Planning Commission Staff Report
Agenda Item No. 3
September 19, 2024

SUBJECT: Unclassified Conditional Use Permit (CUP) Nos. 3789, 3790, 3791 and 3792 amending Unclassified Conditional Use Permit (CUP) No. 3555 and an addendum to Environmental Impact Report No. 7230 previously certified for the project.

Amend CUP No. 3555 approved for the Scarlet Solar Energy Project on a 4,089-acre site in the AE-20 (Exclusive Agricultural; 20-acre minimum parcel size) Zone District separating the CUP into four individual entitlements (CUP 3789, 3790, 3791, 3792) to allow for independent financial securities and decommissioning of the project and; increase the physical footprint of the approved battery storage system, allow shared use of infrastructure (gen-tie, switching station, electrical substation and related infrastructure) with the Sonrisa Solar Facility CUP 3677, eliminate 320 acres approved under CUP No. 3555, provide an alternative Condition of Approval related to the repair of public roads, and provide an addendum to EIR No. 7230 to incorporate an updated hydrology technical memorandum and an updated air quality technical memorandum.

LOCATION: The project site is in unincorporated Fresno County, approximately 3.5 miles west-southwest of the community of Tranquility and 6.5 miles east of Interstate 5 (I-5) and is bordered by W. South Avenue to the south, W. Dinuba Avenue to the north State Route 33 (S. Derrick Avenue to the east and S. San Mateo Avenue to the west.

APNs:

028-071-34	028-071-39	028-071-40	028-071-41	028-071-43
028-071-44	028-071-45	028-071-47	028-071-48	028-071-49
028-081-66	028-111-01	028-111-02	028-111-04	028-111-06
028-111-07	028-111-09	028-111-10	028-111-13	028-111-14
028-111-15	028-111-16	028-111-17	028-111-19	028-111-20
028-120-61	028-120-62	028-101-84	028-101-82,	028-101-81
028-101-75				

OWNER: Westlands Water District

APPLICANT: RE Scarlet, LLC, a wholly owned subsidiary of EDP Renewables North America LLC (EDPR NA). (Recurrent Energy was the previous project applicant)

STAFF CONTACT: Ejaz Ahmad, Planner
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David Randall, Senior Planner
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RECOMMENDATION:

1. Move to:

    - Determine the Addendum to previously certified EIR No. 7230 was presented to, reviewed, and considered by the Planning Commission;

    - Determine the certification of the Addendum to previously certified EIR No. 7230 reflects the Planning Commission's independent judgement;

    - Certify that addendum to EIR No. 7230 prepared for the Scarlet Solar Energy Project, consisting of Unclassified Conditional Use Permit (CUP) No. 3789, 3790, 3791 and 3792, as complete and adequate in conformance with California Environmental Quality Act;

    - Determine the required Findings can be made and move to approve the Unclassified Conditional Use Permit No. 3789, 3790, 3791, and 3792 subject to Conditions of Approval, and Project Notes listed in Exhibit 1;

2. Direct the Secretary to prepare a Resolution documenting the Commission's action.

EXHIBITS:

1. Conditions of Approval and Project Notes (Mandatory Requirements)
2. Location Map
3. Zoning Map
4. Land Use Map
5. Map Modified Project Site
6. Map Shared Infrastructure.
7. Maps Modified Unclassified Conditional Use Permits / Reclamation Sections
8. Project Description & Operational Statement

9. Addendum to Certified Environmental Impact Report (EIR) No. 7230 with Appendix A (Air Quality and Greenhouse Gas Emissions Technical Memorandum) and Appendix B (Addendum to Water Supply Assessment).

10. Addendum to Reclamation Plan (Sections I-IV) With Decommissioning Cost Estimate

SITE DEVELOPMENT AND OPERATIONAL INFORMATION:

Criteria	**Existing**	**Proposed**
General Plan Designation	Agriculture	No Change
Zoning	AE-20 (Exclusive Agricultural, 20-acre minimum parcel size)	No Change
Parcels	028-071-34 028-071-39 028-111-01 028-111-02 028-111-04 028-111-06 028-111-07 028-111-09 028-111-10 028-111-13 028-111-14 028-111-15 028-111-16 028-111-17 028-111-19 028-071-48 028-071-49 028-081-66 028-111-20 028-120-61 028-120-62 028-071-47 028-100-84 (Formerly 72 & 74) 028-100-81 028-100-82 028-101-75	The project will transfer management of the following parcel totaling 320 acres approved under CUP No. 3555 to the Sonrisa Solar Park facility: 028-071-40 028-071-41 028-071-43 028-071-44 028-071-45
Project Site	Solar facility, Tranquility Switching Station	No change from approved CUP No. 3555
Structural Improvements	Solar PV modules, support structures, electrical inverters, intermediate voltage transformers, substations with high voltage transformers, electrical control building, O&M building, supervisory control and data acquisition	No change from approved CUP No. 3555

Criteria	Existing	Proposed
	(SCADA) system, meteorological data system, telecommunications infrastructure, access roads, and security fencing, Tranquillity Switching Station, utility lines.	
Nearest Residence	Approximately 125 feet and 365 feet south of the project site	No Change
Surrounding Development	Solar energy-related uses, agricultural production, scattered rural farm residences	No Change
Operational Features	N/A	See above “Project Site”
Employees	8 (per approved CUP No. 3555)	No change from approved CUP No. 3555
Customers	None	N/A
Traffic Trips	Per approved Traffic Impact Study for CUP 3555, dated March 24, 2020.	No change to TIS
Vehicle Miles Traveled	Per approved CUP No. 3555	No change
Lighting	Per approved CUP No. 3555	No change
Hours of Operation	Per approved CUP No. 3555	No change

EXISTING VIOLATION AND NATURE OF VIOLATION: None

ENVIRONMENTAL ANALYSIS:

CEQA Guidelines §15164(a) instructs that a “lead agency shall prepare an addendum to a previously certified [Environmental Impact Report] EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” Serving as lead agency under the California Environmental Quality Act (CEQA) and its implementing regulations (the CEQA Guidelines), the Fresno County Planning Commission certified an environmental impact report on March 15, 2022 (Final EIR No. 7230) in conjunction with its approval of Unclassified Conditional Use Permit (CUP) No. 3555 authorizing a 400-megawatt (MW) solar photovoltaic (PV) energy generation facility and an up to 400 MW energy storage facility known as the Scarlet Solar Energy Project (Approved Project).

RE Scarlet LLC (Applicant) subsequently requested County approval to modify approved CUP No. 3555. The proposed changes collectively are referred to as the “Modified Project” and include the following:

- Incorporation of an updated hydrology technical memorandum and an updated air quality technical memorandum.
- Increase of the physical footprint of the approved battery energy storage system.
- Optimization of the approved layout to allow for sharing of electrical transmission and control facilities with an adjacent project.
- Eliminate a portion of the Approved Project’s footprint to be included in an adjacent proposed project now under process (i.e., the Sonrisa Solar Project, EIR No. 8189); and
- Separation of approved CUP No. 3555 into four phases, each to be assigned a unique CUP number (CUP Nos. 3789, 3790, 3791, and 3792).
- Replace the original Condition of Approval No. 16 with an alternative regarding repair of public roads.

Some changes or additions to Final EIR No. 7230 are needed for the analysis to address the Modified Project; however, none of the conditions described in CEQA Guidelines Section 15162 calling for the preparation of a subsequent EIR have occurred. Section 15162 requires the preparation of a subsequent EIR under limited circumstances, none of which is triggered by the proposed modified project. Section 15162(a) says:

(a) When an EIR has been certified… for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

> *(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR… due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*
>
> *(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR… due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or*
>
> *(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete…shows… one or more significant effects not discussed in the previous EIR… [or] significant effects previously examined will be substantially more severe than shown in the previous EIR…*

Section 15162 identifies two additional triggers calling for the preparation of a subsequent EIR that relate to mitigation measure feasabilites and project alternatives; however, neither is relevant to this project or the Final EIR.

Consistent with CEQA Guidelines Sections 15162 and 15164(a), the County prepared an addendum to EIR No. 7230 (Addendum) to document the changes to Final EIR No. 7230 needed to assess the potential environmental impacts of the Modified Project. The Addendum includes an updated air quality and greenhouse gas technical memorandum (Appendix A) and an addendum to the previously prepared water supply assessment (Appendix B). The purpose of the updated air quality and greenhouse gas technical memorandum is, in part, to document revised total emissions for the previously approved CUP No. 3555 that are regulated by the San Joaquin Valley Air Pollution Control District, updating modeled assumptions relied upon in EIR No. 7230 with actual data for equipment and usage emissions for the equipment types and quantities used for the project. The purpose of the addendum to the previously prepared water supply assessment is to document a project change: the Applicant's proposal to shift the groundwater source from offsite to onsite.

CEQA Guidelines Section 15164 explains in subsections (c) and (d) that an addendum does not need to be circulated for public review but can be attached to the Final EIR for consideration by the decision-making body (here, the Planning Commission) prior to making a decision on the modified project.

Consistent with CEQA Guidelines section 15164(e), the Addendum includes a brief explanation (supported by substantial evidence) of the County's decision not to prepare a subsequent EIR pursuant to Section 15162. The addendum found that the Modified Project would result in no new significant environmental effects and no substantial increase in the severity of significant effects identified in the Final EIR. Changes to CUP No. 3555 do not require major revisions to the certified Final EIR. Additionally, no new information of substantial importance was received that would require major revisions of EIR No. 7230. Furthermore, there are no known mitigation measures or alternatives that were previously considered infeasible but are now considered feasible that would substantially reduce one or more significant effects on the environment previously identified in Final EIR No. 7230. Similarly, there are no known mitigation measures or alternatives that are considerably different than those required by EIR No. 7230 that would substantially reduce one or more significant effects on the environment identified in the Final EIR.

The addendum found, consistent with the analysis and conclusions reached in the Final EIR, that the Modified Project would have:

No impact regarding:

- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Tribal Cultural Resources

- Wildfire

Less-than-significant impact regarding:

- Aesthetics
- Agriculture and Forestry Resources
- Energy
- Greenhouse Gas Emissions
- Noise
- Transportation
- Utilities and Service Systems

Less-than-significant impact with the implementation of recommended Mitigation Measures identified in the Final EIR regarding:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality

PUBLIC NOTICE:

Consistent with County's operating policies, notices of this public hearing were sent to 11 property owners within one mile of the subject parcels, exceeding the 300-foot minimum notification requirements prescribed by California Government Code Section 65091 and the County Zoning Ordinance. Notices were also sent to 16 other interested parties.

PROCEDURAL CONSIDERATIONS:

In order for the project to be approved, the addendum to the EIR must first be certified as complete and adequate in conformance with the California Environmental Quality Act (CEQA) .

An Unclassified Conditional Use Permit may be approved only if four findings specified in the Fresno County Zoning Ordinance, Section 842.5 are made by the Planning Commission.

The decision of the Planning Commission on a CUP Application is final, unless appealed to the Board of Supervisors within 15 days of the Commission's action.

BACKGROUND INFORMATION:

RE Scarlet LLC (Applicant) applied for an Unclassified Conditional Use Permit (CUP) No.3555 in 2016 to construct, operate, maintain, and ultimately decommission CUP No. 3555. As approved, the project consisted of a 400-megawatt (MW) solar photovoltaic (PV) energy generation facility and an energy storage facility with a maximum of 400 MW on approximately 4,089 acres in western Fresno County. Fresno County prepared EIR No. 7230 to analyze the Project's environmental impacts. The Final EIR, dated August 2021, was certified by the Fresno County (County) Planning Commission on March 15, 2022, in conjunction with its approval of CUP No. 3555.

Two phases of construction have been commenced and the remaining construction is anticipated to be begin shortly after approval of the modified project.

The four new conditional use permits generally correlate with four Sections with separate operational and potential separate decommission financial securities and timing. As shown in Exhibit 7, Section I (CUP 3789) and Section II (CUP 3790) of the project consists of solar photovoltaic modules and battery energy storage systems, Section III (CUP 3791)consists of energy storage facilities and Section IV (CUP 3792) consists of the electrical transmission and control equipment facilities that are to be shared between Section I, Section II and Section III and adjacent Sonrisa Solar Photovoltaic (PV) generation facility (CUP 3677).

REQUIRED CUP FINDINGS:

***Finding 1*:** *That the site of the proposed use is adequate in size and shape to accommodate said use and all yards, spaces, walls and fences, parking, loading, landscaping, and other features required by this Division, to adjust said use with land and uses in the neighborhood*

	Current Standard:	**Proposed Operation:**	**Is Standard Met (y/n)**
Setbacks	Front: 35 feet Side: 20 feet Rear: 20 feet	No change from approved CUP No. 3555	Yes
Parking	One parking space for every two employees on site; one of which shall be an Americans with Disabilities Act-compliant (ADA) parking stall (van accessible) located as close as possible to the main entrance of the main building	No change from approved CUP No. 3555	Yes
Lot Coverage	No requirement	N/A	N/A
Space Between Buildings	40 feet between animal shelter and building for human occupancy	N/A	N/A
Wall Requirements	Per Section 822.3.050 of the County Ordinance Code	No change from approved CUP No. 3555	N/A
Septic Replacement Area	100 percent for existing system	No change from approved CUP No. 3555	Yes
Water Well Separation	• Building sewer/septic tank: 50 feet • Disposal field: 100 feet	Reactivation of existing capped well onsite	N/A

	Current Standard:	Proposed Operation:	Is Standard Met (y/n)
	• Seepage pit/cesspool: 150 feet		

Reviewing Agency/Department Comments:

No comments specific to the adequacy of the site were expressed by reviewing Agencies or Departments.

Analysis Finding 1:

There is no change in the size of the 4,089-acre project site approved by CUP No. 3555 except that 320 acres of it will be deleted from CUP No. 3555 and incorporated into the Sonrisa Solar facilities (CUP 3677). The modified project includes an increase in physical footprint of the approved battery storage system (3 acres for Section I and 10 acres for Section II) and sharing of electrical transmission and control facilities with an adjacent project (Sonrisa Solar) will remain within the boundaries of the project site approved by CUP No. 3555.

Conclusion Finding 1:

Based on the above information, the site is adequate in size and shape to accommodate the proposal.

***Finding 2*:** *That the site for the proposed use relates to streets and highways adequate in width and pavement type to carry the quantity and kind of traffic generated by the proposed use*

		Existing Conditions	Proposed Operation
Private Road	Yes	Per approved CUP No 3555, private on-site access roads, perimeter roads and internal roads for construction and operation.	No change from approved CUP 3555
Public Road Frontage	Yes	• State Route (SR) 33 (AKA Derrick Avenue) • W. Dinuba Avenue • S. San Mateo Avenue • W. South Avenue • Manning Avenue	No change
Direct Access to Public Road	Yes	Per approved CUP No.3555, primary access to the Solar Facility is via W. Manning Avenue at S. Monterey Avenue and W. Manning Avenue at San Benito Avenue. Primary	No change

		Existing Conditions	Proposed Operation
		access to the Tranquillity Switching Station is via existing access gates at S. Ohio Avenue and W. Dinuba Avenue. •	
Road Average Daily Traffic (ADT)		Per approved CUP No. 3555	No change
Road Classification		• SR 33: Expressway • W. Dinuba Avenue: Local • San Mateo Avenue: Private • W. South Avenue: Local • Manning Avenue: Expressway	No change
Road Width		• SR 33: two, 12-foot-wide travel lanes and gravel shoulders • W. Dinuba Avenue: 15-20 feet • S. San Mateo Avenue: 15-20 feet • W. South Avenue: 15-20 feet • Manning Avenue: two, 12-foot-wide travel lanes and gravel shoulders	No change.
Road Surface		• SR 33: Paved • West Dinuba Avenue: Dirt • South San Mateo Avenue: Dirt • West South Avenue: Dirt • Manning Avenue: Paved	No change
Traffic Trips		Per approved Traffic Impact Study for CUP No. 3555, dated March 24, 2020.	
Traffic Impact Study (TIS) Prepared	Yes	Per approved Traffic Impact Study	No change to TIS
Road Improvements Required		Condition No. 16 for approved CUP No. 3555 requires repair to County roads demonstrably damaged by Project Construction & Decommissioning traffic.	Condition No. 16 for approved CUP No. 3555 will be replaced with a modified condition attached as Exhibit 1

Reviewing Agency/Department Comments:

California Department of Transportation (Caltrans): Construction and permanent access to the site shall not be allowed from State Route (SR) 33 and be from Manning Avenue.

Encroachment permits shall be obtained from Caltrans for any work done within or impacting the State right of way and be conform to the current Caltrans Highway Design Manual and State Standard Plans and Specifications. (Note: These requirements were included in CUP No. 3555 as regulatory requirements)

To achieve the ultimate right-of-way, requirements for SR 33, an irrevocable offer of five feet of dedicated right-of way shall be made to the Caltrans. Future solar farm equipment and/or permanent structures shall be constructed with sufficient setback to accommodate the future widening. (Note: This requirement was included in CUP No. 3555 as a Condition of Approval.)

County Road Maintenance and Operations (RMO) Division: The RMO Division in collaboration with the Applicant has sought to define a more precise Condition of Approval, as shown below, to replace Condition No. 16 from CUP No. 3555, that addressed the potential impact for the project to damage existing public roads. This condition is considered superior to the prior Condition as it provides a more specific defined scope of improvements to the roads in the area that could be impacted by the project.

16. *~~Prior to granting occupancy to the use, the developer shall enter into a financially secured agreement to ensure that any County roads which are demonstrably damaged by project related traffic are repaired, paved, and/or slurry-sealed, as is determined by the Fresno County Public Works and Planning Department's Road Maintenance and Operations Division~~.*

    Prior to the approval of final permits, release of any temporary power deposits, or the start of operations other than testing processes of the facilities the Applicant shall crack seal & chip seal Manning Ave between Derrick Avenue and the San Mateo Avenue Alignment. Prior to the chip seal application, in locations where the construction entrances are directly across from each other along Manning Ave, the area of Manning Ave between the construction entrances shall be grinded to a depth of 0.3 feet and replaced with hot mixed asphalt.

No other comments specific to the adequacy of streets and highways were expressed by reviewing Agencies or Departments.

Analysis Finding 2:

The subject proposal (CUP 3789, 3790, 3791, 3792) would not trigger any changes to the site access points off surrounding roads and highways as approved by CUP No. 3555.
Primary access to the Solar Facility would remain via W. Manning Avenue at S. Monterey Avenue and W. Manning Avenue at San Benito Avenue. Primary access to the Switching Station would remain via existing gates at S. Ohio Avenue and W. Dinuba Avenue. All access points meet applicable County standards and no driveways onto State Route (SR 33) are proposed or are permitted by California Department of Transportation (Caltrans).
The project will not impact Caltrans' future right-of-way adjacent to State Route (SR) 33 and the regulatory requirement that any improvements within the County right-of-way shall require an encroachment permit would remain in effect. Furthermore, all County maintained roads directly affected by the project construction activities will require to be replaced with hot mix asphalt and

crake seal and chip seal. This requirement is reflected in the recommended modified Condition of approval as noted above.

Recommended Conditions of Approval:

Revision to Road Repair Requirements to require specific repairs.

Conclusion Finding 2:

Based on the above information, and with adherence to above-noted Condition of Approval, the surrounding streets and highways serving the project site will remain adequate to accommodate the proposal. Finding 2 can be made.

Finding 3: That the proposed use will have no adverse effect on abutting property and surrounding neighborhood or the permitted use thereof.

Surrounding Parcels			
	Use:	**Zoning:**	**Nearest Residence**
North	Non-irrigated agricultural land (owned by Westlands Water District)	AE-20 (all)	None
South	Agricultural land Solar facilities	AE-20 (all)	Two rural residences; approximately 125 and 365 feet south of the Project site, respectively
East	Non-irrigated agricultural land (owned by Westlands Water District)	AE-20 (all)	None
West	Non-irrigated agricultural land (owned by Westlands Water District) Agricultural land Solar facilities	AE-20 (all)	None

Reviewing Agency/Department Comments:

Various comments were received from department/agencies regarding regulatory requirements that could indirectly shield or reduce potential impacts on the surrounding area. The project will comply with these requirements, and they have been included as Project Notes in Exhibit 1 of this report.

Analysis Finding 3:

The subject proposal would amend EIR No. 7230 to incorporate an updated hydrology technical memorandum and an updated air quality technical memorandum; increase the physical footprint of the approved battery storage system from approximately 12 acres to approximately 30 acres; provide for shared use of infrastructures (gen-tie, switching station, electrical substation and related infrastructure) with Sonrisa Solar Park to support efficient operation and maintenance of both project sites; and transfer management of 320 acres approved under CUP No. 3555 to the Sonrisa Solar Park, reducing the Project site from 4,089 acres to 3,769 acres.

Amendment to CUP No. 3555 into four Conditional Use Permits for the ease of decommissioning, the amendment to EIR No. 7230 to incorporate an updated hydrology technical memorandum and an updated air quality technical memorandum, including other proposed changes to the project such as increased battery storage area, shared infrastructure, and the transfer to land to adjacent solar facility would not bring any significant physical changes to the project approved under CUP No. 3555. As such the project would cause no significant adverse effect on abutting property and the surrounding neighborhood relative to the impact disclosed in EIR No. 7230

Per the addendum to previously certified EIR No. 7230, Section 3.10. b., Hydrology and Water Quality, the water supply source would shift from offsite sources under the approved CUP No. 3555 (well water from a neighboring site and purchased water delivered by truck) to onsite sources under the subject proposal (reactivation of existing capped wells) and this change will have a less than significant impact on water supply. Likewise, per the addendum to previously certified EIR No. 7230, Section 3.3 a. b. Air Quality, the Modified Project's criteria air pollutant emissions would cause no new significant impact and no substantial increase in the severity of a significant impact relative to the impact disclosed in EIR No. 7230.

The project was originally determined to not have an adverse effect on abutting property and surrounding neighborhood or the permitted use thereof. The proposed changes do not change this situation in any meaningful way, it only allows the project to be developed in a more efficient manner.

Recommended Conditions of Approval:

None.

Conclusion finding 3:

Based on the above information and with adherence to regulatory requirement (Project Notes) attached as Exhibit 1, staff believes the proposal will not have an adverse effect upon surrounding properties. Finding 3 can be made.

***Finding 4*:** *That the proposed development is consistent with the General Plan*

Reviewing Agency/Department Comments:

There were no comments on the proposed amendments to the project relative to its consistency with the General Plan

Analysis Finding 4:

No new polices apply on the project. The project will continue to adhere to all policies previously approved for CUP No. 3555. As such the proposal is consistent with the General Plan Policies.

Recommended Conditions of Approval:

None

Conclusion finding 4:

Based on the above information, staff believes the proposal is consistent with the Fresno County General Plan.

PUBLIC COMMENT:

None.

SUMMARY CONCLUSION:

Based on the factors cited in the analysis, staff believes the required Findings for granting the Unclassified Conditional Use Permits can be made. Staff therefore recommends approval of Unclassified Conditional Use Permit Nos. 3789, 3790, 3791 and 3792 amending Unclassified Conditional Use Permit No. 3555 subject to the recommended Conditions of Approval, including the revised Road Repair condition. Staff also concurs with the validity of the Addendum to the EIR.

PLANNING COMMISSION MOTIONS:

Recommended Motion (Approval Action)

1. Determine the Addendum to Previously Certified Environmental Impact Report (EIR No. 7230) was presented to, reviewed, and considered by the Planning Commission, and represents their independent judgement.

2. Move to certify that addendum to EIR No. 7230 prepared for the Scarlet Solar Energy Project, consisting of Unclassified Conditional Use Permit (CUP) No. 3789, 3790, 3791 and 3792, as complete and adequate in conformance with California Environmental Quality Act.

3. Move to determine the required Findings can be made and move to approve the Unclassified CUP No. 3789, 3790, 3791, and 3792 subject to Conditions of Approval, and Project Notes listed in Exhibit 1, and

4. Direct the Secretary to prepare a Resolution documenting the Commission's action.

Alternative Motion (Denial Action)

1. Determine the Addendum to Previously Certified Environmental Impact Report (EIR No. 7230) was presented to, reviewed and considered by the Planning Commission, and represents their independent judgement.

2. Move to not certify the Addendum to Previously Certified Environmental Impact Report (EIR No. 7230) prepared for the Project.

3. Move to determine that the required Findings cannot be made (state basis for not making the Findings) and move to deny Unclassified CUP Nos. 3789, 3790, 3791 and 3792; and

4. Direct the Secretary to prepare a Resolution documenting the Commission's action.

Mitigation Measures, Recommended Conditions of Approval and Project Notes:

See Recommended Conditions of Approval attached as Exhibit 1.

EA:
G:\4360Devs&Pln\PROJSEC\PROJDOCS\CUP\3700-3799\3789-3792 - See EIR 7230\SR\CUP 3789-3792 Staff Report.docx

EXHIBIT 1

Addendum to Previously Certified Scarlet Solar Energy Project EIR No. 7230
Conditions of Approval CUP Nos. 3789, 3790, 3791 and 3792

Conditions of Approval	
1.	Development and operation of the project shall be substantially in accordance with the Site Plans and Operational Statement submitted to the Planning Commission.
2.	Conditional Use Permit Nos. 3789, 3790, 3791 and 3792 shall expire in 35-year concurrently with the approved CUP No. 3555.
3.	All Mitigation Measures, Conditions of Approval, and Project Notes approved for CUP No. 3555 shall remain in full force and effects except were modified by the subject Use Permits.
4.	Prior to the approval of final permits, release of any temporary power deposits, or the start of operations other than testing processes of the facilities the Applicant shall crack seal & chip seal Manning Ave between Derrick Avenue and the San Mateo Avenue Alignment. Prior to the chip seal application, in locations where the construction entrances are directly across from each other along Manning Ave, the area of Manning Ave between the construction entrances shall be grinded to a depth of 0.3 feet and replaced with hot mixed asphalt.

*MITIGATION MEASURE – Measure specifically applied to the project to mitigate potential adverse environmental effects identified in the environmental document.
Conditions of Approval reference recommended Conditions for the project. The term Applicant is synonymous with the term developer.

Project Notes	
The following Notes reference mandatory requirements of Fresno County or other Agencies and are provided as information to the project Developer.	
1.	Conditional Use Permit Nos. 3789, 3790, 3791 and 3792 will become void unless there has been substantial development within two years of the effective date of this approval, or there has been a cessation of the use for a period more than two years.
2.	Construction plans, building permits and inspections are required for all proposed improvements on the property. Contact the Building and Safety Section of the Fresno County Department of Public Works and Planning at (559) 600-4540 for plans, permits and inspections.
3.	Prior to initiating construction, the developer shall be required to contact Underground Service Alert (811) to allow Westlands Water District staff to locate and mark its facilities prior to commencement of grading or construction activities.
4.	Per Article 19 Rules & Regulations of Westland Water District, the proposed water sources are on-site groundwater wells and through a Municipal & Industrial (M&I) water agreement secured with the District. The District will make available up to five (5) acre-feet annually per 160 acres for solar developments. If the Applicant's annual water use is expected to exceed the aforementioned amount, the Applicant must submit a supplemental M&I Water Application to the District and identify the source of water to be made available to meet the incremental increased use.
5.	The project shall comply with California Code of Regulations Title 24– Fire Code and "Prior to receiving FCFPD conditions of approval for the project, the developer shall submit construction plans to the County of Fresno Public Works and Planning for review. The project may also be annexation into the Community Facilities District No. 2010-01 of the Fresno County Fire Protection District.

EXHIBIT 1

Project Notes	
6.	To address public health impacts resulting from the project, Fresno County Department of Public Health, Environmental Health Division (Health Department) requires the following: • Facilities that use and/or store hazardous materials and/or hazardous wastes shall meet the requirements set forth in the California Health and Safety Code (HSC), Division 20, Chapter 6.95, and the California Code of Regulations (CCR), Title 22, Division 4.5. • Any business that handles a hazardous material or hazardous waste may be required to submit a Hazardous Materials Business Plan pursuant to the HSC, Division 20, Chapter 6.95. • All hazardous waste shall be handled in accordance with requirements set forth in the California Code of Regulations (CCR), Title 22, Division 4.5. • Should any underground storage tank(s) be found during the project, the applicant shall apply for and secure an Underground Storage Tank Removal Permit from the Health Department. • All abandoned water wells and septic systems on the subject parcels shall be properly destroyed by an appropriately licensed contractor. . • Any underground storage tank(s) found during construction, shall be removed with an Underground Storage Tank Removal Permit from the Health Department. • Prior to destruction of agricultural wells, a sample of the upper most fluid in the well column should be sampled for lubricating oil. The presence of oil staining around the well may indicate the use of lubricating oil to maintain the well pump. Should lubricating oil be found in the well, the oil should be removed from the well prior to placement of fill material for destruction. The "oily water" removed from the well must be handled in accordance with federal, state and local government requirements. • Should the structures have an active rodent or insect infestation, the infestation should be abated prior to demolition of the structures to prevent the spread of vectors to adjacent properties. • In the process of demolishing the existing structures, if asbestos containing construction materials and materials coated with lead-based paints are encountered, contact the San Joaquin Valley Air Pollution Control District. • If the structures were constructed prior to 1979 or if lead-based paint is suspected to have been used in these structures, then prior to demolition work contact the California Department of Public Health, Childhood Lead Poisoning Prevention Branch, at (560) 620-5600, United States Environmental Protection Agency, Region 9 at (415) 947-8000, State of California, Industrial Relations Department, Division of Occupational Safety and Health, Consultation Service (CAL-OSHA) at (559) 454-5302. [

EXHIBIT 2

CUP 3789, 3790, 3791, 3792 (EIR 7230)

LOCATION MAP

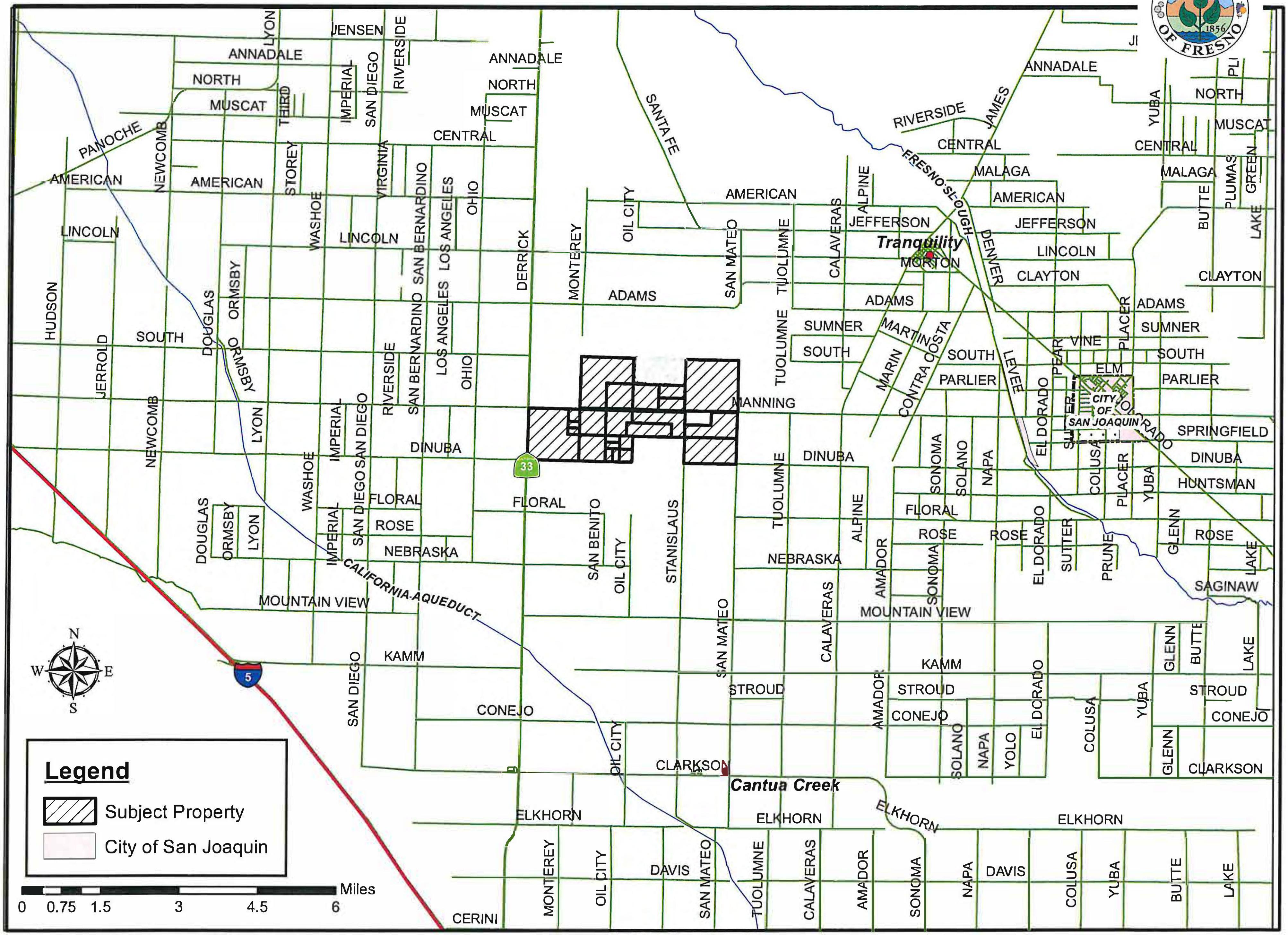
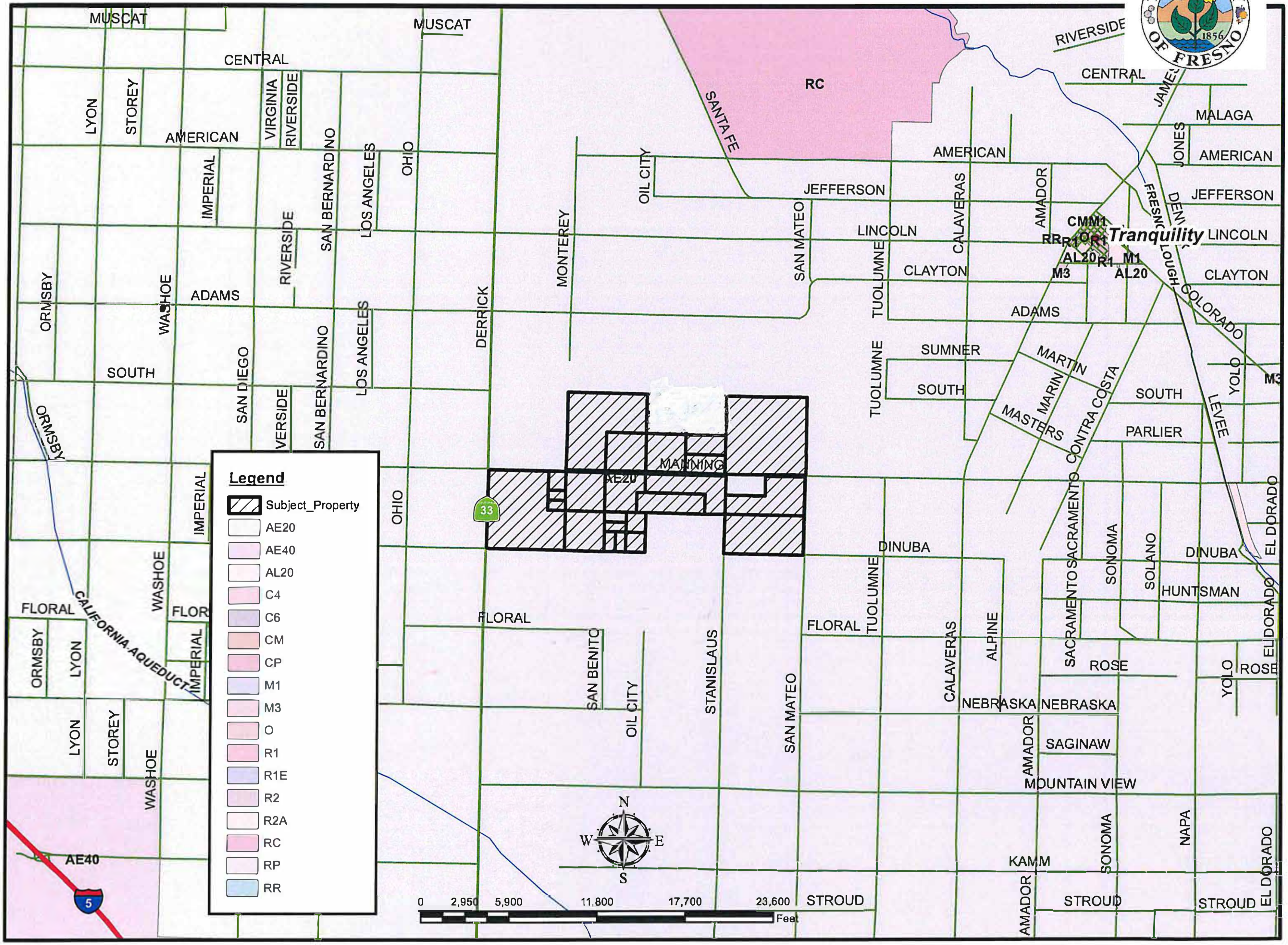


EXHIBIT 2

EXHIBIT 3

EXISTING ZONING MAP

CUP 3789, 3790, 3791, 3792 (EIR 7230)



Prepared by: County of Fresno Department of Public Works and Planning, Development Services Division

KJ

EXHIBIT 3

EXHIBIT 4

CUP 3789, 3790, 3791, 3792 (EIR 7230)

EXISTING LAND USE MAP

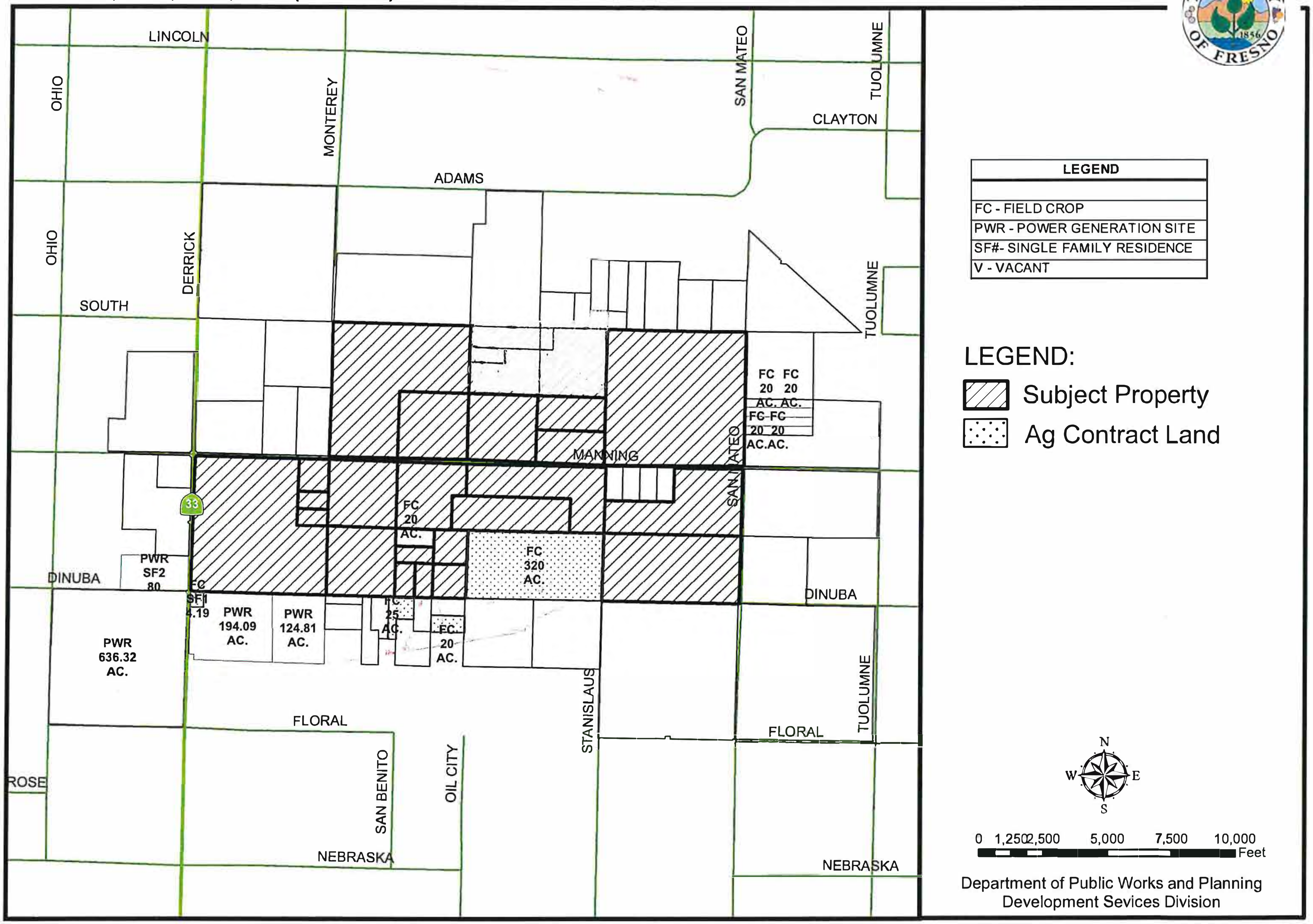
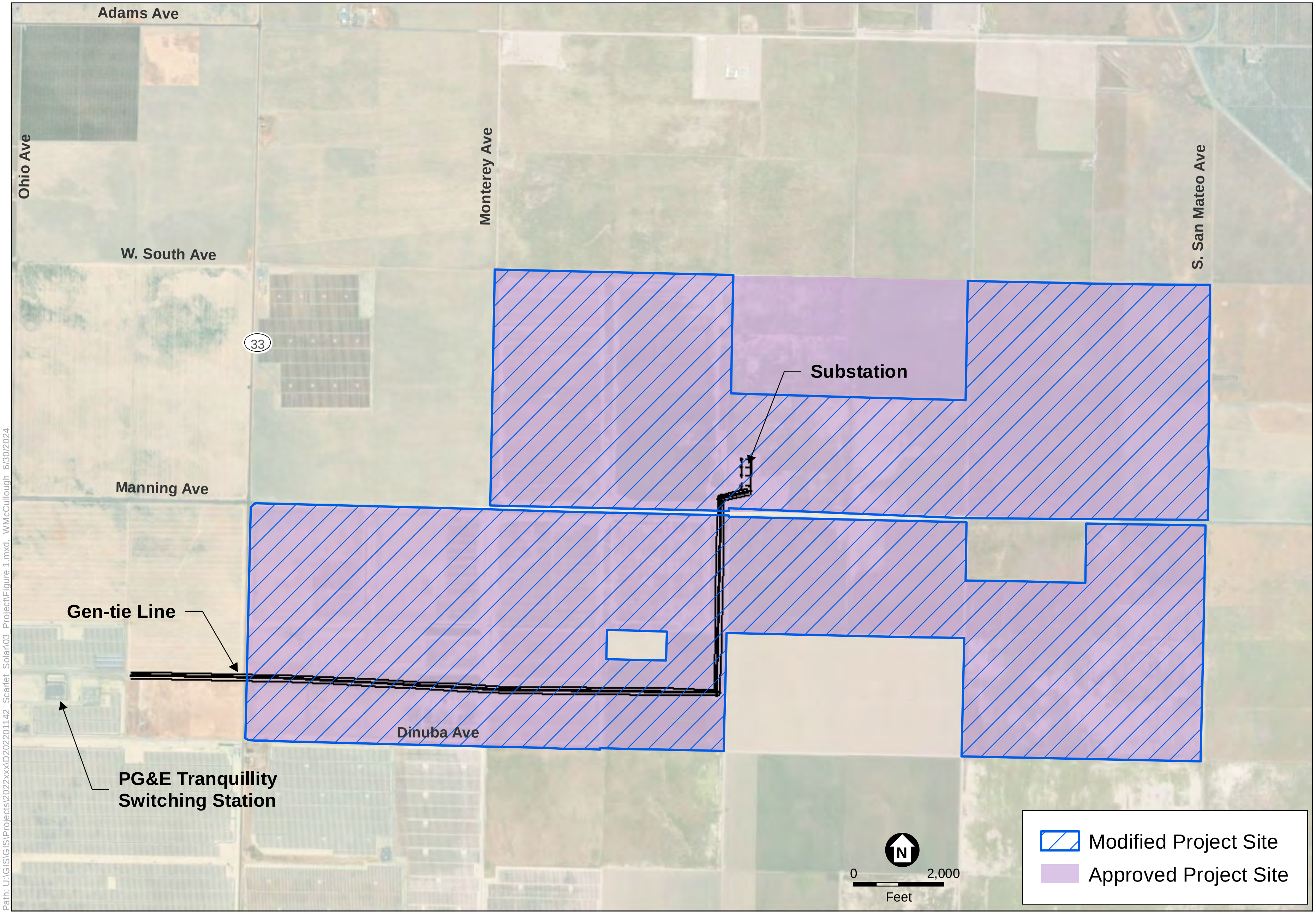


EXHIBIT 4

Prepared by: County of Fresno Department of Public Works and Planning, Development Services Division

KJ

EXHIBIT 5



SOURCE: EDP, 2024

Scarlet Solar Project Addendum

Figure 1.3-1
Approved Project and Modified Project Sites

EXHIBIT 6

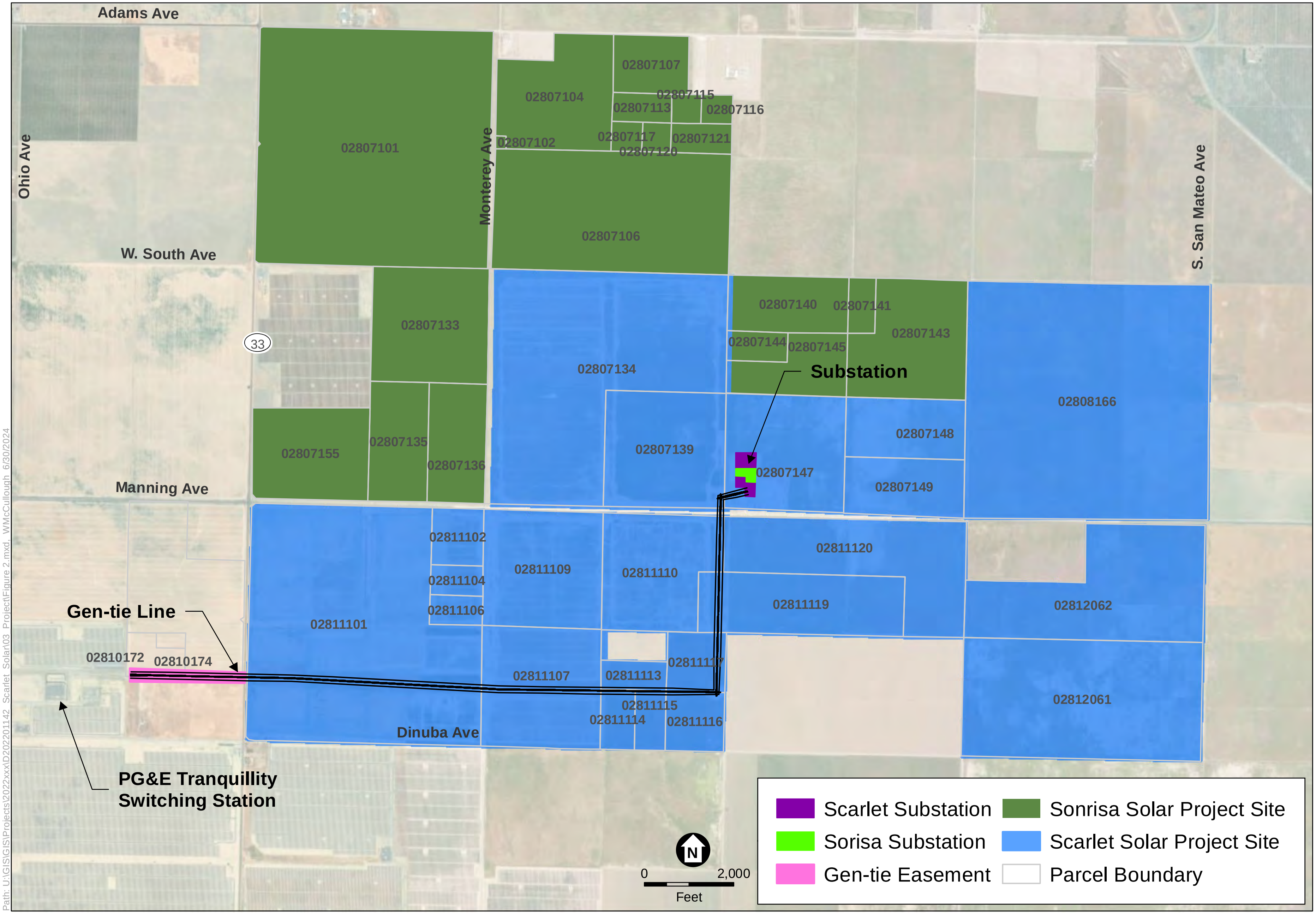


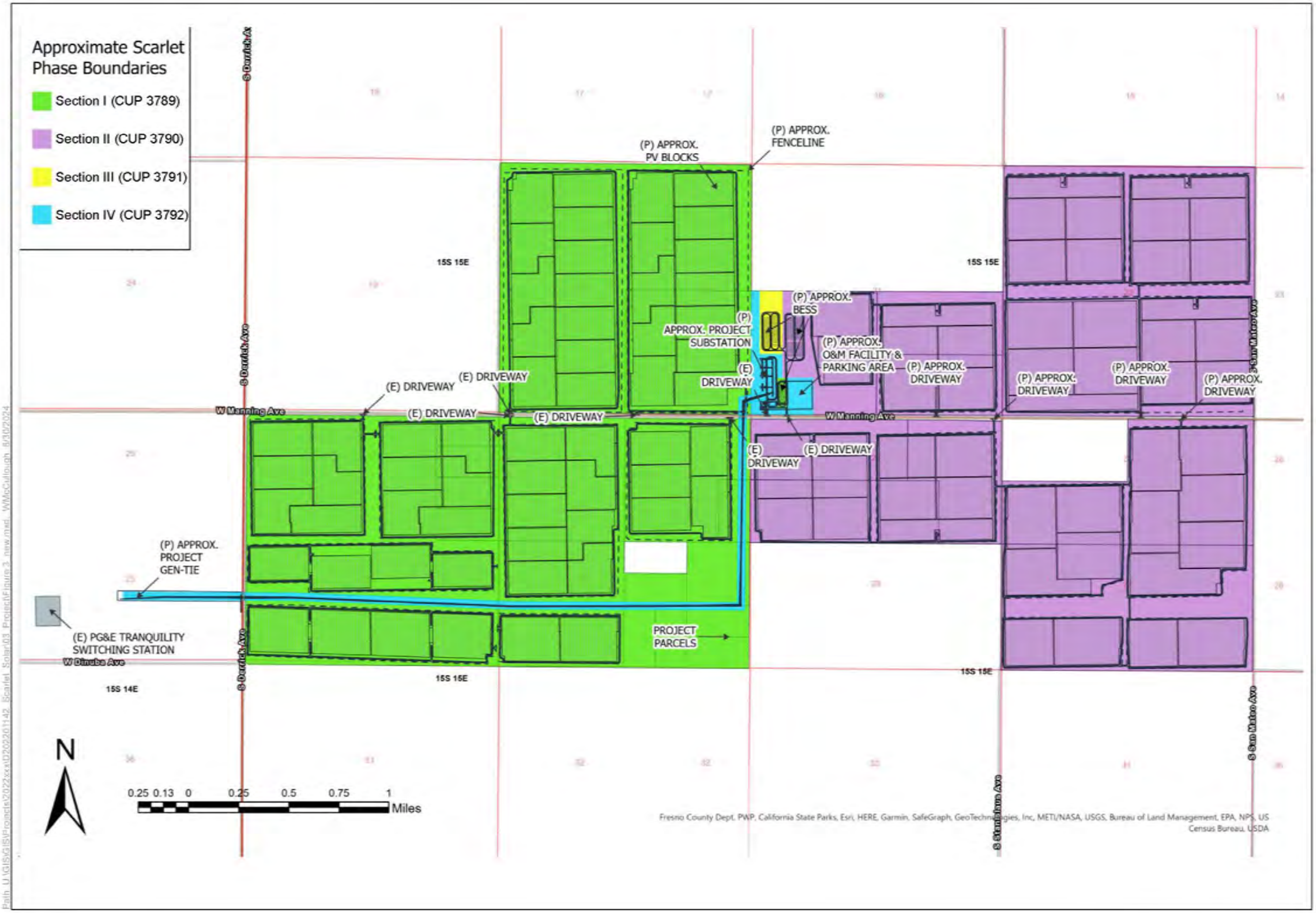
EXHIBIT 6

SOURCE: EDP, 2024

Scarlet Solar Project Addendum

Figure 1.3-2
Sonrisa, Scarlet, and Shared Infrastructure

EXHIBIT 7



SOURCE: EDP, 2024

Scarlet Solar Project Addendum

Figure 1.3-3
Modified Construction Phasing

EXHIBIT 7

EXHIBIT 8

Project Description/Operational Statement

Project Overview

On September 9, 2021, the County of Fresno's Planning Commission certified Environmental Impact Report (EIR) NO. 7230 for the Scarlet Solar Energy Project and approved and issued to RE Scarlet LLC (Applicant) the Unclassified Conditional Use Permit (CUP) No. 3555. The Applicant seeks an Addendum to CUP No. 3555 to address the items below:

- Shared use of infrastructure with the Sonrisa Solar Park (Draft EIR No. 7869), including the gen-tie, switching station, electrical substation, and infrastructure to support efficient operation and maintenance of the site; As approximately shown in *Figure 1*.
- Transfer management of approximately 320 acres approved under CUP No. 3555 to the Sonrisa Solar Park (Draft EIR No. 7869)
- Revision to the Air Quality Analysis
- Increased footprint associated with energy storage infrastructure
- Revision to Hydrology Section
- Allow for phased decommissioning of the Project, as shown in *Figure 2*.

The CUP allows for the construction, operation, maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating and energy storage facility and associated infrastructure to be known as the Scarlet Solar Energy Project (Project). The Project will generate a total of up to 400 megawatts of alternating current (MWac) at the point of electrical grid interconnection on approximately 4,089 acres in unincorporated western Fresno County. The Project will provide solar power to utility customers by interconnecting to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) existing Tranquillity Switching Station located just west of the Project site.

The Project will operate year-round to generate solar electricity during daylight hours, and would store and dispatch power at the energy storage system during both daylight and non-daylight hours. The Project is being constructed in continuous phases. The first phase began construction in September 2022. The last phase is anticipated to be online as early as late 2025.

Components of the project would include the following, which are further described below:

- Groups of solar arrays (arrays include PV modules and steel support structures, electrical inverters, transformers, cabling, and other infrastructure);
- An electrical substation;
- A switchyard, including one high-voltage 230 kV utility switchyard, telecommunications infrastructure, and dead-end structures;
- Approximately 3.5 miles of 230 kV generation intertie (gen-tie) transmission line (from the substation and the project 230 kV switchyard) to connect to the existing PG&E Tranquillity Switching Station;
- Improvements to PG&E electrical infrastructure, including a minor expansion of PG&E's Tranquillity Switching Station and approximately 1,900 feet of PG&E 230 kV transmission line to connect the 230 kV gen-tie line to the Tranquillity Switching Station;

- An up to 400 MW energy storage system, consisting of battery or flywheel enclosures and electrical cabling; and
- Other necessary infrastructure, including one permanent operations and maintenance (O&M) building, a septic system and leach field, a supervisory control and data acquisition (SCADA) system, a meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar, lighting, and wildlife-friendly security fencing.

Project Location

The Project site is located in unincorporated Fresno County, approximately 3.5 miles southwest of the community of Tranquillity and approximately 6.5 miles east of Interstate 5 (I-5). The Project site is located northeast of and adjacent to the Tranquillity Solar Generating Facility, which is currently under construction. The Project site is generally located south of West South Avenue, north of West Dinuba Avenue, east of State Route 33 (SR 33; South Derrick Avenue), and west of South San Mateo Avenue.

Lead Agency

County of Fresno
Department of Public Works and Planning
2220 Tulare Street, 6th Floor
Fresno, California 96721
Contact: Ejaz Ahmad
(559)600-4204

Project Applicant

RE Scarlet LLC

1501 McKinney Street
Unite 1300
Houston, TX 77010
Contact: Kristofer Cheney

Property Owner

RE Scarlet LLC

1501 McKinney Street
Unite 1300
Houston, TX 77010
Contact: Kristofer Cheney

Project Background

The California Renewable Portfolio Standard (RPS) legislation enacted in 2002 (Senate Bill 1078) and accelerated in 2006 required retail sellers of electricity to obtain 20 percent of their supply of electricity from renewable energy sources, such as solar, by 2010. Subsequent recommendations advocated a goal of 33 percent by 2020, which Governor Arnold Schwarzenegger set as a statewide goal when he signed Executive Order S-14-08. The following year, Executive Order S-21-09 directed the California Air Resources Board, under its Assembly Bill 32 authority, to enact regulations to achieve the goal of 33 percent renewables by 2020 (California Energy Commission 2014). The 33 percent goal was enacted into law by Governor Brown on April 13, 2011 with his signing of Senate Bill 2X. The California Public Utilities Commission states that the state's investor-owned utilities (including PG&E, Southern California Edison, and San Diego Gas & Electric) collectively served 22.7 percent of their 2013 retail electricity sales with renewable energy sources, and that they have all exceeded the contractual requirements for reaching 33 percent by 2020 (California Public Utility Commission [CPUC] 2016). To set a higher goal, on October 7, 2015, Governor Brown signed Senate Bill 350, known as the Clean Energy and Pollution Reduction Act of 2015, which increased California's RPS to 50 percent by 2030.

Power generated by the Project would be delivered directly via the California Independent System Operator (CAISO) electrical transmission system pursuant to the terms of one or several power purchase agreements.

Components of the Project:

The Scarlet Solar project would be comprised of 4 phases: Phase I, Phase II, Phase III, and Phase IV.

- **Phase I** incorporates 200MW of solar photovoltaic electric generating facilities combined with 40MW / 160MWh of lithium ion battery storage facilities. Project substation equipment related to specific metering of Phase I output is implemented and tested during Phase I construction, including main power transformers and all medium voltage (MV) equipment. Phase I encompasses approximately 1850 acres of land dedicated to solar photovoltaic modules and approximately 3 acres of battery energy storage systems. Phase I began construction in September 2022, and is estimated to complete construction during Q2 2024.
- **Phase II** incorporates 200 MW solar photovoltaic renewable energy generating facilities and 150 MW/ 600 MWh of lithium ion battery storage facilities. Project substation equipment related to specific metering of Phase II output is implemented and tested during Phase II construction, including main power transformers and all medium voltage (MV) equipment. Phase II encompasses approximately 1700 acres of land dedicated to solar photovoltaic modules and approximately 10 acres of battery energy storage systems. Phase II began construction in October 2023 and is expected to complete construction in Q4 2024.
- **Phase III** incorporates 160 MW/ 640 MWh of energy storage facilities. Project substation equipment related to specific metering of Phase III output is implemented and tested during Phase III construction, including main power transformers and all medium voltage (MV) equipment. Phase III encompasses approximately 20 acres of land. Phase III expects to start construction in Q4 2024 and may expect to complete construction in Q4 2025.
- **Phase IV** consists of the facilities that are shared between Phases I-III and the nearby Sonrisa Project. Phase IV includes the gen-tie, switching station, electrical substation, and infrastructure to support efficient operation and maintenance of the site. Phase IV encompasses approximately 95 acres of land. The majority of Phase IV will be completed within the construction timeline of Scarlet I. Phase IV began construction in September 2022 and is expected to complete construction in Q4 2025.

Decommissioning and Restoration Process

The Project is anticipated to have an operating life of up to 35 years. After this period, the facility would be either repowered or decommissioned. Repowering after the operating life is not anticipated at this time; however, if repowering were to be pursued, it would require the owner to obtain all required permit approvals. Project decommissioning would occur in accordance with the expiration of the CUP and would involve the removal of all above-grade facilities, buried electrical conduit, and all concrete foundations in accordance with a Reclamation Plan. Utility-owned infrastructure would not be removed at the time the Solar Facility is decommissioned. Equipment would be repurposed off-site, recycled, or disposed of in a landfill as appropriate. Decommissioning would involve the use of heavy equipment and personnel similar to that used for construction. Appropriate hazardous materials control and erosion control measures would be used throughout the decommissioning process. It is anticipated that such controls would be substantially similar to those implemented during construction.

Similar to the construction of the project, decommissioning of the project will occur in phases. Infrastructure that solely support~~s~~ Phase I, Phase II, and Phase III will be decommissioned at the end of the useful life of each phase. The decommissioning of each phase’s infrastructure could occur independently of the other phase and would not need to be decommissioned in a particular order. All infrastructure that will be shared across phases (Phase IV) as well as across projects (Scarlet Solar Energy Project and proposed Sonrisa Solar Energy Project) will be decommissioned at the end of the last phase that utilizes that infrastructure. In other words, Reclamation of the infrastructure that would be shared across projects will occur within 24 months of either: (i) the later of the expiration of the Sonrisa Solar Energy Project or the Scarlet Solar Energy Project’s Conditional Use Permit (CUP) or (ii) the abandonment of both the Sonrisa Solar Energy Project and the Scarlet Solar Energy Project without the project owner making efforts to cure a disruption of electricity production, whichever occurs first.

A Reclamation Plan containing details regarding site reclamation and decommissioning has been approved by Fresno County. The Reclamation Plan will be amended to separate decommissioning activities between the Project phases.

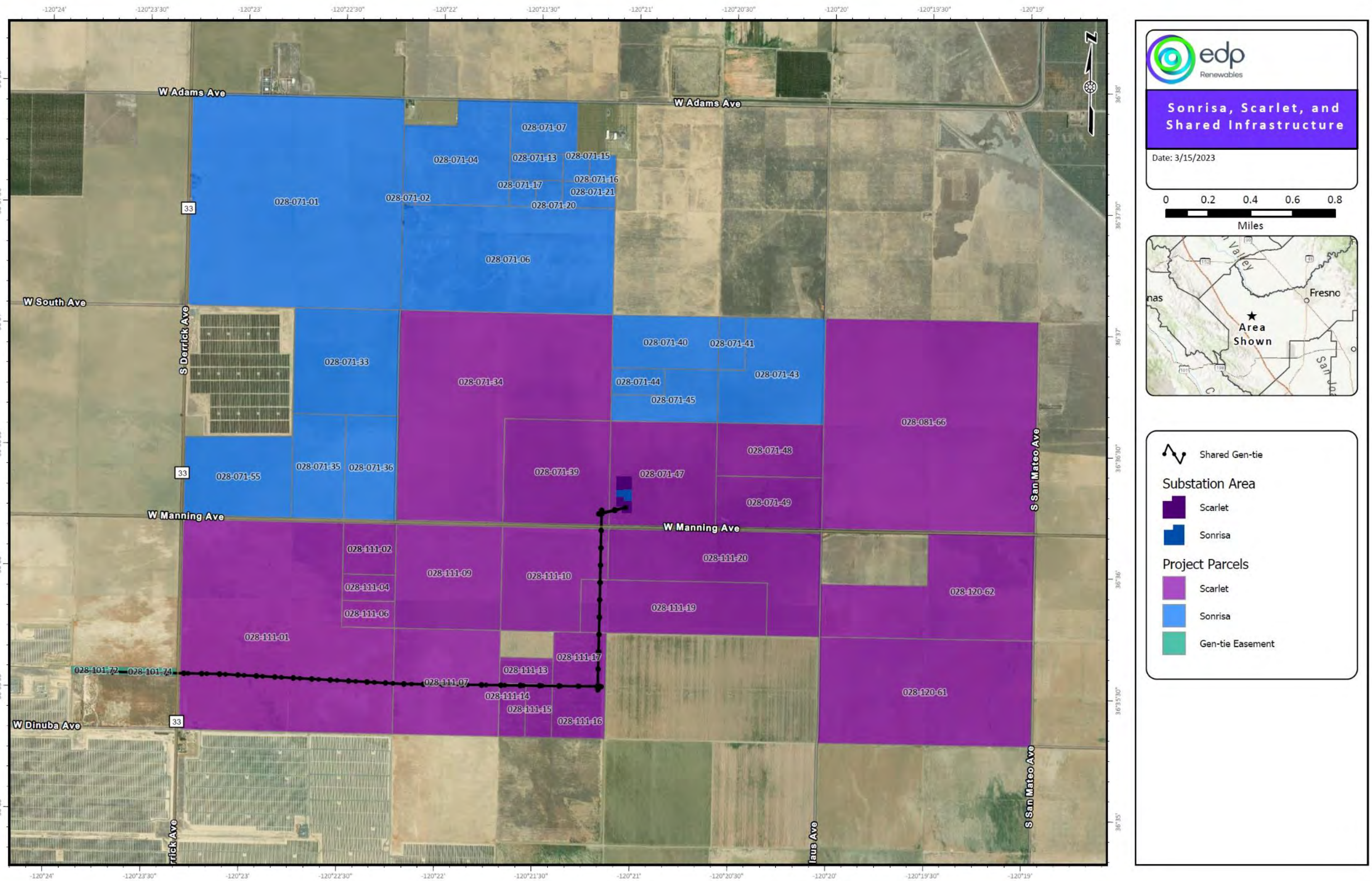


Figure 1: Sonrisa, Scarlet, and Shared Infrastructure

Figure 2: Scarlet Phase I, II, III, and Shared Infrastructure

EXHIBIT 9

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

Addendum to Previously Certified Environmental Impact Report (EIR No. 7230) State Clearinghouse No. 2018091022)

1.	Project Title:	Scarlet Solar Energy Project Unclassified Conditional Use Permit (CUP) Nos. 3789, 3790, 3791, and 3792 amending CUP No. 3555 and Addendum to Environmental Impact Report (EIR) No. 7230 originally certified for the project
2.	Lead Agency Name and Address:	Fresno County Development Services and Capital Projects Division/Current Planning Section 2220 Tulare St. 6th Floor Fresno, CA 93721
3.	Contact Person and Phone Number:	Ejaz Ahmad, Planner Direct: (559) 600-4204
4.	Project Location:	Unincorporated Fresno County, approximately 3.5 miles west-southwest of the community of Tranquillity and 6.5 miles east of Interstate 5
5.	Assessor's Parcels:	028-071-34, 028-071-39, 028-071-40, 028-071-41, 028-071-43, 028-071-44, 028-071-45, 028-07147, 028-071-48, 028-071-49, 028-081-66, 028-111-01, 028-111-02, 028-111-04, 028111-06, 028-111-07, 028-111-09, 028-111-10, 028-111-12, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, 028-111-19, 028-111-20, 028-121-61, 028-12062, 028-100-74, 028-100-72, 028-100-82, 028-100-81,028-10175S

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this Addendum to previously certified EIR No. 7230:

☐ I find that the proposed modifications to the Scarlet Solar Energy Project COULD result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects, and a SUBSEQUENT OR SUPPLEMENTAL EIR will be prepared.

☒ I find that the proposed modifications to the Scarlet Solar Energy Project COULD NOT result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects, and an Addendum is required.

______________________________ ______________________
Signature Date

CONTENTS

Addendum to EIR No. 7230

Figures

Tables

Appendices

Executive Summary

This Addendum to Environmental Impact Report (EIR) No. 7230 for the Scarlet Solar Energy Project has been prepared in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) and its implementing regulations (CEQA Guidelines) (14 Cal. Code Regs. section 15000 et seq.). An addendum to a previously certified EIR must be prepared when changes or additions to a certified EIR are necessary but none of the conditions in CEQA Guidelines section 15162 triggering preparation of a subsequent or supplemental EIR have occurred.

The Fresno County (County) Planning Commission released the 2021 EIR in August 2021 (2021 EIR) and certified it on March 15, 2022 in conjunction with its approval of Unclassified Conditional Use Permit (CUP) No. 3555 to allow the construction, operation, maintenance, and ultimate decommissioning of a 400-megawatt (MW) solar photovoltaic (PV) energy generation facility, up to 400 MW energy storage facility, and PG&E improvements known as the Scarlet Solar Energy Project (Approved Project).

RE Scarlet LLC (Applicant) has since requested County approval to modify the Approved Project to do the following: incorporate an updated hydrology technical memorandum and an updated air quality technical memorandum, increase the physical footprint of the approved battery energy storage system, optimize the approved layout to allow for sharing of electrical transmission and control facilities with an adjacent project; and to transfer a portion of the Approved Project's footprint to an adjacent proposed project. Four CUP Nos. 3789, 3790, 3791, and 3792 are proposed to divide the existing, approved CUP into separate entitlements that would allow for phased decommissioning. Collectively, these changes are referred to as the "Modified Project."

This Addendum clarifies or supplements the information contained in the 2021 EIR. It also provides analysis to support the County's determination that an addendum to the 2021 EIR is appropriate and complies with CEQA and the CEQA Guidelines. Specifically, this analysis supports a conclusion that no new significant environmental effects and no substantial increase in the severity of previously identified significant effects would result from the Modified Project. Furthermore, there are no known mitigation measures or alternatives that were previously considered infeasible but are now considered feasible that would substantially reduce one or more significant effects on the environment previously identified in the 2021 EIR. Similarly, there are no known mitigation measures or alternatives that are considerably different than those required by the 2021 EIR that would substantially reduce one or more significant effects on the environment identified in the EIR.

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1. Introduction

1.1 Overview and Purpose of Analysis

The California Environmental Quality Act (CEQA) and its implementing regulations (the CEQA Guidelines) require public agencies to analyze and consider the environmental consequences of their decisions to approve development projects over which they exercise discretion. CEQA achieves this objective by requiring agencies to prepare EIRs for projects with the potential to cause significant impacts on the physical environment. EIRs are public documents that assess environmental effects related to the construction, operation and maintenance, and decommissioning of a project, and indicate ways to avoid or reduce possible environmental impacts. An EIR also discloses any growth-inducing impacts, effects found not to be significant, potential significant cumulative impacts, and significant impacts that cannot be avoided. The purpose of an EIR is to inform. EIRs are not policy documents that recommend project approval or denial.

1.2 Project Background

The Approved and Modified Project site is located in unincorporated western Fresno County, approximately 3.5 miles west-southwest of the community of Tranquillity and approximately 6.5 miles east of Interstate 5 (I-5). The site is northeast of and adjacent to the Great Valley Solar Facility (previously the Tranquillity Solar Facility) and is generally south of West South Avenue, north of West Dinuba Avenue, east of Ohio Avenue and State Route 33 (SR 33, South Derrick Avenue), and west of South San Mateo Avenue (refer to Figure 2-1, Regional Location, and Figure 2-2, Project Site Location, on pages 2-4 and 2-5 of the Draft EIR No. 7230). The Approved Project site encompasses approximately 4,089 acres on 33 parcels of land including parcels 028-071-40, 028-071-41, 028-071-43, 028-071-44, and 028-071-45, which are proposed to be transferred to the Sonrisa Solar Project (EIR No. 7869, CUP No. 3677).

As lead agency, the County prepared EIR No. 7230 for the Approved Project in compliance with CEQA and the CEQA Guidelines. The Final EIR was released in August of 2021 (2021 EIR). Following a public hearing, the County Planning Commission certified the 2021 EIR for the Approved Project, adopted the CEQA findings of fact, and approved CUP No. 3555 on March 15, 2022. As described and analyzed in the 2021 EIR, the Approved Project includes the construction, operation, maintenance, and ultimate decommissioning of a 400 MW solar PV electricity generating facility and 400 MW energy storage system and associated infrastructure on the Approved Project site (Solar Facility). Once constructed, the Approved Project will provide solar power to utility customers by interconnecting to the regional electricity grid at the existing Pacific Gas and Electric Company (PG&E) Tranquillity Switching Station (PG&E Improvements). The Approved Project includes the solar and energy storage facilities (designated as the Solar Facility in the 2021 EIR) and the PG&E improvements. The Approved Project includes solar PV modules, support structures, electrical inverters, intermediate voltage transformers, two electrical substations, a switchyard, and a generation intertie (gen-tie) transmission line. Other Approved Project components include battery energy storage facilities, operation and maintenance building and systems, access roads, and security fencing. Improvements to PG&E electrical infrastructure evaluated in the 2021 EIR include expansion of the existing PG&E's Tranquillity Switching Station and approximately 1,900 feet of 230 kilovolt (kV) transmission line to connect the existing solar and energy storage facility's 230 kV gen-tie line to the Tranquillity Switching Station (PG&E Improvements).

As analyzed in the 2021 EIR, the Approved Project will operate year-round to generate solar electricity during daylight hours and will store and dispatch power at the energy storage system during both daylight and non-daylight hours. The Approved Project is being constructed in continuous phases. The first phase began construction in September 2022. The last phase is anticipated to be online as early as late 2025.

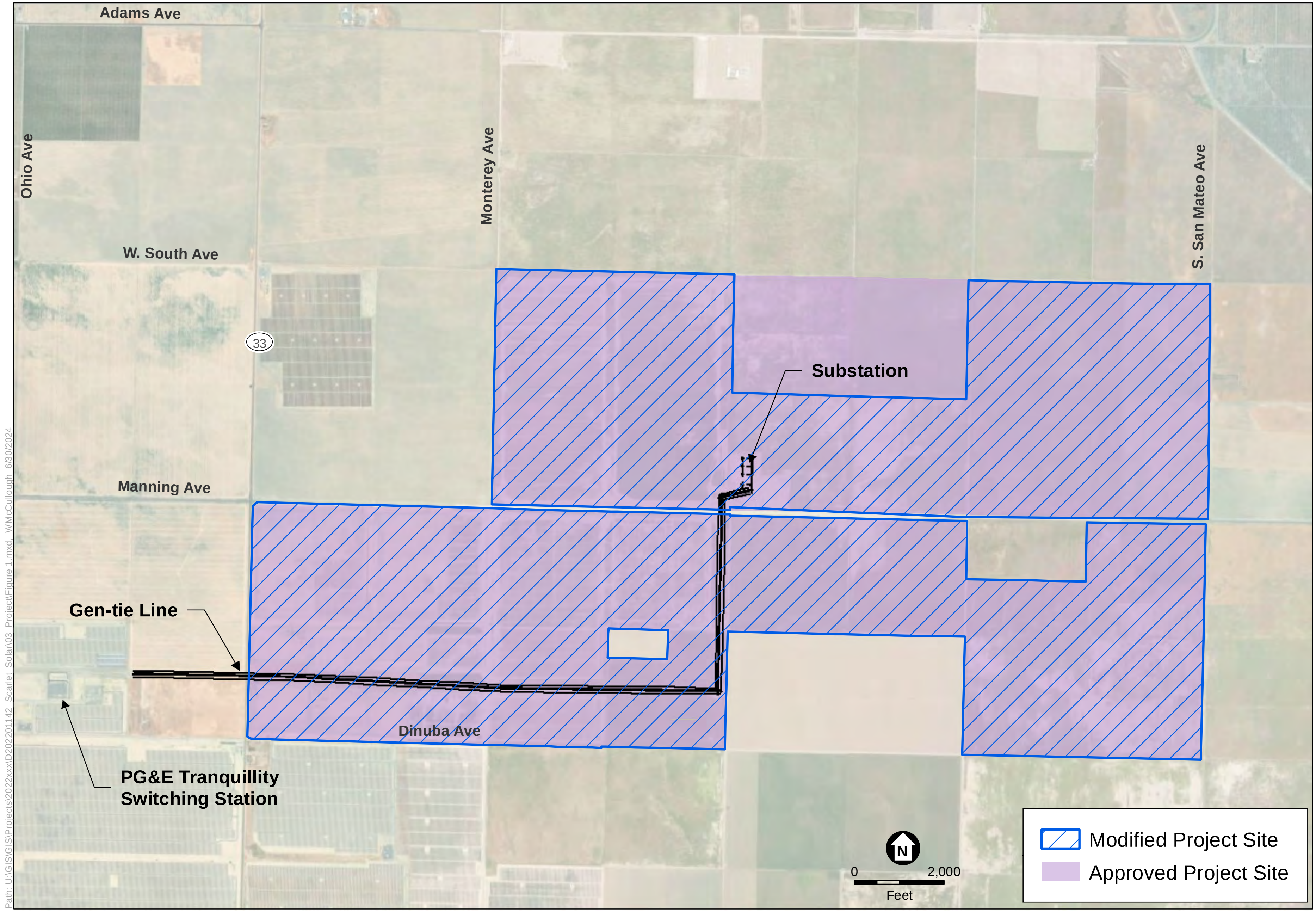
1.3 Description of the Modified Project

The Applicant seeks County authorization to develop the Modified Project to accomplish the following:

- Transfer management of approximately 320 acres approved under CUP No. 3555 to the Sonrisa Solar Park (CUP No. 3677, Draft EIR No. 7869), reducing the Project site from 4,089 acres to approximately 3,769 acres (see **Figure 1.3-1, *Approved Project and Modified Project Site***).
- Provide for the shared use of infrastructure with the Sonrisa Solar Park. Shared infrastructure would include the generation intertie (gen-tie), switching station, electrical substation, and infrastructure to support efficient operation and maintenance of both project sites (see **Figure 1.3-2, *Sonrisa, Scarlet, and Shared Infrastructure***).
- Incorporate an Air Quality and Greenhouse Gas Emissions Technical Memorandum into revised Air Quality and Greenhouse Gas analyses.
- Incorporate an updated Water Supply Assessment into a revised Hydrology and Water Quality analysis.
- Increase the physical footprint of the approved battery energy storage system from approximately 12 acres to approximately 30 acres.
- Refine the site design to involve the consolidation of the two electrical 230 kV substations and one 230 kV switchyard included in the Approved Project into one consolidated centralized location where all power generated from various solar blocks would be stepped up for delivery to the PG&E Tranquillity Switching Station.
- Allow for phased decommissioning (see **Figure 1.3-3, *Modified Construction Phasing***) by permitting the Modified Project under four CUPs, each corresponding to a proposed development phase.

Components of the Approved Project and Modified Project are compared in **Table 1.3-1**.

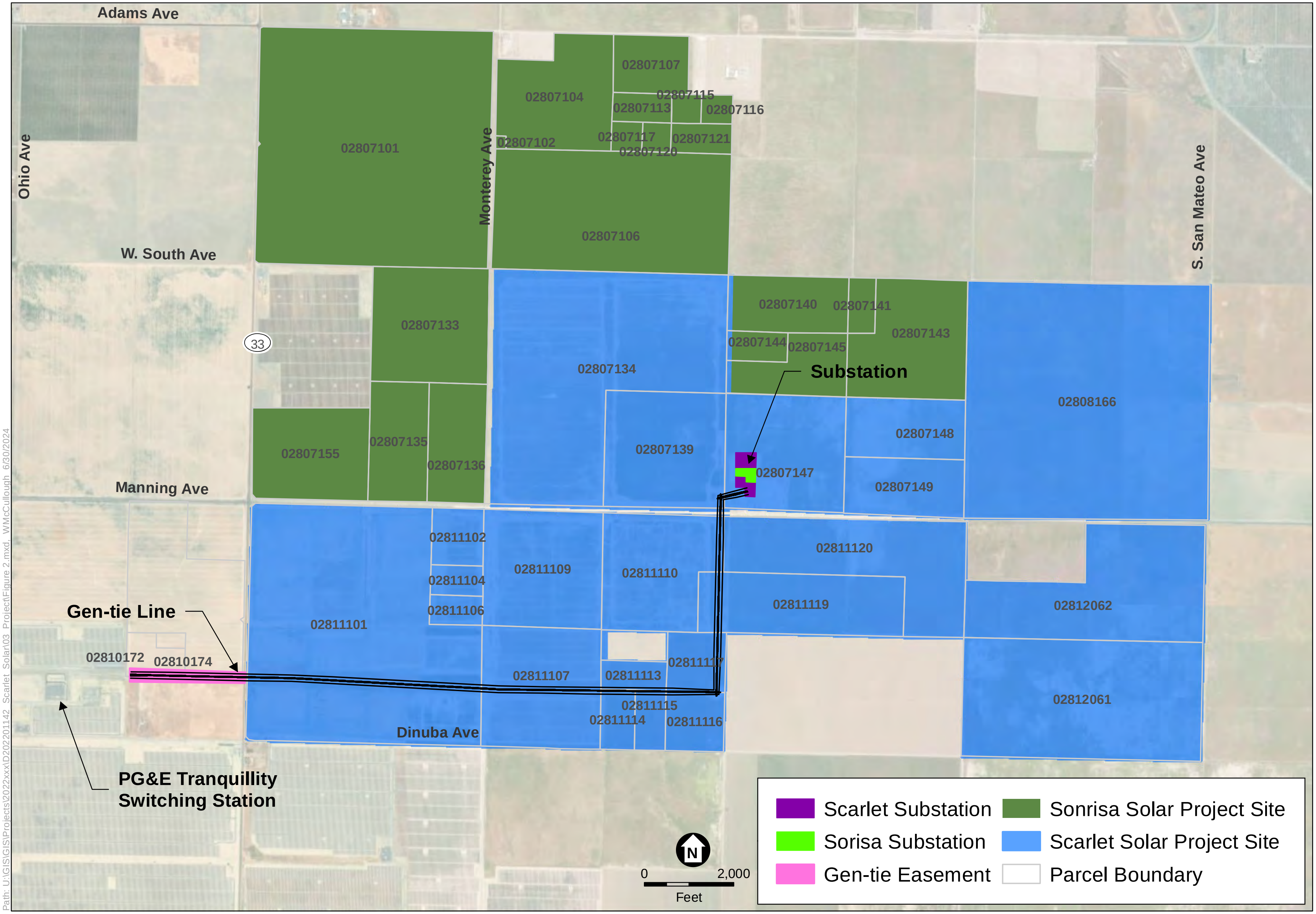
The four proposed Unclassified CUPs 3789, 3790, 3791, and 3792 are proposed to divide the existing Unclassified CUP into four separate entitlements that would allow for phased decommissioning of the Modified Project. The four construction phases and corresponding CUPs are described in **Table 1.3-2**.



SOURCE: EDP, 2024

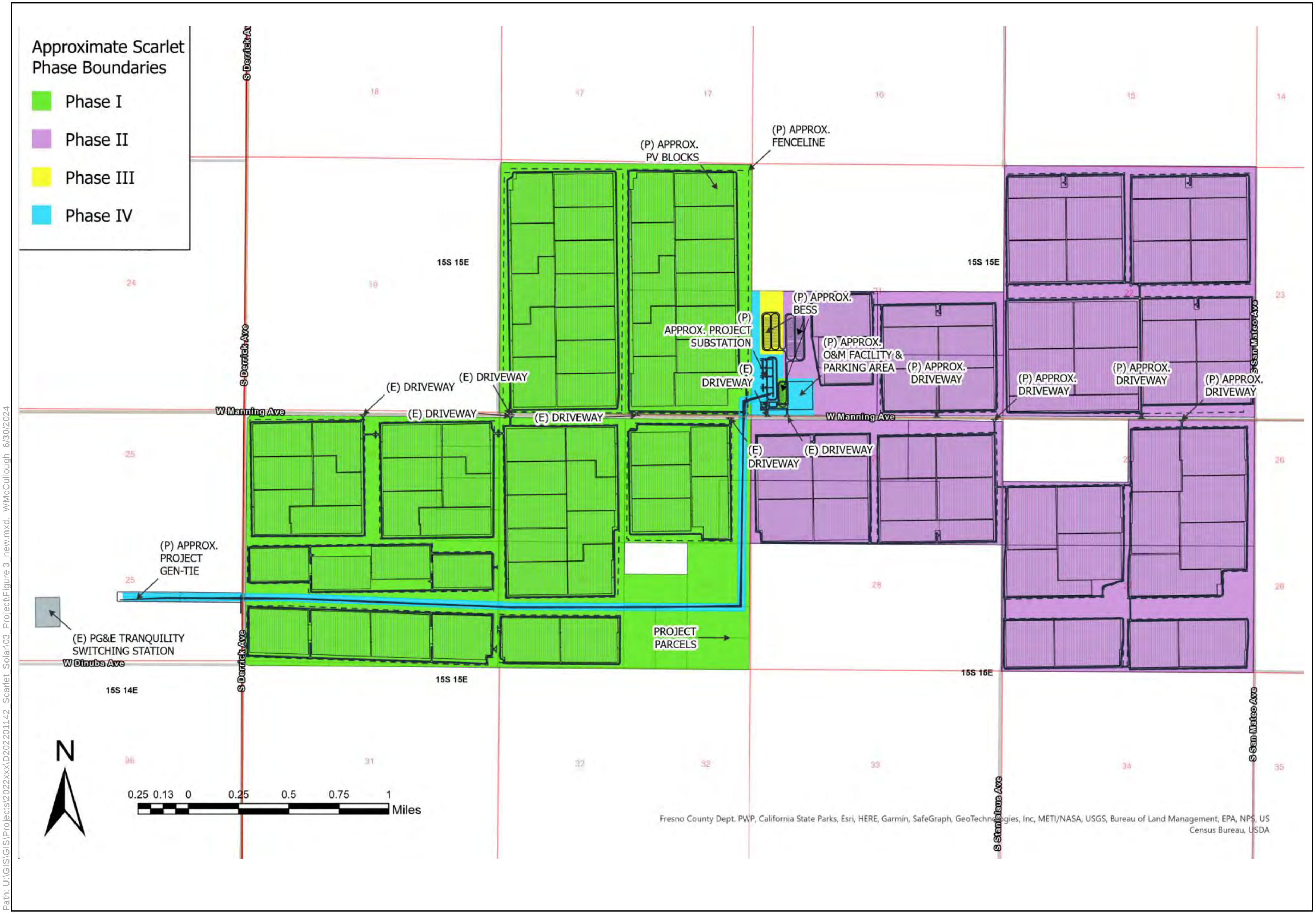
Scarlet Solar Project Addendum

Figure 1.3-1
Approved Project and Modified Project Sites



SOURCE: EDP, 2024

Figure 1.3-2
Sonrisa, Scarlet, and Shared Infrastructure



SOURCE: EDP, 2024

Scarlet Solar Project Addendum

Figure 1.3-3
Modified Construction Phasing

TABLE 1.3-1
COMPARISON OF APPROVED PROJECT AND MODIFIED PROJECT COMPONENTS

Approved Project Components (per the 2021 EIR)	Component Change per Modified Project
Groups of solar arrays (arrays include PV modules and steel support structures, electrical inverters, transformers, cabling, and other infrastructure)	No change
Two electrical substations	One electrical substation, including telecommunications infrastructure, a supervisory control and data acquisition (SCADA), and dead-end structures
A switchyard, including one high-voltage 230 kV utility switchyard, SCADA system, and two 65-foot-high dead-end structures	Removed from the Modified Project
Approximately 3.1 miles of 230 kV gen-tie transmission line (from the substations and the 230 kV switchyard) to connect to PG&E's existing Tranquillity Switching Station	Approximately 3.5 miles of 230 kV gen-tie transmission line (from the substation) to connect to PG&E's existing Tranquillity Switching Station
Improvements to PG&E electrical infrastructure, including a minor expansion of PG&E's Tranquillity Switching Station and approximately 1,900 feet of PG&E 230 kV transmission line to connect the 230 kV gen-tie line to the Tranquillity Switching Station	No change
A 400 MW energy storage system, consisting of battery enclosures and electrical cabling	An up to 400 MW energy storage system, consisting of battery enclosures and electrical cabling
Other necessary infrastructure, including one permanent operation and maintenance (O&M) building, a septic system and leach field, a meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar, lighting, and wildlife-friendly security fencing.	No change

TABLE 1.3-2
MODIFIED PROJECT CONSTRUCTION PHASES AND CORRESPONDING CUP APPLICATIONS

Phase	CUP Number	APNs	Approximate Size	Modified Project Component and Construction Timing
I	3789	028-071-47, 028-071-34, 028-071-39, 028-111-01, 028-111-02, 028-111-04, 028-111-06, 028-111-07, 028-111-09, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, 028-111-19	1,853 acres total Approximately 1850 acres are dedicated to solar PV modules and approximately 3 acres to energy storage systems.	200 MW of solar PV electric generating facilities combined with 40 MW / 160 MWh of lithium-ion battery storage facilities. Project substation equipment related to specific metering of Phase I output would be implemented and tested during Phase I construction, including main power transformers and all medium voltage (MV) equipment. Phase I began construction in September 2022 and completed construction in Q2 2024.
II	3790	028-071-47, 028-071-48, 028-071-49, 028-081-66, 028-111-19, 028-111-20, 028-120-61, 028-120-62	1,710 acres total Approximately 1700 acres are dedicated to solar PV modules and approximately 10 acres to energy storage systems.	200 MW solar PV renewable energy generating facilities and 150 MW/ 600 MWh of lithium-ion battery storage facilities. Project substation equipment related to specific metering of Phase II output would be implemented and tested during Phase II construction, including main power transformers and all MV equipment. Phase II began construction in October 2023 and is expected to complete construction in Q4 2024.

Phase	CUP Number	APNs	Approximate Size	Modified Project Component and Construction Timing
III	3791	028-071-47	20 acres	Phase III incorporates 160 MW/ 640 MWh of energy storage facilities. Project substation equipment related to specific metering of Phase III output would be implemented and tested during Phase III construction, including main power transformers and all MV equipment. Phase III encompasses approximately 20 acres of land. Phase III expects to start construction in Q4 2024 and to complete construction in Q4 2025.
IV	3792	028-071-47, 028-071-39, 028-111-01, 028-111-07, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, 028-111-19	95 acres	Phase IV consists of the facilities that are shared between Phases I-III and the nearby Sonrisa Project. Phase IV includes the gen-tie, switching station, electrical substation, and infrastructure to support efficient operation and maintenance of the site. Phase IV encompasses approximately 95 acres of land. The majority of Phase IV would be completed within the construction timeline of Scarlet I. Phase IV began construction in September 2022 and is expected to complete construction in Q4 2025.

Decommissioning and Restoration Process

The Modified Project is anticipated to have an operating life of up to 35 years. After this period, the facility would be either repowered or decommissioned. Repowering after the operating life is not anticipated at this time; however, if repowering were to be pursued, it would require the owner to obtain all required environmental clearance and permit approvals. Decommissioning would occur in accordance with the expiration of the CUPs and would involve the removal of all above-grade facilities, buried electrical conduit, and all concrete foundations in accordance with four separate Reclamation Plans, one for each CUP. Utility-owned infrastructure would not be removed at the time the Approved Project is decommissioned. Equipment would be repurposed off-site, recycled, or disposed of in a landfill as appropriate. Decommissioning would involve the use of heavy equipment and personnel similar to that used for construction. Appropriate hazardous materials control and erosion control measures would be used throughout the decommissioning process. It is anticipated that such controls would be substantially similar to those implemented during construction.

Similar to the construction of the Modified Project, decommissioning of the Modified Project would occur in phases. Infrastructure that solely supports construction phases I, II, and III would be decommissioned at the end of the useful life of each phase. The decommissioning of each phase’s infrastructure could occur independently of the other phase and would not need to be decommissioned in a particular order. All infrastructure that would be shared across phases as well as across projects (Scarlet Solar Energy Project and proposed Sonrisa Solar Project) would be decommissioned at the end of the last phase that utilizes that infrastructure. In other words, reclamation of the infrastructure that would be shared across projects would occur within 24 months of either: (i) the later of the expiration of the Sonrisa Solar Project or the Scarlet Solar Energy Project’s CUP or (ii) the abandonment of both the Sonrisa Solar Project and the Scarlet Solar Energy Project without the project owner making efforts to cure a disruption of electricity production, whichever occurs first.

Four separate Reclamation Sections, one for each CUP, would be submitted to Fresno County for review and approval. The Reclamation Plans would contain details regarding site reclamation and decommissioning. The Reclamation Plans would be amended if the Project is approved to separate decommissioning activities among the Project phases.

1.4 Applicable CEQA Provisions

Public Resources Code section 21166 and CEQA Guidelines section 15162 limit the authority of an agency to require a new or subsequent EIR, once one has been certified for a project. Public Resources Code section 21166 and CEQA Guidelines section 15162 provide that once an EIR has been prepared for a project, no subsequent or supplemental EIR will be required unless certain specified conditions have occurred. As set forth in CEQA Guidelines section 15162, these occurrences are:

(i) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(ii) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(iii) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

CEQA Guidelines section 15164(a) explains that an agency must prepare an addendum to a previously certified EIR "if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." An addendum need not be circulated for public review but can be included in or attached to the Final EIR (CEQA Guidelines section 15164[c]). The decision-making body shall consider the addendum with the Final EIR prior to making a decision on the project (CEQA Guidelines section 15164[d]).

2. Project Implementation and Background

As described above in Section 1.3, *Description of the Modified Project*, the Applicant has proposed modifications to the existing Approved Project. The purpose of this Addendum is to analyze the application for the Modified Project, and to determine whether the impacts of the Modified Project fall within the previously analyzed envelope of impacts specified in the certified Final EIR.

After reviewing the facts and analyzing the circumstances, County staff has concluded that a new, supplemental, and/or subsequent EIR is not required because none of the circumstances described in Public Resources Code section 21166 as further set forth in CEQA Guidelines section 15162 are present. This Addendum has been prepared under the review and at the direction of County staff to analyze these issues and to document the factual basis for this determination. Consistent with CEQA Guidelines section 15164, this Addendum will be attached to the 2021 EIR and the County will consider this Addendum with the 2021 EIR before making any decision on the Modified Project.

3. Impact Analysis

As documented below, County staff has determined that implementation of the Modified Project would result in no new significant environmental effects and no substantial increase in the severity of significant effects identified in the 2021 EIR.

3.1 Aesthetics

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
I. AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:			
a) Have a substantial adverse effect on a scenic vista?	No Impact	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	☒	☐
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?	Less than Significant Impact	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	Less than Significant Impact	☒	☐

Discussion

a) The Initial Study (Draft EIR Section 4.15.1.1, *Aesthetics)* found that there were no scenic vistas within view of the Project site and, therefore, the 2021 EIR determined that no impacts to a scenic vista would occur. The Modified Project would be developed within the Approved Project site, and similarly, no new scenic vistas would be within view. As such, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

b) Section 4.15.1.1, *Aesthetics*, found that the closest state scenic highway segments were between 20 and 50 miles from the project site and would not be viewable. The 2021 EIR notes that I-5, while not designated a state scenic highway, is designated a scenic roadway in the Fresno County General Plan due to its unrestricted view of coastal foothills. However, the Project site would not obstruct views of the coastal foothills west of I-5 since the site would be over 6 miles east of I-5. The Modified Project would be developed within the previously approved Project site and similarly would not damage scenic resources. As such, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

c) Section 4.1, *Aesthetics*, of the Draft EIR found that construction and decommissioning would cause a change in the existing visual character but not alter any sensitive or unique visual resources. In addition, visual impacts associated with construction equipment and activities would be temporary. The 2021 EIR found that once constructed, project components, specifically the solar panels and components, would result in low-to-moderate visual contrast to the existing landscape. While the Approved Project would alter the visual character, unique scenic features would not be impacted. In addition, due to the industrial and agricultural views in the vicinity of the Project site, impacts to visual quality were deemed less than significant. Construction equipment staging for the Modified Project would take place within the already analyzed Project footprint and would not result in new impacts. The Modified Project would increase the footprint of the approved battery storage system from approximately 12 acres to approximately 30 acres which could impact the public views of the site. However, based on the 2021 EIR analysis, Project components, including the battery storage structure, would be minimally visible from West Manning Avenue and would not degrade the public views or existing visual character of the site. Following decommissioning of the Modified Project, the site would be restored to pre-construction conditions. Since the Modified Project would be located within the Approved Project site and changes in Project components would be minimal, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

d) The 2021 EIR concluded that light and glare impacts would be less than significant. During construction, occasional nighttime work may be needed for electrical connection, inspection, and testing activities. Increased vehicle traffic for the transportation of construction equipment would also be expected and may temporarily increase glare conditions. The 2021 EIR determined that once constructed, nearby residences may be impacted by perimeter lighting. However, compliance with Fresno County's design and development standards would ensure that potential impacts to nighttime views from lighting would be less than significant. As noted in the 2021 EIR, reflection of sunlight off solar panel surfaces would be the primary source of potential glare. However, the solar array would have a non-glare coating which would not be a new source of substantial light or glare. The Modified Project would comply with the same design and development standards to minimize impacts to light and glare. Since the Modified Project would be located within the Approved Project site and would not introduce new sources of potential light and glare, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

3.2 Agriculture and Forestry Resources

Issues (and Supporting Information Sources):		Final EIR Determination	Final EIR Sufficient	Further Analysis Required
II.	**AGRICULTURE AND FORESTRY RESOURCES —** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:			
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?	Less than Significant Impact	☒	☐
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than Significant Impact	☒	☐
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))?	No Impact	☒	☐
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact	☒	☐
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?	Less than Significant Impact	☒	☐

Discussion

a) Section 4.2, *Agricultural Resources*, of the Draft EIR analyzed impacts to agriculture and forestry resources for the Approved Project. The 2021 EIR found that development of the Project would occur on Farmland of Local Importance and Farmland of Statewide Importance. As a result, the County required the applicant to enter into a reclamation agreement as a condition of approval. The reclamation agreement would require the site to be restored to previous agricultural conditions enabling resumed agricultural use following decommissioning, resulting in a less than significant impact. As discussed in section 4.2.1.2, *Regulatory Setting*, the 2021 EIR defines farmland based on the California Department of Conservations Farmland Mapping and Monitoring Program, using three categories. These categories are collectively referred to as "farmland" and are as follows: Prime Farmland, Unique Farmland or Farmland of Statewide Importance (collectively, Farmland). No designated Farmland is present in the PG&E Improvements area, so the PG&E Improvements would not convert Farmland to non-agricultural use. Since the Modified Project would be located within the Approved Project site, impacts to Farmland would also occur. However, pursuant to the reclamation requirements of the Approved Project that would apply to the Modified Project, the site would have to be restored to predeveloped conditions. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR found that the Approved Project would not be located on land subject to a Williamson Act contract. The project site has not been enrolled in the Williamson Act program since certification of the 2021 EIR. Accordingly, consistent with 201 EIR's determination for the Approved Project, the Modified Project would have no impact due to a conflict with a Williamson Act contract.

Also like the Approved Project, the Modified Project would cause a less-than-significant impact relating to the site's existing zoning for agricultural use. The Approved Project would be located on land zoned AE-20. Fresno County Zoning Code Section 853(B) allows for solar facility development on AE-20-zoned land with the approval of a CUP. The PG&E Improvements would be an allowable use under an existing CUP for the Tranquillity Switching Station. Since Unclassified CUP Application No.3555 had not been approved when the 2021 EIR was written, impacts were determined to be less than significant. The Modified Project site would be smaller but within the Approved Project footprint and also would require approval of a CUP to allow for the development of the solar facilities and battery storage on AE-20 zoned land. Instead of operating under CUP No. 3555, the Modified Project would be permitted under four CUPs, each corresponding to a proposed construction phase. Pending the discretionary approval of the CUPs identified in **Table 1-2**, *Modified Project Construction Phases and Corresponding CUP Applications*, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

c) The Initial Study (Draft EIR Section 4.15.1.2, *Agriculture and Forestry Resources)* found that Project site and surrounding land does not contain any 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)). Accordingly, the 2021 EIR determined that the Approved Project would have no impact on such resources. Since the Modified Project would be located within the Approved Project site, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

d) Section 4.15.1.2, *Agriculture and Forestry Resources*, found that the Project site and surrounding land does not contain any land defined as 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)). Accordingly, the 2021 EIR determined that the Approved Project would have no impact on such resources. Since the Modified Project would be located within the Approved Project site, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

e) The 2021 EIR found that the Approved Project would result in less-than-significant impacts with respect to the conversion of farmland to non-agricultural use. Development of the Approved Project would comply with Fresno County Solar Facility Guidelines and General Plan Policy LU-A.13 which would require a minimum setback of 50 feet from neighboring agricultural operations. Stormwater and dust control measures discussed in Draft EIR Section 2.11.1.5, Erosion and Sediment Control and Pollution, would prevent permanent impacts to soil conditions on and surrounding the project site. In addition, a reclamation plan would restore the site to pre-construction conditions. Therefore, the Approved Project would not involve changes in the existing environment that could result in the conversion of Farmland to a non-agricultural use. The Modified Project would be located within the Approved Project site and would comply with Fresno County Solar Facility Guidelines, Policy LU-A.13, the Approved Project's Stormwater Pollution Prevention Plan (SWPPP), Best Management Practices (BMPs), and implement a County-approved reclamation plan. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

3.3 Air Quality

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
III.	**AIR QUALITY —** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:			
a)	Conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant with Mitigation Incorporated	☒	☐
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?	Less than Significant with Mitigation Incorporated	☒	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact	☒	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact	☒	☐

Discussion

a, b) Approved Project

Section 4.3, *Air Quality*, of the Draft EIR analyzed impacts to air quality for the originally proposed Project[1] and found that it would exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds for emissions of some criteria during either construction, operation and maintenance, and decommissioning, and would therefore conflict with SJVAPCD's applicable air quality plan. **Table 3.3-1** summarizes the unmitigated emissions of the proposed Project for construction and decommissioning as presented in the 2021 EIR. As shown in Table 3.3-1, the 2021 EIR found that construction of the proposed Project would result in emissions exceedances of the NOx, PM10, and PM2.5 significance thresholds. **Table 3.3-2** presents the proposed Project's unmitigated operational emissions as presented in the Draft EIR. As shown in Table 3.3-2, the 2021 EIR found that operation of the proposed Project would result in an exceedance of the PM10 significance threshold.

As a result of the proposed Project's exceedances, mitigation measures were adopted as part of the Approved Project for both the Solar Facility and the PG&E Improvements components. Mitigation Measure AQ-1 requires implementation of on-site controls to reduce construction equipment exhaust and Mitigation Measure AQ-2 requires the Project Applicant to enter into a Voluntary Emission Reduction Agreement (VERA) with the SJVAPCD to mitigate or reduce Project construction emissions of NOx, PM10, and PM2.5, and Project operation and maintenance emissions of PM10 beyond the requirements of Rule 9510 through the payment of fees (on a per-ton basis) to the SJVAPCD. With the implementation of Mitigation Measures AQ-1 and AQ-2, the impacts from criteria air pollutant emissions and obstruction with an applicable air quality plan due to the Approved Project were found to be reduced to a less-than-significant level.

1 In this analysis of impacts on air quality, references to the "proposed Project" mean the project as proposed by the applicant (unmitigated) in 2018. By comparison, throughout this analysis, references to the "Approved Project" mean the project as approved by the County and described in the 2021 EIR, including the County's mitigation requirements (i.e., the mitigated project).

TABLE 3.3-1
TOTAL UNMITIGATED PROJECT CONSTRUCTION AND DECOMMISSIONING EMISSIONS AS PRESENTED IN THE DRAFT EIR

Construction Year	Tons per Year					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Construction Year 1	5.2	49.2	62.6	0.1	139.2	34.7
Construction Year 2	2.2	24.1	28.0	0.1	147.5	21.9
Decommissioning	5.7	4.6	12.8	0.0	25.9	2.7
Maximum	5.7	49.2	62.6	0.1	147.5	34.7
SJVAPCD Thresholds	10	10	100	27	15	15
Significant (Yes or No)?	**No**	**Yes**	**No**	**No**	**Yes**	**Yes**

NOTES:

PM10 and PM2.5 emission estimates assume Water-related dust controls would be implemented as part of the Approved project in compliance WITH SJVAPCD Rule 8021 and Regulation VIII to control dust emissions.

ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter.

SOURCE: Scarlet Solar 2021 (SEE TABLE 4.3-8)

TABLE 3.3-2
UNMITIGATED OPERATION AND MAINTENANCE EMISSIONS ESTIMATES AS PRESENTED IN THE DRAFT EIR

Emission Type / Source	Tons per Year					
	ROG	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Exhaust / On-Road & On-Site Vehicles	0.3	1.0	16.0	<0.1	0.1	<0.2
Fugitive Dust / On-Site Maintenance Vehicles	-	-	-	-	34.2	3.8
Total	**0.3**	**1.0**	**16.0**	**<0.1**	**34.3**	**3.8**
SJVAPCD Thresholds	10	10	100	27	15	15
Significant (Yes or No)?	**No**	**No**	**No**	**No**	**Yes**	**No**

NOTES:

ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter.

SOURCE: Scarlet Solar 2021 (See Table 4.3-6)

Modified Project

The discussion of the Modified Project's air quality emissions is informed by the Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project included as **Appendix A** to this Addendum. The Technical Memorandum was prepared to address the changes to the Project and to support the VERA process that the Applicant has entered into with the SJVAPCD pursuant to Mitigation Measure AQ-2.

To provide a direct comparison to the proposed Project's unmitigated emissions as presented in the 2021 EIR (see Table 3.3-1), **Table 3.3-3** summarizes the construction emissions of the Modified Project without the incorporation of Mitigation Measures AQ-1 and AQ-2 because mitigated emissions for the Approved Project are not included in the EIR. As compared to the unmitigated proposed Project, unmitigated construction emissions of the Modified Project would only result in an exceedance of NOx emissions and would remain below the threshold for PM10 and PM2.5 emissions. Overall, the Modified Project emissions without the incorporation of mitigation would be 20–95 percent less than the unmitigated proposed Project's maximum construction emissions. However, the Modified Project would be required to implement Mitigation Measures AQ-1 and AQ-2 to reduce the impact to less than significant, consistent with the Approved Project. The Modified Project would be subject to the same SJVAPCD rules as applied to the Approved Project.

TABLE 3.3-3
ESTIMATED MAXIMUM CONSTRUCTION CRITERIA AIR POLLUTANT EMISSIONS – UNMITIGATED

Construction Year	Tons per Year					
	ROG	NOx	CO	SOx	PM10	PM2.5
2022	0.68	6.50	8.82	0.02	3.27	0.65
2023	2.74	25.97	38.26	0.08	13.64	2.74
2024	0.74	7.95	10.56	0.02	3.68	0.77
2025	0.12	1.34	1.66	<0.00	0.57	0.12
Maximum	2.74	25.97	38.26	0.08	13.64	2.74
Percent Reduction from Approved Project	52%	47%	39%	20%	95%	94%
SJVAPCD Thresholds	10	10	100	27	15	15
Significant (Yes or No)?	**No**	**Yes**	**No**	**No**	**No**	**No**

NOTES:

ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004

SOURCE: DUDEK 2024

Table 3.3-4 presents the operational emissions of the Modified Project without the incorporation of Mitigation Measure AQ-2. Compared to the proposed Project, the Modified Project's operational emissions would be less for all pollutants and would be below the SJVAPCD's threshold for PM10. However, the Modified Project would be required to implement Mitigation Measure AQ-2 to reduce the impact to less than significant, consistent with the Approved Project.

By adhering to Mitigation Measures AQ-1 and AQ-2 in the 2021 EIR, the Modified Project's criteria air pollutant emissions would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for these significance criterion.

- 2021 EIR Mitigation: Measures AQ-1 and AQ-2
- Additional Mitigation: None required

TABLE 3.3-4
ESTIMATED MAXIMUM ANNUAL OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Construction Year	Tons per Year					
	ROG	NOx	CO	SOx	PM10	PM2.5
Area	0.01	<0.00	<0.00	<0.00	<0.00	<0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Offroad	0.07	0.57	0.62	<0.00	0.02	0.02
Mobile	0.02	0.02	0.13	<0.00	6.12	0.61
Total	**0.10**	**0.59**	**0.79**	**<0.00**	**6.14**	**0.63**
SJVAPCD Thresholds	10	10	100	27	15	15
Significant (Yes or No)?	**No**	**No**	**No**	**No**	**No**	**No**

NOTES:
ROG = reactive organic gases; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004
SOURCE: Dudek 2024.

c) The 2021 EIR analyzed impacts related to sensitive receptors for the Approved Project. The 2021 EIR found that the Approved Project would not expose sensitive receptors to substantial pollutant concentrations during construction, operation and maintenance, or decommissioning, resulting in a less than significant impact. A health risk assessment for the Approved Project evaluated diesel particulate matter (DPM) emissions as the potential toxic air contaminant affecting sensitive receptors. The findings showed that construction and decommissioning of the Approved Project would not result in any exceedance of health risk. A health risk assessment was not conducted for the Modified Project; however, based on the Modified Project's reduction in project footprint and decrease in PM10[2] emissions, the Modified Project has the potential to result in a decrease in health risk. As such, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

d) The Initial Study (Section 4.15.1.3, *Air Quality*) analyzed odorous and other emissions for the Approved Project and the 2021 EIR concludes that the Approved Project would not generate substantial odorous and other emissions. Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. As such, same as the Approved Project, the Modified Project would not result in odors or other emissions adversely affecting a substantial number of people and therefore would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the analysis disclosed in the 2021 EIR for this significance criterion.

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2 Exhaust PM10 from diesel-fueled vehicles and equipment is conservatively used a surrogate for DPM emissions.

3.4 Biological Resources

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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 U.S. Fish and Wildlife Service?	Less than Significant with Mitigation Incorporated	☒	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	☒	☐
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?	No Impact	☒	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less than Significant with Mitigation Incorporated	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than Significant with Mitigation Incorporated	☒	☐
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	☒	☐
g)	Whether the Project would 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal?	Less than Significant with Mitigation Incorporated	☒	☐

Discussion

a) Section 4.4, *Biological Resources*, of the Draft EIR analyzed impacts to biological resources for the Approved Project. The 2021 EIR found that implementation of the Project had the potential to have a direct or indirect adverse effect on special status species; however, with the implementation of Mitigation Measures BIO-1(a) through BIO-1(u), impacts to migratory nesting birds, burrowing owls, San Joaquin kit fox, and Swainson's hawk would be avoided, minimized, or mitigated to a less than significant level. The Modified Project would include the same potential impacts of the Approved Project but would also incorporate Mitigation measures BIO-1(a) through BIO-1(u) for the Solar Facility and PG&E Improvements; therefore, there would be **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures BIO-1(a) through BIO-1(u)
- Additional Mitigation: None required

b) The 2021 EIR concluded in Section 4.4, *Biological Resources,* that the Solar Facility and PG&E Improvements would not be located nor have a substantial adverse effect on any riparian or other identified sensitive community. Accordingly, the 2021 EIR determined that the Approved Project would have no impact on such resources. Because the Modified Project shrinks the Approved Project footprint in the existing location, the Modified Project footprint would also not be located in or have a substantial adverse effect on any riparian or other identified sensitive community. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c) The Initial Study (Section 4.15.1.4, *Biological Resources)* determined that the Solar Facility and PG&E Improvements would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means, because the Approved Project would be located on agricultural land that is not traversed by drainages or washes, and does not contain state or federally protected wetlands or waters. Because the Modified Project shrinks the Approved Project footprint in the existing location, the Modified Project footprint would also not have a substantial adverse effect on state or federally protected wetlands. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

d) The 2021 EIR concluded in Section 4.4, *Biological Resources,* that the Approved Project would have the potential to substantially interfere with the local movement of wildlife and migratory birds on the project site; however, with the implementation of Mitigation Measures BIO-1(u), BIO-3(a) and BIO-3(b), impacts would be reduced to a less-than-significant level. The Modified Project would cause the same potential impacts as the Approved Project, and would incorporate all relevant mitigation measures for the Solar Facility and PG&E Improvements. Therefore, there would be **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures BIO-1(u), BIO-3(a) and BIO-3(b)
- Additional Mitigation: None required

e) The 2021 EIR concluded in Section 4.4, *Biological Resources,* that the Approved Project could conflict with local policies protecting biological resources; however, with the implementation of Mitigation Measures BIO-1(a) through BIO-1(u), BIO-3(a) and BIO-3(b), impacts would be reduced to a less than significant level. The Modified Project would cause all the same potential impacts of the Approved Project, and would require the same mitigation measures as the Approved Project; therefore, there would be **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures BIO-1(a) through BIO-1(u), BIO-3(a) and BIO-3(b)
- Additional Mitigation: None required

f) The 2021 EIR concluded in Section 4.15.1.4, *Biological Resources,* that the Approved Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan, because the Approved Project would be 45 miles away from the Eastern Fresno Habitat Plan (the closest HCP or NCCP area) and not within any other adopted Habitat Conservation Plan. Because the Modified Project shrinks the Approved Project footprint in the existing location, the Modified Project footprint would also not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

g) The 2021 EIR found that the Approved Project would have the potential to substantially degrade the quality of the environment; however, with the implementation of mitigation measures BIO-1(a) through BIO-1(u), impacts to migratory nesting birds, burrowing owls, San Joaquin kit fox, and Swainson's hawk would be avoided, minimized, or mitigated to a less than significant level. The Modified Project would include the same project components and activities as the Approved Project. Furthermore, the Modified Project would also incorporate mitigation measures BIO-1(a) through BIO-1(u). Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures BIO-1(a) through BIO-1(u)
- Additional Mitigation: None required

3.5 Cultural Resources

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
V.	**CULTURAL RESOURCES —** Would the project:			
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	No Impact	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Less than Significant with Mitigation Incorporated	☒	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	Less than Significant Impact	☒	☐

Discussion

a) Section 4.5, *Cultural Resources*, of the Draft EIR analyzed impacts to cultural resources for the Approved Project. The 2021 EIR found that there are no historical resources, specifically built environment resources, within the Project site, and therefore, that the Approved Project would have no impact on historical resources. The Modified Project site would be smaller, but within the Approved Project site and therefore, would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** on historical resources relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that Project-related ground disturbing activities could cause a significant impact on previously undiscovered archaeological resources. However, implementation of Mitigation Measures CR-1(a), CR-1(b), and CR-1(c) would reduce potential impacts to previously unknown archaeological resources to less-than-significant levels. The Modified Project would be subject to the same mitigation measures that would ensure a less-than-significant impact relating to the discovery of unknown archaeological resources. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** on archaeological resources relative to the impacts disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures CR-1(a), CR-1(b), and CR-1(c)
- Additional Mitigation: None required

c) The 2021 EIR concluded that Project-related ground disturbing activities could cause a significant impact on previously unidentified human remains. However, compliance with existing regulatory requirements would reduce potential impacts to human remains to a less-than-significant level. The Modified Project would also be subject to California Health and Safety Code section 7050.5, which establishes the protocol to be followed in the event that human remains are identified outside of known cemeteries. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** on humans remains relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.6 Energy

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	Less than Significant Impact	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact	☒	☐

Discussion

a) Approved Project

Section 4.6, *Energy*, of the Draft EIR analyzed impacts on energy for the Approved Project. The 2021 EIR found that the Approved Project would not result in inefficient, wasteful, or unnecessary energy use compared with similar projects and construction sites, resulting in a determination of less-than-significant impact. Construction of the Approved Project was estimated to consume 593,563 gallons of diesel and 256,580 gallons of gasoline for the use of heavy-duty equipment, haul truck trips, and vehicle trips generated by construction workers. The Approved Project's energy use for construction of the Solar Facility and PG&E Improvements would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a typical condition of these sites. Additionally, the operation and decommissioning of the Approved Project would be expected to have minimal fuel and electricity consumption due to the Solar Facility's renewable source of energy, compared to construction-related fuel demands.

Modified Project

This discussion of the Modified Project's energy consumption is informed by the Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project included in Appendix A to this Addendum. Fuel consumption by on-site construction equipment and off-road vehicles has been estimated based on the annual CO_2T greenhouse gas (GHG) emissions estimates from the California Emissions Estimator Model (CalEEMod) output of the Modified Project. With respect to on-road construction vehicles, this analysis assumes that light-duty automobiles and trucks used by commuting workers would be fueled by gasoline and on-road construction vehicles (e.g., vendor and haul trucks for debris, soil, and other hauling materials) would consume diesel fuel. Default factors derived from The Climate Registry (TCR 2022) for calculating CO_2 emissions from diesel and gasoline fuel combustion were applied to estimate the total fuel usages.

The Modified Project's construction activities would consume a total of approximately 1,160,739 gallons of diesel and 476,139 gallons of gasoline fuel. Project fuel use during construction would represent approximately 0.013 percent of diesel and approximately 0.13 percent of gasoline sold in Fresno County in 2022 (California Energy Commission 2023). As compared to the Approved Project, the Modified Project's fuel consumption would be nearly double, however, the fuel use during construction would be temporary and minimal in comparison to the overall fuel use within

Fresno County. Therefore, construction-related fuel consumption by the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR found that the Approved Project would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency, resulting in no impact. The Modified Project's construction, operation, and maintenance activities would be subject to consistency with the goals and strategies of state energy standards. Consistent with the 2021 EIR's description and evaluation the Approved Project, the Modified Project would provide a new source of renewable energy in support of the state's energy goals, offset its fuel usage, and comply with fuel and energy efficiency regulations. Additionally, the Modified Project would be required to comply with the State's Renewables Portfolio Standard that requires renewable energy resources and zero-carbon resources to supply 90 percent of all retail sales of electricity to end-use customers by December 31, 2035. Therefore, the Modified Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

References

California Energy Commission, 2023. 2022 California Annual Retail Fuel Outlet Report Results (CEC-A15). Available: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting. Accessed June 2024.

The Climate Registry (TCR), 2022. 2022 Default Emission Factors – Table 2.1, U.S. Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels, May 2022. Available: https://theclimateregistry.org/wp-content/uploads/2022/11/2022-Default-Emission-Factors-Final.pdf. Accessed June 2024.

3.7 Geology and Soils

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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:	Less than Significant with Mitigation Incorporated		
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact	☒	☐
	ii) Strong seismic ground shaking?	Less than Significant Impact	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	Less than Significant with Mitigation Incorporated	☒	☐
	iv) Landslides?	No Impact	☒	☐
b)	Result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact	☒	☐
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?	Less than Significant with Mitigation Incorporated	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	Less than Significant Impact	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	Less than Significant Impact	☒	☐
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than Significant with Mitigation Incorporated	☒	☐

Discussion

a.i) The Initial Study (Section 4.15.1.6, *Geology and Soils*) found that the Approved Project would not be within an earthquake fault rupture hazard zone as defined under the Alquist-Priolo Earthquake Fault Zoning Act. No active or potentially active faults are mapped within the Approved Project site. The closest active fault is located 25 miles south of the Approved Project site. Since the Modified Project is located within the Approved Project site, it would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

a.ii) Draft EIR Section 4.7, *Geology and Soils*, analyzed impacts to geology and soils for the Approved Project. The 2021 EIR found that the Approved Project would not directly or indirectly cause adverse effects, including risk of loss, injury, or death related to strong seismic ground shaking, and would therefore have a less than significant impact. The Approved Project would be 25 miles from the Creeping Section of the San Andreas Fault but would be designed to be able to withstand substantial ground shaking in accordance with Title 24 of the California Code of Regulations, Section 1803, *Geotechnical Investigations*. The Modified Project would be designed with the same intention of being able to withstand ground shaking in accordance with the same regulations as the Approved Project. Therefore, the Modified Project would cause **no new**

significant impact and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

a.iii) The 2021 EIR concluded in Section 4.7, *Geology and Soils*, that the Approved Project could cause adverse effects, including risk of loss, injury, or death related to ground failure, including liquefaction; however, with implementation of Mitigation Measure GEO-2, impacts would be reduced to a less-than-significant level. Mitigation Measure GEO-2 would employ measures to reduce liquefaction impacts through the submittal of a ground improvement program prescribed by a qualified engineer. The Modified Project would cause the same potential impacts as the Approved Project because the Modified Project would not expand the boundaries of the Project site and would incorporate Mitigation Measure GEO-2. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measure GEO-2
- Additional Mitigation: None required

a.iv) Section 4.15.1.6, *Geology and Soils*, included additional analysis of impacts on geology and soils for the Approved Project. The Initial Study found that the Approved Project would be located on flat terrain, absent of hillsides or other geographic features typically associated with landslides. Since the Modified Project would be located within the Approved Project site, development of the Modified Project also would be located on flat terrain. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that the Approved Project would not result in substantial soil erosion or loss of topsoil, resulting in a less than significant impact with respect to soil loss. The Approved Project would involve ground-disturbing activities but would be subject to the requirements of the Construction General National Pollutant Discharge Elimination System (NPDES) Program permit and would be included in the SWPPP. Further discussion of erosion-related impacts can be found in Draft EIR Section 4.10, *Hydrology and Water Quality*, and in Section 3.10 of this Addendum. The Modified Project would result in the same potential impacts as the Approved Project relative to this significance criterion because the Modified Project would have the same project components and construction activities that could result in a change to the loss of topsoil or increased erosion and would be subject to the same requirements as the Approved Project. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c) The 2021 EIR concluded that the Approved Project would 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. However, the 2021 EIR concluded that with implementation of mitigation measure GEO-2, impacts to unstable soils would be reduced to a less than significant level, because the mitigation measure would employ measures to reduce liquefaction prescribed by a qualified engineer, such as site preparation measures, foundation design measures such as removal and replacement of liquefiable soils, or others recommended by a structural engineer. The Modified Project would include the same project components of the Approved Project and would incorporate Mitigation Measure GEO-2 to minimize potential significant impacts. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measure GEO-2
- Additional Mitigation: None required

d) The 2021 EIR concluded that the Approved Project would not create substantial direct or indirect risks to life or property by being located on expansive soils, resulting in a less-than-significant impact. The Approved Project would be located on soils that have a moderate to high potential for expansion, but this impact would be addressed in construction because the Approved Project would be designed to comply with applicable building codes and structural improvement requirements of Title 24 of the California Code of Regulations, Section 1803, *Geotechnical Investigations*. The Modified Project would be designed to address impacts related to expansive soils in accordance with the same regulations as the Approved Project, because the Modified Project would be located on expansive soils and the same design and structural requirements would apply. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

e) The 2021 EIR determined that the Approved Project would have soils capable of accommodating a septic or other alternative wastewater disposal system, resulting in a less than significant impact under this significance criterion. The Solar Facility portion of the Approved Project would potentially include the installation of a septic system and would be subject to Fresno County Ordinance 15.20, *Plumbing Code and the Fresno County Local Area Management Program*, which would, in part, require that the septic system be located on soils capable of supporting it. The PG&E Improvements would not include a septic system or alternative wastewater disposal system. Like the Approved Project, the Modified Project would include the construction of a septic system and be subject to the same regulations as the Approved Project, which would ensure that the septic system for the Modified Project would be located on soils that are capable of supporting it. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

f) The 2021 EIR concluded that the Approved Project would include ground-disturbing activities associated with the Project that could unearth or impact previously unidentified paleontological resources. However, with implementation of mitigation measures GEO-6(a), GEO-6(b), GEO-6(c), and GEO-6(d), impacts would be reduced to a less than significant level. These mitigation measures would require retaining a qualified paleontologist to direct implementation of the mitigation measures, which would include the preparation of a Mitigation and Monitoring Program to be implemented during ground-disturbing activities; conduction of a Worker Environmental Awareness Program; and execution of the Mitigation and Monitoring Program to salvage fossils, prepare and curate recovered fossils, and preparation of a final paleontological mitigation report upon completion of ground disturbing activities. The Modified Project would include the same Project components and incorporate the same mitigation measures as required for the Approved Project. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures GEO-6(a), GEO-6(b), GEO-6(c), and GEO-6(d)
- Additional Mitigation: None required

3.8 Greenhouse Gas Emissions

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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?	Less than Significant Impact	☒	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant Impact	☒	☐

Discussion

a) Approved Project

Section 4.8, *Greenhouse Gas Emissions*, of the Draft EIR analyzed impacts to GHG emissions for the Approved Project. The 2021 EIR found that the Approved Project would directly and indirectly generate GHG emissions; however, such emissions would be offset by the long-term generation of renewable energy. **Table 3.8-1** presents the estimated annual GHG emissions from the Approved Project. Total emissions from the construction and operation of the PG&E Improvements with emissions generated by construction, operation, and decommissioning of the Solar Facility would generate approximately 1,208 metric tons of carbon dioxide (CO_2) equivalent ($MTCO_2e$) per year. This would be offset by the Solar Facility's anticipated and overall reduction of CO_2e due to the renewable source of energy, compared to fossil fuels for energy production. With the Solar Facility's potential to displace 173,455 $MTCO_2e$ annually over its 35-year operation, the emissions of the Approved Project would be offset fully in the first year of operation. Therefore, the 2021 EIR determined that the Approved Project would result in a less-than-significant impact.

TABLE 3.8-1
ESTIMATED ANNUAL GHG EMISSIONS FROM THE APPROVED PROJECT

Source	GHG Emissions ($MTCO_2e$)
Solar Facility	
Decommissioning & Construction[a]	545
Operation	646
Solar Facility Total	**1,191**
PG&E Improvements	
Construction	551
Decommissioning	51
PG&E Total[a]	**17**
Approved Project Total	1,208

NOTE:
a. Emissions were annualized by 35 years.
SOURCE: Scarlet Solar EIR 2021

Modified Project

The GHG emissions presented below are informed by the Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project included as Appendix A to this Addendum. Because the 2021 EIR did not use quantitative thresholds to analyze GHG emissions, the Modified Project's GHG emissions are included for informational purposes. The emissions below include the construction and operation of the Solar Facility and PG&E Improvements.

Presented in **Table 3.8-2**, the estimated total GHG emissions during construction of the Modified Project would be approximately 16,416 $MTCO_2e$. Annualized over the 35-year operation, the Modified Project would generate approximately 469 $MTCO_2e$ per year. **Table 3.8-3** presents the estimated operational emissions and total annual emissions of the Modified Project. As a result of the Modified Project's operational activities, it would be estimated to generate 292 $MTCO_2e$ per year.

TABLE 3.8-2
ESTIMATED ANNUAL CONSTRUCTION GHG EMISSIONS

Construction Year	Construction GHG Emissions ($MTCO_2e$)
2022	2,161.21
2023	10,311.63
2024	3,375.57
2025	567.25
Total	16,415.67
Annualized Emissions over 35 Years	**469.02**
SOURCE: Dudek 2024	

TABLE 3.8-3
ESTIMATED ANNUAL OPERATION GHG EMISSIONS

Construction Year	Construction GHG Emissions ($MTCO_2e$)
Area	0.01
Energy	163.71
Offroad	94.72
Mobile	31.53
Water	2.23
Total Operational	292.2
Amortized Construction Emissions	469.02
Modified Project Total	**761.22**

Total emissions generated by the Modified Project would be approximately 761 $MTCO_2e$ per year. This would result in a decrease of 447 $MTCO_2e$ per year as compared to the Approved Project. Additionally, this would be offset by the Solar Facility's anticipated and overall reduction of CO_2e due to the renewable source of energy, compared to fossil fuels for energy production. With the Solar Facility's potential to displace 173,455 $MTCO_2e$ annually over its 35-year operation, the emissions of the Modified Project would be offset fully in the first year of operation. As a result, the Modified Project's ability to generate GHG emissions would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR found that the Approved Project would be consistent with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, resulting in a less-than-significant impact. The Approved Project evaluated the consistency with plans, policies, and regulations with the California Air Resources Board's 2017 Climate Change Scoping Plan and Senate Bill 100 (SB 100). Construction, operation, maintenance, and decommissioning of the Approved Project would be consistent with the renewable energy goals under the 2017 Scoping Plan and SB 100. The 2021 EIR also determined that the PG&E Improvements would not conflict with any applicable plans, policies, or regulations related to reducing GHG emissions. Because the Modified Project would adhere to the same existing plans, policies, and regulations related to GHG emissions as the Approved Project, and so would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion.

3.9 Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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?	Less than Significant Impact	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less than Significant with Mitigation Incorporated	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact	☒	☐
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?	No Impact	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	Less than Significant Impact	☒	☐

Discussion

a) Section 4.9, *Hazards and Hazardous Materials*, of the Draft EIR analyzed impacts to hazards and hazardous materials for the Approved Project. The 2021 EIR found that the Approved Project would not involve the routine transport, use, or disposal of hazardous materials, and would not create a significant hazard to the public or the environment, resulting in a less than significant impact. Construction of the Solar Facility component of the Approved Project would involve the relatively limited use of hazardous materials, such as lubricants, fuels, oils, paints, thinners, and cleaning solvents. The implementation of best management practices (BMPs) would ensure the safe disposal and transportation of such hazardous materials. Furthermore, the use of hazardous materials for O&M activities would be regulated by the mandatory compliance with federal, state, and County regulations. Decommissioning of the Solar Facility component would be governed by a reclamation plan, as required by Fresno County Solar Facility Guidelines to ensure hazardous materials are handled and disposed of safely. The PG&E Improvements included in the Approved Project also would not involve the routine transport, use, or disposal of hazardous materials and would be subject to the BMPs required by the SWPPP. The Modified Project would be implemented using construction methods and equipment substantially similar to those described for the Approved Project and would be required to follow all of the same policies, procedures, and regulations. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that the Approved Project would create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, which would result in a less than significant impact with the implementation of mitigation. The Approved Project could cause the accidental release of hazardous materials during construction, O&M, and decommissioning. However, compliance with existing regulations and protocols would minimize impacts. The Approved Project could result in the accidental release of Coccidioides spores into the air, which can cause Valley Fever, but implementation of mitigation measures HAZ-3(a), HAZ-3(b), HAZ-3(c), and HAZ-3(d) would minimize exposure to personnel and the public. The Approved Project could encounter asbestos-containing materials or petroleum products during construction, but implementation of mitigation measures HAZ-4 and HAZ-5 would result in a less-than-significant impact. The Modified Project would be implemented using construction methods and equipment substantially similar to the Approved Project and would be subject to compliance with the same laws and regulations governing the transport, use, and disposal of hazardous materials, as well as the mitigation measures adopted as conditions of approval for the Approved Project. Accordingly, the Modified Project also would result in a less-than-significant impact on personnel, the public, and the environment. The Modified Project would not involve new operational equipment or activities that could result in hazardous material release previously unconsidered by the 2021 EIR. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measures HAZ-3(a), HAZ-3(b), HAZ-3(c), HAZ-3(d), HAZ-4 and HAZ-5
- Additional Mitigation: None required

c) The 2021 EIR determined that the Approved Project would not emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school and determined that there would be no impact. The Modified Project would reduce the Approved Project site footprint, would be farther than one-quarter mile from an existing or proposed school, and result in no impact relating due to hazards near schools. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

d) The 2021 EIR that the Approved Project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and thus determined that there would be no impact. As with the Approved Project, the Modified Project site would not be listed on any regulatory agency's list of hazardous materials sites. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

e) The 2021 EIR determined that the Approved Project would not be located in an area covered by an airport land use plan or within two miles of a public airport or public use airport and, therefore, no airport-related safety hazard for people residing or working in the Project site area would result. Because the Modified Project site is a subset of the Approved Project site, the Modified Project site would also not be located in an area covered by an airport land use plan or within two miles of a public airport or public use airport. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

f) The 2021 EIR concluded that the Approved Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan and therefore would result in a less-than-significant impact. The Modified Project, like the Approved Project, would not involve the closure of any roadways, interfere with evacuation routes, or restrict access to or operation of the Emergency Operations Center, which is 35 miles away. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

g) The 2021 EIR concluded that the Approved Project would not directly or indirectly expose people or structures to significant risk of loss, injury, or death involving wildland fires, resulting in a less-than-significant impact. According to CAL FIRE, the Approved Project would not be in a zone of high or very high fire severity hazard, but fire prevention measures would still be in effect. The solar facility may present a flammability hazard with electrical equipment, such as the battery energy storage system, but a Project-specific Fire Prevention and Emergency Action Plan prepared by the Applicant would help to ensure that impacts remain less than significant. The Modified Project would also not be within a high or very high fire severity hazard zone and would be subject to all the requirements and expectations of the Approved Project. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.10 Hydrology and Water Quality

Issues (and Supporting Information Sources):		*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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?	Less than Significant Impact	☒	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than Significant Impact	☒	☐
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;	Less than Significant Impact	☒	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	Less than Significant Impact	☒	☐
	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	Less than Significant Impact	☒	☐
	iv) impede or redirect flood flows?	Less than Significant Impact	☒	☐
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less than Significant with Mitigation Incorporated	☒	☐
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than Significant Impact	☒	☐

Discussion

a) Section 4.10, *Hydrology and Water Quality*, of the Draft EIR analyzed impacts to hydrology and water quality for the Approved Project. The 2021 EIR found that the Approved Project would not violate any water quality standards or waste discharge requirements and would therefore have a less-than-significant impact with respect to criterion a. The 2021 EIR determined that the Approved Project would not substantially affect the runoff patterns on the Project site, because there would be a relatively small amount of new impervious surfaces associated with the construction of the Solar Facility component, and BMPs in combination with the flat terrain of the Project site would help ensure that the drainage pattern would not be altered. The Approved Project would not generate an increase of runoff that could contain sediment and other pollutants. Furthermore, the Approved Project would be required to prepare and implement an Engineered Grading and Drainage Plan to ensure consistency with County requirements during construction. There would be water quality impacts during construction and decommissioning of the Approved Project related to erosion, sedimentation, and the potential for accidental release of hazardous materials. However, these impacts are addressed in the 2021 EIR for the Approved Project with the implementation of the SWPPP and preparation and implementation of a Hazardous Materials Business Plan (HMBP) to ensure water quality is maintained. Further discussion of hazardous materials can be found in this Addendum in Section 3.9, *Hazards and Hazardous Materials*.

Operations and maintenance activities for the Approved Project could involve the use of and result in accidental release of hazardous materials, however, the HMBP would reduce the potential impacts of accidental releases to less than significant levels. During O&M for the PG&E Improvements there would also be the risk of accidental hazardous material release, but adherence to BMPs and existing regulations would ensure that impacts would be less than significant. The Modified Project would involve the same type of construction, operation, and decommissioning activities as the Approved Project, and would be subject to the same policies and regulations to ensure that water quality is maintained and that water quality standards are met. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that the Approved Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the Project would impede sustainable groundwater management of the basin and would, therefore, have a less-than-significant impact. The 2021 EIR determined that the construction phase would involve the use of 360 acre-feet per year (AFY) of water, which would amount to 0.18 percent of the annual safe yield of 200,000 AFY for the Westside Subbasin, representing a small fraction of the groundwater supply. Decommissioning would take place 35 years after the Approved Project completed construction, and, due to the speculative nature of predicting the state of future water quality conditions, it is assumed that decommissioning activities would result in similar hydrological impacts as those generated by construction. The Approved Project assumed that 20 AFY would be required for O&M activities such as panel washing and other miscellaneous activities, to be obtained from the cities of Fresno or Mendota.

Regarding the Modified Project, the following water demand estimates and sources are informed by the Addendum to Water Supply Assessment (WSA Addendum) for the Scarlet Solar Energy Project (**Appendix B** to this Addendum). The Applicant prepared the WSA Addendum to supplement the project information and analysis in the 2021 EIR by assessing Modified Project refinements, in compliance with Senate Bill 610 requirements. On the whole, the water supply source would shift from offsite sources under the Approved Project (well water from a neighboring site and purchased water delivered by truck) to onsite sources under the Modified Project (reactivation of existing capped wells). Therefore, the Modified Project's water use would be limited to the Westside Subbasin only.

The amount of water to be used during construction and O&M activities under the Modified Project would be different than that estimated under the Approved Project. The Modified Project anticipates a revised water demand of 650 AFY for construction, because the new estimate includes grading and dust control requirements for the battery energy storage systems (BESS) and uses a more conservative estimation method that includes a 15 percent contingency. Although greater than the Approved Project, this change in estimation for the Modified Project would remain less than significant, because it would still be a small portion of the safe yield amount, representing an increase from approximately 0.18 percent to 0.33 percent of the safe yield for Westside Subbasin (approximately 200,000 AFY) for construction and then decommissioning.

The Approved Project was expected to use 20 AFY for O&M, which the 2021 EIR determined to be less than significant; by comparison, the WSA Addendum estimates that the Modified Project would use 5 AFY due to a decrease in the frequency and volume of water needed for panel washing. This new lower estimate would also not have an adverse effect on the water supply, because it would be a small portion of the safe yield amount for the Westside Subbasin. Construction of the PG&E Improvements would require minimal water use compared to the Solar Facility component and would not require water for O&M. Furthermore, the PG&E Improvements would add 3 acres of impervious surfaces, which would be a small amount of new impervious surface amid the perviousness of the Project site, so infiltration rates of water would not be significantly impacted. The Modified Project would not make changes to the PG&E Improvements in relation to impervious surfaces. Additionally, when amortized over a 20-year timeframe, the total amount of water needed for construction plus O&M under the Modified Project would be roughly the same as that anticipated under the Approved Project (37 AFY compared to 36 AFY per SB 610 parameters, respectively). For these reasons, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c.i) The 2021 EIR concluded that the Approved Project would not substantially alter the existing drainage pattern such that substantial erosion or siltation would occur and would have a less than significant impact with respect to this threshold criterion. In terms of erosion and siltation, construction of the Approved Project would include drainage features that would protect the site from potentially significant changes to the drainage patterns. Furthermore, estimations made by hydrological models demonstrated that the Approved Project would not increase stormwater flow depths by more than one foot. Decommissioning activities would disturb soils in a similar manner as during the construction of the Approved Project. As such, decommissioning would be required to comply with regulations, including the preparation of a SWPPP and installation of BMPs. Construction and decommissioning components and activities of the Modified Project would be substantially similar to those analyzed in the 2021 EIR and, thus, would have similar impacts. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c.ii) The 2021 EIR concluded that the Approved Project would not substantially alter the existing drainage pattern such that flooding would occur; therefore, the Approved Project would have a less-than-significant impact on subsurface runoff. As stated above, construction of the Approved Project would not substantially change the existing on-site drainage patterns and would introduce a relatively small area of impervious surfaces. Impervious surfaces introduced by the Approved Project amount to approximately 3 acres from the PG&E Improvements and small areas for the Solar Facility. Decommissioning activities would have similar impacts as construction for the Approved Project. The Modified Project would have similar components and activities for construction, maintenance and decommissioning, and would have the same impacts related to flooding as those analyzed in the 2021 EIR. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c.iii) The 2021 EIR concluded that the Approved Project would not substantially alter the existing drainage pattern such that an exceedance of stormwater system capacity or impedance to flood flows would occur and therefore would have a less than significant impact on stormwater drainage systems. The Approved Project would cause a minor increase in peak storm runoff volume from the Project site, which would be accommodated by the drainage infrastructure design. Furthermore, decommissioning would have similar hydrological impacts as the construction phase, which were determined to be less than significant. The Modified Project would have similar components and activities for construction, maintenance and decommissioning, and would have the same impacts related to drainage capacity as those analyzed in the 2021 EIR. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c.iv) The 2021 EIR concluded that the Approved Project would not substantially alter the existing drainage pattern through the addition of impervious surfaces in a manner which would impede or redirect flood flows, and would therefore have a less-than-significant impact on flood flows. The Approved Project includes two substations and the O&M building, both of which would be outside the 100-year flood plan. Under the Approved Project, the floodwater patterns would not be altered when compared to existing conditions. The Modified Project would have similar components and activities for construction, maintenance and decommissioning, and would have the same impacts related to flood flows as those analyzed in the 2021 EIR. However, the Modified Project would only have one substation. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

d) The 2021 EIR concluded that the Approved Project would cause a less-than-significant impact with mitigation incorporated for this criterion. The site is located within the 100-year floodplain and if pollutants are not properly stored on the Solar Facility site located within Zone A, which would be inundated in the event of a flood, then pollutants could be released during a flood. This would cause a potential significant impact if no mitigation measures were implemented. The PG&E Improvements component of the Approved Project would not be within the 100-year floodplain. The Approved Project would store hazardous material in accordance with OSHA and have a comprehensive Spill Prevention Control and Countermeasure Plan. The Applicant would also prepare and submit a HMBP to Fresno County Division of Environmental Health. The Approved Project would comply with mitigation measure HWQ-4, *Hazardous Materials Business Plan Inundation Measures,* which would include a flood inundation plan in the emergency response plan section. The Modified Project would have similar components and activities for construction, maintenance and decommissioning, and would have the same impacts related to flood hazards and the release of hazardous materials as those analyzed in the 2021 EIR. Furthermore, the Modified Project would also be required to comply with Mitigation Measure HWQ-4. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

- 2021 EIR Mitigation: Measure HWQ-4

- Additional Mitigation: None required

e) The 2021 EIR concluded that the Approved Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater plan and so would cause a less-than-significant impact. The Approved Project would not conflict with or obstruct implementation of the Basin Plan. Furthermore, as stated above, the Approved Project and Modified Project would not result in water supply reliability impacts, so there would be a less-than-significant impact related to the Fresno County Groundwater Management Plan. The Modified Project would have similar impacts related to complying with water quality control plans or sustainable groundwater plans as analyzed in the 2021 EIR, therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.11 Land Use and Planning

Issues (and Supporting Information Sources):	*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
XI. LAND USE AND PLANNING — Would the project:			
a) Physically divide an established community?	No Impact	☒	☐
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?	No Impact	☒	☐

Discussion

a) Section 4.11, *Land Use and Planning*, of the Draft EIR analyzed impacts on land use and planning for the Approved Project. The 2021 EIR found that the Approved Project would not divide an established community. There are no established communities near the Approved Project site, with the nearest communities being Tranquillity, 3.5 miles southwest of the Approved Project site, and Three Rocks and Cantua Creek, 5.7 north of the Project site. The Modified Project would be located at the same site as the Approved Project and would not divide an established community. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that the Approved Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. The solar facility would not conflict with the Fresno County General Plan, County Zoning Ordinance, nor the County's Solar Facility Guidelines. Additionally, in regard to the PG&E Improvements, the County reviewed potential impacts as a part of the EIR process and determined that there would be no conflict with the County land use plans, policies, and regulations. The Modified Project would not include new land, nor would it include more or different project components or activities as compared to the Approved Project. Therefore, the Modified Project would not result in inconsistencies with land use plans, policies, or regulations. The Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.12 Mineral Resources

Issues (and Supporting Information Sources):	*Final EIR Determination*	*Final EIR Sufficient*	*Further Analysis Required*
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?	No Impact	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	No Impact	☒	☐

Discussion

a) The Initial Study (Section 4.15.1.9, *Mineral Resources*) analyzed impacts to mineral resources for the Approved Project. The Initial Study found that the Approved Project would not be located in a mineral resource zone and would not result in the loss of mineral resources. Therefore, the 2021 EIR determined that the Approved Project would have no impact on mineral resources. Since the Modified Project is located within the Approved Project site, development of the Modified Project also result in no impact, and would cause **no new significant impact** and **no substantial increase in the severity of a significant impacts** relative to the impacts disclosed in the 2021 EIR.

b) Section 4.15.1.9 found that the Approved Project would not be located on or near a mineral resource recovery site. Therefore, the 2021 EIR determined that the Approved Project would have no impact on mineral resources. Since the Modified Project is located within the Approved Project site, development of the Modified Project also would result in no impact, and would cause **no new significant impact** and **no substantial increase in the severity of a significant impacts** relative to the impacts disclosed in the Scarlet Solar EIR.

3.13 Noise

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	Less than Significant Impact	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant Impact	☒	☐
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?	No Impact	☒	☐

Discussion

a) Section 4.12, *Noise*, of the 2021 EIR analyzed impacts related to noise for the Approved Project. The 2021 EIR determined that ambient noise levels would have a less-than-significant impact with respect to generating noise in excess of applicable standards. Operation of heavy equipment during the Approved Project's construction and decommissioning would result in a temporary noise level increase that could disturb nearby sensitive receptors. Figure 4.12-1 of the 2021 EIR shows noise-sensitive users near the Approved Project site, with the closest located at approximately 100 and 350 feet south of the southern Project site boundary. Overlapping construction phasing for the Approved Project construction would result in the highest average noise levels of 97 equivalent noise level (Leq) A-weighted decibels (dBA) at 100 feet, and 86 Leq dBA at 350 feet, if activities to construct the Solar Facility component were occurring simultaneously. This would exceed the Fresno County Exterior Noise Level Standard daytime Leq limit of 50 dBA for 30 minutes or more. However, construction activities are exempt from the Fresno County Noise Control Ordinance if they occur between the hours of 6:00 a.m. and 9:00 p.m., Monday through Friday, and between 7:00 a.m. and 5:00 p.m. on Saturday and Sunday. The 2021 EIR determined that construction and decommissioning of the Approved Project would result in a short-term increase in vehicle trips that would increase ambient noise levels off-site, primarily from commuting construction workers and from haul trucks bringing materials to the Project site. Traffic related to the Approved Project construction would increase peak hour traffic noise levels by 0 to 8 dBA Leq at sensitive receptors along SR 33, West Manning Avenue, and James Road. However, noise from construction-related vehicles and equipment would be temporary and exempt from Fresno County Exterior Noise Standards. Regarding noise during O&M activities, noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities are also exempt from the Noise Control Ordinance.

Under the Modified Project, the southern Project site boundary would not change, so the nearest sensitive receptors would remain approximately 100 and 350 feet away, the hours of construction would not change, and the proposed construction haul routes would not change. The timing of construction for the Project components would change, with the energy generation components and shared facilities being constructed simultaneously and the energy storage components being constructed after the energy generation components are completed. The typical construction equipment mix would be similar for the Modified Project as for the Approved Project, but there would be a reduction in the number of pieces of equipment required for the Modified Project during construction and decommissioning. Project-related traffic during operation would be similar under the Modified Project as compared to the Approved Project. Therefore, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

b) The 2021 EIR determined that Approved Project construction and decommissioning activity involving bulldozers and loaded trucks could create temporary ground-borne vibration on-site and adjacent to the Project site, but it would result in a less-than-significant impact. Vibration levels from the Approved Project's construction equipment would reach an estimated range of 69 vibration decibels (VdB) at 100 feet from the source. This level of ground-borne vibration could be perceptible at the nearest sensitive receptor but would not exceed the Federal Transit Administration's criterion of 72 VdB at residences, which was relied upon in the 2021 as a threshold of significance. Equipment used during all Approved Project O&M activities would be limited to small- and medium-sized trucks, which would not emit perceivable vibrations. The Modified Project boundaries relative to the nearest sensitive receptors would not change, so the nearest sensitive receptor would not change; however, the Modified Project would use fewer pieces of equipment during construction and decommissioning as compared to the Approved Project (Appendix A). The Modified Project would not use heavy-duty trucks during O&M, similar to the Approved Project, thereby not emitting perceivable vibrations. Therefore, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

c) The Initial Study (Section 4.15.1.10, *Noise)* found that the Approved Project would not be located within two miles of an airport or in the vicinity of a private airstrip or airport land use plan and so the 2021 EIR concluded that the Approved Project would have no impact on airport-related noise considerations. Since the Modified Project would be located within the Approved Project site, development of the Modified Project would cause **no new significant impacts** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

3.14 Population and Housing

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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)?	No Impact	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact	☒	☐

Discussion

a) The 2021 EIR concluded in Section 4.15.1.11 *Population and Housing* that the Approved Project would not induce population growth either directly or indirectly. The Approved Project would primarily provide short-term employment during construction and decommissioning, amounting to approximately 132 to 701 workers per day with a maximum of 974 workers per day during overlapping phases of construction. The construction worker positions would be filled by people in the existing labor pool in Fresno County, who would commute to the site rather than moving to the Project area, thereby not inducing substantial population growth.

The Approved Project would involve the creation of a perimeter drive, access driveways and drives, and internal drives. These access roads, however, would not contribute to an indirect population increase because they would be exclusively used for the purposes of accessing the Project site. Furthermore, these access roads would not remove obstacles to growth, because they would not allow improved access to urban areas. Additionally, the Approved Project would provide more reliable energy access, which has the potential to induce indirect population growth, but the energy produced would be added to California's electricity grid and would not act as a source of electricity for a growing demand in the local area.

Worker levels for construction, maintenance, and decommissioning and construction of roads and infrastructure for the Modified Project would be substantially similar to the Approved Project as described in the 2021 EIR. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

b) The 2021 EIR concluded that the Approved Project would not displace substantial amounts of existing people or housing, necessitating the construction of replacement housing elsewhere, because the Approved Project site is undeveloped. The Modified Project would be located within the Approved Project site, and so also would not displace any people or housing. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.15 Public Services

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
XV. PUBLIC SERVICES —			
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
i) Fire protection?	No Impact	☒	☐
ii) Police protection?	No Impact	☒	☐
iii) Schools?	No Impact	☒	☐
iv) Parks?	No Impact	☒	☐
v) Other public facilities?	No Impact	☒	☐

Discussion

a) The Initial Study (Section 4.15.1.12, *Public Services)* concluded that the Approved Project would not result in an impact regarding the provision of public services. The Approved Project would not result in a need for the construction of new facilities or expansion of existing government facilities for public services. As discussed in Section 3.14, *Population and Housing*, there would not be a substantial increase in population as a result of the Approved Project, so there would not be an increase in demand for public services requiring new or physically altered governmental facilities for public services. Similarly, the Modified Project would not induce demand for public services because it, too, would not induce population growth and would not require new or physically altered governmental facilities for public services. Furthermore, the Modified Project can be adequately serviced by existing public services, and so would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.16 Recreation

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	No Impact	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact	☒	☐

Discussion

a) The Initial Study (Section 4.15.1.13, *Recreation)* found that the Approved Project would not induce population growth and therefore would not increase the use of recreational facilities such that substantial physical deterioration would occur or be accelerated. Since the Modified Project would be located within the previously Approved Project site and require substantially the same number of workers as the Approved Project, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

b) The 2021 EIR analyzed impacts to recreation and found that the Approved Project would have no impact on criterion b) because it did not include the construction or expansion of any recreational facilities. Since the Modified Project is located within the previously Approved Project site, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

3.17 Transportation

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	No Impact	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than Significant Impact	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than Significant Impact	☒	☐
d) Result in inadequate emergency access?	Less than Significant Impact	☒	☐

Discussion

a) The Initial Study (Section 4.15.1.14, *Transportation*) found that there would be no existing or planned pedestrian, bicycle, or transit facilities within the Approved Project area. Therefore, the 2021 EIR determined that the Approved Project would cause no impact on criterion a). Since the Modified Project would be located within the Approved Project site, and since no change to the project components would lead to a conflict with a plan, ordinance, or policy addressing the circulation system, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

b) Section 4.13, *Transportation*, of the Draft EIR analyzed impacts to transportation for the Approved Project. The 2021 EIR found that construction and decommissioning would generate between 132,000 and 974,000 vehicle mile trips (VMT) per day. The total number of workers during the construction and decommissioning phases of the Project would range between 132 and 974, with a round-trip commute of approximately 100 miles. This would result in a temporary increase in VMT from employee and truck trips during the approximately 18-month construction period and 24-month decommissioning period, but still result in a less than significant impact. The workforce for the Modified Project would remain the same as for the Approved Project. Therefore, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

c) The 2021 EIR found that construction and decommissioning of the Approved Project could increase hazards to traffic conditions due to the use and delivery of oversized equipment and materials. Since the Approved Project would be in a rural part of the County with minimal road traffic, oversized vehicles would not be anticipated to result in a substantial roadway hazard. Additionally, the design of Solar Facility access road intersections would be required to comply with Fresno County standards (per General Plan Policies TR-A.3, TR-A.5, and TR-A.8). Impacts associated with Project geometric design features were determined to be less than significant. Since the Modified Project would consist of substantially the same types and quantities of construction equipment, project components, and materials, delivery of oversized equipment and materials would result in no new impacts. The Modified Project would also be required to comply with Fresno County Design Standards. Therefore, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

d) The 2021 EIR found that impacts on emergency access would be less than significant. The Approved Project would be accessible by several access roads and include internal access road improvements allowing for adequate emergency access. Development of the Approved Project would not require the closure of local roadways. The delivery of oversized construction equipment and materials could interfere with emergency response to the site or the surrounding area. However, since the Approved Project is located in a rural part of the County with limited residences and is not in close proximity to emergency services it is not unlikely that delivery of oversized construction equipment and materials would result in inadequate emergency access. The Modified Project would be located within the same footprint as the Approved Project and delivery of oversized construction equipment and materials would be substantially similar to that of the Approved Project. Therefore, development of the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR.

3.18 Tribal Cultural Resources

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
XVIII. TRIBAL CULTURAL RESOURCES —			
a) 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:			
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	No Impact	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	No Impact	☒	☐

Discussion

a.i; a.ii) The Initial Study (Section 4.15.1.15, *Tribal Cultural Resources*) analyzed impacts to Tribal Cultural Resources for the Approved Project. The 2021 EIR found that there are no tribal cultural resources within the Approved Project site that are listed or eligible for listing in the California Register of Historical Resources, in a local register of historical resources, and that the County has not determined there to be any tribal cultural resources within the Approved Project site. Therefore, the 2021 EIR determined that the Approved project would have no impact on tribal cultural resources. The Modified Project site would be within the Approved Project site; therefore, it would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** on tribal cultural resources relative to the impact disclosed in the 2021 EIR for this significance criteria.

3.19 Utilities and Service Systems

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	Less than Significant Impact	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less than Significant Impact	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact	☒	☐
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?	Less than Significant Impact	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than Significant Impact	☒	☐

Discussion

a) Section 4.14, *Utilities and Service Systems*, of the Draft EIR analyzed impacts to utilities for the Approved Project. The 2021 EIR found that there would be a less-than-significant impact from the construction of a new on-site septic tank, leach field and stormwater drainage, electric power, and telecommunications facilities. The Approved Project would not require the construction of additional stormwater facilities, or natural gas facilities, but the Project would require an on-site septic system, leach field, and telecommunications infrastructure, which would result in a less-than-significant impact. The Modified Project would not require additional or different facilities than the Approved Project; therefore the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the Draft EIR for this significance criterion.

b) The 2021 EIR concluded that impacts related to water supplies would be less than significant if there would be sufficient water supplied from existing entitlements and resources available to serve the Project during normal, dry, and multiple dry years. It is anticipated that the Approved Project would require 360 AFY for construction and for decommissioning and 20 AFY for O&M, which would not result in adverse effects on water supply because it would be a small portion of the safe yield amount. According to the Addendum to Water Supply Assessment for the Scarlet Solar Energy Project (Appendix B to this Addendum), the Modified Project's anticipated water demand is anticipated to be 650 AFY, because the new estimate includes grading and dust control requirements for the BESS and uses a more conservative estimation method that includes a 15 percent contingency. This change in estimation for the Modified Project relative to the Approved Project would remain less than significant, because it would still be a small portion of the safe yield amount, representing an increase from approximately 0.18 percent to 0.33 percent of the safe yield for the Westside Basin (approximately 200,000 AFY). The estimate for water use during the O&M phase of the Modified Project would decrease to 5 AFY due to a decrease in the frequency and volume of water needed for panel washing as compared to the Approved Project. The Modified Project O&M water use estimate would also not have an adverse effect on water supply, because it would be a small portion of the safe yield amount for Kings Subbasin, which is approximately 72,500 AFY. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

c) The 2021 EIR concluded that the Approved Project would not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments, thereby having no impact with respect to this criterion. The Approved Project site would not be served by a municipal wastewater treatment provider, as the site is located in rural unincorporated Fresno County. The Modified Project would also not be served by a municipal wastewater treatment provider because it, too, would use portable units during construction and panel-washing events as restroom facilities. Operation, maintenance, and decommissioning would use an installed septic system and leach field adjacent to the O&M building for restroom facilities and sewage needs. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

d) The 2021 EIR concluded that the Approved Project would result in a less-than-significant impact with respect to solid waste generation and disposal, because it would not 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 2021 EIR estimated that construction of the Approved Project's Solar Facility component would result in approximately 66 tons of solid waste per week and 13.2 tons of solid waste per week from the PG&E Improvements, totaling 79.2 tons per week. If all this solid waste was to be brought to American Avenue Landfill on the same day, the landfill would have an average of 2,120.8 tons remaining of its daily permitted capacity (2,200 tons per day). Furthermore, it is estimated that O&M activities would produce 1 cubic yard of waste per week, which would be negligible for American Avenue Landfill and for Billy Wright Disposal, which is permitted to receive 2,000 tons of solid waste per day. Additionally, assuming that recycling facilities for used batteries would not be available 20 years after the Approved Project were to initiate operation, approximately 2,500 tons of hazardous solid waste in the form of batteries used as the energy storage system for the Approved Project would need to be disposed of at the Clean Harbors Buttonwillow landfill, which accepts 10,500 tons of waste per day. Finally, decommissioning of the Approved Project would result in approximately 55 cubic yards per week in addition to 2,500 tons of hazardous waste for battery removal. While these landfills are expected to have reached their permitted capacities during the Project's lifespan, Fresno County is required by the California Integrated Waste Management Act to demonstrate that it has at least 15 years of remaining landfill capacity available in the County, meaning that it is expected that solid waste disposal sites will be identified to address disposal demand after the closure of these landfills. The 2021 EIR determined that the availability of landfill capacity demonstrates that the Approved Project could be adequately serviced for construction, operation, maintenance, and decommissioning. Since the Modified Project has fewer Project components and a substantially similar size workforce compared to the Approved

Project, it is expected that the Modified Project would produce less waste than the Approved Project, resulting in **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

e) The 2021 EIR concluded that the Approved Project would comply with applicable solid waste management and reduction statutes and regulations, resulting in a less-than-significant impact with respect to this criterion. The Approved Project would be required to comply with the CalGreen Code and the Fresno County C&D Debris Recycling Program. As demonstrated in criterion d, there would not be any conflicts with statutes or regulations about solid waste disposal, because the landfills identified would be capable of taking the necessary waste from the Approved Project for construction, O&M, and decommissioning. Since the Modified Project has fewer Project components and a substantially similar size workforce as compared to the Approved Project, it is expected that the Modified Project would produce less waste than the Approved Project. As a result, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impact disclosed in the 2021 EIR for this significance criterion.

3.20 Wildfire

Issues (and Supporting Information Sources):	Final EIR Determination	Final EIR Sufficient	Further Analysis Required
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?	No Impact	☒	☐
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?	No Impact	☒	☐
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?	No Impact	☒	☐
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?	No Impact	☒	☐

Discussion

a-d) Analysis of a project's potential to result in a significant impact on wildfire is required if a project is "located in or near state responsibility areas or lands classified as very high fire hazard severity zones" (CEQA Guidelines Appendix G). Because the Approved Project site would not be located in or near "very high fire hazard severity zones," a detailed analysis of the Appendix G significance criteria for Wildfire was not included in the 2021 EIR. The Modified Project would be located within the Approved Project site and would remain outside of state responsibility areas and designated very high, high, or moderate fire hazard severity zones. Development of the Modified Project would not require additional analysis regarding potential impacts to wildfire. Therefore, the Modified Project would cause **no new significant impact** and **no substantial increase in the severity of a significant impact** relative to the impacts disclosed in the 2021 EIR for this significance criterion. Refer to Section 4.9 of the 2021 EIR, *Hazards and Hazardous Materials*, criterion g, regarding potential impacts associated with exposing people or structures to a significant risk of loss, injury, or death involving wildland fires.

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Appendix A

Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project

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MEMORANDUM

To:	Patrick Cousineau, EDP Renewables North America
From:	Adam Poll, Dudek
Subject:	Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Scarlet Solar Energy Project
Date:	June 13, 2024
cc:	Alex Hardy, Dudek; Erlin Worthington, Dudek
Attachment:	A, Emission Calculations

Dudek is pleased to present EDP Renewables North America (applicant), with the following air quality and greenhouse gas (GHG) analysis for the proposed Scarlet Solar Energy Project (project) located in Fresno County (County). This memorandum estimates criteria air pollutant and GHG emissions and impacts from construction and operation of the project in accordance with the California Environmental Quality Act (CEQA) Guidelines. The contents and organization of this memorandum are as follows: Project Description, General Analysis and Methodology, Thresholds of Significance and Impact Analyses for the Air Quality Assessment and GHG Emissions Assessment, Conclusions, and References Cited.

1 Project Description

The Project consists of a solar photovoltaic (PV) electricity generating facility and energy storage system and associated infrastructure. The Solar Facility would generate a total of up to 400 megawatts (MW) of alternating current (AC) at the point of electrical grid interconnection on approximately 4,089 acres in unincorporated western Fresno County. The Project would provide solar power to utility customers by interconnecting to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) Tranquillity Switching Station located approximately 0.75 mile west of the Project site.

Project design refinements involving consolidation of the two electrical 230 kV substations and one 230 kV switchyard included in the FEIR) into one consolidated centralized location where all power generated from various solar blocks will be stepped-up for delivery to the PG&E Tranquility Switching Station is being proposed..

2 General Analysis and Methodology

The project Site is located within the San Joaquin Valley Air Basin (SJVAB) and is within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which has jurisdiction over Fresno County (County) where the project is located. Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include volatile organic compounds (VOCs; sometimes referred to as reactive organic gases (ROGs)), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$). VOCs and NO_x are important because they are precursors to ozone (O_3).

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2e). The CO_2e for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of CO_2e = (MT of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH_4 is 25, which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2, and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

2.1 Construction

Emissions from the construction phase of the project were estimated using the California Emissions Estimator Model (CalEEMod) Version 2022 (CAPCOA 2022). For the purposes of modeling, it was assumed that construction of the project would commence in July 2022[1] and would last approximately 34 months, ending in April 2025. The project was assumed to be operational for 35 years and then be decommissioned and removed at the end of its lifetime. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate):

- Scarlet I: Site Preparation (2 months)
- Scarlet II: Site Preparation (2 months)
- Scarlet II: Energy Storage System Site Preparation (2 months)
- Scarlet III: Energy Storage System Site Preparation (2 months)

[1] The analysis assumes a construction start date of July 2022, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

- Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (10 months)
- Scarlet I: Solar Facility - PV Module System Installation (12 months)
- Scarlet I: Solar Facility - Substation and Electrical System Installation and PG&E Improvements (8 months)
- Scarlet II: Solar Facility - PV Module System Installation (9 months)
- Scarlet II: Solar Facility - Substation and Electrical System Installation (8 months)
- Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (11 months)
- Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (11 months)

The upgrades to the PG&E Tranquillity Switching Station were modeled within the Scarlet I: Solar Facility – Substation and Electrical System Installation phase. The majority of the phases listed above would occur concurrently and would not occur sequentially in isolation. The estimated construction duration was provided by the project applicant. Detailed construction equipment modeling assumptions are provided in Attachment A, CalEEMod Outputs.

The construction equipment mix used for estimating the construction emissions of the project is based on information provided by the project applicant and is shown in Table 1. This information reflects actual activity to accomplish construction of the project based on the construction contractor being used to build it.

Table 1. Construction Scenario Assumptions

	One-Way Vehicle Trips			Equipment		
Construction Phase	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Scarlet I: Site Preparation	60	4	2	Graders	2	7
				Tractors/Loaders/ Backhoes	4	7
				Skid Steer Loaders	4	7
				Rollers	8	7
				Excavators	1	7
Scarlet II: Site Preparation	440	30	24	Graders	2	7
				Tractors/Loaders/ Backhoes	4	7
				Skid Steer Loaders	4	7
				Rollers	8	7
				Excavators	1	7
Scarlet II: Energy Storage System Site Preparation	60	4	2	Graders	2	7
				Skid Steer Loaders	4	7
				Rollers	4	7
				Excavators	2	7
				Dumpers/Tenders	5	4
	40	10	4	Graders	2	7

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Scarlet III: Energy Storage System Site Preparation				Skid Steer Loaders	4	7
				Rollers	4	7
				Excavators	2	7
				Dumpers/Tenders	5	4
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	10	4	Forklifts	2	7
				Skid Steer Loaders	1	7
				Excavators	1	7
				Dumpers/Tenders	1	4
				Bore/Drill Rigs	2	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7
				Aerial Lifts	1	7
				Generator Sets	1	9
Scarlet I: Solar Facility - PV Module System Installation	32	6	6	Skid Steer Loaders	20	7
				Bore/Drill Rigs	10	7
				Forklifts	8	6
				Generator Sets	5	7
				Rubber Tired Dozers	2	6
				Trenchers	1	6
Scarlet I: Solar Facility - Substation and Electrical System Installation and PG&E Improvements	80	12	10	Rubber Tired Dozers	2	7
				Graders	1	7
				Skid Steer Loaders	1	7
				Rubber Tired Loaders	7	7
				Rollers	1	7
				Generator Sets	17	8
				Forklifts	1	7
				Bore/Drill Rigs	2	7
				Trenchers	1	7
				Excavators	4	7
				Cranes	2	4
Scarlet II: Solar Facility - PV Module System Installation	440	40	32	Skid Steer Loaders	20	7
				Bore/Drill Rigs	10	7
				Forklifts	8	6
				Generator Sets	5	7

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Rubber Tired Dozers	2	6
				Trenchers	1	6
Scarlet II: Solar Facility - Substation and Electrical System Installation	80	12	10	Rubber Tired Dozers	2	7
				Graders	1	7
				Skid Steer Loaders	1	7
				Rubber Tired Loaders	1	7
				Rollers	1	7
				Generator Sets	17	8
				Forklifts	1	7
				Bore/Drill Rigs	2	7
				Trenchers	1	7
				Excavators	4	7
				Cranes	2	4
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	16	14	Graders	2	7
				Forklifts	3	7
				Skid Steer Loaders	2	7
				Rubber Tired Loaders	2	7
				Excavators	1	7
				Bore/Drill Rigs	4	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7
				Aerial Lifts	1	7
				Generator Sets	1	9
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	40	16	14	Graders	2	7
				Forklifts	3	7
				Skid Steer Loaders	2	7
				Rubber Tired Loaders	2	7
				Excavators	1	7
				Bore/Drill Rigs	4	7
				Trenchers	2	7
				Tractors/Loaders/ Backhoes	1	7
				Cranes	1	7

Table 1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Average Daily Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Aerial Lifts	1	7
				Generator Sets	1	9

Note: See Attachment A for details.

For the analysis, it was assumed that heavy construction equipment would be operating 5 days per week (22 days per month) during project construction. Construction worker and vendor trips were based on applicant provided data. Equipment emissions were estimated using the CalEEMod default emission factors for the construction duration.

All vehicles and haul trucks would travel to and from the onsite staging area. All water trucks were assumed to travel on unpaved road. Worker vehicles and vendor trucks were assumed to travel 50 miles per one-way trip and haul trucks were assumed to travel 115 miles per one-way trip. Onsite travel was assumed to be 2 miles per one-way trip which represents halfway between the paved road and the end of the project site.

Implementation of the project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, and architectural coatings. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would comply with SJVAPCD Rule 8021 to control dust emissions generated during the grading activities, which would be required as a condition of approval. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites to maintain acceptable levels of dust generation.

A detailed depiction of the construction schedule—including information regarding phases and equipment used during each phase—is included in Attachment A to this letter report. The information contained in Attachment A was used as CalEEMod model inputs.

2.2 Operation

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2025 was assumed, as it would be the first year following completion of construction.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. The battery storage containers would have heating, ventilation, and air conditioning systems to keep the batteries in the optimal operating temperatures. It was estimated that the project would require up to 1,752,000 kWh of electricity per year. The project would not have natural gas.

Emissions were calculated by multiplying the energy use by the utility's carbon intensity (pounds of GHGs per megawatt-hour for electricity) for CO_2 and other GHGs. Annual electricity emissions were estimated in CalEEMod using the emissions factors for PG&E, which would be the energy source provider for the project.

Offroad Sources

The project would require periodic use of offroad equipment during maintenance activities including all-terrain vehicles, tractors, portable generators, and water trailers. Equipment activity information was provided by the project applicant. CalEEMod default emission factors, equipment horsepower, and load factors were used to estimate emissions from this source.

Mobile Sources

Following the completion of construction activities, the project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the maintenance activity of the project. Water trucks would also visit the site for periodic panel washing. CalEEMod default data, including trip characteristics and emissions factors, were used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod. Emission factors representing the vehicle mix and emissions for 2025 were used to estimate emissions associated with vehicular sources. Onsite travel was assumed to be 2 miles per one-way trip which represents halfway between the paved road and the end of the project site.

Water

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. The project would utilize water for dust suppression during construction and panel washing during operation. Water use was provided by the applicant.

3 Air Quality Assessment

3.1 Thresholds of Significance

San Joaquin Valley Air Pollution Control District

The SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* has established emissions-based thresholds of significance for criteria pollutants (SJVAPCD 2015), which are depicted in Table 2. As shown in Table 2, the SJVAPCD has established significance thresholds for construction emissions and operational permitted and non-permitted equipment and activities, and it recommends evaluating impact significance for these categories separately. These thresholds of significance are based on a calendar-year basis, although construction emissions are assessed on a rolling 12-month period.

Table 2. San Joaquin Valley Air Pollution Control District California Environmental Quality Act Significance Thresholds for Criteria Pollutants

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
ROG	10	10	10
NO_x	10	10	10
CO	100	100	100
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015.

3.2 Impact Analysis

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SJVAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road vendor trucks, haul trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

CalEEMod Version 2022 was used to estimate emissions from construction of the project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SJVAPCD Rule 8021 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The CalEEMod default assumptions were used for estimating fugitive dust emissions from grading on site. Table 3 presents the annual emissions reported as the highest rolling 12 months estimated during construction of the project. Details of the emission calculations are provided in Attachment A. The project would also comply with SJVAPCD Rule 9510, Indirect Source Review, which requires development projects to reduce exhaust emissions from construction equipment by 20% for NO_x and 45% for PM_{10} compared to the statewide average.

Table 3. Estimated Maximum Construction Criteria Air Pollutant Emissions – Unmitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
2022	0.68	6.50	8.82	0.02	3.27	0.65
2023	2.74	25.97	38.26	0.08	13.64	2.74
2024	0.74	7.95	10.56	0.02	3.68	0.77
2025	0.12	1.34	1.66	<0.00	0.57	0.12
Maximum Emissions	2.74	25.97	38.26	0.08	13.64	2.74
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004.
See Attachment A for complete results.

As shown in Table 3, the project construction would exceed SJVAPCD's threshold for NOx. Per mitigation measure MM-AQ-1 of the Final Environmental Impact Report for the project, higher tier construction equipment is required. Table 4 presents the emissions from the project including MM-AQ-1.

Table 4. Estimated Maximum Construction Criteria Air Pollutant Emissions – Mitigated

Year	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
2022	0.36	6.10	8.97	0.02	3.21	0.60
2023	1.59	25.41	38.97	0.08	13.53	2.63
2024	0.38	8.51	11.29	0.02	3.68	0.77
2025	0.06	1.57	1.85	<0.00	0.58	0.12
Maximum Emissions	1.59	25.41	38.97	0.08	13.53	2.63
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District; ISR = Indirect Source Review; <0.00 = less than 0.004.
See Attachment A for complete results.

As shown in Table 4, with mitigation measure MM-AQ-1, the project would exceed the SJVAPCD threshold for NOx.

Operational Emissions

Emissions from the operational phase of the project were estimated using CalEEMod. Operational year 2025 was assumed, as it would be the first year following completion of construction. Table 5 presents the estimated emissions during operation.

Table 5. Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Emissions Source	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Tons per year					
Area	0.01	<0.00	<0.00	<0.00	<0.00	<0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Offroad	0.07	0.57	0.62	<0.00	0.02	0.02
Mobile	0.02	0.02	0.13	<0.00	6.12	0.61
Total	0.10	0.59	0.79	<0.00	6.14	0.63
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SJVAPCD = San Joaquin Valley Air Pollution Control District. <0.00 = less than 0.004
See Attachment A for complete results. Totals may not sum precisely due to rounding.

As shown in Table 5, the project would not exceed SJVAPCD's significance thresholds during operations.

4 Greenhouse Gas Emissions Assessment

4.1 Thresholds of Significance

The project EIR evaluated the impacts of GHG emissions qualitatively against the reduction measures in CARB's 2017 Climate Change Scoping Plan. As such, there were no quantitative thresholds used for GHG emissions in the EIR. Therefore, the emissions from the revised project are included for informational purposes consistent with the EIR.

4.2 Impact Analysis

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SJVAPCD recommends that construction emissions be amortized over the project lifetime (35 years); therefore, the total construction GHG emissions were calculated, amortized over 35 years, and then added to the operational emissions.

CalEEMod was used to estimate GHG emissions during construction. Construction of the project is anticipated to last up to 34 months. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (vendor trucks and worker vehicles). Table 6 presents construction GHG emissions for the project from on-site and off-site emission sources.

Table 6. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2022	2,115.36	0.07	0.14	2,161.21
2023	10,079.94	0.31	0.72	10,311.63
2024	3,289.18	0.10	0.27	3,375,57
2025	552.28	0.01	0.05	567.26
			Total	**16,415.67**
			Annualized emissions over 35 years (metric tons per year)	***469.02***

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Attachment A for complete results.

As shown in Table 6, the estimated total GHG emissions during construction of the project would be approximately 16,416 MT CO_2e. Estimated project-generated construction emissions amortized over 35 years would be approximately 469 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is determined by adding the amortized construction emissions to the operational emissions and comparing them to the operational threshold.

Operational Emissions

CalEEMod was used to estimate potential project generated operational GHG emissions from area sources, energy sources (electricity), mobile sources, off-road equipment, solid waste, and water and wastewater. Emissions from each category are discussed in the following text with respect to the project. For additional details, see Section 2.2 for a discussion of operational emission calculation methodology and assumptions. Operational year 2025 was assumed as the first year of operation. Table 7 shows the estimated operational emissions from the project.

Table 7. Estimated Annual Operation GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	0.01	0.00	0.00	0.01
Energy	162.10	0.03	<0.00	163.71
Offroad	94.40	<0.00	<0.00	94.72
Mobile	30.97	<0.00	<0.00	31.53
Water	2.21	<0.00	<0.00	2.23
			Amortized construction emissions	*469.02*
			Total	**761.22**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Attachment A for complete results.

As shown in Table 7, the estimated total GHG emissions during operation of the project would be approximately 761 MT CO_2e per year, including amortized construction emissions.

5 Conclusions

Criteria air pollutant emissions generated during construction of the project would exceed the SJVAPCD's significance threshold for NOx after mitigation. Operation of the project would not exceed SJVAPCD's significance thresholds.

Estimated total GHG emissions generated during operation, including amortized construction emissions, would be 761 MT CO_2e per year.

Sincerely,

Adam Poll, QEP, LEED AP BD+C
Senior Air Quality Specialist

Cc: Alex Hardy, Dudek;
Erlin Worthington, Dudek
Att: A – Emission Calculations

6 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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Attachment A
Emission Calculations

Scarlet Solar Detailed Report

Table of Contents

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Scarlet Solar
Construction Start Date	9/19/2022
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	22.6
Location	W South Ave, California 93706, USA
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2519
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.24

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

General Light Industry	1.00	1000sqft	4,089	1,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	37.8	31.3	286	510	0.93	10.4	157	167	9.67	22.9	32.6	—	133,405	133,405	3.94	9.39	314	136,616
Mit.	21.1	18.3	283	519	0.93	9.30	157	166	8.52	22.9	31.5	—	133,405	133,405	3.94	9.39	314	136,616
% Reduced	44%	41%	1%	-2%	—	11%	—	1%	12%	—	4%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	33.4	26.4	269	386	0.88	9.34	133	142	8.66	20.2	28.9	—	120,634	120,634	3.76	9.03	7.75	123,426
Mit.	19.2	15.4	265	394	0.88	8.43	133	141	7.73	20.2	27.9	—	120,634	120,634	3.76	9.03	7.75	123,426
% Reduced	42%	42%	2%	-2%	—	10%	—	1%	11%	—	3%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	18.2	15.0	142	210	0.44	5.16	69.6	74.7	4.78	10.3	15.0	—	60,883	60,883	1.88	4.33	62.1	62,283

Mit.	10.1	8.71	139	214	0.44	4.56	69.6	74.1	4.18	10.3	14.4	—	60,883	60,883	1.88	4.33	62.1	62,283
% Reduced	45%	42%	2%	-2%	—	12%	—	1%	13%	—	4%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.32	2.74	26.0	38.3	0.08	0.94	12.7	13.6	0.87	1.87	2.74	—	10,080	10,080	0.31	0.72	10.3	10,312
Mit.	1.84	1.59	25.4	39.0	0.08	0.83	12.7	13.5	0.76	1.87	2.63	—	10,080	10,080	0.31	0.72	10.3	10,312
% Reduced	45%	42%	2%	-2%	—	12%	—	1%	13%	—	4%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	6.70	5.50	48.4	69.2	0.12	2.09	33.1	35.2	1.93	3.98	5.91	—	16,015	16,015	0.51	0.99	30.4	16,351
2023	37.8	31.3	286	510	0.93	10.4	157	167	9.67	22.9	32.6	—	133,405	133,405	3.94	9.39	314	136,616
2024	10.7	8.67	91.1	117	0.27	3.47	39.5	43.0	3.22	5.42	8.65	—	38,905	38,905	1.11	3.29	69.5	39,982
2025	3.74	3.03	33.4	44.1	0.11	1.19	14.0	15.2	1.11	1.96	3.07	—	15,484	15,484	0.40	1.33	26.6	15,916
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	27.7	23.0	219	290	0.56	8.35	109	117	7.72	15.0	22.7	—	77,445	77,445	2.52	5.11	4.72	79,037
2023	33.4	26.4	269	386	0.88	9.34	133	142	8.66	20.2	28.9	—	120,634	120,634	3.76	9.03	7.75	123,426
2024	21.1	17.1	176	234	0.47	6.06	91.0	97.0	5.62	13.3	18.9	—	78,131	78,131	1.79	6.07	4.56	79,988
2025	3.72	3.00	34.1	41.3	0.11	1.19	14.0	15.2	1.11	1.96	3.07	—	15,307	15,307	0.40	1.33	0.69	15,712
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	4.52	3.74	35.6	48.4	0.09	1.37	16.5	17.9	1.27	2.29	3.55	—	12,777	12,777	0.40	0.85	12.5	13,054

2023	18.2	15.0	142	210	0.44	5.16	69.6	74.7	4.78	10.3	15.0	—	60,883	60,883	1.88	4.33	62.1	62,283
2024	5.04	4.08	43.5	57.9	0.13	1.56	18.6	20.2	1.44	2.77	4.22	—	19,867	19,867	0.58	1.64	17.6	20,389
2025	0.81	0.65	7.35	9.12	0.02	0.26	2.88	3.14	0.24	0.41	0.65	—	3,336	3,336	0.09	0.29	2.50	3,426
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.82	0.68	6.50	8.82	0.02	0.25	3.02	3.27	0.23	0.42	0.65	—	2,115	2,115	0.07	0.14	2.07	2,161
2023	3.32	2.74	26.0	38.3	0.08	0.94	12.7	13.6	0.87	1.87	2.74	—	10,080	10,080	0.31	0.72	10.3	10,312
2024	0.92	0.74	7.95	10.6	0.02	0.28	3.40	3.68	0.26	0.51	0.77	—	3,289	3,289	0.10	0.27	2.91	3,376
2025	0.15	0.12	1.34	1.66	< 0.005	0.05	0.53	0.57	0.04	0.07	0.12	—	552	552	0.01	0.05	0.41	567

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	2.54	2.19	48.4	72.2	0.12	1.56	33.1	34.7	1.43	3.98	5.40	—	16,015	16,015	0.51	0.99	30.4	16,351
2023	21.1	18.3	283	519	0.93	9.30	157	166	8.52	22.9	31.5	—	133,405	133,405	3.94	9.39	314	136,616
2024	4.51	3.87	98.7	127	0.27	3.37	39.5	42.8	3.10	5.42	8.52	—	38,905	38,905	1.11	3.29	69.5	39,982
2025	1.66	1.44	39.1	48.7	0.11	1.36	14.0	15.3	1.25	1.96	3.21	—	15,484	15,484	0.40	1.33	26.6	15,916
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	13.8	12.0	204	294	0.56	6.55	109	115	5.99	15.0	20.9	—	77,445	77,445	2.52	5.11	4.72	79,037
2023	19.2	15.4	265	394	0.88	8.43	133	141	7.73	20.2	27.9	—	120,634	120,634	3.76	9.03	7.75	123,426
2024	11.8	9.93	180	243	0.47	5.84	91.0	96.8	5.35	13.3	18.6	—	78,131	78,131	1.79	6.07	4.56	79,988
2025	1.64	1.41	39.8	46.0	0.11	1.36	14.0	15.3	1.25	1.96	3.21	—	15,307	15,307	0.40	1.33	0.69	15,712
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	2.24	1.95	33.4	49.2	0.09	1.08	16.5	17.6	0.99	2.29	3.28	—	12,777	12,777	0.40	0.85	12.5	13,054

2023	10.1	8.71	139	214	0.44	4.56	69.6	74.1	4.18	10.3	14.4	—	60,883	60,883	1.88	4.33	62.1	62,283
2024	2.47	2.10	46.6	61.9	0.13	1.55	18.6	20.2	1.42	2.77	4.20	—	19,867	19,867	0.58	1.64	17.6	20,389
2025	0.36	0.31	8.59	10.1	0.02	0.30	2.88	3.18	0.27	0.41	0.68	—	3,336	3,336	0.09	0.29	2.50	3,426
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2022	0.41	0.36	6.10	8.97	0.02	0.20	3.02	3.21	0.18	0.42	0.60	—	2,115	2,115	0.07	0.14	2.07	2,161
2023	1.84	1.59	25.4	39.0	0.08	0.83	12.7	13.5	0.76	1.87	2.63	—	10,080	10,080	0.31	0.72	10.3	10,312
2024	0.45	0.38	8.51	11.3	0.02	0.28	3.40	3.68	0.26	0.51	0.77	—	3,289	3,289	0.10	0.27	2.91	3,376
2025	0.07	0.06	1.57	1.85	< 0.005	0.05	0.53	0.58	0.05	0.07	0.12	—	552	552	0.01	0.05	0.41	567

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.31	1.94	15.0	17.5	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,935	3,935	0.28	0.05	0.74	3,958
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.29	1.92	15.0	17.4	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,918	3,918	0.28	0.05	0.02	3,940
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.56	0.48	3.21	4.15	0.01	0.13	33.5	33.6	0.12	3.36	3.47	0.00	1,750	1,750	0.19	0.03	0.32	1,765
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.09	0.59	0.76	< 0.005	0.02	6.12	6.14	0.02	0.61	0.63	0.00	290	290	0.03	0.01	0.05	292

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.10	0.10	0.83	< 0.005	< 0.005	35.7	35.7	< 0.005	3.58	3.58	—	199	199	0.01	0.01	0.74	203
Area	0.03	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.31	1.94	15.0	17.5	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,935	3,935	0.28	0.05	0.74	3,958
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.11	0.70	< 0.005	< 0.005	35.7	35.7	< 0.005	3.58	3.58	—	182	182	0.01	0.01	0.02	186
Area	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.29	1.92	15.0	17.4	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,918	3,918	0.28	0.05	0.02	3,940
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.10	0.71	< 0.005	< 0.005	33.5	33.5	< 0.005	3.36	3.36	—	187	187	0.01	0.01	0.32	190
Area	0.03	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Off-Road	0.44	0.37	3.11	3.42	0.01	0.12	—	0.12	0.11	—	0.11	—	570	570	0.02	< 0.005	—	572
Total	0.56	0.48	3.21	4.15	0.01	0.13	33.5	33.6	0.12	3.36	3.47	0.00	1,750	1,750	0.19	0.03	0.32	1,765
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.02	0.13	< 0.005	< 0.005	6.12	6.12	< 0.005	0.61	0.61	—	31.0	31.0	< 0.005	< 0.005	0.05	31.5
Area	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	162	162	0.03	< 0.005	—	164
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7
Total	0.10	0.09	0.59	0.76	< 0.005	0.02	6.12	6.14	0.02	0.61	0.63	0.00	290	290	0.03	0.01	0.05	292

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.11	0.10	0.10	0.83	< 0.005	< 0.005	35.7	35.7	< 0.005	3.58	3.58	—	199	199	0.01	0.01	0.74	203
Area	0.03	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.31	1.94	15.0	17.5	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,935	3,935	0.28	0.05	0.74	3,958
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.11	0.70	< 0.005	< 0.005	35.7	35.7	< 0.005	3.58	3.58	—	182	182	0.01	0.01	0.02	186
Area	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Total	2.29	1.92	15.0	17.4	0.03	0.58	35.7	36.3	0.53	3.58	4.11	0.00	3,918	3,918	0.28	0.05	0.02	3,940
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.10	0.71	< 0.005	< 0.005	33.5	33.5	< 0.005	3.36	3.36	—	187	187	0.01	0.01	0.32	190
Area	0.03	0.02	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	979	979	0.16	0.02	—	989
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.44	0.37	3.11	3.42	0.01	0.12	—	0.12	0.11	—	0.11	—	570	570	0.02	< 0.005	—	572
Total	0.56	0.48	3.21	4.15	0.01	0.13	33.5	33.6	0.12	3.36	3.47	0.00	1,750	1,750	0.19	0.03	0.32	1,765
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02	0.02	0.02	0.13	< 0.005	< 0.005	6.12	6.12	< 0.005	0.61	0.61	—	31.0	31.0	< 0.005	< 0.005	0.05	31.5
Area	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	162	162	0.03	< 0.005	—	164
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7
Total	0.10	0.09	0.59	0.76	< 0.005	0.02	6.12	6.14	0.02	0.61	0.63	0.00	290	290	0.03	0.01	0.05	292

3. Construction Emissions Details

3.1. Scarlet I: Site Preparation (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	2.89	23.7	26.8	0.04	1.26	—	1.26	1.16	—	1.16	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.03	0.69	0.34	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	255	255	0.01	0.04	0.48	268
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.44	2.89	23.7	26.8	0.04	1.26	—	1.26	1.16	—	1.16	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.02	0.73	0.35	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	256	256	0.01	0.04	0.01	268
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.36	2.93	3.30	< 0.005	0.16	—	0.16	0.14	—	0.14	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	2.40	2.40	< 0.005	0.24	0.24	—	31.5	31.5	< 0.005	0.01	0.03	33.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.07	0.53	0.60	< 0.005	0.03	—	0.03	0.03	—	0.03	—	81.2	81.2	< 0.005	< 0.005	—	81.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.44	0.44	< 0.005	0.04	0.04	—	5.21	5.21	< 0.005	< 0.005	< 0.005	5.47
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.49	0.92	15.4	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,453	2,453	0.08	0.07	11.4	2,487
Vendor	0.03	0.02	0.80	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	1.72	664
Hauling	0.03	0.02	1.08	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	1.98	869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.45	1.12	10.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,163	2,163	0.08	0.07	0.30	2,187
Vendor	0.03	0.02	0.86	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	0.04	662
Hauling	0.03	0.02	1.15	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	0.05	867
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	0.01	0.01	0.61	280
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.2	78.2	< 0.005	0.01	0.09	81.7
Hauling	< 0.005	< 0.005	0.14	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.02	0.11	107
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.10	46.4
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.5
Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.02	17.7

3.2. Scarlet I: Site Preparation (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.03	0.69	0.34	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	255	255	0.01	0.04	0.48	268
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,993
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.02	0.73	0.35	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	256	256	0.01	0.04	0.01	268
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.80	3.43	< 0.005	0.10	—	0.10	0.09	—	0.09	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	2.40	2.40	< 0.005	0.24	0.24	—	31.5	31.5	< 0.005	0.01	0.03	33.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.51	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	81.2	81.2	< 0.005	< 0.005	—	81.5
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.44	0.44	< 0.005	0.04	0.04	—	5.21	5.21	< 0.005	< 0.005	< 0.005	5.47
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.63	0.49	0.92	15.4	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,453	2,453	0.08	0.07	11.4	2,487
Vendor	0.03	0.02	0.80	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	1.72	664
Hauling	0.03	0.02	1.08	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	1.98	869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.45	1.12	10.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,163	2,163	0.08	0.07	0.30	2,187
Vendor	0.03	0.02	0.86	0.20	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	634	634	0.01	0.09	0.04	662
Hauling	0.03	0.02	1.15	0.15	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	827	827	0.02	0.13	0.05	867
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.12	1.39	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	277	277	0.01	0.01	0.61	280
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.2	78.2	< 0.005	0.01	0.09	81.7
Hauling	< 0.005	< 0.005	0.14	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	102	102	< 0.005	0.02	0.11	107
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	45.8	45.8	< 0.005	< 0.005	0.10	46.4
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.5

Hauling	< 0.005	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.02	17.7

3.3. Scarlet II: Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.61	21.7	26.4	0.04	1.07	—	1.07	0.98	—	0.98	—	3,980	3,980	0.16	0.03	—	3,994
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.03	0.64	0.35	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	250	250	0.01	0.04	0.48	263
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.97	3.62	0.01	0.15	—	0.15	0.13	—	0.13	—	545	545	0.02	< 0.005	—	547
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.05	< 0.005	< 0.005	2.67	2.67	< 0.005	0.27	0.27	—	34.3	34.3	< 0.005	0.01	0.03	36.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.54	0.66	< 0.005	0.03	—	0.03	0.02	—	0.02	—	90.3	90.3	< 0.005	< 0.005	—	90.6

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05	—	5.69	5.69	< 0.005	< 0.005	< 0.005	5.96
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54	0.47	0.78	14.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,403	2,403	0.08	0.07	10.6	2,437
Vendor	0.03	0.02	0.65	0.17	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	626	626	0.01	0.09	1.72	656
Hauling	0.03	0.01	0.88	0.14	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	816	816	0.02	0.13	1.97	857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.13	1.40	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	302	302	0.01	0.01	0.62	305
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	85.8	85.8	< 0.005	0.01	0.10	89.8
Hauling	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	< 0.005	0.02	0.12	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.9	49.9	< 0.005	< 0.005	0.10	50.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.02	19.4

3.4. Scarlet II: Site Preparation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.66	22.7	27.8	0.04	0.84	—	0.84	0.77	—	0.77	—	3,980	3,980	0.16	0.03	—	3,994
Dust From Material Movement	—	—	—	—	—	—	0.41	0.41	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.04	0.03	0.64	0.35	< 0.005	< 0.005	20.8	20.8	< 0.005	2.08	2.08	—	250	250	0.01	0.04	0.48	263
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	3.11	3.81	0.01	0.12	—	0.12	0.11	—	0.11	—	545	545	0.02	< 0.005	—	547
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.05	< 0.005	< 0.005	2.67	2.67	< 0.005	0.27	0.27	—	34.3	34.3	< 0.005	0.01	0.03	36.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.57	0.70	< 0.005	0.02	—	0.02	0.02	—	0.02	—	90.3	90.3	< 0.005	< 0.005	—	90.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.49	0.49	< 0.005	0.05	0.05	—	5.69	5.69	< 0.005	< 0.005	< 0.005	5.96
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.54	0.47	0.78	14.0	0.00	0.00	2.12	2.12	0.00	0.50	0.50	—	2,403	2,403	0.08	0.07	10.6	2,437
Vendor	0.03	0.02	0.65	0.17	< 0.005	0.01	0.17	0.18	0.01	0.05	0.06	—	626	626	0.01	0.09	1.72	656
Hauling	0.03	0.01	0.88	0.14	0.01	0.02	0.21	0.23	0.02	0.06	0.07	—	816	816	0.02	0.13	1.97	857
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.13	1.40	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	302	302	0.01	0.01	0.62	305
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	85.8	85.8	< 0.005	0.01	0.10	89.8
Hauling	< 0.005	< 0.005	0.13	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	112	112	< 0.005	0.02	0.12	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.9	49.9	< 0.005	< 0.005	0.10	50.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.9
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.5	18.5	< 0.005	< 0.005	0.02	19.4

3.5. Scarlet II: Energy Storage System Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.23	1.87	15.8	17.7	0.03	0.75	—	0.75	0.69	—	0.69	—	2,745	2,745	0.11	0.02	—	2,755

Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.37	0.20	< 0.005	< 0.005	11.9	11.9	< 0.005	1.19	1.19	—	143	143	0.01	0.02	0.27	150
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.78	1.99	< 0.005	0.08	—	0.08	0.08	—	0.08	—	308	308	0.01	< 0.005	—	309
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	1.25	1.25	< 0.005	0.13	0.13	—	16.1	16.1	< 0.005	< 0.005	0.01	16.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.32	0.36	< 0.005	0.02	—	0.02	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	2.66	2.66	< 0.005	< 0.005	< 0.005	2.79
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.06	0.04	1.62	0.43	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,566	1,566	0.02	0.23	4.29	1,641
Hauling	0.06	0.02	1.77	0.28	0.02	0.03	0.43	0.46	0.03	0.12	0.15	—	1,632	1,632	0.03	0.25	3.94	1,713

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Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.77	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.34	167
Vendor	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.21	184
Hauling	0.01	< 0.005	0.21	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.19	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.06	27.6
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.03	30.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.4	30.4	< 0.005	< 0.005	0.03	31.8

3.6. Scarlet II: Energy Storage System Site Preparation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.58	15.7	18.8	0.03	0.59	—	0.59	0.54	—	0.54	—	2,745	2,745	0.11	0.02	—	2,755
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.37	0.20	< 0.005	< 0.005	11.9	11.9	< 0.005	1.19	1.19	—	143	143	0.01	0.02	0.27	150
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.77	2.11	< 0.005	0.07	—	0.07	0.06	—	0.06	—	308	308	0.01	< 0.005	—	309
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	1.25	1.25	< 0.005	0.13	0.13	—	16.1	16.1	< 0.005	< 0.005	0.01	16.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.32	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.23	0.23	< 0.005	0.02	0.02	—	2.66	2.66	< 0.005	< 0.005	< 0.005	2.79
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.06	0.04	1.62	0.43	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,566	1,566	0.02	0.23	4.29	1,641
Hauling	0.06	0.02	1.77	0.28	0.02	0.03	0.43	0.46	0.03	0.12	0.15	—	1,632	1,632	0.03	0.25	3.94	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.77	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	165	165	0.01	0.01	0.34	167
Vendor	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	176	176	< 0.005	0.03	0.21	184

Hauling	0.01	< 0.005	0.21	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	183	183	< 0.005	0.03	0.19	192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.3	27.3	< 0.005	< 0.005	0.06	27.6
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.1	29.1	< 0.005	< 0.005	0.03	30.5
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.4	30.4	< 0.005	< 0.005	0.03	31.8

3.7. Scarlet III: Energy Storage System Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.09	1.76	14.9	17.6	0.03	0.68	—	0.68	0.63	—	0.63	—	2,747	2,747	0.11	0.02	—	2,756
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.27	0.15	< 0.005	< 0.005	8.91	8.91	< 0.005	0.89	0.89	—	105	105	< 0.005	0.02	0.21	111
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.68	1.98	< 0.005	0.08	—	0.08	0.07	—	0.07	—	309	309	0.01	< 0.005	—	310
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	11.9	11.9	< 0.005	< 0.005	0.01	12.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	0.36	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.3
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.96	1.96	< 0.005	< 0.005	< 0.005	2.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.06	0.03	1.53	0.38	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,543	1,543	0.02	0.22	4.29	1,614
Hauling	0.06	0.02	1.69	0.26	0.01	0.03	0.43	0.46	0.03	0.12	0.15	—	1,605	1,605	0.03	0.25	3.94	1,686
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.06	0.70	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	0.01	0.01	0.31	164
Vendor	0.01	< 0.005	0.18	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.02	0.21	181
Hauling	0.01	< 0.005	0.20	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	180	180	< 0.005	0.03	0.19	189
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.7	26.7	< 0.005	< 0.005	0.05	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.03	31.3

3.8. Scarlet III: Energy Storage System Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.61	0.58	15.7	18.8	0.03	0.59	—	0.59	0.54	—	0.54	—	2,747	2,747	0.11	0.02	—	2,756
Dust From Material Movement	—	—	—	—	—	—	0.37	0.37	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.27	0.15	< 0.005	< 0.005	8.91	8.91	< 0.005	0.89	0.89	—	105	105	< 0.005	0.02	0.21	111
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.77	2.11	< 0.005	0.07	—	0.07	0.06	—	0.06	—	309	309	0.01	< 0.005	—	310
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	11.9	11.9	< 0.005	< 0.005	0.01	12.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.32	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	51.1	51.1	< 0.005	< 0.005	—	51.3

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.17	0.17	< 0.005	0.02	0.02	—	1.96	1.96	< 0.005	< 0.005	< 0.005	2.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.06	0.03	1.53	0.38	0.01	0.02	0.42	0.44	0.02	0.12	0.14	—	1,543	1,543	0.02	0.22	4.29	1,614
Hauling	0.06	0.02	1.69	0.26	0.01	0.03	0.43	0.46	0.03	0.12	0.15	—	1,605	1,605	0.03	0.25	3.94	1,686
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.06	0.70	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	162	162	0.01	0.01	0.31	164
Vendor	0.01	< 0.005	0.18	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	173	173	< 0.005	0.02	0.21	181
Hauling	0.01	< 0.005	0.20	0.03	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	180	180	< 0.005	0.03	0.19	189
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.7	26.7	< 0.005	< 0.005	0.05	27.1
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.9	29.9	< 0.005	< 0.005	0.03	31.3

3.9. Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.03	1.71	15.9	17.3	0.03	0.74	—	0.74	0.68	—	0.68	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.25	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	91.1	91.1	< 0.005	0.01	0.17	95.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.03	1.71	15.9	17.3	0.03	0.74	—	0.74	0.68	—	0.68	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.26	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	91.3	91.3	< 0.005	0.01	< 0.005	95.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	4.90	5.31	0.01	0.23	—	0.23	0.21	—	0.21	—	933	933	0.04	0.01	—	936
Onsite truck	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	2.14	2.14	< 0.005	0.21	0.21	—	28.0	28.0	< 0.005	< 0.005	0.02	29.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.89	0.97	< 0.005	0.04	—	0.04	0.04	—	0.04	—	154	154	0.01	< 0.005	—	155
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	4.64	4.64	< 0.005	< 0.005	< 0.005	4.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.26	0.49	8.21	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,308	1,308	0.04	0.04	6.10	1,327
Vendor	0.05	0.03	1.20	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	2.58	996
Hauling	0.10	0.05	3.24	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	5.94	2,606

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.60	5.34	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,154	1,154	0.05	0.04	0.16	1,166
Vendor	0.05	0.03	1.29	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	0.07	993
Hauling	0.10	0.05	3.46	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	0.15	2,601
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.16	1.85	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	368	368	0.01	0.01	0.81	373
Vendor	0.02	0.01	0.39	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	292	292	< 0.005	0.04	0.34	305
Hauling	0.03	0.02	1.04	0.14	0.01	0.01	0.19	0.21	0.01	0.05	0.07	—	762	762	0.01	0.12	0.79	800
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.13	61.7
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.4	48.4	< 0.005	0.01	0.06	50.6
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.13	132

3.10. Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.63	—	0.63	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.25	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	91.1	91.1	< 0.005	0.01	0.17	95.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.63	—	0.63	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.26	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	91.3	91.3	< 0.005	0.01	< 0.005	95.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.19	5.24	5.89	0.01	0.19	—	0.19	0.17	—	0.17	—	933	933	0.04	0.01	—	936
Onsite truck	< 0.005	< 0.005	0.08	0.04	< 0.005	< 0.005	2.14	2.14	< 0.005	0.21	0.21	—	28.0	28.0	< 0.005	< 0.005	0.02	29.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.96	1.08	< 0.005	0.04	—	0.04	0.03	—	0.03	—	154	154	0.01	< 0.005	—	155
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	4.64	4.64	< 0.005	< 0.005	< 0.005	4.87
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.26	0.49	8.21	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,308	1,308	0.04	0.04	6.10	1,327
Vendor	0.05	0.03	1.20	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	2.58	996
Hauling	0.10	0.05	3.24	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	5.94	2,606
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.60	5.34	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,154	1,154	0.05	0.04	0.16	1,166
Vendor	0.05	0.03	1.29	0.30	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	951	951	0.01	0.14	0.07	993
Hauling	0.10	0.05	3.46	0.46	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,481	2,481	0.05	0.40	0.15	2,601
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.16	1.85	0.00	0.00	0.34	0.34	0.00	0.08	0.08	—	368	368	0.01	0.01	0.81	373
Vendor	0.02	0.01	0.39	0.09	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	292	292	< 0.005	0.04	0.34	305

Hauling	0.03	0.02	1.04	0.14	0.01	0.01	0.19	0.21	0.01	0.05	0.07	—	762	762	0.01	0.12	0.79	800
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.34	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.9	60.9	< 0.005	< 0.005	0.13	61.7
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.4	48.4	< 0.005	0.01	0.06	50.6
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	126	126	< 0.005	0.02	0.13	132

3.11. Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	1.58	14.7	16.8	0.03	0.64	—	0.64	0.59	—	0.59	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.23	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	89.4	89.4	< 0.005	0.01	0.17	93.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.88	1.58	14.7	16.8	0.03	0.64	—	0.64	0.59	—	0.59	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.24	0.13	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	89.8	89.8	< 0.005	0.01	< 0.005	94.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.35	4.96	0.01	0.19	—	0.19	0.17	—	0.17	—	897	897	0.04	0.01	—	900
Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.06	2.06	< 0.005	0.21	0.21	—	26.5	26.5	< 0.005	< 0.005	0.02	27.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.10	0.09	0.79	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	148	148	0.01	< 0.005	—	149
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	4.38	4.38	< 0.005	< 0.005	< 0.005	4.59
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.42	7.48	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,282	1,282	0.04	0.04	5.65	1,300
Vendor	0.04	0.02	0.97	0.26	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	2.57	984
Hauling	0.08	0.04	2.65	0.42	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	5.92	2,570
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.19	0.53	4.85	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,131	1,131	0.04	0.04	0.15	1,144
Vendor	0.04	0.02	1.04	0.25	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	0.07	982
Hauling	0.08	0.03	2.82	0.41	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	0.15	2,564
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.14	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	347	347	0.01	0.01	0.72	351
Vendor	0.01	0.01	0.30	0.07	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	< 0.005	0.04	0.33	290
Hauling	0.02	0.01	0.82	0.12	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	724	724	0.01	0.11	0.76	758
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.03	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.4	57.4	< 0.005	< 0.005	0.12	58.2
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.0	46.0	< 0.005	0.01	0.05	48.1
Hauling	< 0.005	< 0.005	0.15	0.02	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	120	120	< 0.005	0.02	0.13	126

3.12. Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.62	—	0.62	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.23	0.12	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	89.4	89.4	< 0.005	0.01	0.17	93.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	0.63	17.0	19.2	0.03	0.62	—	0.62	0.57	—	0.57	—	3,035	3,035	0.12	0.02	—	3,046
Onsite truck	0.01	0.01	0.24	0.13	< 0.005	< 0.005	7.42	7.42	< 0.005	0.74	0.74	—	89.8	89.8	< 0.005	0.01	< 0.005	94.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.19	5.04	5.67	0.01	0.18	—	0.18	0.17	—	0.17	—	897	897	0.04	0.01	—	900
Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.06	2.06	< 0.005	0.21	0.21	—	26.5	26.5	< 0.005	< 0.005	0.02	27.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.92	1.03	< 0.005	0.03	—	0.03	0.03	—	0.03	—	148	148	0.01	< 0.005	—	149
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	—	4.38	4.38	< 0.005	< 0.005	< 0.005	4.59
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.42	7.48	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,282	1,282	0.04	0.04	5.65	1,300
Vendor	0.04	0.02	0.97	0.26	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	2.57	984
Hauling	0.08	0.04	2.65	0.42	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	5.92	2,570

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.19	0.53	4.85	0.00	0.00	1.13	1.13	0.00	0.26	0.26	—	1,131	1,131	0.04	0.04	0.15	1,144
Vendor	0.04	0.02	1.04	0.25	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	940	940	0.01	0.14	0.07	982
Hauling	0.08	0.03	2.82	0.41	0.03	0.05	0.64	0.69	0.05	0.18	0.22	—	2,449	2,449	0.05	0.38	0.15	2,564
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.14	1.61	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	347	347	0.01	0.01	0.72	351
Vendor	0.01	0.01	0.30	0.07	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	278	278	< 0.005	0.04	0.33	290
Hauling	0.02	0.01	0.82	0.12	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	724	724	0.01	0.11	0.76	758
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.03	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	57.4	57.4	< 0.005	< 0.005	0.12	58.2
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.0	46.0	< 0.005	0.01	0.05	48.1
Hauling	< 0.005	< 0.005	0.15	0.02	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	120	120	< 0.005	0.02	0.13	126

3.13. Scarlet I: Solar Facility - PV Module System Installation (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.61	5.55	60.4	71.9	0.11	2.65	—	2.65	2.43	—	2.43	—	11,222	11,222	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.78	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	274	274	0.01	0.04	0.01	287

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	8.75	10.4	0.02	0.38	—	0.38	0.35	—	0.35	—	1,625	1,625	0.07	0.01	—	1,631
Onsite truck	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	3.03	3.03	< 0.005	0.30	0.30	—	39.6	39.6	< 0.005	0.01	0.03	41.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.15	1.60	1.90	< 0.005	0.07	—	0.07	0.06	—	0.06	—	269	269	0.01	< 0.005	—	270
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.55	0.55	< 0.005	0.06	0.06	—	6.56	6.56	< 0.005	< 0.005	0.01	6.88
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.82	3.27	8.24	73.5	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,862	15,862	0.62	0.52	2.17	16,036
Vendor	0.25	0.15	6.45	1.49	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,754	4,754	0.07	0.70	0.33	4,965
Hauling	0.39	0.20	13.8	1.85	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,924	9,924	0.19	1.59	0.62	10,403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.48	1.05	12.0	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,385	2,385	0.09	0.08	5.23	2,415
Vendor	0.04	0.02	0.91	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	688	688	0.01	0.10	0.81	720
Hauling	0.06	0.03	1.97	0.27	0.02	0.03	0.37	0.39	0.03	0.10	0.13	—	1,437	1,437	0.03	0.23	1.49	1,508
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.19	2.19	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.01	0.87	400
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.13	119
Hauling	0.01	0.01	0.36	0.05	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	< 0.005	0.04	0.25	250

3.14. Scarlet I: Solar Facility - PV Module System Installation (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.11	—	2.11	—	11,222	11,222	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.78	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	274	274	0.01	0.04	0.01	287
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.33	8.44	10.7	0.02	0.34	—	0.34	0.31	—	0.31	—	1,625	1,625	0.07	0.01	—	1,631
Onsite truck	0.01	< 0.005	0.11	0.05	< 0.005	< 0.005	3.03	3.03	< 0.005	0.30	0.30	—	39.6	39.6	< 0.005	0.01	0.03	41.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.54	1.95	< 0.005	0.06	—	0.06	0.06	—	0.06	—	269	269	0.01	< 0.005	—	270
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.55	0.55	< 0.005	0.06	0.06	—	6.56	6.56	< 0.005	< 0.005	0.01	6.88
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	3.82	3.27	8.24	73.5	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,862	15,862	0.62	0.52	2.17	16,036
Vendor	0.25	0.15	6.45	1.49	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,754	4,754	0.07	0.70	0.33	4,965
Hauling	0.39	0.20	13.8	1.85	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,924	9,924	0.19	1.59	0.62	10,403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.48	1.05	12.0	0.00	0.00	2.22	2.22	0.00	0.52	0.52	—	2,385	2,385	0.09	0.08	5.23	2,415
Vendor	0.04	0.02	0.91	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	688	688	0.01	0.10	0.81	720
Hauling	0.06	0.03	1.97	0.27	0.02	0.03	0.37	0.39	0.03	0.10	0.13	—	1,437	1,437	0.03	0.23	1.49	1,508
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.19	2.19	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	395	395	0.01	0.01	0.87	400
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	114	114	< 0.005	0.02	0.13	119
Hauling	0.01	0.01	0.36	0.05	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	238	238	< 0.005	0.04	0.25	250

3.15. Scarlet I: Solar Facility - PV Module System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.68	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	268	268	0.01	0.04	0.51	281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261

Onsite truck	0.04	0.02	0.73	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	269	269	0.01	0.04	0.01	282
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.40	2.85	30.8	38.6	0.06	1.30	—	1.30	1.19	—	1.19	—	6,084	6,084	0.25	0.05	—	6,104
Onsite truck	0.02	0.01	0.38	0.20	< 0.005	< 0.005	11.3	11.3	< 0.005	1.13	1.13	—	146	146	0.01	0.02	0.12	153
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.62	7.04	0.01	0.24	—	0.24	0.22	—	0.22	—	1,007	1,007	0.04	0.01	—	1,011
Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.07	2.07	< 0.005	0.21	0.21	—	24.1	24.1	< 0.005	< 0.005	0.02	25.3
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.19	0.12	4.85	1.28	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,698	4,698	0.07	0.70	12.9	4,922
Hauling	0.33	0.14	10.6	1.67	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,795	9,795	0.19	1.53	23.7	10,279
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.19	0.11	5.19	1.26	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,699	4,699	0.07	0.70	0.33	4,910
Hauling	0.33	0.14	11.3	1.62	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,796	9,796	0.19	1.53	0.62	10,257
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.03	1.74	3.63	40.7	0.00	0.00	8.30	8.30	0.00	1.94	1.94	—	8,751	8,751	0.32	0.28	18.1	8,862
Vendor	0.10	0.06	2.76	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,547	2,547	0.04	0.38	3.02	2,664
Hauling	0.18	0.08	6.01	0.88	0.07	0.10	1.37	1.47	0.10	0.38	0.47	—	5,310	5,310	0.10	0.83	5.57	5,565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.37	0.32	0.66	7.43	0.00	0.00	1.52	1.52	0.00	0.35	0.35	—	1,449	1,449	0.05	0.05	3.00	1,467
Vendor	0.02	0.01	0.50	0.12	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	422	422	0.01	0.06	0.50	441
Hauling	0.03	0.01	1.10	0.16	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	879	879	0.02	0.14	0.92	921

3.16. Scarlet I: Solar Facility - PV Module System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.68	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	268	268	0.01	0.04	0.51	281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.02	0.73	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	269	269	0.01	0.04	0.01	282
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.23	31.6	39.9	0.06	1.26	—	1.26	1.14	—	1.14	—	6,084	6,084	0.25	0.05	—	6,104
Onsite truck	0.02	0.01	0.38	0.20	< 0.005	< 0.005	11.3	11.3	< 0.005	1.13	1.13	—	146	146	0.01	0.02	0.12	153
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.76	7.28	0.01	0.23	—	0.23	0.21	—	0.21	—	1,007	1,007	0.04	0.01	—	1,011

Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.07	2.07	< 0.005	0.21	0.21	—	24.1	24.1	< 0.005	< 0.005	0.02	25.3
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.19	0.12	4.85	1.28	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,698	4,698	0.07	0.70	12.9	4,922
Hauling	0.33	0.14	10.6	1.67	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,795	9,795	0.19	1.53	23.7	10,279
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.19	0.11	5.19	1.26	0.03	0.07	1.26	1.32	0.07	0.35	0.41	—	4,699	4,699	0.07	0.70	0.33	4,910
Hauling	0.33	0.14	11.3	1.62	0.12	0.18	2.56	2.74	0.18	0.70	0.88	—	9,796	9,796	0.19	1.53	0.62	10,257
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.03	1.74	3.63	40.7	0.00	0.00	8.30	8.30	0.00	1.94	1.94	—	8,751	8,751	0.32	0.28	18.1	8,862
Vendor	0.10	0.06	2.76	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,547	2,547	0.04	0.38	3.02	2,664
Hauling	0.18	0.08	6.01	0.88	0.07	0.10	1.37	1.47	0.10	0.38	0.47	—	5,310	5,310	0.10	0.83	5.57	5,565
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.37	0.32	0.66	7.43	0.00	0.00	1.52	1.52	0.00	0.35	0.35	—	1,449	1,449	0.05	0.05	3.00	1,467
Vendor	0.02	0.01	0.50	0.12	< 0.005	0.01	0.12	0.13	0.01	0.03	0.04	—	422	422	0.01	0.06	0.50	441
Hauling	0.03	0.01	1.10	0.16	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	879	879	0.02	0.14	0.92	921

3.17. Scarlet I: Solar Facility - Substation and Electrical System Installation (2022) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	9.07	7.59	68.9	64.4	0.11	3.25	—	3.25	2.99	—	2.99	—	10,551	10,551	0.43	0.09	—	10,587
Onsite truck	0.05	0.03	1.04	0.50	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	365	365	0.01	0.06	0.02	383
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.47	1.23	11.2	10.5	0.02	0.53	—	0.53	0.49	—	0.49	—	1,714	1,714	0.07	0.01	—	1,720
Onsite truck	0.01	0.01	0.17	0.08	< 0.005	< 0.005	4.52	4.53	< 0.005	0.45	0.45	—	59.2	59.2	< 0.005	0.01	0.05	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.22	2.04	1.91	< 0.005	0.10	—	0.10	0.09	—	0.09	—	284	284	0.01	< 0.005	—	285
Onsite truck	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.83	0.83	< 0.005	0.08	0.08	—	9.81	9.81	< 0.005	< 0.005	0.01	10.3
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.59	1.50	13.4	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,884	2,884	0.11	0.10	0.39	2,916
Vendor	0.10	0.06	2.58	0.60	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,902	1,902	0.03	0.28	0.13	1,986
Hauling	0.16	0.08	5.77	0.77	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,135	4,135	0.08	0.66	0.26	4,334
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.11	0.10	0.21	2.45	0.00	0.00	0.45	0.45	0.00	0.11	0.11	—	486	486	0.02	0.02	1.07	492
Vendor	0.02	0.01	0.41	0.10	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	309	309	< 0.005	0.05	0.36	323
Hauling	0.03	0.01	0.92	0.13	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	672	672	0.01	0.11	0.69	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.5	80.5	< 0.005	< 0.005	0.18	81.5
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.1	51.1	< 0.005	0.01	0.06	53.5
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	117

3.18. Scarlet I: Solar Facility - Substation and Electrical System Installation (2022) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.57	3.21	55.9	63.5	0.11	2.31	—	2.31	2.09	—	2.09	—	10,551	10,551	0.43	0.09	—	10,587
Onsite truck	0.05	0.03	1.04	0.50	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	365	365	0.01	0.06	0.02	383
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.58	0.52	9.07	10.3	0.02	0.37	—	0.37	0.34	—	0.34	—	1,714	1,714	0.07	0.01	—	1,720
Onsite truck	0.01	0.01	0.17	0.08	< 0.005	< 0.005	4.52	4.53	< 0.005	0.45	0.45	—	59.2	59.2	< 0.005	0.01	0.05	62.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	1.66	1.88	< 0.005	0.07	—	0.07	0.06	—	0.06	—	284	284	0.01	< 0.005	—	285

Onsite truck	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.83	0.83	< 0.005	0.08	0.08	—	9.81	9.81	< 0.005	< 0.005	0.01	10.3
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.69	0.59	1.50	13.4	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,884	2,884	0.11	0.10	0.39	2,916
Vendor	0.10	0.06	2.58	0.60	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,902	1,902	0.03	0.28	0.13	1,986
Hauling	0.16	0.08	5.77	0.77	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,135	4,135	0.08	0.66	0.26	4,334
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.45	0.00	0.00	0.45	0.45	0.00	0.11	0.11	—	486	486	0.02	0.02	1.07	492
Vendor	0.02	0.01	0.41	0.10	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	309	309	< 0.005	0.05	0.36	323
Hauling	0.03	0.01	0.92	0.13	0.01	0.01	0.17	0.18	0.01	0.05	0.06	—	672	672	0.01	0.11	0.69	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.5	80.5	< 0.005	< 0.005	0.18	81.5
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	51.1	51.1	< 0.005	0.01	0.06	53.5
Hauling	< 0.005	< 0.005	0.17	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.12	117

3.19. Scarlet I: Solar Facility - Substation and Electrical System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	8.54	7.15	63.6	63.1	0.11	2.94	—	2.94	2.70	—	2.70	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.04	0.91	0.49	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	357	357	0.01	0.06	0.69	375
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.54	7.15	63.6	63.1	0.11	2.94	—	2.94	2.70	—	2.70	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.03	0.97	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	359	359	0.01	0.06	0.02	376
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.61	2.18	19.4	19.3	0.03	0.90	—	0.90	0.82	—	0.82	—	3,221	3,221	0.13	0.03	—	3,232
Onsite truck	0.02	0.01	0.29	0.15	< 0.005	< 0.005	8.50	8.51	< 0.005	0.85	0.85	—	109	109	< 0.005	0.02	0.09	115
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.54	3.51	0.01	0.16	—	0.16	0.15	—	0.15	—	533	533	0.02	< 0.005	—	535
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	1.55	1.55	< 0.005	0.16	0.16	—	18.1	18.1	< 0.005	< 0.005	0.02	19.0
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860

Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.37	4.17	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	896	896	0.03	0.03	1.86	907
Vendor	0.02	0.01	0.62	0.15	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	574	574	0.01	0.09	0.68	600
Hauling	0.04	0.02	1.41	0.21	0.02	0.02	0.32	0.35	0.02	0.09	0.11	—	1,246	1,246	0.02	0.19	1.31	1,306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.76	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	0.01	< 0.005	0.31	150
Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.0	95.0	< 0.005	0.01	0.11	99.4
Hauling	0.01	< 0.005	0.26	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.22	216

3.20. Scarlet I: Solar Facility - Substation and Electrical System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.55	3.19	55.8	63.5	0.11	2.28	—	2.28	2.07	—	2.07	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.04	0.91	0.49	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	357	357	0.01	0.06	0.69	375
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.55	3.19	55.8	63.5	0.11	2.28	—	2.28	2.07	—	2.07	—	10,552	10,552	0.43	0.09	—	10,588
Onsite truck	0.05	0.03	0.97	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	359	359	0.01	0.06	0.02	376

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.97	17.0	19.4	0.03	0.70	—	0.70	0.63	—	0.63	—	3,221	3,221	0.13	0.03	—	3,232
Onsite truck	0.02	0.01	0.29	0.15	< 0.005	< 0.005	8.50	8.51	< 0.005	0.85	0.85	—	109	109	< 0.005	0.02	0.09	115
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.18	3.11	3.54	0.01	0.13	—	0.13	0.12	—	0.12	—	533	533	0.02	< 0.005	—	535
Onsite truck	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	1.55	1.55	< 0.005	0.16	0.16	—	18.1	18.1	< 0.005	< 0.005	0.02	19.0
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.18	0.37	4.17	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	896	896	0.03	0.03	1.86	907
Vendor	0.02	0.01	0.62	0.15	< 0.005	0.01	0.15	0.16	0.01	0.04	0.05	—	574	574	0.01	0.09	0.68	600
Hauling	0.04	0.02	1.41	0.21	0.02	0.02	0.32	0.35	0.02	0.09	0.11	—	1,246	1,246	0.02	0.19	1.31	1,306
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.07	0.76	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	148	148	0.01	< 0.005	0.31	150

Vendor	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	95.0	95.0	< 0.005	0.01	0.11	99.4
Hauling	0.01	< 0.005	0.26	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	206	206	< 0.005	0.03	0.22	216

3.21. Scarlet II: Solar Facility - PV Module System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.68	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	268	268	0.01	0.04	0.51	281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.27	5.26	56.8	71.2	0.11	2.39	—	2.39	2.20	—	2.20	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.02	0.73	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	269	269	0.01	0.04	0.01	282
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.23	1.87	20.2	25.4	0.04	0.85	—	0.85	0.78	—	0.78	—	3,997	3,997	0.16	0.03	—	4,011
Onsite truck	0.01	0.01	0.25	0.13	< 0.005	< 0.005	7.44	7.44	< 0.005	0.74	0.75	—	95.7	95.7	< 0.005	0.02	0.08	100
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.41	0.34	3.69	4.63	0.01	0.16	—	0.16	0.14	—	0.14	—	662	662	0.03	0.01	—	664
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.14	—	15.8	15.8	< 0.005	< 0.005	0.01	16.6

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.25	0.16	6.46	1.71	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,264	6,264	0.09	0.93	17.2	6,562
Hauling	0.44	0.19	14.1	2.23	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,060	13,060	0.25	2.04	31.6	13,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727
Vendor	0.25	0.15	6.93	1.69	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,265	6,265	0.09	0.93	0.45	6,546
Hauling	0.44	0.18	15.0	2.16	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,061	13,061	0.25	2.04	0.82	13,675
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.14	2.39	26.8	0.00	0.00	5.46	5.46	0.00	1.28	1.28	—	5,750	5,750	0.21	0.19	11.9	5,823
Vendor	0.09	0.05	2.42	0.60	0.02	0.03	0.59	0.62	0.03	0.16	0.19	—	2,231	2,231	0.03	0.33	2.65	2,334
Hauling	0.16	0.07	5.27	0.77	0.06	0.09	1.20	1.29	0.09	0.33	0.42	—	4,652	4,652	0.09	0.73	4.88	4,875
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.44	4.88	0.00	0.00	1.00	1.00	0.00	0.23	0.23	—	952	952	0.03	0.03	1.97	964
Vendor	0.02	0.01	0.44	0.11	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	369	369	0.01	0.06	0.44	386
Hauling	0.03	0.01	0.96	0.14	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	770	770	0.01	0.12	0.81	807

3.22. Scarlet II: Solar Facility - PV Module System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.03	0.68	0.37	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	268	268	0.01	0.04	0.51	281
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	2.28	58.3	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,223	11,223	0.46	0.09	—	11,261
Onsite truck	0.04	0.02	0.73	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	269	269	0.01	0.04	0.01	282
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.84	0.81	20.7	26.2	0.04	0.83	—	0.83	0.75	—	0.75	—	3,997	3,997	0.16	0.03	—	4,011
Onsite truck	0.01	0.01	0.25	0.13	< 0.005	< 0.005	7.44	7.44	< 0.005	0.74	0.75	—	95.7	95.7	< 0.005	0.02	0.08	100
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.15	3.79	4.78	0.01	0.15	—	0.15	0.14	—	0.14	—	662	662	0.03	0.01	—	664
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.14	—	15.8	15.8	< 0.005	< 0.005	0.01	16.6
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.98	3.44	5.71	103	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	17,624	17,624	0.57	0.52	77.7	17,872
Vendor	0.25	0.16	6.46	1.71	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,264	6,264	0.09	0.93	17.2	6,562
Hauling	0.44	0.19	14.1	2.23	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,060	13,060	0.25	2.04	31.6	13,705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.72	2.68	7.24	66.6	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,554	15,554	0.61	0.52	2.00	15,727

Vendor	0.25	0.15	6.93	1.69	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,265	6,265	0.09	0.93	0.45	6,546
Hauling	0.44	0.18	15.0	2.16	0.16	0.24	3.41	3.65	0.24	0.93	1.18	—	13,061	13,061	0.25	2.04	0.82	13,675
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.33	1.14	2.39	26.8	0.00	0.00	5.46	5.46	0.00	1.28	1.28	—	5,750	5,750	0.21	0.19	11.9	5,823
Vendor	0.09	0.05	2.42	0.60	0.02	0.03	0.59	0.62	0.03	0.16	0.19	—	2,231	2,231	0.03	0.33	2.65	2,334
Hauling	0.16	0.07	5.27	0.77	0.06	0.09	1.20	1.29	0.09	0.33	0.42	—	4,652	4,652	0.09	0.73	4.88	4,875
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.21	0.44	4.88	0.00	0.00	1.00	1.00	0.00	0.23	0.23	—	952	952	0.03	0.03	1.97	964
Vendor	0.02	0.01	0.44	0.11	< 0.005	0.01	0.11	0.11	0.01	0.03	0.04	—	369	369	0.01	0.06	0.44	386
Hauling	0.03	0.01	0.96	0.14	0.01	0.02	0.22	0.24	0.02	0.06	0.08	—	770	770	0.01	0.12	0.81	807

3.23. Scarlet II: Solar Facility - PV Module System Installation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.84	4.90	52.9	69.7	0.11	2.11	—	2.11	1.94	—	1.94	—	11,213	11,213	0.45	0.09	—	11,252
Onsite truck	0.04	0.02	0.72	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	265	265	0.01	0.04	0.01	278
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.86	0.72	7.77	10.2	0.02	0.31	—	0.31	0.28	—	0.28	—	1,646	1,646	0.07	0.01	—	1,651

Onsite truck	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	3.07	3.07	< 0.005	0.31	0.31	—	38.7	38.7	< 0.005	0.01	0.03	40.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.42	1.87	< 0.005	0.06	—	0.06	0.05	—	0.05	—	272	272	0.01	< 0.005	—	273
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.56	0.56	< 0.005	0.06	0.06	—	6.41	6.41	< 0.005	< 0.005	0.01	6.73
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.11	2.57	6.72	60.8	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,240	15,240	0.12	0.52	1.84	15,401
Vendor	0.25	0.11	6.57	1.50	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,174	6,174	0.09	0.89	0.44	6,441
Hauling	0.44	0.18	14.5	2.08	0.08	0.24	3.41	3.65	0.24	0.93	1.18	—	12,845	12,845	0.25	2.04	0.82	13,459
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.38	0.84	10.0	0.00	0.00	2.25	2.25	0.00	0.53	0.53	—	2,321	2,321	0.09	0.08	4.50	2,351
Vendor	0.04	0.02	0.94	0.22	0.01	0.01	0.24	0.26	0.01	0.07	0.08	—	906	906	0.01	0.13	1.08	946
Hauling	0.06	0.03	2.09	0.30	0.01	0.04	0.50	0.53	0.04	0.14	0.17	—	1,885	1,885	0.04	0.30	1.99	1,977
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.15	1.83	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	384	384	0.01	0.01	0.74	389
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	150	150	< 0.005	0.02	0.18	157
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	312	312	0.01	0.05	0.33	327

3.24. Scarlet II: Solar Facility - PV Module System Installation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.36	2.27	58.2	73.6	0.11	2.32	—	2.32	2.10	—	2.10	—	11,213	11,213	0.45	0.09	—	11,252
Onsite truck	0.04	0.02	0.72	0.38	< 0.005	< 0.005	22.3	22.3	< 0.005	2.23	2.23	—	265	265	0.01	0.04	0.01	278
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.33	8.55	10.8	0.02	0.34	—	0.34	0.31	—	0.31	—	1,646	1,646	0.07	0.01	—	1,651
Onsite truck	0.01	< 0.005	0.10	0.05	< 0.005	< 0.005	3.07	3.07	< 0.005	0.31	0.31	—	38.7	38.7	< 0.005	0.01	0.03	40.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.56	1.97	< 0.005	0.06	—	0.06	0.06	—	0.06	—	272	272	0.01	< 0.005	—	273
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.56	0.56	< 0.005	0.06	0.06	—	6.41	6.41	< 0.005	< 0.005	0.01	6.73
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.11	2.57	6.72	60.8	0.00	0.00	15.5	15.5	0.00	3.64	3.64	—	15,240	15,240	0.12	0.52	1.84	15,401
Vendor	0.25	0.11	6.57	1.50	0.04	0.09	1.68	1.77	0.09	0.46	0.55	—	6,174	6,174	0.09	0.89	0.44	6,441
Hauling	0.44	0.18	14.5	2.08	0.08	0.24	3.41	3.65	0.24	0.93	1.18	—	12,845	12,845	0.25	2.04	0.82	13,459

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.38	0.84	10.0	0.00	0.00	2.25	2.25	0.00	0.53	0.53	—	2,321	2,321	0.09	0.08	4.50	2,351
Vendor	0.04	0.02	0.94	0.22	0.01	0.01	0.24	0.26	0.01	0.07	0.08	—	906	906	0.01	0.13	1.08	946
Hauling	0.06	0.03	2.09	0.30	0.01	0.04	0.50	0.53	0.04	0.14	0.17	—	1,885	1,885	0.04	0.30	1.99	1,977
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.15	1.83	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	384	384	0.01	0.01	0.74	389
Vendor	0.01	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	150	150	< 0.005	0.02	0.18	157
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	312	312	0.01	0.05	0.33	327

3.25. Scarlet II: Solar Facility - Substation and Electrical System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.93	5.79	52.5	46.6	0.08	2.34	—	2.34	2.15	—	2.15	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.04	0.91	0.49	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	357	357	0.01	0.06	0.69	375
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.93	5.79	52.5	46.6	0.08	2.34	—	2.34	2.15	—	2.15	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.03	0.97	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	359	359	0.01	0.06	0.02	376
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	2.66	2.22	20.1	17.9	0.03	0.90	—	0.90	0.83	—	0.83	—	3,038	3,038	0.12	0.02	—	3,048
Onsite truck	0.02	0.01	0.36	0.19	< 0.005	< 0.005	10.7	10.7	< 0.005	1.07	1.07	—	137	137	0.01	0.02	0.11	144
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.68	3.26	0.01	0.16	—	0.16	0.15	—	0.15	—	503	503	0.02	< 0.005	—	505
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	1.95	1.95	< 0.005	0.19	0.20	—	22.7	22.7	< 0.005	< 0.005	0.02	23.9
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.22	0.47	5.24	0.00	0.00	1.07	1.07	0.00	0.25	0.25	—	1,126	1,126	0.04	0.04	2.33	1,140
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	721	721	0.01	0.11	0.86	754
Hauling	0.05	0.02	1.77	0.26	0.02	0.03	0.40	0.43	0.03	0.11	0.14	—	1,565	1,565	0.03	0.24	1.64	1,641
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.09	0.96	0.00	0.00	0.19	0.19	0.00	0.05	0.05	—	186	186	0.01	0.01	0.39	189
Vendor	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	125
Hauling	0.01	< 0.005	0.32	0.05	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	259	259	< 0.005	0.04	0.27	272

3.26. Scarlet II: Solar Facility - Substation and Electrical System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.74	44.2	45.0	0.08	1.73	—	1.73	1.57	—	1.57	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.04	0.91	0.49	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	357	357	0.01	0.06	0.69	375
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.10	2.74	44.2	45.0	0.08	1.73	—	1.73	1.57	—	1.57	—	7,921	7,921	0.32	0.06	—	7,948
Onsite truck	0.05	0.03	0.97	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	359	359	0.01	0.06	0.02	376
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.05	16.9	17.2	0.03	0.67	—	0.67	0.60	—	0.60	—	3,038	3,038	0.12	0.02	—	3,048
Onsite truck	0.02	0.01	0.36	0.19	< 0.005	< 0.005	10.7	10.7	< 0.005	1.07	1.07	—	137	137	0.01	0.02	0.11	144
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	3.09	3.15	0.01	0.12	—	0.12	0.11	—	0.11	—	503	503	0.02	< 0.005	—	505
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	1.95	1.95	< 0.005	0.19	0.20	—	22.7	22.7	< 0.005	< 0.005	0.02	23.9
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.72	0.63	1.04	18.7	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	3,204	3,204	0.10	0.10	14.1	3,250
Vendor	0.08	0.05	1.94	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,879	1,879	0.03	0.28	5.15	1,969
Hauling	0.14	0.06	4.41	0.70	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,081	4,081	0.08	0.64	9.86	4,283
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.68	0.49	1.32	12.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,828	2,828	0.11	0.10	0.36	2,860
Vendor	0.07	0.05	2.08	0.51	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,880	1,880	0.03	0.28	0.13	1,964
Hauling	0.14	0.06	4.70	0.68	0.05	0.08	1.07	1.14	0.08	0.29	0.37	—	4,082	4,082	0.08	0.64	0.26	4,274
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.22	0.47	5.24	0.00	0.00	1.07	1.07	0.00	0.25	0.25	—	1,126	1,126	0.04	0.04	2.33	1,140
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	721	721	0.01	0.11	0.86	754
Hauling	0.05	0.02	1.77	0.26	0.02	0.03	0.40	0.43	0.03	0.11	0.14	—	1,565	1,565	0.03	0.24	1.64	1,641
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.09	0.96	0.00	0.00	0.19	0.19	0.00	0.05	0.05	—	186	186	0.01	0.01	0.39	189
Vendor	0.01	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	125
Hauling	0.01	< 0.005	0.32	0.05	< 0.005	0.01	0.07	0.08	0.01	0.02	0.03	—	259	259	< 0.005	0.04	0.27	272

3.27. Scarlet II: Solar Facility - Substation and Electrical System Installation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.57	5.50	49.2	44.9	0.08	2.14	—	2.14	1.97	—	1.97	—	7,919	7,919	0.32	0.06	—	7,946
Onsite truck	0.05	0.03	0.96	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	353	353	0.01	0.06	0.02	370
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.41	2.20	< 0.005	0.10	—	0.10	0.10	—	0.10	—	387	387	0.02	< 0.005	—	389
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.14	—	17.2	17.2	< 0.005	< 0.005	0.01	18.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.40	< 0.005	0.02	—	0.02	0.02	—	0.02	—	64.1	64.1	< 0.005	< 0.005	—	64.4
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.25	0.25	< 0.005	0.02	0.02	—	2.85	2.85	< 0.005	< 0.005	< 0.005	2.99
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.47	1.22	11.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,771	2,771	0.02	0.10	0.33	2,800
Vendor	0.07	0.03	1.97	0.45	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,852	1,852	0.03	0.27	0.13	1,932
Hauling	0.14	0.06	4.52	0.65	0.03	0.08	1.07	1.14	0.08	0.29	0.37	—	4,014	4,014	0.08	0.64	0.26	4,206
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.27	142
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.6	90.6	< 0.005	0.01	0.11	94.6
Hauling	0.01	< 0.005	0.22	0.03	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	196	196	< 0.005	0.03	0.21	206

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.3	23.3	< 0.005	< 0.005	0.05	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.7
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	0.01	0.03	34.1

3.28. Scarlet II: Solar Facility - Substation and Electrical System Installation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.08	2.73	44.1	44.9	0.08	1.72	—	1.72	1.56	—	1.56	—	7,919	7,919	0.32	0.06	—	7,946
Onsite truck	0.05	0.03	0.96	0.51	< 0.005	0.01	29.7	29.7	0.01	2.97	2.97	—	353	353	0.01	0.06	0.02	370
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	2.16	2.20	< 0.005	0.08	—	0.08	0.08	—	0.08	—	387	387	0.02	< 0.005	—	389
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	1.36	1.36	< 0.005	0.14	0.14	—	17.2	17.2	< 0.005	< 0.005	0.01	18.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.39	0.40	< 0.005	0.02	—	0.02	0.01	—	0.01	—	64.1	64.1	< 0.005	< 0.005	—	64.4
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.25	0.25	< 0.005	0.02	0.02	—	2.85	2.85	< 0.005	< 0.005	< 0.005	2.99
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.57	0.47	1.22	11.1	0.00	0.00	2.83	2.83	0.00	0.66	0.66	—	2,771	2,771	0.02	0.10	0.33	2,800
Vendor	0.07	0.03	1.97	0.45	0.01	0.03	0.50	0.53	0.03	0.14	0.17	—	1,852	1,852	0.03	0.27	0.13	1,932
Hauling	0.14	0.06	4.52	0.65	0.03	0.08	1.07	1.14	0.08	0.29	0.37	—	4,014	4,014	0.08	0.64	0.26	4,206
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.05	0.61	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	141	141	0.01	< 0.005	0.27	142
Vendor	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	90.6	90.6	< 0.005	0.01	0.11	94.6
Hauling	0.01	< 0.005	0.22	0.03	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	196	196	< 0.005	0.03	0.21	206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.3	23.3	< 0.005	< 0.005	0.05	23.6
Vendor	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.7
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	0.01	0.03	34.1

3.29. Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.68	3.09	29.0	35.0	0.05	1.37	—	1.37	1.26	—	1.26	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.32	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	125	125	< 0.005	0.02	0.24	131

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.68	3.09	29.0	35.0	0.05	1.37	—	1.37	1.26	—	1.26	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.34	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	126	126	< 0.005	0.02	0.01	132
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05	0.88	8.28	10.0	0.02	0.39	—	0.39	0.36	—	0.36	—	1,683	1,683	0.07	0.01	—	1,689
Onsite truck	0.01	< 0.005	0.09	0.05	< 0.005	< 0.005	2.79	2.79	< 0.005	0.28	0.28	—	35.8	35.8	< 0.005	0.01	0.03	37.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.51	1.83	< 0.005	0.07	—	0.07	0.07	—	0.07	—	279	279	0.01	< 0.005	—	280
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.51	0.51	< 0.005	0.05	0.05	—	5.93	5.93	< 0.005	< 0.005	< 0.005	6.22
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.10	0.06	2.59	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	6.86	2,625
Hauling	0.19	0.08	6.18	0.98	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	13.8	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.24	0.66	6.06	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,414	1,414	0.06	0.05	0.18	1,430
Vendor	0.10	0.06	2.77	0.67	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	0.18	2,618
Hauling	0.19	0.08	6.58	0.95	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	0.36	5,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.08	0.17	1.95	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	419	419	0.02	0.01	0.87	425
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	716	716	0.01	0.11	0.85	749
Hauling	0.05	0.02	1.85	0.27	0.02	0.03	0.42	0.45	0.03	0.12	0.15	—	1,633	1,633	0.03	0.25	1.71	1,711
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.4	69.4	< 0.005	< 0.005	0.14	70.3
Vendor	0.01	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	124
Hauling	0.01	< 0.005	0.34	0.05	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	270	270	0.01	0.04	0.28	283

3.30. Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2023) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.32	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	125	125	< 0.005	0.02	0.24	131
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,892	5,892	0.24	0.05	—	5,912
Onsite truck	0.02	0.01	0.34	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	126	126	< 0.005	0.02	0.01	132
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.31	8.67	11.2	0.02	0.35	—	0.35	0.32	—	0.32	—	1,683	1,683	0.07	0.01	—	1,689

Onsite truck	0.01	< 0.005	0.09	0.05	< 0.005	< 0.005	2.79	2.79	< 0.005	0.28	0.28	—	35.8	35.8	< 0.005	0.01	0.03	37.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	1.58	2.05	< 0.005	0.06	—	0.06	0.06	—	0.06	—	279	279	0.01	< 0.005	—	280
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.51	0.51	< 0.005	0.05	0.05	—	5.93	5.93	< 0.005	< 0.005	< 0.005	6.22
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.36	0.31	0.52	9.35	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,602	1,602	0.05	0.05	7.06	1,625
Vendor	0.10	0.06	2.59	0.68	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	6.86	2,625
Hauling	0.19	0.08	6.18	0.98	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	13.8	5,996
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.34	0.24	0.66	6.06	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,414	1,414	0.06	0.05	0.18	1,430
Vendor	0.10	0.06	2.77	0.67	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,506	2,506	0.04	0.37	0.18	2,618
Hauling	0.19	0.08	6.58	0.95	0.07	0.11	1.49	1.60	0.11	0.41	0.52	—	5,714	5,714	0.11	0.89	0.36	5,983
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	1.95	0.00	0.00	0.40	0.40	0.00	0.09	0.09	—	419	419	0.02	0.01	0.87	425
Vendor	0.03	0.02	0.78	0.19	0.01	0.01	0.19	0.20	0.01	0.05	0.06	—	716	716	0.01	0.11	0.85	749
Hauling	0.05	0.02	1.85	0.27	0.02	0.03	0.42	0.45	0.03	0.12	0.15	—	1,633	1,633	0.03	0.25	1.71	1,711
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.4	69.4	< 0.005	< 0.005	0.14	70.3
Vendor	0.01	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.04	< 0.005	0.01	0.01	—	119	119	< 0.005	0.02	0.14	124
Hauling	0.01	< 0.005	0.34	0.05	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	270	270	0.01	0.04	0.28	283

3.31. Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	123	123	< 0.005	0.02	0.24	129
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	124	124	< 0.005	0.02	0.01	130
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.15	0.97	8.96	11.6	0.02	0.41	—	0.41	0.38	—	0.38	—	1,959	1,959	0.08	0.02	—	1,966
Onsite truck	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	3.24	3.24	< 0.005	0.32	0.32	—	41.0	41.0	< 0.005	0.01	0.03	43.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.64	2.12	< 0.005	0.07	—	0.07	0.07	—	0.07	—	324	324	0.01	< 0.005	—	325
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	6.78	6.78	< 0.005	< 0.005	0.01	7.12
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	2.07	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	478	478	0.02	0.02	0.93	484
Vendor	0.03	0.01	0.86	0.20	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	821	821	0.01	0.12	0.98	858
Hauling	0.06	0.03	2.07	0.30	0.01	0.04	0.49	0.53	0.04	0.13	0.17	—	1,869	1,869	0.04	0.30	1.98	1,961
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.2	79.2	< 0.005	< 0.005	0.15	80.2
Vendor	0.01	< 0.005	0.16	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	< 0.005	0.02	0.16	142
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	309	309	0.01	0.05	0.33	325

3.32. Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	123	123	< 0.005	0.02	0.24	129
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	124	124	< 0.005	0.02	0.01	130
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.36	10.1	13.1	0.02	0.41	—	0.41	0.37	—	0.37	—	1,959	1,959	0.08	0.02	—	1,966
Onsite truck	0.01	< 0.005	0.11	0.06	< 0.005	< 0.005	3.24	3.24	< 0.005	0.32	0.32	—	41.0	41.0	< 0.005	0.01	0.03	43.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.07	1.84	2.39	< 0.005	0.07	—	0.07	0.07	—	0.07	—	324	324	0.01	< 0.005	—	325
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	6.78	6.78	< 0.005	< 0.005	0.01	7.12
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400

Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.17	2.07	0.00	0.00	0.46	0.46	0.00	0.11	0.11	—	478	478	0.02	0.02	0.93	484
Vendor	0.03	0.01	0.86	0.20	0.01	0.01	0.22	0.23	0.01	0.06	0.07	—	821	821	0.01	0.12	0.98	858
Hauling	0.06	0.03	2.07	0.30	0.01	0.04	0.49	0.53	0.04	0.13	0.17	—	1,869	1,869	0.04	0.30	1.98	1,961
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.03	0.38	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	79.2	79.2	< 0.005	< 0.005	0.15	80.2
Vendor	0.01	< 0.005	0.16	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	136	136	< 0.005	0.02	0.16	142
Hauling	0.01	< 0.005	0.38	0.06	< 0.005	0.01	0.09	0.10	0.01	0.02	0.03	—	309	309	0.01	0.05	0.33	325

3.33. Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	123	123	< 0.005	0.02	0.24	129
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.46	2.90	26.9	34.8	0.05	1.23	—	1.23	1.13	—	1.13	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	124	124	< 0.005	0.02	0.01	130

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.39	1.16	10.8	14.0	0.02	0.49	—	0.49	0.45	—	0.45	—	2,362	2,362	0.10	0.02	—	2,370
Onsite truck	0.01	< 0.005	0.13	0.07	< 0.005	< 0.005	3.91	3.91	< 0.005	0.39	0.39	—	49.4	49.4	< 0.005	0.01	0.04	51.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.97	2.55	< 0.005	0.09	—	0.09	0.08	—	0.08	—	391	391	0.02	< 0.005	—	392
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	8.18	8.18	< 0.005	< 0.005	0.01	8.58
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.50	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	577	577	0.02	0.02	1.12	584
Vendor	0.04	0.02	1.03	0.24	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	991	991	0.02	0.14	1.18	1,035
Hauling	0.08	0.03	2.50	0.36	0.01	0.04	0.59	0.63	0.04	0.16	0.20	—	2,254	2,254	0.04	0.36	2.38	2,364
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.5	95.5	< 0.005	< 0.005	0.19	96.7

Vendor	0.01	< 0.005	0.19	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	164	164	< 0.005	0.02	0.20	171
Hauling	0.01	0.01	0.46	0.07	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	373	373	0.01	0.06	0.39	391

3.34. Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	123	123	< 0.005	0.02	0.24	129
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,888	5,888	0.24	0.05	—	5,908
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	124	124	< 0.005	0.02	0.01	130
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.44	12.2	15.8	0.02	0.49	—	0.49	0.44	—	0.44	—	2,362	2,362	0.10	0.02	—	2,370
Onsite truck	0.01	< 0.005	0.13	0.07	< 0.005	< 0.005	3.91	3.91	< 0.005	0.39	0.39	—	49.4	49.4	< 0.005	0.01	0.04	51.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	2.22	2.88	< 0.005	0.09	—	0.09	0.08	—	0.08	—	391	391	0.02	< 0.005	—	392
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	8.18	8.18	< 0.005	< 0.005	0.01	8.58

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.26	0.47	8.52	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,569	1,569	0.05	0.05	6.43	1,591
Vendor	0.10	0.04	2.44	0.61	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,469	2,469	0.04	0.36	6.86	2,583
Hauling	0.19	0.08	5.93	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	13.8	5,901
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.23	0.61	5.53	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,385	1,385	0.01	0.05	0.17	1,400
Vendor	0.10	0.04	2.63	0.60	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,470	2,470	0.04	0.36	0.18	2,577
Hauling	0.19	0.08	6.33	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,619	5,619	0.11	0.89	0.36	5,888
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.21	2.50	0.00	0.00	0.56	0.56	0.00	0.13	0.13	—	577	577	0.02	0.02	1.12	584
Vendor	0.04	0.02	1.03	0.24	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	991	991	0.02	0.14	1.18	1,035
Hauling	0.08	0.03	2.50	0.36	0.01	0.04	0.59	0.63	0.04	0.16	0.20	—	2,254	2,254	0.04	0.36	2.38	2,364
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.04	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.5	95.5	< 0.005	< 0.005	0.19	96.7
Vendor	0.01	< 0.005	0.19	0.04	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	164	164	< 0.005	0.02	0.20	171
Hauling	0.01	0.01	0.46	0.07	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	373	373	0.01	0.06	0.39	391

3.35. Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.19	2.68	24.6	34.7	0.05	1.05	—	1.05	0.96	—	0.96	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	120	120	< 0.005	0.02	0.24	126
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.19	2.68	24.6	34.7	0.05	1.05	—	1.05	0.96	—	0.96	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	121	121	< 0.005	0.02	0.01	127
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.58	5.35	7.53	0.01	0.23	—	0.23	0.21	—	0.21	—	1,280	1,280	0.05	0.01	—	1,284
Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.12	2.12	< 0.005	0.21	0.21	—	26.2	26.2	< 0.005	< 0.005	0.02	27.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.37	< 0.005	0.04	—	0.04	0.04	—	0.04	—	212	212	0.01	< 0.005	—	213
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	4.34	4.34	< 0.005	< 0.005	< 0.005	4.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.43	7.79	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,536	1,536	0.01	0.05	5.90	1,556
Vendor	0.08	0.04	2.32	0.54	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	6.83	2,539
Hauling	0.16	0.05	5.72	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,510	5,510	0.11	0.86	13.7	5,782
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.22	0.52	5.05	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,357	1,357	0.01	0.05	0.15	1,371

Vendor	0.08	0.04	2.49	0.55	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	0.18	2,533
Hauling	0.16	0.05	6.12	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,511	5,511	0.11	0.86	0.35	5,769
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.10	1.24	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	306	306	< 0.005	0.01	0.55	309
Vendor	0.02	0.01	0.53	0.12	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	527	527	0.01	0.08	0.64	551
Hauling	0.03	0.01	1.30	0.20	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,197	1,197	0.02	0.19	1.28	1,254
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	50.6	50.6	< 0.005	< 0.005	0.09	51.2
Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	87.2	87.2	< 0.005	0.01	0.11	91.2
Hauling	0.01	< 0.005	0.24	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	198	198	< 0.005	0.03	0.21	208

3.36. Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.31	0.17	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	120	120	< 0.005	0.02	0.24	126
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	1.09	30.3	39.3	0.05	1.22	—	1.22	1.11	—	1.11	—	5,893	5,893	0.24	0.05	—	5,913
Onsite truck	0.02	0.01	0.33	0.18	< 0.005	< 0.005	10.4	10.4	< 0.005	1.04	1.04	—	121	121	< 0.005	0.02	0.01	127

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.24	6.59	8.54	0.01	0.26	—	0.26	0.24	—	0.24	—	1,280	1,280	0.05	0.01	—	1,284
Onsite truck	< 0.005	< 0.005	0.07	0.04	< 0.005	< 0.005	2.12	2.12	< 0.005	0.21	0.21	—	26.2	26.2	< 0.005	< 0.005	0.02	27.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	1.20	1.56	< 0.005	0.05	—	0.05	0.04	—	0.04	—	212	212	0.01	< 0.005	—	213
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	4.34	4.34	< 0.005	< 0.005	< 0.005	4.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	0.43	7.79	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,536	1,536	0.01	0.05	5.90	1,556
Vendor	0.08	0.04	2.32	0.54	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	6.83	2,539
Hauling	0.16	0.05	5.72	0.90	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,510	5,510	0.11	0.86	13.7	5,782
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.22	0.52	5.05	0.00	0.00	1.41	1.41	0.00	0.33	0.33	—	1,357	1,357	0.01	0.05	0.15	1,371
Vendor	0.08	0.04	2.49	0.55	0.02	0.04	0.67	0.71	0.04	0.19	0.22	—	2,425	2,425	0.04	0.36	0.18	2,533
Hauling	0.16	0.05	6.12	0.91	0.04	0.11	1.49	1.60	0.11	0.41	0.52	—	5,511	5,511	0.11	0.86	0.35	5,769
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.10	1.24	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	306	306	< 0.005	0.01	0.55	309
Vendor	0.02	0.01	0.53	0.12	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	527	527	0.01	0.08	0.64	551
Hauling	0.03	0.01	1.30	0.20	0.01	0.02	0.32	0.34	0.02	0.09	0.11	—	1,197	1,197	0.02	0.19	1.28	1,254
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.23	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	50.6	50.6	< 0.005	< 0.005	0.09	51.2

Vendor	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	87.2	87.2	< 0.005	0.01	0.11	91.2
Hauling	0.01	< 0.005	0.24	0.04	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	198	198	< 0.005	0.03	0.21	208

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Total	—	—	—	—	—	—	—	—	—	—	—	—	979	979	0.16	0.02	—	989
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164
Total	—	—	—	—	—	—	—	—	—	—	—	—	162	162	0.03	< 0.005	—	164

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.03	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Total	0.03	0.03	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	13.3	13.3	< 0.005	< 0.005	—	13.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	2.21	2.21	< 0.005	< 0.005	—	2.23

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819
Off-Highway Trucks	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819

Off-Highway	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.03	0.02	0.22	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.7	52.7	< 0.005	< 0.005	—	52.9
Generator Sets	0.01	0.01	0.10	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Pumps	0.04	0.03	0.25	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.6	29.6	< 0.005	< 0.005	—	29.7
Off-Highway Trucks	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.79	0.79	< 0.005	< 0.005	—	0.80
Total	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819

Off-Highway	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.51	0.43	4.41	7.63	0.01	0.17	—	0.17	0.16	—	0.16	—	1,162	1,162	0.05	0.01	—	1,166
Generator Sets	0.48	0.40	3.18	2.10	0.01	0.13	—	0.13	0.12	—	0.12	—	415	415	0.02	< 0.005	—	417
Pumps	1.00	0.82	6.22	4.31	0.01	0.26	—	0.26	0.24	—	0.24	—	816	816	0.03	0.01	—	819
Off-Highway Trucks	0.19	0.16	1.09	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	350	350	0.01	< 0.005	—	351
Total	2.18	1.81	14.9	16.7	0.03	0.58	—	0.58	0.53	—	0.53	—	2,743	2,743	0.11	0.02	—	2,753
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.03	0.02	0.22	0.38	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.7	52.7	< 0.005	< 0.005	—	52.9
Generator Sets	0.01	0.01	0.10	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.3
Pumps	0.04	0.03	0.25	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.6	29.6	< 0.005	< 0.005	—	29.7
Off-Highway Trucks	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.79	0.79	< 0.005	< 0.005	—	0.80
Total	0.08	0.07	0.57	0.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	94.4	94.4	< 0.005	< 0.005	—	94.7

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Scarlet I: Site Preparation	Site Preparation	9/19/2022	11/18/2022	5.00	45.0	—
Scarlet II: Site Preparation	Site Preparation	6/12/2023	8/18/2023	5.00	50.0	—
Scarlet II: Energy Storage System Site Preparation	Site Preparation	6/12/2023	8/7/2023	5.00	41.0	—

Scarlet III: Energy Storage System Site Preparation	Site Preparation	4/15/2024	6/10/2024	5.00	41.0	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	7/28/2022	5/31/2023	5.00	220	—
Scarlet I: Solar Facility - PV Module System Installation	Building Construction	10/19/2022	10/4/2023	5.00	251	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Building Construction	10/10/2022	6/5/2023	5.00	171	—
Scarlet II: Solar Facility - PV Module System Installation	Building Construction	7/3/2023	3/15/2024	5.00	185	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Building Construction	6/19/2023	1/25/2024	5.00	159	—
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	8/8/2023	6/18/2024	5.00	226	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Building Construction	6/10/2024	4/21/2025	5.00	226	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Scarlet I: Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41

Scarlet I: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	7.00	84.0	0.37
Scarlet I: Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet I: Site Preparation	Rollers	Diesel	Average	8.00	7.00	36.0	0.38
Scarlet I: Site Preparation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	7.00	84.0	0.37
Scarlet II: Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet II: Site Preparation	Rollers	Diesel	Average	8.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet II: Energy Storage System Site Preparation	Rollers	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Excavators	Diesel	Average	2.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38

Scarlet III: Energy Storage System Site Preparation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet III: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Average	4.00	7.00	71.0	0.37
Scarlet III: Energy Storage System Site Preparation	Rollers	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Excavators	Diesel	Average	2.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Dumpers/Tenders	Diesel	Average	1.00	4.00	16.0	0.38

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Average	20.0	7.00	71.0	0.37

Scarlet I: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Average	10.0	7.00	83.0	0.50
Scarlet I: Solar Facility - PV Module System Installation	Forklifts	Diesel	Average	8.00	6.00	82.0	0.20
Scarlet I: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Average	2.00	6.00	367	0.40
Scarlet I: Solar Facility - PV Module System Installation	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Average	2.00	7.00	367	0.40
Scarlet I: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Average	1.00	7.00	148	0.41
Scarlet I: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Average	7.00	7.00	150	0.36
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Average	1.00	7.00	36.0	0.38

Scarlet I: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet I: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Average	1.00	7.00	82.0	0.20
Scarlet I: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Average	1.00	7.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Average	2.00	4.00	367	0.29
Scarlet II: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Average	20.0	7.00	71.0	0.37
Scarlet II: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Average	10.0	7.00	83.0	0.50
Scarlet II: Solar Facility - PV Module System Installation	Forklifts	Diesel	Average	8.00	6.00	82.0	0.20
Scarlet II: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74

Scarlet II: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Average	2.00	6.00	367	0.40
Scarlet II: Solar Facility - PV Module System Installation	Trenchers	Diesel	Average	1.00	6.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Average	2.00	7.00	367	0.40
Scarlet II: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Average	1.00	7.00	148	0.41
Scarlet II: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Average	1.00	7.00	71.0	0.37
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Average	1.00	7.00	150	0.36
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet II: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Average	1.00	7.00	82.0	0.20
Scarlet II: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Average	2.00	7.00	83.0	0.50

Scarlet II: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Average	1.00	7.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Average	4.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Average	2.00	4.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	3.00	7.00	82.0	0.20
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	2.00	7.00	71.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Average	2.00	7.00	150	0.36

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	4.00	7.00	83.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Average	2.00	7.00	148	0.41
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Average	3.00	7.00	82.0	0.20
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Average	2.00	7.00	71.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Average	2.00	7.00	150	0.36
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Average	1.00	7.00	36.0	0.38

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Average	4.00	7.00	83.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Average	2.00	7.00	40.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Average	1.00	7.00	367	0.29
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Average	1.00	7.00	46.0	0.31
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Scarlet I: Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet I: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 3	4.00	7.00	84.0	0.37
Scarlet I: Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet I: Site Preparation	Rollers	Diesel	Tier 4 Interim	8.00	7.00	36.0	0.38
Scarlet I: Site Preparation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 3	4.00	7.00	84.0	0.37
Scarlet II: Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet II: Site Preparation	Rollers	Diesel	Tier 4 Interim	8.00	7.00	36.0	0.38
Scarlet II: Site Preparation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet II: Energy Storage System Site Preparation	Rollers	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet II: Energy Storage System Site Preparation	Excavators	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38

Scarlet II: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet III: Energy Storage System Site Preparation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet III: Energy Storage System Site Preparation	Skid Steer Loaders	Diesel	Tier 4 Interim	4.00	7.00	71.0	0.37
Scarlet III: Energy Storage System Site Preparation	Rollers	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Excavators	Diesel	Tier 4 Interim	2.00	7.00	36.0	0.38
Scarlet III: Energy Storage System Site Preparation	Dumpers/Tenders	Diesel	Average	5.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	2.00	7.00	82.0	0.20
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Dumpers/Tenders	Diesel	Average	1.00	4.00	16.0	0.38
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31

Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	20.0	7.00	71.0	0.37
Scarlet I: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Tier 3	10.0	7.00	83.0	0.50
Scarlet I: Solar Facility - PV Module System Installation	Forklifts	Diesel	Tier 3	8.00	6.00	82.0	0.20
Scarlet I: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet I: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	6.00	367	0.40
Scarlet I: Solar Facility - PV Module System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	6.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	7.00	367	0.40
Scarlet I: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Tier 3	1.00	7.00	148	0.41
Scarlet I: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37

Scarlet I: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	7.00	7.00	150	0.36
Scarlet I: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74
Scarlet I: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Tier 3	1.00	7.00	82.0	0.20
Scarlet I: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	7.00	40.0	0.50
Scarlet I: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet I: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Tier 3	2.00	4.00	367	0.29
Scarlet II: Solar Facility - PV Module System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	20.0	7.00	71.0	0.37
Scarlet II: Solar Facility - PV Module System Installation	Bore/Drill Rigs	Diesel	Tier 3	10.0	7.00	83.0	0.50

Scarlet II: Solar Facility - PV Module System Installation	Forklifts	Diesel	Tier 3	8.00	6.00	82.0	0.20
Scarlet II: Solar Facility - PV Module System Installation	Generator Sets	Diesel	Average	5.00	7.00	14.0	0.74
Scarlet II: Solar Facility - PV Module System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	6.00	367	0.40
Scarlet II: Solar Facility - PV Module System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	6.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Dozers	Diesel	Tier 3	2.00	7.00	367	0.40
Scarlet II: Solar Facility - Substation and Electrical System Installation	Graders	Diesel	Tier 3	1.00	7.00	148	0.41
Scarlet II: Solar Facility - Substation and Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	7.00	71.0	0.37
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	1.00	7.00	150	0.36
Scarlet II: Solar Facility - Substation and Electrical System Installation	Rollers	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Generator Sets	Diesel	Average	17.0	8.00	14.0	0.74

Scarlet II: Solar Facility - Substation and Electrical System Installation	Forklifts	Diesel	Tier 3	1.00	7.00	82.0	0.20
Scarlet II: Solar Facility - Substation and Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	2.00	7.00	83.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	1.00	7.00	40.0	0.50
Scarlet II: Solar Facility - Substation and Electrical System Installation	Excavators	Diesel	Tier 4 Interim	4.00	7.00	36.0	0.38
Scarlet II: Solar Facility - Substation and Electrical System Installation	Cranes	Diesel	Tier 3	2.00	4.00	367	0.29
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	3.00	7.00	82.0	0.20
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	7.00	71.0	0.37

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	2.00	7.00	150	0.36
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	4.00	7.00	83.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Graders	Diesel	Tier 3	2.00	7.00	148	0.41
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Forklifts	Diesel	Tier 3	3.00	7.00	82.0	0.20
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	7.00	71.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Rubber Tired Loaders	Diesel	Tier 3	2.00	7.00	150	0.36

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Excavators	Diesel	Tier 4 Interim	1.00	7.00	36.0	0.38
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Bore/Drill Rigs	Diesel	Tier 3	4.00	7.00	83.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Trenchers	Diesel	Tier 4 Interim	2.00	7.00	40.0	0.50
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Tractors/Loaders/Backhoes	Diesel	Tier 3	1.00	7.00	84.0	0.37
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Cranes	Diesel	Tier 3	1.00	7.00	367	0.29
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Aerial Lifts	Diesel	Tier 4 Interim	1.00	7.00	46.0	0.31

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Generator Sets	Diesel	Average	1.00	9.00	14.0	0.74

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Scarlet I: Site Preparation	—	—	—	—
Scarlet I: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet I: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet I: Site Preparation	Hauling	2.00	115	HHDT
Scarlet I: Site Preparation	Onsite truck	28.0	2.00	HHDT
Scarlet I: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet I: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - PV Module System Installation	Vendor	30.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - PV Module System Installation	Hauling	24.0	115	HHDT
Scarlet I: Solar Facility - PV Module System Installation	Onsite truck	30.0	2.00	HHDT
Scarlet II: Site Preparation	—	—	—	—
Scarlet II: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet II: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet II: Site Preparation	Hauling	2.00	115	HHDT
Scarlet II: Site Preparation	Onsite truck	28.0	2.00	HHDT

Scarlet II: Energy Storage System Site Preparation	—	—	—	—
Scarlet II: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet II: Energy Storage System Site Preparation	Onsite truck	16.0	2.00	HHDT
Scarlet III: Energy Storage System Site Preparation	—	—	—	—
Scarlet III: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet III: Energy Storage System Site Preparation	Onsite truck	12.0	2.00	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	32.0	50.0	LDA,LDT1,LDT2
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	6.00	50.0	HHDT,MHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	6.00	115	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	10.0	2.00	HHDT

Scarlet I: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	2.00	HHDT
Scarlet II: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet II: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - PV Module System Installation	Vendor	40.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - PV Module System Installation	Hauling	32.0	115	HHDT
Scarlet II: Solar Facility - PV Module System Installation	Onsite truck	30.0	2.00	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	2.00	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—

Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	2.00	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	2.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Scarlet I: Site Preparation	—	—	—	—
Scarlet I: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet I: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet I: Site Preparation	Hauling	2.00	115	HHDT

Scarlet I: Site Preparation	Onsite truck	28.0	2.00	HHDT
Scarlet I: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet I: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - PV Module System Installation	Vendor	30.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - PV Module System Installation	Hauling	24.0	115	HHDT
Scarlet I: Solar Facility - PV Module System Installation	Onsite truck	30.0	2.00	HHDT
Scarlet II: Site Preparation	—	—	—	—
Scarlet II: Site Preparation	Worker	60.0	50.0	LDA,LDT1,LDT2
Scarlet II: Site Preparation	Vendor	4.00	50.0	HHDT,MHDT
Scarlet II: Site Preparation	Hauling	2.00	115	HHDT
Scarlet II: Site Preparation	Onsite truck	28.0	2.00	HHDT
Scarlet II: Energy Storage System Site Preparation	—	—	—	—
Scarlet II: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet II: Energy Storage System Site Preparation	Onsite truck	16.0	2.00	HHDT
Scarlet III: Energy Storage System Site Preparation	—	—	—	—
Scarlet III: Energy Storage System Site Preparation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet III: Energy Storage System Site Preparation	Vendor	10.0	50.0	HHDT,MHDT

Scarlet III: Energy Storage System Site Preparation	Hauling	4.00	115	HHDT
Scarlet III: Energy Storage System Site Preparation	Onsite truck	12.0	2.00	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	32.0	50.0	LDA,LDT1,LDT2
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	6.00	50.0	HHDT,MHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	6.00	115	HHDT
Scarlet I: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	10.0	2.00	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet I: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet I: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet I: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	2.00	HHDT
Scarlet II: Solar Facility - PV Module System Installation	—	—	—	—
Scarlet II: Solar Facility - PV Module System Installation	Worker	440	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - PV Module System Installation	Vendor	40.0	50.0	HHDT,MHDT

Scarlet II: Solar Facility - PV Module System Installation	Hauling	32.0	115	HHDT
Scarlet II: Solar Facility - PV Module System Installation	Onsite truck	30.0	2.00	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	—	—	—	—
Scarlet II: Solar Facility - Substation and Electrical System Installation	Worker	80.0	50.0	LDA,LDT1,LDT2
Scarlet II: Solar Facility - Substation and Electrical System Installation	Vendor	12.0	50.0	HHDT,MHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Hauling	10.0	115	HHDT
Scarlet II: Solar Facility - Substation and Electrical System Installation	Onsite truck	40.0	2.00	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet II: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	2.00	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	—	—	—	—
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Worker	40.0	50.0	LDA,LDT1,LDT2

Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Vendor	16.0	50.0	HHDT,MHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Hauling	14.0	115	HHDT
Scarlet III: Energy Storage System - Foundations, Structures, and DC Electrical System Installation	Onsite truck	14.0	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Scarlet I: Site Preparation	101,600	—	1,040	0.00	—
Scarlet II: Site Preparation	101,600	—	1,155	0.00	—
Scarlet II: Energy Storage System Site Preparation	22,880	—	947	0.00	—

Scarlet III: Energy Storage System Site Preparation	22,880	—	947	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2022	0.00	204	0.03	< 0.005
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	23.9	23.9	23.9	8,740	221	221	221	80,809

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	23.9	23.9	23.9	8,740	221	221	221	80,809

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	1,500	500	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	1,752,000	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	1,752,000	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	9,868,737

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	0.00	9,868,737

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Pumps	Diesel	Average	10.0	8.00	11.0	0.74
Off-Highway Trucks	Diesel	Average	4.00	4.00	50.0	0.38

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Generator Sets	Diesel	Average	4.00	8.00	14.0	0.74
Pumps	Diesel	Average	10.0	8.00	11.0	0.74

Off-Highway Trucks	Diesel	Average	4.00	4.00	50.0	0.38

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	29.4	annual days of extreme heat
Extreme Precipitation	1.00	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	77.0
AQ-PM	86.1
AQ-DPM	23.1
Drinking Water	99.8
Lead Risk Housing	78.1
Pesticides	95.7
Toxic Releases	50.9
Traffic	1.57
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	92.6

Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	12.5
Solid Waste	63.7
Sensitive Population	—
Asthma	88.4
Cardio-vascular	66.8
Low Birth Weights	48.8
Socioeconomic Factor Indicators	—
Education	89.4
Housing	36.2
Linguistic	62.2
Poverty	87.3
Unemployment	82.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	5.633260619
Employed	10.49659951
Median HI	12.89618889
Education	—
Bachelor's or higher	15.47542666
High school enrollment	100
Preschool enrollment	31.75927114
Transportation	—
Auto Access	56.16578981

Active commuting	43.26960092
Social	—
2-parent households	63.64686257
Voting	30.63005261
Neighborhood	—
Alcohol availability	86.53920185
Park access	2.194276915
Retail density	1.244706788
Supermarket access	9.521365328
Tree canopy	1.411523162
Housing	—
Homeownership	24.61183113
Housing habitability	31.72077505
Low-inc homeowner severe housing cost burden	80.21301168
Low-inc renter severe housing cost burden	50.42987296
Uncrowded housing	24.97112794
Health Outcomes	—
Insured adults	18.50378545
Arthritis	0.0
Asthma ER Admissions	9.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	30.7

Cognitively Disabled	56.3
Physically Disabled	20.3
Heart Attack ER Admissions	13.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	8.1
Elderly	65.5
English Speaking	18.6
Foreign-born	63.5
Outdoor Workers	0.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	98.3
Traffic Density	0.9
Traffic Access	0.0
Other Indices	—
Hardship	87.2

Other Decision Support	—
2016 Voting	28.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	86.0
Healthy Places Index Score for Project Location (b)	13.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on site plan.
Construction: Construction Phases	Based on applicant provided information.
Construction: Off-Road Equipment	Based on applicant provided information.
Construction: Trips and VMT	Based on applicant provided information.
Operations: Architectural Coatings	No architectural coating.

Operations: Energy Use	Electricity use for BESS.
Operations: Water and Waste Water	1,060 acre-feet of water used for construction and operation.
Operations: Refrigerants	No refrigerants.
Operations: Off-Road Equipment	Based on applicant provided information.
Construction: Dust From Material Movement	Based on applicant provided information.
Operations: Solid Waste	No waste generated, remotely monitored.
Operations: Road Dust	Based on 2 miles of unpaved road travel per trip.

Appendix B
Addendum to Water Supply Assessment for Scarlet Solar Project

DUDEK
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MEMORANDUM

To:	Patrick Cousineau
From:	Dylan Duvergé, PG No. 9244; Devin Pritchard-Peterson, PG No. 10133
Subject:	Addendum to Water Supply Assessment for Scarlet Solar Project
Date:	February 9, 2023
cc:	Alex Hardy
Attachment:	Attachment A - Water Supply Assessment RE Scarlet Solar Energy Project

The Scarlet Solar Project (Project) was the subject of an environmental impact report (EIR) prepared in compliance with the California Environmental Quality Act (CEQA), which was certified by the County of Fresno (County) Board of Supervisors in April 2022. Since that time, EDP Renewables North America (EDPR) has made design refinements to the project warranting an addendum to the EIR to assess environmental impacts relative to conclusions presented in the EIR. The design refinements include changes to the source and amount of water that was analyzed in the Water Supply Assessment (WSA) originally prepared in 2018 per Senate Bill (SB) 610 (attached).[1] While the construction-related water demand has been revised upward, the water required for operation and maintenance has been revised downwards, such that if water demand were amortized over the 20-year analysis period for SB 610, the overall water use of the Project remains unchanged. The purpose of this addendum is to supplement the information and analysis in the original WSA, as needed, to ensure compliance with SB 610 requirements and to support the EIR addendum.

In short, this addendum concludes that there is sufficient groundwater available to supply the Project's construction and operation and maintenance (O&M) water demands for at least the next 20 years, even in multiple-dry-year conditions, accounting for the changes to the source and amount of water analyzed in the WSA. This addendum also concludes that the Project's water use will not result in unsustainable groundwater use, based on prior estimates of basin sustainable yield and because it will be well below the sustainable yield thresholds set forth in the basin's groundwater sustainability plan (GSP) prepared pursuant to the Sustainable Groundwater Management Act (SGMA) of 2014.

1 Water Demand Source and Volume Changes

The certified EIR described the proposed source of water for construction as a well on the neighboring Tranquility Station site as well as water purchased from Westlands Water District (WWD) and delivered to the site by truck. The source of water that was originally proposed for O&M was not specific but assumed to be trucked from an offsite local water purveyor with sufficient capacity. EDPR now intends to reactivate one or more capped existing wells on

1 Recurrent Energy Inc. 2018. *Water Supply Assessment RE Scarlet Solar Energy Project*. Prepared by Rincon Consultants, Inc. December 2018.

the project site[2] and use onsite groundwater for both construction and O&M purposes, with water from WWD secured through a municipal and industrial water agreement for up to 122 acre-feet (AF) for construction purposes. EDPR may also import or receive from off-site for O&M water. Thus, the primary change in terms of water supply source is to shift the groundwater source from offsite to onsite, which is environmentally preferable because it would reduce vehicle traffic and air pollutant emissions associated with water trucking. It also renders the discussion of offsite sources (i.e., City of Fresno and City of Mendota) and neighboring groundwater basins (i.e., Kings and Delta-Mendota Subbasins) in the original WSA unnecessary. The impacts of the Project's water use will be limited to the Westside Subbasin (Subbasin) of San Joaquin Groundwater Basin (DWR Basin No. 5-22.09).

In addition to changes in the source of water for the Project, the volume of water needed has also changed. As shown in Table 1, the amount of water that would be needed over the three phases of construction (approximately 2 years) has been revised upward to 650 AF from 360 AF originally, due in part to inclusion of grading and dust control requirements for the battery energy storage systems (BESS) and in part to a more conservative estimation method (e.g., inclusion of the 15% contingency). On the other hand, the long-term O&M water requirement has been revised downward to 5 acre-feet per year (AFY) from 20 AFY originally, due to a reduction in the frequency and volume of water needed for panel washing. When these water demands are amortized (i.e., averaged) over the 20-year planning period associated with SB 610, the water demand remains unchanged relative to the original WSA. When considering the longer term, beyond the 20-year horizon, these revisions result in a lower water demand than the original Project.

The focus of this WSA addendum is on the changes in source and volume of groundwater from the Westside Subbasin, because the original WSA adequately assessed the availability of water supply from WWD. With the use of a supplemental water agreement with WWD for 122 AF, there is sufficient water available to serve the Project's updated water demands. As described in additional detail in the original WSA, "It is reasonably assumed that the WWD would not use or distribute their allocated surface water supplies or available groundwater supplies in such a way that would be unsustainable to long-term water supply reliability, based on existing management programs. [...] Construction demands would either be met using groundwater supplies, which are understood to recover from short-term periods of heavier pumping, or WWD provided water, which is managed by the WWD for long-term supply reliability. In either case, the WWD would assess and approve the use of this water."[3]

Table 1. Revised Project Water Demand

Project Phase	Schedule	PV Array	BESS	Total
Construction				
Phase 1	10 months	270	10 AF	280 AF
Phase 2	9 months	270	45 AF	315 AF
Phase 3	7 months	0 AF	55 AF	55 AF
Total Water Demand Over 2 Years		**440 AF**	**110 AF**	**650 AF** (revised up from 360 AF)
Post-Construction / Operation and Maintenance				
5 AFY (revised down from 20 AFY)				

2 The well is located at the southwest corner of APN 028-071-47 in Section 21, Township 15S, Range 15E. The well Identification number is 15S/15E-21N02. The well was last used in November 2020. The well is capped and not currently active.

3 Recurrent Energy Inc. 2018. *Water Supply Assessment RE Scarlet Solar Energy Project*. Prepared by Rincon Consultants, Inc. December 2018.

20-Year Amortized Demand (2 years construction + 18 years O&M)
740 AF / 20 Years = 37 AFY (unchanged)

Note: A 15% additional contingency was added to the construction water demand estimates; PV = photovoltaic; BESS = battery energy storage system; AF = acre-feet; AFY = acre-feet per year.

2 Water Planning Updates

Notable changes in the water management planning framework have occurred since publication of the original WSA for the Project. The 2014 SGMA legislation adopted an updated basin prioritization system that ranks groundwater basins as high, medium, low, or very low priority. The Westside Subbasin is identified as a high-priority basin in a state of critical overdraft.[4] Based on this determination, in January 2020, acting as the groundwater sustainability agencies (GSAs) for the Westside Subbasin, WWD and the County adopted a Final GSP, which outlines a path to achieve sustainable groundwater management in the Westside Subbasin within a 20-year period.[5] As mandated under GSP Regulation 354.24, the GSAs have established a "sustainability goal for the basin that culminates in the absence of undesirable results within 20 years of the applicable statutory deadline." Specifically, the sustainability goal establishes that the Westside Subbasin will be operated within its sustainable yield by 2040 and maintain sustainability through the entire planning and implementation horizon through 2070. The GSP sets forth active management strategies that may be pursued by the GSAs and stakeholders as authorized, as well as enforceable commitments to ensure its efficacy. These strategies include firming up access to more reliable surface water deliveries, conjunctive use, demand management through the adoption of an allocation system, improved efficiencies by transfer/trading, and surface water substitution within subsidence prone areas.

In an effort to address groundwater sustainability goals and measurable objectives, and to avoid causing undesirable results in the Subbasin, the GSP identifies and describes the following five projects and management actions (PMAs):

- Project No. 1 – Surface Water Imports
- Project No. 2 – Initial Allocation of Groundwater Extraction
- Project No. 3 – Aquifer Storage and Recovery
- Project No. 4 – Targeted Pumping Reductions
- Project No. 5 – Percolation Basins

This water management framework, i.e., implementation of the GSP for the Westside Subbasin, was not present when the original WSA was prepared. Because development and implementation of the GSP is required to achieve sustainable groundwater management by 2040, and because the Project's long-term water demand would be solely from wells that access groundwater from the Westside Subbasin, the statutory intent of SB 610 would be satisfied by demonstrating that the Project would not impede or conflict with the relevant aspects of the GSP. PMAs 1, 3, 4 and 5, as described in the GSP, would neither have a direct impact on the potential to pump on-site groundwater to supply the Project, nor would the project have any impact on the feasibility or efficacy of any of these PMAs. The

4 DWR. 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization – Process and Results. May 2020. Accessed September 2022. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization.

5 Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan.* Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.

one PMA which is relevant to on-site groundwater pumping for project construction and/or O&M use would be Project No. 2 – Initial Allocation of Groundwater Extraction, which is addressed below in Section 3.

In January 2022, the California Department of Water Resources (DWR) determined that the Westside Subbasin GSP was "Incomplete" for lacking adequate information and directed WWD and the County to resubmit an updated plan by July 2022.[6] The GSAs resubmitted a revised GSP on July 18, 2022. However, DWR did not dispute the original GSP's PMAs—which are likely to be approved—so the GSP is still an appropriate water management framework under which to assess the Project's water supply pursuant to SB 610 and serves as an appropriate performance standard under CEQA.

Another recent development has been Executive Order N-7-22, which was adopted by California's Governor Gavin Newsom on March 28, 2022, in response to the State's ongoing drought conditions. The executive order includes limitations on constructing new wells or altering existing ones if the well at issue provides 2 AF per year or more of groundwater. The general limitation requires findings that extracting the groundwater (1) would not interfere with nearby wells and (2) is "not likely to cause subsidence that would adversely impact or damage nearby infrastructure." The executive order also includes a separate requirement for wells in a medium- or high-priority basin under the SGMA. There, the GSA must make written findings that the well would not (1) be inconsistent with the applicable GSP and (2) decrease the likelihood of achieving an applicable sustainability goal.

Although groundwater (either directly from on site or indirectly via WWD) is the sole source of water for the Project, this water will rely on existing wells and will not require any new well drilling, rehabilitation, or deepening, and thus would not trigger the need for a well drilling permit. The following section provides the rationale for why the Project's water use would not conflict with the applicable GSP or decrease the likelihood of achieving an applicable sustainability goal.

3 Groundwater Impact Analysis

For this analysis, the entire water demand of the Project is assumed to be supplied from onsite, and thus must be reviewed for its potential to impact groundwater resources and with its compatibility with the sustainable management criteria (SMC) and the PMAs outlined in the GSP for the Westside Subbasin. The original WSA evaluates supplemental construction water of up to 122 AF from offsite sources supplied by WWD. Each section below evaluates the project's water demand in the context of the GSP's SMC and PMAs.

There is no issue with regard to the physical ability of the site to supply the needed groundwater because there are numerous onsite wells and there are no real constraints on yield, since onsite wells were historically capable of supplying enough water for agricultural irrigation, even during multiple-year droughts. The SB 610 requirement to determine water sufficiency during multiple-year droughts are most impactful for projects that rely on surface water. However, groundwater levels can be expected to decline temporarily during severe droughts. If the onsite well(s) used by EDPR to supply the project suffer from a reduction or loss of yield, it will be a matter of switching to another onsite well(s) or deepening existing well(s), in coordination with WWD.

6 California Department of Water Resources. 2022. "Incomplete" Determination of the 2020 Westside Subbasin Groundwater Sustainability Plan. January. Accessed February 2023. https://cawaterlibrary.net/wp-content/uploads/2022/03/Westside_Subbasin GSP2022 Determination.pdf

Sustainable Yield of the Westside Subbasin

Estimates of sustainable yield (i.e., the amount of groundwater that can be extracted annually without causing undesirable results) were developed by WWD as the GSA for the Westside Subbasin and published in the Final GSP. Using historical long-term average pumping and change in aquifer storage, under baseline conditions (using simulated average historical net lateral subsurface flow from 1989 through 2015 and projected net lateral flow from 2020 through 2070), the projected sustainable yield of the Subbasin is 269,000 AFY.[7] Using assumed 2030 climate change factors, the projected sustainable yield is 270,000 AFY, and using assumed 2070 climate change factors, the projected sustainable yield is 293,000 AFY. Previously, safe yield of the Westside Subbasin had been estimated by WWD to be approximately 200,000 AFY.[8] The short-term, temporary construction demand of the project (650 AF) is less than 0.25% of the estimated projected sustainable yield of the Subbasin under baseline conditions (269,000 AFY) published in the Final GSP, and approximately 0.33% of the previously estimated safe yield of the Subbasin (200,000 AFY). Both the short-term and long-term demand of the Project is such an insignificant fraction of the Westside Subbasin's sustainable yield that it would not have an adverse impact on total groundwater in storage.

GSP Project No. 2 – Groundwater Extraction Allocation

Based on DWR's basin prioritization finalized in 2019, the Westside Subbasin had yearly average groundwater use of 1.81 AF/acre[9], which is one of the major factors contributing to the subbasin's status as being in a state of critical overdraft. By comparison, the Project's average yearly per-acre groundwater use over the next 20 years would be less than 0.01 AF. GSP Project No. 2 (Initial Allocation of Groundwater Extraction) is a PMA that establishes terms of groundwater extraction allocation (AF/acre) which would provide each groundwater user with land overlying the Subbasin continued access to pump groundwater, in accordance with the allocation plan. The allocation plan will begin with the commencement of an 8-year transition period from 2022 through 2030 in which a uniform initial annual allocation is established at 1.3 AF/acre, which subsequently ramps down each year by 0.1 AF/acre until 2030, at which time the allocation would be 0.6 AF/acre.[10] During this transition period, the GSA will measure and track groundwater withdrawals during this transition period.

The Initial Allocation of Groundwater Extraction PMA is described in Section 4.2.1 of the GSP, which states that "Uniform distribution of the total Subbasin pumping among water users will be determined on a per-acre land ownership basis *for qualifying agricultural lands (qualifying lands do not include land that has been retired within the subbasin)."* Additionally, Section 4.2.1.1 of the GSP states "Land eligible for a groundwater allocation in the Subbasin totals up to approximately 525,000 acres *(excludes the District owned land) [...]*." Based on the fact that the Project property is currently owned by WWD and is considered retired (i.e., is non-contracted land, has not received surface water for the last 10 years, does not currently receive surface water, and is explicitly excluded from surface water import in perpetuity per the Peck Settlement), the Project is not subject to the groundwater extraction allocation.[11] Therefore, it does not have a specific cap for groundwater use and is eligible to extract

7 Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan*. Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.
8 Westlands Water District. 2013. *Water Management Plan 2012*. Published April 2013.
9 DWR. 2020. Sustainable Groundwater Management Act 2019 Basin Prioritization – Process and Results. May 2020. Accessed September 2022. https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization.
10 Luhdorff & Scalmanini. 2020. *Westside Subbasin Groundwater Sustainability Plan*. Prepared for Westlands Water District GSA and County of Fresno GSA. January 2020.
11 Article 2 of WWD's Rules and Regulations.

groundwater for reasonable and beneficial use so long as no water is wasted, and subject to WWD's rules and regulations pertaining to use of municipal and industrial water.[12] However, the allocation program is useful to compare project pumping to the maximum level of pumping that was determined in the GSP to be allowable without causing undesirable results.

As shown in Table 2, even in the circumstance where the groundwater allocation would apply to the Project, the initial allocation of 1.3 AF/acre would result in 5,290 AF of pumped groundwater available to the project in 2023 and 4,883 AF available in 2024, which would easily satisfy the construction demand of 650 AF over the approximate 2-year construction period. The most conservative groundwater allocation that could result due to the implementation of the GSP, 0.6 AF/acre at the end of the 8-year ramp down, would result in 2,441 AF of groundwater available to the Project annually during the O&M phase. This supply would be more than sufficient to satisfy the estimated maximum O&M demand of 5 AFY. As shown in Table 2, the Project's water demand, even if it were subject to the groundwater extraction allocation, would only extract 0.2% of the theoretical extraction allocation on a yearly basis in the long-term. Even if the GSA reduces the cap further in its adaptive management role during a periodic re-evaluation of GSP implementation (i.e., if needed to meet its long-term sustainability goal), the Project's extraction would have minimal impact. Although the GSP assumed the Project site to be retired, it represents less than 1% of the land area eligible for the groundwater allocation. Therefore, even though the Project site (being retired agricultural land) does not currently contribute to the groundwater overdraft condition, its Project-related contribution would be negligible when compared to the extraction that occurs throughout the Subbasin.

Table 2. Comparison of Groundwater Extraction Allocation to the Revised Project Water Demand

Year	Allocation Cap (AF / gross acre)	Theoretical Groundwater Extraction Allocation (AF)[1]	Estimated Water Demand (AF)	Percent of Allocation (AF)
2023	1.3	5,290	500[2]	9.5%
2024	1.2	4,883	150[2]	3.1%
2025	1.1	4,476	5	0.1%
2026	1.0	4,069	5	0.1%
2027	0.9	3,662	5	0.1%
2028	0.8	3,255	5	0.2%
2029	0.7	2,848	5	0.2%
2030	0.6	2,441	5	0.2%
2031	0.6	2,441	5	0.2%
2032	0.6	2,441	5	0.2%
2033	0.6	2,441	5	0.2%
2034	0.6	2,441	5	0.2%
2035	0.6	2,441	5	0.2%
2036	0.6	2,441	5	0.2%
2037	0.6	2,441	5	0.2%
2038	0.6	2,441	5	0.2%
2039	0.6	2,441	5	0.2%

12 Article 19 of WWD's Rules and Regulations.

Table 2. Comparison of Groundwater Extraction Allocation to the Revised Project Water Demand

Year	Allocation Cap (AF / gross acre)	Theoretical Groundwater Extraction Allocation (AF)[1]	Estimated Water Demand (AF)	Percent of Allocation (AF)
2040	0.6	2,441	5	0.2%
2041	0.6	2,441	5	0.2%
2042	0.6	2,441	5	0.2%

Notes: AF = acre-feet.
1 Based on a project size of 4,069 acres (
2 The construction demand of 650 AF was split over two years based on construction phasing shown in Table 1.

Groundwater Levels in the Westside Subbasin

The GSP established minimum thresholds and measurable objectives (i.e., sustainable management criteria, or SMC) for a number of key monitoring wells throughout the Westside Subbasin to monitor its progress towards its sustainability goal. There are two representative monitoring wells near the Project site intended to measure groundwater levels in both the deep and shallow aquifer, and to assess whether they are meeting the objectives of the GSP. As shown in Table 3, Well No. 15S/15E-29K01, located about a half-mile south of the Project's southern boundary, measures compliance with SMCs in the lower aquifer, and Well No. 15S/15E-16K01, located about 0.4-miles north of the Project's northern boundary, measures compliance with SMCs in the upper aquifer. The most recent water level readings in these wells, shown in Table 3, indicate that neither are exceeding their minimum thresholds, and both are on track to meet their 5- and 10-year interim milestones. Given the Project's average yearly per-acre groundwater use over the next 20 years would be less than 0.01 AF and the onsite groundwater well used to supply the Project would be at least a half-mile away from these two representative monitoring wells, the Project's water use would have a negligible, if any, effect on water levels within them. The long-term water use of the project would be far less than what would occur if this land was used for rural residential uses (even with rural residential parcels of 40 acres) with domestic wells pumping less than 2 AFY, which SGMA has identified as de-minimis groundwater pumping. Conservatively assuming 40-acre parcels with single residences and 4 people per residence, the Project operational water demand would only be approximately 11% of that of the rural development[13]. If, over the GSP's implementation horizon, water levels in these wells do not meet the established SMCs, the GSA has outlined a number of management responses that could be taken to bring them back in line with their SMCs. For these reasons, the water use of the Project would not have any impact on the SMCs identified in the GSP for the nearest representative monitoring wells.

Table 3. Sustainable Management Criteria for Representative Monitoring Wells Near the Project Site

Aquifer	Well Name	Fall 2021 Water Level	5-Year Interim Milestone	10-Year Interim Milestone	15-Year Interim Milestone	Measurable Objective	Minimum Threshold
Lower	15S/15E-29K01	-178.4	-198.8	-179.2	-159.6	-140	-218.4

13 101 gal./person/day (How We Use Water | US EPA) x 4 people per residence x 102 residences = 41,208 gal/day x 365 days/year = 15,040,920 gal/year. 15,040,920 gal/325,851 gal/AF = 46.2 AFY. 5 AFY operational demand/46.2 x 100 = 11%.

Upper	15S/15E-16K01	108.1	88.4	100.2	112	123.8	76.6

Source: Luhdorff & Scalmanini 2020.
Notes: Units are water surface elevations in feet above mean sea level.

4 SB 610 Conclusions

Based on a review of available water supplies, groundwater conditions, and sustainability goals and objectives, this addendum to the original WSA has concluded the following:

- The Project has sufficient access to water through use of on-site groundwater to support both the construction and operations and maintenance demands of the Project over the next 20 years, even in multiple-dry-year conditions.
- The Project does not conflict with the applicable goals, SMC, and/or PMAs identified in the GSP prepared by WWD and the County because its long-term per-acre average yearly water demand is so low.

For the purposes of CEQA, this addendum to the original WSA supports a less than significant impact conclusion regarding water supply availability and groundwater resources.

Attachment A

Water Supply Assessment
RE Scarlet Solar Energy Project

Water Supply Assessment

RE Scarlet Solar Energy Project

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1 Introduction

Senate Bill 610 (SB 610) became effective on January 1, 2002, amending California Water Code to require detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA and meets certain requirements, each of which is discussed in detail in Section 3 of this WSA.

SB 610 was not originally clear on whether renewable energy developments are subject to SB 610 and require the preparation of a WSA. Senate Bill 267 (SB 267) was signed into law by California's Governor Brown on October 8, 2011, amending California's Water Law to revise the definition of "project" specified in SB 610. Under SB 267, wind and photovoltaic projects which consumed less than 75 acre-feet per year (AFY) of water were not considered to be a "project" under SB 610; subsequently, a WSA would not be required for this type of project. However, the renewable energy exclusions provided by SB 267 expired in January 2017. Since the language of SB 610 remains unclear on whether renewable energy projects meet the definition of a "project," this WSA takes a conservative approach and considers renewable energy projects to be subject to the requirements of SB 610.

Water requirements associated with the Scarlet Solar Energy Project ("Project" or "proposed Project") are described in Section 1.1 of this WSA, and include the following:

- Construction water demands would be met using groundwater obtained from an existing groundwater well located on the neighboring Tranquillity Solar Generating Station (Tranquillity Station) site. Both the proposed Project site and the Tranquillity Station site are located within the Westlands Water District (WWD) and overlie the Westside Subbasin of the San Joaquin Valley Groundwater Basin. Groundwater resources are characterized in Section 3 of this WSA.
- Operational and maintenance (O&M) water demands for the proposed Project would be obtained from either the City of Fresno or the City of Mendota, and trucked to the Project site on an as-needed basis. It is anticipated that O&M water would not be obtained from the Tranquillity Station site. These water sources are also characterized in Section 3 of this WSA.

When a WSA is required per California Water Code, it must examine the availability of an identified water supply under normal-year (no drought), single-dry-year (limited drought), and multiple-dry-year (extended drought) conditions over a 20-year projection, accounting for the projected water demand of the proposed Project in addition to other existing and planned future uses of the identified water supply, including agricultural and manufacturing uses. However, a common lack of data for groundwater usage and replenishment rates makes it difficult to estimate baseline conditions regarding water supply availability. Data availability is particularly of issue in the San Joaquin Valley area of California, where the proposed Project is located, due to a dominance of agricultural water users and a lack of consistent groundwater monitoring and reporting programs. Therefore, where data is not available to make quantitative estimates of water supply, reasonable assumptions are made based on available information and data.

The steps followed to ensure compliance of this WSA with California Water Code are described in Attachment A (DWR Guidebook for Implementation of Senate Bill 610 and Senate Bill 221).

1.1 Project Description

The proposed Scarlet Solar Energy Project is a photovoltaic (PV) electricity generating facility, which would generate up to 400 megawatts of alternating current (MW_{ac}) on approximately 4,069 acres in unincorporated Fresno County. Power generated by the proposed Project would be delivered to customers via an interconnection to the regional electricity grid at Pacific Gas and Electric Company's (PG&E) existing Tranquillity Station located just west of the Project site.

The solar facility would consist of the following primary components:

Solar arrays in different configuration, where each array includes PV panels and steel support structures, electrical inverters, transformers, cabling, and other infrastructure; two electrical substations; and other necessary infrastructure, including one permanent O&M building, septic system and leach field, supervisory control and data acquisition (SCADA) system, meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar, other shared facilities, and wildlife-friendly security fencing. The project would also include up to 3.1 miles of 230 kV generator intertie (gen-tie) transmission line (from two substations) to connect to PG&E's Tranquillity Station, as well as a 400 MW energy storage system, consisting of battery or flywheel enclosures and electrical cabling.

1.1.1 Location and Land Uses

The proposed Project would be located in western Fresno County, approximately five miles southwest of the community of Tranquillity. Primary access to the Project site would be provided from Manning Avenue, an existing public road, and State Route (SR) 33. Figures 1 and 2 show groundwater basins and surface waters in the Project area, respectively.

Existing land uses on the Project site are characterized primarily by dry-farmed agriculture that has been intermittently irrigated. The Project site is designated as Exclusive Agriculture in the Fresno County General Plan (2000) and is zoned AE20 (Exclusive Agriculture, 20-acre minimum required). The property is currently owned by Westlands Water District (WWD).[1] Please see Figure 3.

For the past 10 years, the Project site has been intermittently utilized for low-yield agricultural production (tilled, seeded, and harvested for winter wheat); intermittently irrigated (drip or sprinkler) and harvested for alfalfa seed or other crops; or disced twice a year and left fallow. Soils and groundwater on the Project site are subject to high levels of selenium. Additionally, the local groundwater table does not provide for sufficient drainage for most commercially irrigated crops. Furthermore, the entire Project site is part of WWD settlements that require a non-irrigation covenant upon transfer of ownership. For the portion of the Project site that is cultivated without the benefit of irrigation, the productivity of these crops depends entirely on rainfall. When the unirrigated crops fail to mature to harvest, the land is grazed as rangeland grasses. There are no Williamson Act contracts binding any of the parcels.[2]

Existing land use surrounding the Project site is predominantly agricultural, consisting of fields (non-irrigated agricultural land) which are predominately owned by WWD, which keeps them in various states of low-value agricultural production. Roadways surrounding the Project site include West Dinuba Avenue and State Route 33 (West Derrick Avenue), both of which are paved, as well as South San Mateo Avenue

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2 The Williamson Act (also known as the California Land Conservation Act of 1965) enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. The contracted land is then restricted to agricultural and compatible uses through a rolling-term, 10 year contract between the private land owner and the local government.

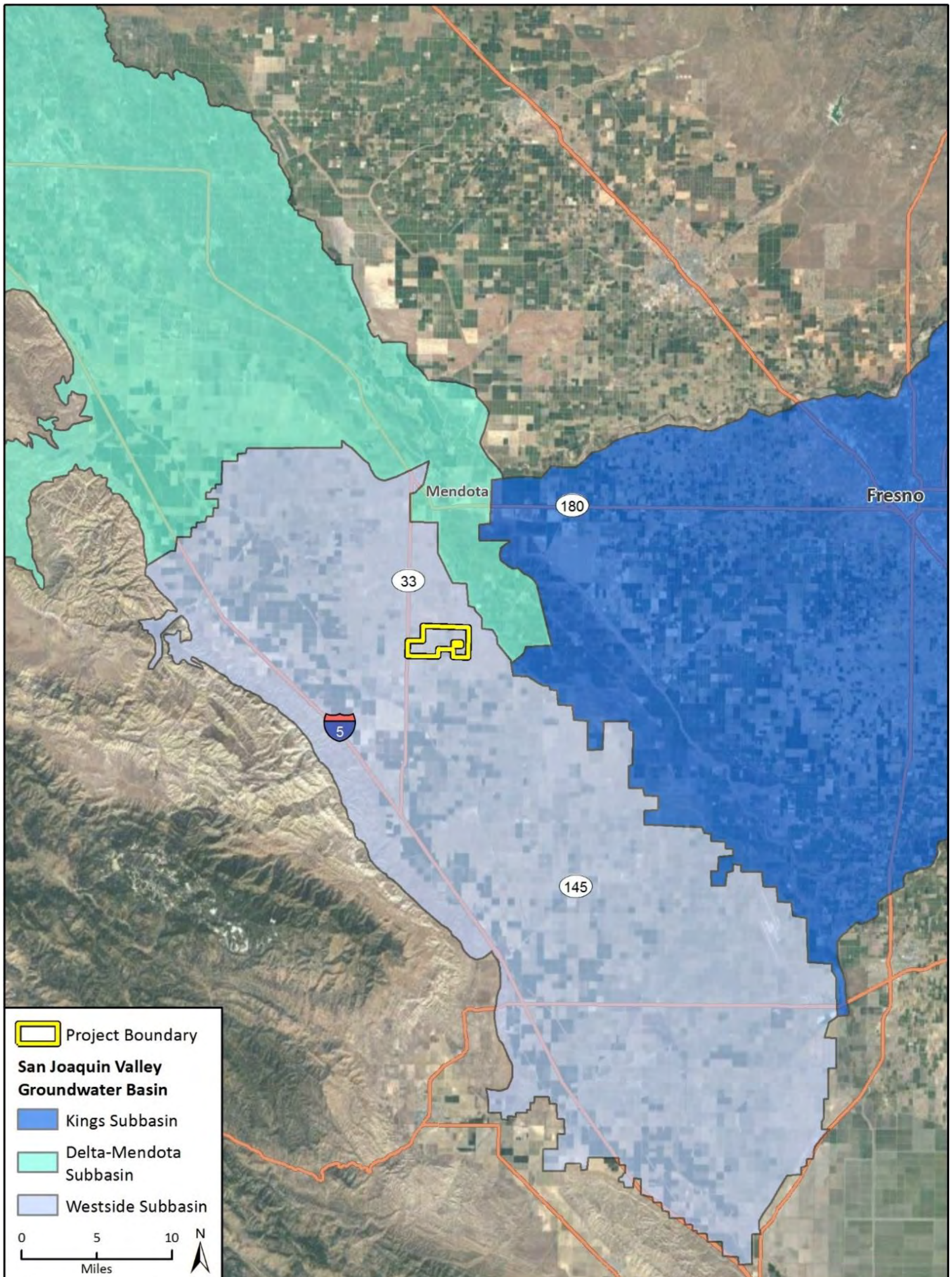
and West South Avenue, which are unpaved. These roads range between 15 feet and 50 feet in width and provide a buffer between the Project site and the parcels to the north, west, south, and east.

1.1.2 Construction Water

During construction of the Project, it is proposed that water would be obtained from an existing private well on the neighboring Tranquillity Station site, which is also within the WWD, or that water would be purchased from the WWD and trucked to the site from a local well source within five miles of the Project site. If grading and grubbing are required at the proposed Project site, it is anticipated that construction would require up to 360 acre-feet per year (AFY) of water for dust suppression, truck wheel washing, and miscellaneous purposes. If grading and grubbing are not required for implementation of the Project, construction water requirements would be reduced to 200 AFY (also for dust suppression, truck wheel washing, and miscellaneous purposes).

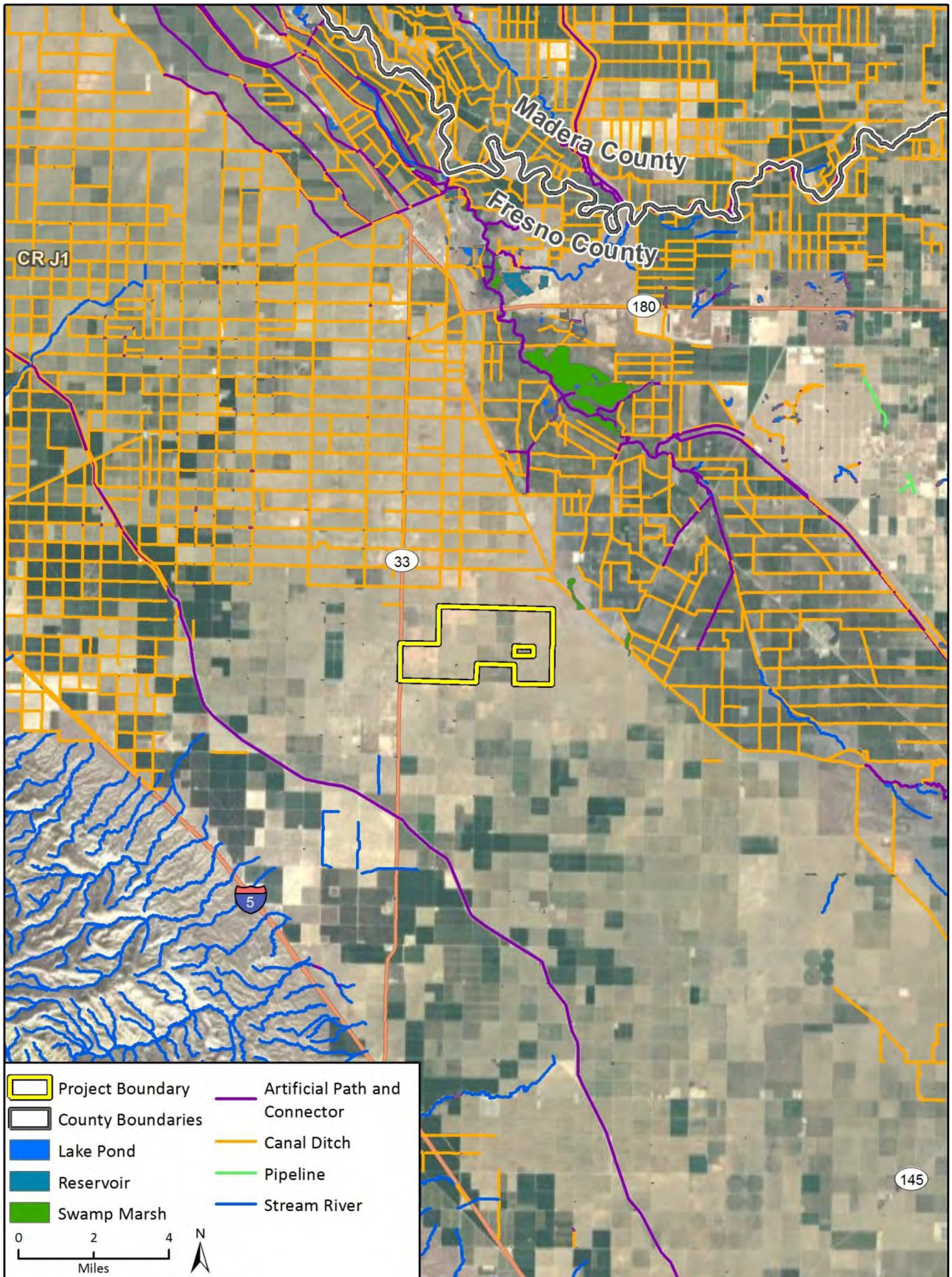
During construction, restroom facilities would be provided as portable units that would be serviced by licensed providers. Potable water for drinking and hand washing would be brought to the site by construction employees or by a bottled water service provider.

Figure 1 Groundwater Basins



Imagery provided by Google and its licensors © 2016.
Grounwater Basin Source: California Department of Water Resources, 2015.

Figure 2 Surface Water



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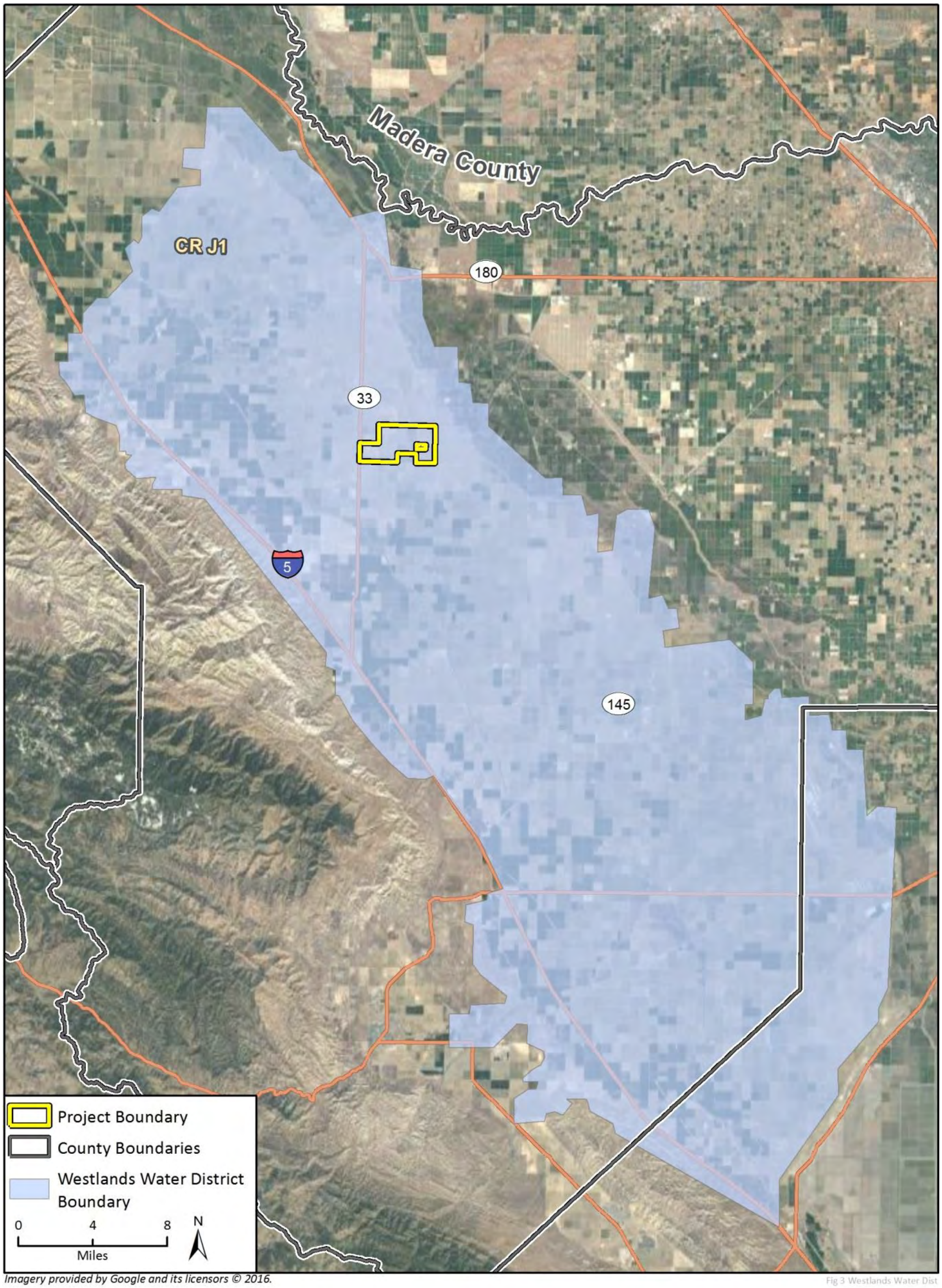
USGS National Hydrology Dataset v220, 2016.

Figure 3 Westlands Water District



1.1.3 Operational Water

During operation and maintenance of the Project, which would occur over the Project's lifetime, water would be required for panel washing and maintenance, for the O&M building restroom facilities, and the support of on-site sheep, and other miscellaneous water uses. Operational water requirements are described in Table 1.

Table 1 Operational Water Requirements

Project Component	Gallons per Year	Acre-Feet per Year
Panel Washing	4,800,000[1]	14.73
Washing equipment, hand washing, non-sanitary uses	500,000	1.53
Support on-site sheep and other misc. needs	1,200,000	3.68
Total	6,500,000	19.94

[1] Up to 1,200,000 gallons (3.7 acre-feet) of water would be used per panel washing event, with up to four panel washings required per year.

As shown in Table 1, operation and maintenance of the Project would require up to approximately 20 AFY of water across 3,575 acres. It is anticipated that operational water would be obtained from an off-site local water purveyor with sufficient capacity to provide the required supply, and trucked to the Project site. Potable water would be supplied to the O&M building for use in restroom and other facilities by a licensed provider.

Water used for panel washing may be treated through a portable truck-mounted filtration system to reduce total dissolved solids (TDS) concentrations; the Project would not include a reverse osmosis or other permanent water treatment system. Water for panel washing during operations may drip from panel surfaces and onto the underlying soils; panel washing would only occur during dry conditions, as rainwater has a similar effect as panel washing. All water used on-site during both construction and operations would be used in dry ambient conditions and in small enough quantities as to be absorbed into the upper layer of onsite soils and ultimately evaporated. Project-related water used on site does not have the potential to percolate into groundwater aquifers at the site.

A septic system and leach field would be installed adjacent to the O&M building to support the restroom facilities and sewage needs of the eight permanent staff working eight hours per day at the O&M building during operation. Personnel on-site to perform panel washing (up to four times per year) would be provided with portable restrooms serviced by a licensed provider. Anticipated peak flow is 600 gallons into the leach field per day during Project operation. No surface discharges are proposed, other than natural stormwater runoff. A Waste Discharge Permit would not be required from the Central Valley Regional Water Quality Control Board (RWQCB) because the Project would not exceed 2,500 gallons per day of sewage. The septic system would be permitted by the Fresno County Department of Public Works and Planning. The septic system and leach field testing procedures and design would meet all applicable specifications and regulations.

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2 Senate Bill 610 Applicability

Senate Bill 610 became effective in 2002 and amended the California Water Code to require a WSA to be completed for certain projects subject to CEQA, as discussed below in Sections 2.1 and 2.2. California Water Code Section 10910, as amended by SB 610, requires that a WSA must address the following questions: Is there a public water system that will service the proposed Project (Section 2.3); Is there a current UWMP that accounts for the project demand (Section 2.4); Is groundwater a component of the supplies for the project (Section 2.5); and are there sufficient supplies to serve the project over the next twenty years (Section 2.6). The primary question to be answered in a WSA is:

> *Will the total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?*

The following sections address the SB 610 WSA questions as they relate to the proposed Scarlet Solar Energy Project.

2.1 Is the Proposed Project Subject to CEQA?

California Water Code Section 10910(a) states that any city or county that determines that a project, as defined in Section 10912, is subject to CEQA, which applies to projects requiring an issuance of a discretionary permit by a public agency, projects undertaken by a public agency, or projects funded by a public agency. The proposed Project requires issuance of an Unclassified Conditional Use Permit (UCUP) by a public agency and is, therefore, subject to CEQA.

2.2 Is the Proposed Project a "Project" under SB 610?

California Water Code Section 10912(a) states that any proposed action which meets the definition of "project" is required to prepare a WSA to demonstrate whether sufficient water supplies are available to meet requirements of the proposed Project under normal and drought conditions. Water Code Section 10912 defines a "project" as any one of six different development types with certain water use requirements. Each identified development type and associated water requirements are addressed below. Any mixed-use project which incorporates one of the six development types described below is also defined as a "project."

Residential Development

A proposed residential development of more than 500 dwelling units is defined as a "project" under SB 610. The proposed Project is not a residential development.

Shopping Center or Business Establishment

A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space is defined as a "project" under SB 610. The proposed Project is not a shopping center or business establishment.

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Commercial Office Building

A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space is defined as a “project” under SB 610. The proposed Project is not a commercial office building.

Hotel or Motel

A proposed hotel or motel, or both, having more than 500 rooms is defined as a “project” under SB 610. The proposed Project is not a hotel or motel.

Industrial, Manufacturing, or Processing Plant or Industrial Park

A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area is defined as a “project” under SB 610.

The proposed Project is not a manufacturing plant, processing plant, or industrial park. However, the proposed Project is an industrial facility occupying more than 40 acres and therefore it was conservatively determined that the proposed Project is considered a “project” under Water Code Section 10912. Therefore, this WSA has been prepared to satisfy the requirements of SB 610.

2.3 Is there a Public Water System that will Serve the Proposed Project?

California Water Code Section 10912 defines a “public water system” as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. The proposed Scarlet Solar Energy Project is located within the jurisdiction of the WWD, which provides agricultural water to users within its jurisdiction and would provide the construction water for the proposed Project. The WWD does not deliver treated water for human consumption and is not considered a public water system.

Operational water demands for the proposed Project would be sourced from either the City of Fresno (Public Water System Number 1010007), or the City of Mendota. As of 2015, the City of Fresno had approximately 130,000 service connections (City of Fresno, 2016) and therefore constitutes a public water system. As of 2017, the City of Mendota had 1,911 service connections (City of Mendota, 2009) and therefore does not constitute a public water system.

2.4 Is there a Current UWMP that Accounts for the Project Demand?

Urban Water Management Plans (UWMPs) are prepared by California’s urban water suppliers to support long-term resource planning and ensure adequate water supplies. Every urban water supplier that either delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to assess the reliability of its water sources over a 20-year period under normal-, dry-, and multiple dry-year scenarios. UWMPs must be updated and submitted to the California Department of Water Resources (DWR) every five years for review and approval. (DWR, 2016)

Construction water demands for the proposed Project would be sourced from the WWD. The WWD does not supply over 3,000 customers with water for municipal purposes; therefore, the WWD is not considered an “urban water supplier” and is not required to submit an UWMP to the DWR. However, the

WWD has more than 3,000 agricultural connections, which are metered and maintained by WWD staff (WWD, 2012d).

Operational water would be provided by the City of Fresno or the City of Mendota. As noted above, the City of Mendota does not have more than 3,000 connections and is not required to have an UWMP in place. The City of Fresno, as a public water system, is required to submit an UWMP to the DWR. In June 2016, the City of Fresno adopted its 2015 UWMP (City of Fresno 2016), which provides updated demographics, historical water use by sector, and supply and demand forecasts under various hydrologic scenarios for the period 2015 through 2040. Demand forecasts are based on long-term demographic projections as well as billing data for major customer classes, conservation, and historic weather. The 2015 UWMP also provides a discussion of water supply reliability, demand management measures, and climate change related to water supply.

According to Water Code Section 10910 (c)(2), if the projected water demand associated with the proposed Project was accounted for in the most recently adopted UWMP, the water supplier may use the demand projections from the UWMP in preparing the WSA. This WSA Water Demand Report uses data provided in the City of Fresno's UWMP to assess water supply availability for the proposed Project. Although the proposed Project is not specifically identified in the UWMP, the UWMP accounts for the types of development constituted by the proposed Project, and the water availability projections provided therein are therefore appropriate to utilize for the purposes of this WSA.

2.5 Is Groundwater a Component of the Supplies for the Project?

Goundwater is a potential water supply for the proposed Project. The Project would require up to 360 AFY of water during construction, and approximately 20 AFY of water during operation and maintenance over the lifetime of the Project.

As noted in Section 1.1, the Project's construction water supply would be pumped from neighboring wells within the Westside Subbasin of the San Juaquin Valley Groundwater Basin, and/or delivered by the WWD to the Project site. Groundwater from the Westside Subbasin is the primary water supply source for the WWD.

The Project's operational water supplies may be sourced from the City of Fresno, which produces groundwater from the Kings Subbasin of the San Joaquin Valley Groundwater Basin, or the City of Mendota, which produces water from the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin.

For the purposes of this WSA, each potential water supply is addressed in the following sections, with respect to water supply reliability; however, it is important to note that Water Code Section 10910 specifically requires analysis of groundwater resources proposed to be used by a particular project, while the availability and reliability of water delivered by a purveyor such as the WWD, the City of Fresno, or the City of Mendota must be ensured by the respective purveyor.

2.6 Are there Sufficient Supplies to Serve the Project over the Next Twenty Years?

The sufficiency of water supplies identified as potential sources to serve the Project is assessed in the following sections, which address both groundwater and surface water supplies in the Project area.

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3 Impact Analysis

Construction water demands for the proposed Project would be met using groundwater pumped from the Westside Subbasin, which is managed by the WWD. Operational water demands for the proposed Project would be met via water from the City of Fresno or the City of Mendota. The following sections examine these water supplies and their capacity to provide the water needed to meet the construction and operational demands of the proposed Project.

3.1 Westlands Water District

Formed in 1952, the WWD is the largest agricultural water district in the United States. Historically, groundwater was the only water supply source used to irrigate nearly all land within the current WWD boundaries. In 1963, the WWD entered into a water supply contract with the United States Bureau of Reclamation (USBR) for surface water supplies from the Central Valley Project (CVP). Currently, the WWD relies on both local groundwater and imported CVP surface supplies to meet the water demands of its customers. (WWD, 2012)

Table 2 shows the WWD's historical water production from 1988 to 2016.

Table 2 Westlands Water District – Historical Water Production

Water Year	CVP Allocation %	Net CVP (AF)	Groundwater (AF)	Water User Acquired (AF)	Additional District Supply (AF)	Total Supply (AF)	Fallowed Acres
1988	100%	1,150,000	160,000	7,657	97,712	1,415,369	45,632
1989	100%	1,035,369	175,000	20,530	99,549	1,330,448	64,579
1990	50%	625,196	300,000	18,502	(2,223)	941,475	52,544
1991	27%	229,666	600,000	22,943	77,399	930,008	125,082
1992	27%	208,668	600,000	42,623	100,861	952,152	112,718
1992	54%	682,833	225,000	152,520	82,511	1,142,864	90,413
1994	43%	458,281	325,000	56,541	108,083	947,905	75,732
1995	100%	1,021,719	150,000	57,840	121,747	1,351,306	43,528
1996	95%	994,935	50,000	92,953	172,609	1,310,497	26,754
1997	90%	968,408	30,000	94,908	261,085	1,354,401	35,554
1998	100%	945,115	15,000	54,205	162,684	1,177,004	33,481
1999	70%	806,040	60,000	178,632	111,144	1,155,816	37,206
2000	65%	695,693	225,000	198,294	133,314	1,252,301	46,748
2001	49%	611,267	215,000	75,592	135,039	1,036,898	73,802
2002	70%	776,526	205,000	106,043	64,040	1,151,609	94,557
2003	75%	863,150	160,000	107,958	32,518	1,163,626	76,654
2004	70%	800,704	210,000	96,872	44,407	1,151,983	70,367
2005	85%	996,147	75,000	20,776	98,347	1,190,270	66,804
2006	100%	1,076,461	25,000	45,936	38,079	1,185,476	54,944
2007	50%	647,864	310,000	87,554	61,466	1,106,884	96,409
2008	40%	347,222	460,000	85,421	102,862	995,505	99,663
2009	10%	202,991	480,000	68,070	70,149	821,210	156,239
2010	45%	590,059	140,000	71,296	79,242	880,597	131,339
2011	80%	876,910	45,000	60,380	191,686	1,173,976	59,514
2012	40%	405,451	355,000	111,154	123,636	995,241	112,755
2013	20%	188,448	638.000	101,413	143,962	1,071,823	131,848
2014	0%	98,573	655,000	59,714	26,382	839,669	220,053
2015	0%	82,429	660,000	55,656	34,600	832,685	218,112
2016*	5%	69,745	550,000	55,000	202,900	877,645	225,000

Definitions:

Water Year = March 1 – February 28
CVP Allocation = Final CVP water supply allocation for Water Year (100% = 1,150,000 AFY)+(Reassignment = 49,948 AF)
Net CVP = CVP allocation adjusted for carry over and rescheduled losses
Groundwater = Total groundwater pumped
Water User Acquired = Private landowner water transfers
Additional District Supply = Surplus water, supplemental supplies, and other adjustments
Fallowed acres = Agricultural land out of production

Source: WWD, 2015b

Currently, the WWD's annual contract entitlement from USBR's CVP is 1.15 million acre-feet. The annual safe yield of the underlying confined groundwater aquifer in the Westside Subbasin of the San Joaquin Valley Groundwater Basin adds about another 200,000 acre-feet. As is shown in Table 2, the WWD does not receive 100 percent of its allocated CVP water supplies each year. Gaps in water supplies are supplemented via additional district supply.

The following sections assess sources of water utilized by the WWD, as well as water conservation efforts and groundwater management undertaken by the District.

3.1.1 Westside Subbasin, San Joaquin Valley Groundwater Basin

The Westside Subbasin of the San Joaquin Valley Groundwater Basin underlies the Project site and the WWD. The Westside Subbasin is located in western Fresno County, encompassing a surface area of approximately 640,000 acres (1,000 square miles) within central California's San Joaquin Valley. To the west of the San Joaquin Valley are the Coast Ranges, to the south are the San Emigdio and Tehachapi Mountains, to the east are the Sierra Nevada Mountains, and to the north is the Sacramento-San Joaquin Delta and Sacramento Valley. The San Joaquin River and its tributaries, including the Fresno, Merced, Tuolumne, and Stanislaus Rivers, drain the northern portion of the San Joaquin Valley toward the Delta. The Kings, Kaweah, Tule, and Kern Rivers drain the southern portion of the valley internally towards the Tulare drainage basin. (DWR, 2006a)

Climate in this area is semi-arid, with long, hot, dry summers and relatively mild winters. Average annual precipitation varies across the subbasin from seven inches in the south to nine inches in the north.

Basin Characteristics

Within the San Joaquin Valley, the Westside Subbasin is located between the Coast Range foothills on the west and the San Joaquin River and Fresno Slough on the east. To the southwest is the Pleasant Valley Groundwater Subbasin, and to the west are Tertiary marine sediments of the Coast Ranges. To the north and northeast is the Delta-Mendota Groundwater Subbasin, and to the east and southeast are the Kings and Tulare Lake Groundwater Subbasins, also subbasins of the San Joaquin Valley Groundwater Basin. Most of the Westside Subbasin consists of lands within WWD. (DWR, 2006a)

Water-bearing Features

The Westside Subbasin consists of Tertiary- and Quaternary-age unconsolidated continental deposits which form an unconfined to semi-confined upper aquifer and a confined lower aquifer. The upper and lower aquifers, described below, are separated by an aquitard named the Corcoran Clay member of the Tulare Formation.

- **Upper Aquifer.** The unconfined to semi-confined aquifer includes younger alluvium, older alluvium, and part of the Tulare Formation. These deposits consist of highly lenticular, poorly sorted clay, silt, and sand intercalated with occasional beds of well-sorted fine to medium grained sand. The depth to the top of the Corcoran Clay (thickness of the upper aquifer) varies from approximately 500 feet to 850 feet. Upper Aquifer water quality is largely affected by historic and long-term irrigation practices, discussed further below under "Water Quality and Drainage Considerations". (DWR, 2006a)
- **Lower Aquifer.** The confined aquifer consists of the lower part of the Tulare Formation and locally the uppermost part of the San Joaquin Formation. This unit is composed of lenticular beds of silty clay, clay, silt, and sand interbedded with occasional strata of well-sorted sand. Brackish or saline water occurs in older marine sedimentary rock that underlies the usable groundwater in the Lower Aquifer. Water quality considerations are further discussed below, under "Water Quality and Drainage Considerations". (DWR, 2006a)

The Corcoran Clay is a lacustrine diatomaceous clay unit that is laterally extensive across underlies much of the subbasin and varies in thickness between 20 and 120 feet. Prior to groundwater development in the Westside Subbasin, the low-permeability Corcoran Clay effectively separated the upper and lower aquifer zones. Wells now penetrate the clay and have allowed partial hydraulic connection between the zones.

Recharge and Connectivity

Recharge to the Westside Subbasin occurs primarily through seepage of surface waters comprised of Coast Range streams along the west side of the subbasin, as well as the deep percolation of surface irrigation. Subsurface flows from the east and northeast may also contribute to groundwater recharge, although subsurface flows are strongly influenced by groundwater pumping activities and therefore inconsistent and difficult to characterize. Groundwater discharge from the Westside Subbasin has occurred primarily by pumping for agricultural uses, evapotranspiration, and seepage to the San Joaquin River.

Over the past 40 years, recharge to the Westside Subbasin has increased dramatically due to the importation of the USBR CVP irrigation water by the WWD. Irrigated agriculture has altered both groundwater flow (recharge/connectivity) and quality (discussed below, under “Water Quality and Drainage Considerations”). Irrigation recharge has increased groundwater storage and has caused the water table to rise within the Upper Aquifer. Groundwater movement (direction of migration) is primarily downward, resulting from the combined response to deep percolation of irrigation water and groundwater pumping from deep water supply wells. Essentially, irrigation water seeps into the soils while groundwater is pumped from both aquifer levels, drawing groundwater downward as recharge increases. From an area-wide perspective, much more water moves in the vertical direction than horizontally, and groundwater level and quality impacts in any given field occur primarily as the result of irrigation of the field. (USBR, 2006)

Drainage systems (and groundwater pumping) prevent both saturation and salt accumulation in the root zone (USBR, 2006); by removing groundwater from the subsurface, either by allowing it to migrate through the area by installing artificial drainage features or by removing it through pumping, saturation of the subsurface is alleviated because the overall volume of groundwater in the specific area is decreased, and subsequently salt accumulation is also alleviated because high-TDS waters are removed from the subsurface. As a result of ongoing drainage issues and in an attempt to minimize recharge to the Westside Subbasin thereby alleviating worsening water quality issues, irrigation has not been permitted on the Project site for more than 10 years; therefore, irrigation to the Westside Subbasin from this portion of the subbasin area does not currently contribute to groundwater recharge. Consequently, only natural groundwater recharge in this portion of the Westside Subbasin (deep infiltration of precipitation and stream flow).

Groundwater Level Trends

Groundwater levels in the Westside Subbasin respond directly to the intensity of pumping throughout the basin, as well as the intensity of precipitation and surface flows contributing to recharge. As previously noted, the Project site (and majority of the Westside Subbasin) is located within the jurisdiction of the WWD, which delivers water to agricultural users primarily from groundwater and CVP water. The WWD produces an annual report on deep groundwater conditions, including assessment of groundwater elevation (depth to groundwater), as well as how much water is pumped in relation to how much of the CVP allocation is received. Between 2008 and 2012, the WWD received an average of 469,850 AFY in CVP allocations, approximately 43 percent of total allocations, and pumped a total of 1,480,000 acre-feet of groundwater, or an average of 296,000 AFY (WWD, 2015c). Over these five years the groundwater surface elevation increased by 12 feet. However, in 2012, WWD received just 40 percent (460,000 acre-feet) of the full CVP allocation and pumped 355,000 acre-feet of groundwater to supplement supplies during the continued drought; as a result, the groundwater elevation decreased by 48 feet to an average elevation of one foot above mean sea level (WWD, 2015c). Table 3, below, provides a history of groundwater elevation compared to pumping intensity. As indicated in Table 3, groundwater pumping increased in the most recent three years of reported monitoring (2013 – 2015); this increased rate of pumping coincides with long-term drought conditions which have affected water supplies throughout California, including the amount of surface water supplies that are delivered via projects such as the CVP. As drought conditions continue to improve, it is anticipated that CVP delivers will increase and the intensity of groundwater pumping will decrease for areas such as the WWD service territory.

Table 3 Westlands Water District – Groundwater Use and Groundwater Elevation Change*

Crop Year	Pumped AF	Elevation FT	Elevation Change FT	Crop Year	Pumped AF	Elevation FT	Elevation Change FT
1956	964.000	-65	-13	1986	145,000	71	8
1957	928,000	-56	9	1987	159,000	89	18
1958	884,000	-29	27	1988	160,000	64	-25
1959	912,000	-77	-48	1989	175,000	63	-1
1960	872,000	-81	-4	1990	300,000	9	-54
1961	824,000	-96	-15	1991	600,000	-32	-41
1962	920,000	–	–	1992	600,000	-62	-30
1963	883,000	–	–	1993	225,000	1	63
1964	913,000	–	–	1994	325,000	-51	-52
1965	822,000	–	–	1995	150,000	27	78
1966	924,000	-134	–	1996	50,000	49	22
1967	875,000	-156	-22	1997	30,000	63	14
1968	596,000	-135	21	1998	15,000	63	0
1969	592,000	-120	15	1999	20,000	65	2
1970	460,000	-100	20	2000	225,000	43	-22
1971	377,000	-93	7	2001	215,000	25	-18
1972	–	-54	39	2002	205,000	22	-3
1973	–	-37	17	2003	160,000	30	8
1974	96,000	-22	15	2004	210,000	24	-6
1975	111,000	-11	11	2005	75,000	56	32
1976	97,000	-2	9	2006	15,000	77	21
1977	472,000	-99	-97	2007	310,000	35	-42
1978	159,000	-4	95	2008	460,000	-11	-46
1979	140,000	-13	-9	2009	480,000	-31	-20
1980	106,000	4	17	2010	140,000	9	40
1981	99,000	11	7	2011	45,000	49	40
1982	105,000	32	21	2012	355,000	1	-48
1983	31,000	56	24	2013	638,000	-58	-59
1984	73,000	61	5	2014	655,000	-76	-18
1985	228,000	63	2	2015	660,000	-120	-44

* Crop year is from 1 October (previous year) to 30 September (current year) for the year in question.

* Starting with 2012 the amount of groundwater pumped is for Water Year (March 1 through February 28).

* Data compiled from PG&E power records by USBR through 1971 and USGS 1974-1987, District estimates 1988- present. Elevation data for 1943-1961 and 1977 from Bill Coor, USBR (requested by the District and received on 4/20/1978) and elevation for 1966-1976 from Plate 5 of "Project Effects on Sub-Corcoran Water Layers" (April 1977).

Source: WWD, 2015c

Table 3 indicates that, while the groundwater elevation consistently falls during years of more intense pumping, it also consistently recovers during years of less intense pumping. The State of California is currently recovering from drought conditions. As a result, less CVP water is delivered to contractors such as the WWD, and groundwater is therefore more heavily relied upon. If reliance on local groundwater resources continues as anticipated, groundwater surface elevation is anticipated to continue decreasing, until the intensity of use subsides.

Groundwater levels in the Westside Subbasin were generally at their lowest levels in the late 1960s, prior to importation of surface water through the CVP. With importation of surface waters, groundwater levels gradually increased to a maximum in the late 1980s, falling briefly during a severe drought in the late 1970s. Groundwater levels began dropping again during a drought between approximately 1987 and 1992, with water levels showing the effects until 1994. Through a series of wet years after the drought, 1998 water levels recovered to near record high levels. (DWR, 2006a)

As previously noted, WWD encompasses approximately 600,000 acres; of this area, surface water is delivered to farms across approximately 535,000 acres, while approximately 33,000 acres receive no surface water allocations and rely exclusively on groundwater. The proposed Project site receives no surface water allocation from the WWD, and much of the land on the site has been fallowed for the past 10 years, meaning that irrigation is not permitted on the site. In addition, some of the parcels within the Scarlet Solar Energy Project footprint are subject to a nonirrigation covenant as a result of a 2002 settlement agreement between the former landowners, the WWD, and the USBR to settle claims related to drainage services on the parcels. However, overlying groundwater rights to these parcels are applicable, and the applicable landowner(s) are allowed to pump underlying groundwater for uses other than irrigation.

Storage Characteristics

Storage capacity of the Westside Subbasin has been estimated to be anywhere between approximately 30,500,000 acre-feet and 65,000,000 acre-feet, depending upon assumed thickness of the upper (unconfined) aquifer. It is important to note that “storage capacity” does not reflect the actual amount of groundwater in storage, or the available groundwater supply, but rather is a function of the porosity of subsurface materials and the quantity of water that could theoretically be contained in the subsurface, based on this porosity. Estimated storage capacity of the Upper and Lower Aquifers is summarized below.

- **Upper Aquifer.** The storage capacity of the upper semi-confined aquifer is approximately 36.5 million acre-feet. This estimate is based on an average thickness of 675 feet from the ground surface to the top of the Corcoran Clay, an area of 600,000 acres, and a specific yield of nine percent. Specific yield is the ratio of the volume of water a rock or soil will yield by gravity drainage. (DWR, 2006a)
- **Lower Aquifer**. The storage capacity of the lower confined aquifer is approximately 65 million acre-feet. This estimate is based on an average thickness of 1,200 feet from the base of the Corcoran Clay to the base of fresh groundwater, an area of 600,000 acres, and a specific yield of nine percent. (DWR, 2006a)

As noted, estimates of storage capacity rely on assumptions regarding the thickness of subsurface layers and specific yield (the ratio of the volume of water a subsurface material will yield by gravity drainage). Storage capacity is not an estimate of the quantity of groundwater actually available for use, but rather of the quantity of water that could potentially be stored within a certain area, under maximum capacity conditions.

SAFE YIELD / BUDGET

The "safe yield" of a groundwater basin is the maximum quantity of water that can be continuously withdrawn from a groundwater basin without adverse effect, while groundwater "budget" is an accounting of all inflows to a basin compared to all outflows from the basin. Safe yield is ideally determined by consideration of the groundwater budget; however, often sufficient data is not available to compile a reasonable budget. For instance, private landowners and groundwater users are typically not required to report rates of usage, which need to be accounted for or at least estimated in a groundwater budget. Other factors that a groundwater budget may account for include evapotranspiration, infiltration of precipitation, underflow to/from other groundwater basins, and extractions from private wells, as well as groundwater management and supply reliability efforts such as banking and conservation programs.

In the proposed Project area, the WWD records annual groundwater use rates (by the WWD), but groundwater uses by other sources are not recorded (farmers and residential users located outside the WWD jurisdiction). As noted above, the WWD delivers water to farms across approximately 535,000 acres, while approximately 33,000 acres receive no WWD allocations and rely exclusively on groundwater (the proposed Project site receives no WWD water allocation and much of the site has not been irrigated for more than 10 years). Although existing data may not be sufficient to determine with a high level of accuracy the groundwater budget that may be used to estimate safe yield for the Westside Subbasin, the WWD has maintained detailed records of its annual water usage and has developed estimates of safe yield for the subbasin based on these records.

In order to approximate safe yield of the Westside Subbasin, the WWD has plotted the amount of groundwater pumped (by WWD) in one year against the average change in groundwater level during that year, drawing a "best fit" line among the plotted points, and identifying the intersection of the best fit line with the line showing zero groundwater level change (WWD, 2012). Based on this approach, the WWD has identified 200,000 AFY to be the safe yield of the Westside Subbasin (WWD, 2012). This means that in any given year, approximately 200,000 AFY of water may be pumped from the Westside Subbasin without adverse effect on depth to groundwater, where increasing depth to groundwater indicates overuse/overdraft.

Table 3 indicates that, while the groundwater elevation consistently falls during years of more intense pumping, it also consistently recovers during years of less intense pumping. As noted above, the State of California is currently recovering from drought conditions and as a result, less CVP water is delivered to contractors such as the WWD, and groundwater is therefore more heavily relied upon. If reliance on local groundwater resources continues as anticipated, groundwater surface elevation is anticipated to continue decreasing, until the intensity of use subsides.

WATER QUALITY AND DRAINAGE CONSIDERATIONS

The Westside Subbasin is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Water Quality Control Plan (Basin Plan) for the Central Valley Region (Region 5). For planning and reporting purposes, Region 5 has two Basin Plans, one for the Tulare Lake Basin and one for the Sacramento River and San Joaquin River Basins; the Westside Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Westside Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and

- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization (CVRWQCB, 2018).

Groundwater in the Project area (and the west side of the San Joaquin Valley in general) tends to be high in TDS concentrations, or salts associated with long-term agricultural uses (described further below). Some areas are also affected by selenium and boron that may affect usability.

The waters of the Upper Aquifer are generally high in calcium and magnesium sulfate. Groundwater below 300 feet and above the Corcoran Clay tends to have decreased TDS concentrations with increased depth. Most groundwater of the Lower Aquifer is of the sodium sulfate type. The difference in quality between the Upper and Lower Aquifers is that the confined zone contains less TDS. Department of Health Services (DHS) data indicates an average TDS of 520 mg/L in the Westside Subbasin, generally ranging between 220 mg/L and 1,300 mg/L. However, TDS in shallow groundwater have also been measured at concentrations greater than 10,000 mg/L at some locations in the lower fan areas. (DWR, 2006a)

Poor subsurface drainage and high soil salinity conditions have limited agricultural production for more than a century. Beginning in the late 1800s, irrigation of crops with water from the San Joaquin and Kings Rivers has led to rising water tables, increased soil salinity, and removal of some land from production. Factors that have contributed to increased soil salts and selenium concentrations in the soil and groundwater include the following.

- Irrigation water percolating past crop roots
- Groundwater pumped from deep wells
- Imported surface water used for irrigation in areas already affected by poor drainage (USBR, 2006)

As a result of the factors above, soil salts and selenium in irrigation water leach from the unsaturated soil zone to increase salt and selenium concentrations in the groundwater. Studies have shown that irrigation had affected the upper 20 to 200 feet of the saturated groundwater zone (Upper Aquifer). This poor quality groundwater zone is moving downward in response to recharge from above the water table and pumping from deep wells, which creates a vertical hydraulic gradient. Studies have shown that eastward movement of saline groundwater affects the quality of water pumped from the semiconfined zone near Mendota and Fresno Slough. (USBR, 2006)

Lands within the WWD have historically been affected by poor drainage, which exacerbates salt accumulation in the soil. The original authorization for WWD included provisions for drainage service, but these facilities were never completed. The problem can be managed in the short-term with intensive irrigation management; WWD is currently using tactics such as this to address drainage issues in the area, such as by ceasing irrigation on the Project site. Salts must ultimately be exported from the area to achieve salt balance and maintain land productivity.

SHALLOW GROUNDWATER

The issue of shallow groundwater caused by poor drainage in the western San Joaquin Valley, including the proposed Project area, was addressed in the San Joaquin Valley Drainage Report of 1990, and included the following recommendations for the WWD area.

1) Deep percolation on 159,300 acres of drainage-affected lands can be reduced to 0.4 acre-feet per acre by improved irrigation management

2) Reuse drainage water to irrigate about 12,100 acres of salt-tolerant trees and halophytes

3) Operate 400 acres of evaporation ponds and about 1,500 acres of solar ponds

4) Pump the semi-confined aquifer under about 19,000 acres of land

5) Retire 33,000 acres of irrigated agricultural lands (WWD, 2012a)

The need for a drainage outlet within the WWD is still a necessity; however, substantial progress has been made towards the reduction of deep percolation. The average deep percolation for irrigated WWD lands during the period 1978 to 2011 was approximately 0.47 acre-feet per acre. Pumping of the semi-confined aquifer has not been an attractive recommendation in managing shallow groundwater due to lack of options for the use of the water. Land retirement has been successful towards managing shallow groundwater because the water allocation on retired lands remains with WWD per signed agreement between the USBR and the WWD. (WWD, 2012a)

The Project may be considered to represent a beneficial use of high-TDS shallow groundwater. Although the proposed Project would not include establishment of salt-tolerant crops for regional drainage reuse efforts described in the Westside Regional Drainage Plan, the use of local groundwater to support Project construction may have a positive effect on alleviating localized drainage issues by removing high-TDS water and applying it on the land in such a way that most of the applied water would evaporate, and would not infiltrate to exacerbate existing salt and selenium issues.

Water Rights and Adjudication

The state of California does not have a singular comprehensive groundwater permit process to regulate the withdrawal of groundwater resources. Groundwater basins may be adjudicated by court decision, wherein a court determines the quantity of groundwater allotted to each landowner with respective rights to the underlying resource. Most groundwater basins in California are not adjudicated, which means that landowners may extract groundwater underlying their property without a permit process for regulation of groundwater use. Groundwater basins that have been adjudicated by court decision, of which there are 22 such basins in California, are subject to management by a court-designated Watermaster.

The Westside Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an “equal and correlative” basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users. Surplus groundwater may be appropriated for use on non-overlying lands, provided such use will not create overdraft conditions; permits are not required for the use of underlying groundwater, but the appropriation of surplus groundwater is subordinate to the correlative rights of overlying users. As noted in Section 1.1, water to meet the Project’s construction water requirements may be obtained from on-site and/or neighboring groundwater wells.

3.1.2 Surface Water

In any given year, the availability of surface water supplies imported from the Sacramento Delta by the CVP is a function of the following:

- Amount of precipitation received in northern California,
- Quantities of water carried over from prior years in reservoirs, and
- Imposition of regulatory operational constraints in the Delta.

The WWD allocates its surface water supplies to more than 534,000 acres of agricultural lands eligible to receive CVP water. In years in which the WWD receives less than its full allocation of CVP water, the amount of groundwater pumped from the Westside Subbasin is inversely proportional to the availability of surface water supplies.

Section 3.1.1 describes under “Safe Yield / Budget” that the WWD has estimated a safe yield for the Westside Subbasin of approximately 200,000 AFY. During some years of low CVP water delivery, the WWD pumps more than the Westside Subbasin’s estimated safe yield of 200,000 AFY. During these years, the elevation of groundwater in the subbasin falls (i.e. depth to groundwater increases). Table 3 also shows that in years of less intense groundwater use the elevation also rises, suggesting that water supply recovers after years of temporary overdraft.

3.1.3 Other Water Supplies

Water Conservation Program

The WWD implements a Water Conservation Program, detailed in the WWD's Water Management Plan, and developed with the following objectives.

- Increase seasonal application efficiency
- Increase distribution uniformity
- Increase crop yields
- Decrease deep percolation
- Decrease the effects of soil salinity (WWD, 2012a)

The current Water Conservation Program consists of the following elements.

- **Irrigation Guide.** Provides farmers with water requirements for various crops based on actual weather and computer modeling;
- **Water Conservation and Management Handbook (Irrigation Management Handbook)**. Contains specific water management information for Westlands' farming conditions;
- **Workshops and Meetings** with small groups of farmers facilitate a two-way flow of timely water management information;
- **Technical Assistance and Water Conservation Computer Programs** provide farmers with one-on-one interaction on irrigation management issues;
- **Water Meters.** WWD maintains a program for the installation, upgrading, and repair of WWD water meters, required at each WWD delivery and on private wells participating in any of the District's conjunctive use programs;
- **Groundwater Monitoring.** Provides farmers with information on the quality and depth of deep groundwater, enabling them to assess their groundwater development;
- **Shallow Groundwater Monitoring** provides farmers with information on the quality and depth of shallow groundwater on a District-wide basis, giving irrigation managers a low-cost tool with which to develop their water management strategy;
- **Efficiency Testing** is conducted on WWD pumps, which serve as part of the water distribution system, to help prevent potentially catastrophic system downtime and reduce electrical consumption and costs;
- **Conjunctive Use of Surface and Groundwater** improves overall water supply reliability by making more efficient use of water that is available (in wet periods, use of surface water is encouraged to preserve groundwater supplies and in droughts, greater flexibility in the use of groundwater is facilitated to extract the maximum benefit from this resource);
- **Irrigation System Improvement Program**. Lease program offers water users an opportunity to lease/own equipment such as drip, micro-spray, sprinkler, and aluminum pipe to encourage conversion to more efficient means of irrigation; and
- **Satellite Imagery** purchased approximately once every two weeks, from USGS, processed by staff and placed on the District's web page, gives the Districts' farmers visual Distribution Uniformity on each of their fields. (WWD, 2012a)

Tangible results of the water conservation efforts described above have included a relative stabilization of shallow groundwater depths, a substantial increase in the number of pressurized (sprinklers and drip) irrigation systems, and intensified irrigation management through the use of irrigation specialists and science-based technology, and a historic average District-wide seasonal application efficiency of 83 percent (WWD, 2012a).

3.1.4 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Westside Subbasin, as summarized below. In the absence of a detailed water budget for these subbasins, the management efforts described below are essential to understanding supply conditions and ensuring water supply reliability.

Westlands Water District

The Westside Subbasin is located almost entirely within the WWD service area. The WWD delivers surface waters obtained through the CVP, supplementing this supply with local groundwater supply when necessary. Groundwater management and water conservation efforts undertaken by the WWD are discussed in detail in Section 4.1.

SUSTAINABLE GROUNDWATER MANAGEMENT ACT

In September 2014, California Governor Jerry Brown signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA) into law. SGMA establishes a framework for local groundwater management and requires local agencies to bring overdrafted basins into balanced levels of pumping and recharge.

The California Statewide Groundwater Elevation Model (CASGEM) Priority List ranks groundwater basins across the state with assessment rankings of High, Medium, Low, or Very Low. The Westside Subbasin has been ranked as a High priority basin (DWR, 2018).

SGMA requires the formation of locally-controlled Groundwater Sustainability Agencies (GSAs). GSAs are responsible for developing and implementing Groundwater Sustainability Plans (GSPs) to guide groundwater management decisions and ensure long-term sustainability in their basins. The WWD serves as the GSA for the Westside Subbasin.

Westside Regional Drainage Plan

The Westside Regional Drainage Plan represents a collaborative effort among the following stakeholders to provide drainage relief in the Project area: San Joaquin River Exchange Contractors Water Authority, Panoche Water District, WWD, and Broadview Water District. Key elements of the Plan include the following.

- Adaptive management to perfect the final drainage management strategy
- Land retirement of up to 200,000 acres
- Groundwater management
- Source control
- Regional reuse
- Treatment
- Salt disposal

The Westside Regional Drainage Plan calls for identification of sound and effective projects to manage drainage and an accelerated implementation schedule to comply with impending regulatory constraints (SWRCB, 2003).

LAND RETIREMENT / FALLOWING

Land retirement is a key component of the Westside Regional Drainage Plan. The land is available for other uses such as regional drainage reuse projects, commercial and industrial use, flood control, surface water storage where appropriate, and wildlife habitat. The proposed Project represents an alternative use of retired agricultural land in compliance with the goals and objectives of the Westside Regional Drainage Plan. The land retirement component of the Plan will be to buy land from willing sellers in areas currently impacted by shallow groundwater. The water supply from this land will remain with the WWD so long as appropriate drainage mitigation programs are effectively implemented consistent with the Plan. (SWRCB, 2003)

In 1999, the WWD initiated a process to purchase approximately 14,000 acres of land with shallow groundwater problems and within the area identified by the USBR as needing drainage service. In addition, 1,443 acres have been retired under the USBR's Land Retirement Demonstration Project[3]. As the land was purchased, the water supply that was historically applied to that land was reallocated to the remaining lands in the WWD. The WWD developed an agricultural lease program for these lands, which allows lessees to dry land farm (i.e. no irrigation). (SWRCB, 2003)

REGIONAL DRAINAGE REUSE

Drainage reuse is the application of subsurface drainage water (groundwater), either directly or slightly diluted, to salt-tolerant crops. The purpose of regional drainage reuse is to reduce the volume of the subsurface drainage water for ease in treatment. Lands used for reuse are managed to maintain adequate salt levels in the soil, such as by installing of subsurface drains to maintain adequate leaching fraction. Regional drainage reuse projects are modeled after the San Joaquin River Water Quality Improvement Project (SJRIP). Within the WWD service area, portions of the land purchased under the land retirement program are used to implement regional reuse efforts that utilize water collected by shallow agricultural tile sumps as well as water generated by shallow well pumping to grow salt-tolerant crops. (SWRCB, 2003)

GROUNDWATER MANAGEMENT PILOT PROJECT

In 2002, the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) implemented a pilot project in cooperation with the USBR, to study the feasibility of using groundwater pumping to mitigate drainage issues in the San Joaquin Valley area. The pilot project involved pumping two wells above the Corcoran Clay but below the shallow groundwater; this water contains elevated levels of salt, but not Selenium. As previously described, the Westside Subbasin is comprised of an upper and a lower aquifer, separated by a layer of Corcoran Clay. Under the pilot project, the aforementioned water supply was diverted into a surface canal and put to beneficial use on surrounding lands and refuges. The pilot project also included monitoring of the shallow groundwater levels and discharges of nearby tile sumps to assess how the groundwater basin was responding to pumping. (SWRCB, 2003)

The pilot project demonstrated significant lowering of the crop root zone water levels, a beneficial impact to groundwater drainage and water quality consideration. The pilot project also indicated that expansion of the groundwater management program is a viable component of the long-term drainage plan. Additionally, extensive modeling has demonstrated significant drain water source reduction benefits from groundwater pumping, where "source reduction" refers to the pumping of impaired groundwater to improve overall groundwater quality. The modeling results show that a carefully crafted

[3] The USBR's Land Retirement Demonstration Project included completion of a five-year study at two sites, one located in Tranquillity (near the proposed Project site), and removed land from irrigated agricultural production as a means by which to reduce the accumulation of drain water and study environmental resources, such as species presence and concentrations of salts and contaminants in soil and groundwater (USBR, 2005).

and implemented groundwater management program alone can result in significant source reduction. (SWRCB, 2003)

3.2 City of Fresno

Historically, the City of Fresno's water supply consisted of direct pumping from wells drilled into the underlying groundwater aquifer. In the 1960s, the City of Fresno purchased surface water made available from USBR. The City of Fresno currently relies on a combination of groundwater and surface water supplies to meet water demands within its service area.

Table 4 shows the City of Fresno's historical water production from 1990 to 2015.

Table 4 City of Fresno – Historical Water Production

Calendar Year	Groundwater (AF)	Treated Surface Water (AF)	Total Production (AF)	Percent Groundwater	Percent Surface Water
1990	118,808	-	118,808	100%	0%
1991	117,562	-	117,562	100%	0%
1992	118,303	-	118,303	100%	0%
1993	119,521	-	119,521	100%	0%
1994	128,992	-	128,992	100%	0%
1995	130,389	-	130,389	100%	0%
1996	138,389	-	138,389	100%	0%
1997	148,670	-	148,670	100%	0%
1998	135,546	-	135,546	100%	0%
1999	151,806	-	151,806	100%	0%
2000	156,487	-	156,487	100%	0%
2001	164,049	-	164,049	100%	0%
2002	165,542	-	165,542	100%	0%
2003	165,177	-	165,177	100%	0%
2004	160,047	4,060	164,108	98%	2%
2005	141,471	15,807	157,278	90%	10%
2006	136,050	19,701	155,750	87%	13%
2007	145,148	20,650	165,798	88%	12%
2008	148,006	20,116	168,122	88%	12%
2009	138,254	19,563	157,817	88%	12%
2010	128,578	18,474	147,052	87%	13%
2011	119,813	20,216	140,029	86%	14%
2012	115,615	19,980	135,595	85%	15%
2013	128,510	18,089	146,599	88%	12%
2014	110,313	20,115	130,428	85%	15%
2015	83,360	28,347	111,706	75%	25%

Definitions:
Calendar Year = January 1 – December 31
AF = acre-feet
Source: City of Fresno, 2016

As shown in Table 4, the City of Fresno began transitioning away from total reliance on groundwater supplies in 2004. The following sections characterize the City's historical and projected supplies and demands.

3.2.1 Kings Subbasin, San Joaquin Valley Groundwater Basin

The City of Fresno overlies the Kings Subbasin of the San Joaquin Valley Groundwater Basin. The Kings Subbasin extends across Fresno, Kings, and Tulare Counties. It encompasses a surface area of approximately 976,000 acres (1,530 square miles) within central California's San Joaquin Valley. The geography and climate of the San Joaquin Valley are characterized in Section 3.1.1. In the Kings Subbasin, average annual precipitation ranges from seven to ten inches, increasing eastward. (DWR, 2006b)

Basin Characteristics

Within the San Joaquin Valley, the Kings Subbasin is bounded by the San Joaquin River on the north, the Delta-Mendota and Westside Subbasins on the west, and the Sierra Nevada foothills on the east. The southern boundary runs easterly along the boundaries of the Empire West Side Irrigation District, the Laguna Irrigation District, the Kings County Water District, the Consolidated and Alta Irrigation Districts, and the Stone Corral Irrigation District.

The San Joaquin and Kings Rivers are the principal rivers within or bordering the Kings Subbasin. In addition, the Fresno Slough and James Bypass connect the Kings River with the San Joaquin River at the western edge of the Subbasin. (DWR, 2006b)

WATER-BEARING FEATURES

Like the Westside Subbasin, the Kings Subbasin consists of Tertiary- and Quaternary-age unconsolidated continental deposits. A younger series of deposits of Quaternary age, which overlie the older deposits, are comprised of older alluvium, lacustrine and marsh deposits, younger alluvium, and flood-basin deposits. These Quaternary age deposits yield more than 90 percent of the groundwater pumped from wells in the Kings Subbasin.

The older and younger alluvium deposits are described below.

- **Older alluvium.** The upper several hundred feet within the Kings Subbasin generally consists of highly permeable, coarse-grained deposits, which are termed older alluvium. The older alluvium forms an important aquifer in the Kings Subbasin. It consists of intercalated lenses of silt, clay, silty and sandy clay, clayey and silty sand, sand, gravel, cobbles, and boulders. Near the trough of the valley, this alluvium is fine-grained. In the western portion of the Subbasin, the older alluvium is interbedded with lacustrine and marsh deposits.
- **Younger alluvium.** The permeability of the younger alluvium varies across the Subbasin; while highly permeable beneath river channels, it may be of poor permeability under flood plains. The younger alluvium is a sedimentary deposit of fluvial arkosic beds. Along the Fresno Slough and James Bypass, the younger alluvium is interbedded with flood-basin deposits consisting of sand, silt, and clay.

The Corcoran Clay (E-clay) member of the Tulare Formation occupies the western one-quarter to one-third of the Kings Subbasin. The A-clay and C-clay layers that lie above the Corcoran clay cause confined groundwater conditions beneath them. (DWR, 2006b)

RECHARGE AND CONNECTIVITY

Recharge to the Kings Subbasin occurs from river and stream seepage, deep percolation of irrigation water, canal seepage, and intentional groundwater recharge. Between 1964 and 2004, the long-term average deep percolation from rainfall and irrigation water was found to be 42,700 AFY. The average net subsurface flow was characterized as being 64,800 AFY. (City of Fresno, 2016)

The Cities of Fresno and Clovis, Fresno Irrigation District, Fresno Metropolitan Flood Control District, Consolidated Irrigation District, and others contribute to groundwater recharge efforts in the Subbasin (DWR, 2006b). Between 2000 and 2013, the City of Fresno has recharged approximately 50,000 AFY. In 2014, the City of Fresno's Metropolitan Water Resources Management Plan outlined developing additional intentional recharge activities to attain a total of 75,100 AFY. (City of Fresno, 2016)

Groundwater Level Trends

For many years, the City of Fresno relied entirely on the Kings Subbasin to meet its water supply needs. After World War II, the population of the City of Fresno grew rapidly and groundwater production increased. Between 1959 and 1968, groundwater levels declined at a rate of 2.8 feet per year. A cone of depression formed beneath the City of Fresno. Groundwater levels continue to decline in the Subbasin, but at a slower rate than before. Since 1990, groundwater levels have been declining at the following rates: less than 0.5 feet per year in the southwest portion of the downtown area, 1.5 feet per year in the northern and southern areas of the City, and three feet per year in the northeastern area of the City.

Today, groundwater remains the City of Fresno's primary water supply source. However, in recent years the City of Fresno has incorporated conjunctive use and surface water treatment into its water supply portfolio in order to maintain the sustainability of the Kings Subbasin. Groundwater replenishment efforts and introduction of alternative supply sources have not yet been sufficient to offset the effect of groundwater extraction. (City of Fresno, 2016)

Storage Characteristics

Storage capacity of the Kings Subbasin has been estimated at 93 million acre-feet, to a depth of 1,000 feet or less. (DWR, 2006b)

In 2007, the City of Fresno contributed funding to the preparation of a hydrological groundwater and surface water model for the Upper Kings Basin Integrated Regional Water Management Authority, called the Kings Basin Integrated Groundwater and Surface Water Model (Kings Basin Water Authority [KBWA], 2007). The City of Fresno relied on this model to develop its 2015 UWMP groundwater projections and estimates.

Safe Yield / Budget

The City of Fresno's 2015 UWMP identified the components to groundwater yield in normal precipitation years, including subsurface inflow and safe yield. In 2015, the UWMP estimated natural recharge to be 25,400 acre-feet, net subsurface inflow to be 47,100 acre-feet, safe yield to be 72,500 acre-feet, and intentional recharge to be 53,100 acre-feet. Total estimated groundwater yield for 2015 was calculated to be 125,600 acre-feet. (City of Fresno, 2016)

Water Quality and Drainage Considerations

Groundwater in the Kings Subbasin generally meets the primary and secondary drinking water standards for municipal water use. The groundwater is predominantly of bicarbonate type, with calcium, magnesium, and sodium as the dominant ions. In the western portion of the Kings Subbasin, some chloride waters have been found (DWR, 2006b).

Total dissolved solids (TDS) concentrations typically range from 200 to 700 mg/L. At greater depths, however, groundwater with TDS concentrations of 2,000 mg/L has been encountered. (City of Fresno, 2016)

The Kings Subbasin is threatened by chemical contaminants including 1, 2-Dibromo-3-Chloropropane (DBCP), ethylene dibromide (EDB), trichloropropane (TCP), other volatile organic compounds (VOCs) such as trichloroethylene (TCE) and tetrachloroethylene (PCE), methyl tertiary butyl ether (MTBE), nitrate, manganese, radon, chloride, and iron. (City of Fresno, 2016)

Like the Westside Subbasin, the Kings Subbasin, is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Basin Plan for the Central Valley Region (Region 5). The Kings Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Kings Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and
- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- **PRO (Industrial Process Supply).** Uses of water for industrial activities that depend primarily on water quality.
- **REC-1 (Water Contact Recreation).** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- **REC-2 (Non-Contact Water Recreation).** Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities. (CVRWQCB, 2018)

The groundwater quality of the Kings Subbasin is generally suitable for the current beneficial uses (KBWA, 2007b).

Water Rights and Adjudication

The Kings Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an “equal and correlative” basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users.

3.2.2 Surface Water

The City of Fresno receives surface water supplies from the USBR via CVP San Joaquin River Class I supplies and the Fresno Irrigation District (FID) via Kings River Class II supplies.

Fresno Irrigation District

The FID is one of 28 agencies that receive an entitlement of water from the Kings River through the Kings River Water Association. In 1976, the City of Fresno and FID executed an agreement stipulating that, as land is annexed to the City of Fresno, the City will receive a pro rata share of FID’s Kings River entitlement. The City of Fresno’s 2015 UWMP projects the annual allocation of FID’s Kings River water through 2040 (City of Fresno, 2016). These projections are incorporated into the overall supply projections discussed in Section 4.

United States Bureau of Reclamation

In 1961, the City of Fresno executed an agreement with USBR for 60,000 AFY of Class I water from the CVP – Friant Division on the San Joaquin River. USBR CVP – Friant Division facilities include Friant Dam, Friant-Kern Canal, and the Madera Canal.

Additionally, the City of Fresno's contract with USBR allows for the provision of other water acquisition opportunities. These include Recovered Water Account water, Section 215 water, unreleased restoration flows, unreleased recirculation flows, and uncontrolled season flows. (City of Fresno, 2016)

3.2.3 Other Water Supplies

Recycled Water

The City of Fresno diverts a portion of its undisinfected secondary effluent from the Fresno/Clovis Wastewater Reclamation Facility to irrigate non-food crops grown adjacent to the facility. In addition, the North Fresno Water Facility produces disinfected tertiary effluent, which is conveyed to an adjacent golf course for irrigation purposes.

Table 5 provides the City of Fresno's annual recycled water use between 2010 and 2015.

Table 5 City of Fresno Recycled Water Use

	Quantity (AFY)					
Recycled Water Facility	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
NFWRF	25	57	58	46	0	62
RWRF	9,591	10,072	8,655	9,406	10,245	8,688
Total	**9,616**	**10,129**	**8,713**	**9,452**	**10,245**	**8,750**

AFY = acre-feet per year

Source: City of Fresno, 2016

3.2.4 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Kings Subbasin, as summarized below. Regional groundwater management efforts may apply to multiple groundwater subbasins.

Fresno County Groundwater Management Plan

The Fresno County Groundwater Management Plan was adopted in 1997 and defines a strategy to enhance and maintain the quantity and quality of groundwater resources throughout the county. The plan states that the County's groundwater-related issues can be addressed through currently available means without intrusive regulation or restrictions on groundwater pumping. If implemented, efforts related to conservation, water recycling, groundwater banking, management of groundwater contamination, and development of additional surface water storage can provide means to meet future increases in demand while reducing or eliminating overdraft conditions in the County. These and other initiatives contained in the County's Groundwater Management Plan include the following:

- **Groundwater Banking** would involve the use of unused storage capacity in local aquifers, which could be used for the intentional recharge of excess flood flows which are currently released and leave the County;
- **First Refusal.** As a CVP contractor, the County intends to explore the feasibility of developing a program to exercise its right of first refusal for purchase of CVP water proposed for transfer, and to acquire other water should additional supplies become available;

- **Groundwater Export**. The County may implement an ordinance prohibiting groundwater for export outside the County, and prohibiting uncontrolled groundwater pumping to replace surface water leaving the County as a result of a transfer;
- **Groundwater Monitoring**. The County intends to develop a program to monitor groundwater quantity and quality to provide an early warning of potential future groundwater-related problems, and to implement programs and policies directed toward the maintenance and enhancement of water quality, preventing groundwater contamination, and preventing the spread of groundwater contamination;
- **Groundwater Recharge**. The County intends to implement a groundwater recharge ordinance to acquire unused surface waters formerly used on converted agricultural lands and use those waters for recharge, and to construct recharge facilities to implement this provision;
- **Groundwater Protection Area**. The County may explore the feasibility of establishing groundwater protection areas, whereby areas of good recharge capability, shallow groundwater, or existing groundwater contamination would be designated for protection. (Fresno County, 2000)

Fresno/Clovis Metropolitan Area Water Resources Management Plan

The Fresno/Clovis Metropolitan Area Water Resources Management Plan is a joint document adopted by the cities of Fresno and Clovis in 1993. The primary goal of the plan is to provide a safe, dependable, reliable and economical water supply that will accommodate existing and future development in the two cities until the year 2050. To achieve this goal, the plan includes policies encouraging the following:

- Use of groundwater as the primary water source,
- Providing wellhead treatment to ensure that domestic supply meets safe drinking water standards,
- Supplementing the groundwater supply with surface water,
- Constructing plants to treat surface water and large-diameter transmission water mains,
- Continuing with an active recharge program, and
- Continuing with appropriate water conservation measures. (Fresno County, 2000)

Implementation of this area-wide Plan demonstrates active effort towards water supply reliability on a regional scale.

Sustainable Groundwater Management Act

The Kings Subbasin has been ranked as a High priority basin under SGMA (DWR, 2018). In response to SGMA, seven agencies have formed in the Kings Subbasin to develop and implement GSPs for the long-term sustainability of local groundwater supplies. The City of Fresno and the Project site are located in the jurisdiction of the North Kings GSA.

The North Kings GSA is a joint powers agency (JPA) formed in December 2016. Local public agencies to adopt the JPA include the FID, Garfield Water District, International Water District, Biola Community Services District, City of Kerman, City of Clovis, City of Fresno, and County of Fresno. In addition, the Bakman Water Company and Fresno Metropolitan Flood Control District have been accepted to the JPA through a separate binding agreement.

The North Kings GSA, consistent with SGMA, is developing a GSP targeted for completion before the legislated deadline of January 31, 2020. In addition to the North Kings GSA, up to six additional Groundwater Sustainability Plans are anticipated to be developed in the Kings Subbasin by the following GSAs: Central Kings GSA, James Irrigation District GSA, Kings River East GSA, McMullin Area GSA, North Fork Kings GSA, and South Kings GSA. (North Kings GSA, 2018)

3.3 City of Mendota

The City of Mendota, located approximately nine miles north of the project site, is another potential source of operational water for the proposed Project. The City of Mendota's water supply system consists of three primary production wells (Nos. 7, 8, and 9), two emergency backup wells (Nos. 3 and 5), transmission mains, and a water treatment plant. The City's primary well field is located on private property situated approximately 3.5 miles northeast of the City of Mendota, near the San Joaquin River. (City of Mendota, 2009)

3.3.1 Delta-Mendota Subbasin, San Joaquin Valley Groundwater Basin

The City of Mendota's well field overlies the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin. The Delta-Mendota Subbasin extends across Stanislaus, Merced, Madera, and Fresno Counties. It encompasses approximately 747,000 acres (1,170 square miles) in the San Joaquin Valley. Average annual precipitation in the Delta-Mendota Subbasin area is nine to 11 inches (DWR, 2006c). The geography and climate of the San Joaquin Valley are characterized in Section 3.1.1.

Basin Characteristics

The Delta-Mendota Subbasin is bounded on the west by the Coast Ranges, and on the north by the Stanislaus/San Joaquin County line. The eastern boundary primarily follows the San Joaquin River then follows the Chowchilla Bypass and the eastern border of Farmer's Water District. Heading northward, it follows the eastern, northern, and northwestern boundary of the Westside Subbasin (corresponding with WWD boundaries). (DWR, 2006c)

Water-bearing Features

Groundwater in the Delta-Mendota Subbasin occurs in three water-bearing zones. The lower zone contains fresh water in the lower section of the Tulare Formation. The upper zone contains confined, semi-confined, and unconfined water in the upper section of the Tulare Formation and upper deposits. Lastly, the shallow zone contains unconfined water within approximately 25 feet of the land surface. (DWR, 2006c)

The Delta-Mendota Subbasin's groundwater reservoir consists of the Tulare Formation, terrace deposits, alluvium, and flood-basin deposits. The Tulare Formation is composed of beds, lenses, and tongues of clay, sand, and gravel. These layers have been alternatively deposited in oxidizing and reducing environments. The Corcoran Clay member of the Tulare Formation acts as a confining layer. It underlies the Delta-Mendota Subbasin at depths ranging from 100 to 500 feet. (DWR, 2006b)

Alluvium deposits are composed of interbedded, poorly to well-sorted clay, silt, sand, and gravel. Alluvium is divided based on its degree of dissection and soil formation. The flood-basin deposits in the Delta-Mendota Subbasin are primarily composed of light-to-dark brown and gray clay, silt, sand, and organic materials with locally high concentrations of salts and alkali. (DWR, 2006c)

The water table generally lies below the bottom of the terrace deposits of Pleistocene age, which lie up to several feet higher than present streambeds. These deposits are composed of yellow, tan, and light-to-dark brown silt, sand, and gravel with a matrix that varies from sand to clay. (DWR, 2006)

Recharge and Connectivity

The California DWR estimates natural recharge in the Delta-Mendota Subbasin to be 8,000 AFY. Applied water recharge is estimated around 74,000 AFY. Groundwater elevation maps in the region suggest that groundwater barriers do not exist in the Subbasin. (DWR, 2006c)

The Delta-Mendota Subbasin is recharged via percolation from applied irrigation water, canals, and water storage facilities. Some recharge also occurs from seepage losses along the San Joaquin River and infiltration of runoff from the Coast Ranges into tributary streams. (Central Valley Regional Water Quality Control Board [RWQCB], 2015)

Groundwater Level Trends

According to USGS well records, the water surface elevation underneath the City of Mendota was approximately 75 feet in the 1980s (USGS, 2018). During the 1990s, pumping from the City of Mendota wells ranged from 1,200 to 1,460 AFY. This pumping quantity was relatively small compared to other producers in the region, including the Central California Irrigation District (CCID) and the Mendota Pool Pumpers. Between 1991 and 1997, CCID pumped a maximum of 6,966 AFY, and the Mendota Pool Pumpers pumped as much as 31,672 AFY.

Across the Delta-Mendota Subbasin, groundwater levels increased an average of 2.2 feet from 1970 to 2000. According to DWR data, the period from 1970 through 1985 showed a general increase. Between 1985 and 1994, groundwater levels declined back to the 1970 groundwater level. Groundwater levels rose to about 2.2 feet above the 1970 groundwater level in 1995, and fluctuated around this value until 2000. (DWR, 2006c)

In recent years, DWR well records indicate that the water surface elevation in the vicinity of the City of Mendota's well field has ranged from approximately 100 feet to 130 feet. Between 2015 and 2018, the water surface elevation has been steadily increasing. (DWR, 2018)

Storage Characteristics

Storage capacity of the Delta-Mendota Subbasin is estimated to be approximately 30 million acre-feet to a depth of 300 feet and 82 million acre-feet to the base of fresh groundwater. These same DWR calculations give an estimate of approximately 26 million acre-feet of groundwater to a depth of 300 feet stored in the Subbasin as of 1995. (DWR, 2006c)

Safe Yield / Budget

The safe yield of the Delta-Mendota Subbasin has not been characterized. However, the City of Mendota regularly monitors groundwater pumping activities from their wellfield, and monitors any groundwater use for activities such as but not limited to the proposed Project. Should the City of Mendota provide water supply for Project operations, such water would be obtained from a metered well on the City's well field site, and trucked to the Project site.

Water Quality and Drainage Considerations

Groundwater in the Delta-Mendota Subbasin is characterized by mixed sulfate to bicarbonate types in the northern and central portion with areas of sodium chloride and sodium sulfate waters in the central and southern portion. TDS values typically range from 700 to 1,000 mg/L in groundwater wells. Shallow, saline groundwater occurs within about 10 feet of the ground surface in most of the Subbasin. There are also localized areas of high iron, fluoride, nitrate, and boron. (DWR, 2006c)

Like the Westside Subbasin and the Kings Subbasin, the Delta-Mendota is located within the jurisdiction of the Central Valley RWQCB, and is subject to management direction of the Basin Plan for the Central Valley Region (Region 5). The Kings Subbasin is addressed in the Tulare Lake Basin Plan. Designated beneficial uses of the Delta-Mendota Subbasin, as identified in the Tulare Lake Basin Plan, include the following:

- **MUN (Municipal and Domestic Supply).** Uses of water for community, military, or individual water supply systems, including but not limited to drinking water supply;
- **AGR (Agricultural Supply).** Uses of water for farming, horticulture, or ranching, including but not limited to irrigation, stock watering, or support of vegetation for range grazing; and
- **IND (Industrial Service Supply).** Uses of water for industrial activities that do not depend primarily on water quality, including but not limited to mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- **PRO (Industrial Process Supply).** Uses of water for industrial activities that depend primarily on water quality.
- **REC-2 (Non-Contact Water Recreation).** Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- **WILD (Wildlife Habitat).** Uses of water that support terrestrial or wetland ecosystems, including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources. (CVRWQCB, 2018)

Water Rights and Adjudication

The Delta-Mendota Subbasin is not adjudicated, which means that overlying land owners may use the groundwater on an “equal and correlative” basis, such that all property owners above a common aquifer possess a shared right to reasonable use of the aquifer, and a user cannot take unlimited quantities without regard to the needs of other users.

3.3.2 Groundwater Management

Multiple groundwater management efforts currently exist for resources in the Delta-Mendota Subbasin. The Fresno County Groundwater Management Plan, which is described in detail in Section 3.2.4, applies to the Delta-Mendota Subbasin.

Sustainable Groundwater Management Act

The Delta-Mendota Subbasin has been ranked as a High priority basin under SGMA (DWR, 2018). Twenty-four locally-formed GSAs have been established in the Delta-Mendota Subbasin. In 2017, the City of Mendota adopted a resolution establishing the City of Mendota GSA.

These GSAs are responsible for complying with the requirements of the SGMA, including preparing and implementing GSPs, conducting outreach about SGMA, and maintaining local control over the region’s groundwater resources. Six coordinated GSPs are currently being developed for the Delta-Mendota Subbasin. These GSPs must be finalized and provided to the State no later than January 31, 2020. (Delta-Mendota SGMA, 2018)

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4 Water Supply Reliability

SB 610 requires the consideration of groundwater supply availability under varying climatic conditions, including normal-year, single-dry-year, and multiple-dry-year scenarios. Characterizations of the water supplies available to the proposed Project provided in the preceding sections further allow for reasonable assumptions to be made regarding water supply availability conditions under varying climatic scenarios.

4.1 Westlands Water District

The WWD delivers federal CVP water to primarily agricultural customers throughout the District area. Although most WWD customers are agricultural users, some are also municipal and industrial; all water delivered is non-potable (as described in Section 3.1, the WWD does not provide piped water to the public for human consumption). For instance, untreated, non-potable water is delivered to the Lemoore Naval Air Station and various rural commercial and residential customers within the District boundaries, as well as to the Cities of Huron and Coalinga, which have separate water supply contracts with the USBR (WWD, 2012a). The proposed Project would also represent a non-agricultural water use. In approximately 2002, the WWD Board of Directors determined that no new non-agricultural service connections would be served if average annual water use for the proposed connection is more than five AFY (CEC, 2007). However, the WWD Board of Directors may adopt a resolution on the use of non-agricultural water. Any use of WWD-provided water by the proposed Project would occur with approval of the WWD Board of Directors and in full compliance with WWD rules and conditions.

The highest level of annual non-agricultural water deliveries by WWD has been approximately 6,500 AFY, which is greater than the proposed Project's anticipated construction water requirement of up to 360 AFY. The CVP allocation to WWD is shared between agricultural, incidental agricultural, and incidental non-agricultural water users, any of which may receive reduced allocations during drought years when the WWD's overall share of CVP water is reduced. There have been no mandatory reductions imposed on WWD's non-agricultural water customers; however, water conservation measures implemented by WWD may result in reduced deliveries. Alternatively, the WWD may purchase water from other sources including an Emergency Drought Water Bank during years of severe drought. (WWD, 2012a)

It is reasonably assumed that the WWD would not use or distribute their allocated surface water supplies or available groundwater supplies in such a way that would be unsustainable to long-term water supply reliability, based on existing management programs. The ongoing efforts of WWD to implement water conservation measures and actively manage shallow groundwater drainage issues which are detrimental to area-wide groundwater quality demonstrate the District's commitment to ensuring sufficient water supply for the area. During years of drought, including single-dry and multiple-dry-year conditions, it is anticipated that the WWD will receive less surface waters from the CVP and therefore rely more on local groundwater resources, resulting in temporary draw-down of the local aquifer(s). As noted above, groundwater monitoring data presented in this WSA indicates that groundwater levels recover after periods of heavier groundwater use, which suggests that any potential overdraft conditions introduced as a result of heavier groundwater use are temporary in nature.

At the end of December 2013, WWD water users had remaining supplies of approximately 206,000 acre-feet; WWD also had approximately 220,000 acre-feet of water in San Luis Reservoir in March of 2014 (WWD, 2014). Particularly in drought years such as the present, this availability of excess surface supplies indicates the success of ongoing water conservation and drought management programs in the area.

Therefore, the WWD is considered an adequate water source for Project construction and/or operation, and the Project's water requirements would not result in an adverse effect on regional water supplies.

4.1.1 Westside Subbasin

During drought years, the WWD relies more heavily on local groundwater resources in the Westside Subbasin. During the 1987-1994 drought, the WWD received an average supply of 61 percent of contract entitlement, and during 1991 and 1992 allocations of only 25 percent were received. Year-to-year surface water allocations and ground water pumping varied significantly between 1976 and 2006, during which period groundwater pumping ranged from a low of 15,000 AFY to a high of 600,000 AFY. In response to these varied pumping rates, groundwater levels show maximum annual variations of declines up to 97 feet per year and maximum recovery levels of up to 89 feet per year.

As discussed in this WSA, groundwater elevation in the Westside Subbasin tends to decrease (depth to groundwater increases) during years of heavier pumping and increase (depth to groundwater decreases) during years of lighter pumping. This indicates that the amount of groundwater available in storage is directly related to the amount of groundwater pumped, which varies depending upon the amount of precipitation received in a given year and subsequently the amount of CVP water delivered to the Project area. As previously noted, groundwater levels in the Westside Subbasin tend to recover after periods of heavier use, indicating supply reliability in the subbasin.

Safe yield for the Westside Subbasin has been estimated by the WWD to be approximately 200,000 AFY. The proposed Project's construction water requirements of up to 360 AFY represent a small portion of this safe yield amount, and would be a short-term temporary use. The Project's operational water requirements of less than 20 AFY would be long-term, lasting for the lifetime of the Project, but represent a very small percentage (0.01 percent) of the safe yield. In addition, the pumping of high-TDS groundwater from the Upper Aquifer could potentially have a positive effect on localized drainage conditions, by relieving the subsurface of elevated groundwater. Therefore, the Westside Subbasin is considered an adequate water source for Project construction and/or operation.

4.2 City of Fresno

In average water year conditions, the City of Fresno considers its water supplies to be fairly stable. The combined surface water supplies from FID and the USBR are sufficient to meet operational needs in the service area. Surface water supplies are the most susceptible to seasonal hydrologic variability. As the availability of surface supplies varies due to climatic conditions, the City of Fresno can meet demands via groundwater resources. (City of Fresno, 2016)

Table 6 shows the City of Fresno's groundwater projections from 2015 through 2040.

Table 6 City of Fresno Groundwater Projections

	Quantity (AFY)					
Groundwater Component	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Natural Recharge	25,400	25,700	25,900	26,000	26,100	26,200
Net Subsurface Inflow	47,100	48,900	50,700	52,600	54,400	56,200
Safe Yield	72,500	74,600	76,600	78,600	80,500	82,400
Intentional Recharge	53,100	55,800	58,500	61,100	63,800	66,500
Total Estimated Groundwater Yield	**125,600**	**130,400**	**135,100**	**139,700**	**144,300**	**148,900**

Groundwater Component	Quantity (AFY) 2015	2020	2025	2030	2035	2040

AFY = acre-feet per year

Source: City of Fresno, 2016

Table 6 indicates that safe yield is expected to increase between 2015 and 2040 as net subsurface inflow and intentional recharge efforts increase recharge in the Kings Subbasin.

With continued intentional recharge augmentation, groundwater supplies remain reliable in all hydrologic conditions. Table 7 shows the City of Fresno's projected water supply and demand in normal, single-dry, and multiple-dry water years from 2020 to 2040.

Table 7 City of Fresno – Projected Supply and Demand Comparison (AF)

		2020	2025	2030	2035	2040
Normal Water Year						
Supply Totals		308,700	329,900	342,00	354,100	366,200
Demand Totals		235,700	264,000	274,100	292,900	301,100
Difference		73,000	65,900	67,900	61,200	65,100
Single-Dry Water Year						
Supply Totals		198,000	216,400	225,800	235,200	244,500
Demand Totals		179,900	205,400	212,900	229,100	234,500
Difference		18,100	11,000	12,900	6,100	10,000
Multiple-Dry Water Year						
	Supply Totals	260,900	280,900	291,800	302,700	313,600
First Year	Demand Totals	213,800	217,800	229,300	229,100	234,500
	Difference	**47,100**	**63,100**	**62,500**	**73,600**	**79,100**
	Supply Totals	271,500	291,700	302,800	313,900	325,000
Second Year	Demand Totals	225,100	229,200	240,900	231,800	241,400
	Difference	**46,400**	**62,500**	**61,900**	**82,100**	**83,600**
	Supply Totals	219,200	238,600	249,000	259,400	269,700
Third Year	Demand Totals	179,900	205,400	212,900	229,100	234,500
	Difference	**39,300**	**33,200**	**36,100**	**30,300**	**35,200**
	Supply Totals	198,000	216,400	225,800	235,200	244,500
Fourth Year	Demand Totals	179,900	205,400	212,900	229,100	234,500
	Difference	**18,100**	**11,000**	**12,900**	**6,100**	**10,000**

Reported volumes are rounded to the nearest 100.

Source: City of Fresno, 2016

As shown in Table 7, the City of Fresno has sufficient water supplies to meet its projected demands in normal and dry water year conditions. In any given year, the Project's operational water demand of 20 AFY is less than the forecasted supply surplus. In the years with the smallest projected supply surpluses (6,100 acre-feet in 2035 single-dry water year and fourth year multiple-dry water year conditions), the operational water demand of the Project accounts for 0.3 percent of the projected surplus.

In addition, the City of Fresno is currently constructing additional infrastructure to maximize its use of regional supplies. A new 54 million gallon per day (mgd) surface water treatment facility is slated for completion in FY 2018, which the City intends to use for potable reuse and groundwater recharge programs. The City of Fresno is also expanding its tertiary wastewater treatment facilities in order to expand recycled water use. (City of Fresno, 2016)

As the City of Fresno brings additional water supply infrastructure online, the reliability of the supply portfolio will become more robust. Additionally, it is reasonably assumed that the City of Fresno would not use or distribute its allocated imported water or natural water supplies in such a way that would be unsustainable to long-term water supply reliability. Therefore, the City of Fresno is considered an adequate water source for project operation, and the Project's water requirements would not result in an adverse effect on regional water supplies.

4.3 City of Mendota

As described in this WSA, the City of Medota does not have an UWMP in place which anticipates water supply availability over a multi-year planning projection. However, any water obtained for the Project from the City of Medota would be pumped from a metered well under the supervision of City staff. It is anticipated that should adverse effects of Project-related groundwater pumping become apparent at a City of Mendota well, City staff would cease such pumping activities and Project operational water would be obtained from an alternate source. Further, as discussed in Section 3.3 of this WSA, DWR groundwater well records indicate that the water surface elevation in the vicinity of the City of Mendota's well field has ranged from approximately 100 feet to 130 feet, and has been steadily increasing between 2015 and 2018 (DWR, 2018); this indicates that the Delta-Mendota Subbasin of the San Joaquin Valley Groundwater Basin is not in overdraft conditions.

5 Conclusions

This WSA assesses the water needs of the proposed Scarlet Solar Energy Project. Available data and information for water supply availability in the project area have been considered in characterizing long-term water availability for the Project. Construction water demands would be met via an existing groundwater well located on the neighboring Tranquillity Solar Generating Station (Tranquillity Station) site. Both the Project site and the Tranquillity Station groundwater well are located within the Westlands Water District and overlie the Westside Subbasin of the San Joaquin Valley Groundwater Basin. Operational water demands would be sourced from either the City of Fresno or the City of Mendota.

Available data and information for water supply availability in the Project area has been considered in characterizing long-term water availability for the Project. The Project's temporary construction demand of up to 360 AFY would be short-term. Construction demands would either be met using groundwater supplies, which are understood to recover from short-term periods of heavier pumping, or WWD-provided water, which is managed by the WWD for long-term supply reliability. In either case, the WWD would assess and approve the use of this water. In neither case is Project construction-related water use expected to result in adverse effects on water supply reliability.

Groundwater overdraft may develop in the Westside Subbasin during implementation of the proposed Scarlet Solar Energy Project. However, such conditions may occur regardless of the proposed Project. In addition, as discussed throughout this WSA, water levels in the Westside Subbasin have historically recovered from periods of heavy pumping (drought years), indicating that overdraft conditions do not persist when the import of surface water returns to non-drought quantities. Groundwater management efforts described in this WSA would contribute to additional supply and improved quality of waters in the Westside Subbasin, and could avoid potential adverse effects associated with future uses.

As described in Section 4, pumping of the semi-confined aquifer (Upper Aquifer) to manage shallow groundwater issues has not been an attractive option to the WWD due to lack of options for the use of the water; however, the proposed Project would introduce a non-irrigation use for this water that may represent an attractive management technique for improving the quality of shallow groundwater. In this manner, the Project may contribute to the regional drainage reuse goals of the Westside Regional Drainage Plan, potentially helping to alleviate groundwater drainage and salt concentrations in the Westside Subbasin over the lifetime of the project.

During operation of the Project, the long-term water demand of approximately 20 AFY would be met using water provided by either the City of Fresno or the City of Mendota. Based on the information provided in this WSA, the operational demand of 20 AFY is not expected to result in adverse water supply reliability impacts to the water sources utilized by these municipalities.

In conclusion, sufficient water supply is available in the Project area to meet Project construction and operational requirements under varying climatic (drought) conditions. This WSA has been prepared in compliance with California Water Code, as amended by SB 610. Attachment A provides a detailed description of the steps followed to prepare this WSA.

EXHIBIT 10

Scarlet Solar Energy Project

Third Addendum to Reclamation Plan

Prepared for

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ACRONYMS AND ABBREVIATIONS

AC	alternating current
CDA	Community Development Agency
County	County of Fresno
CUP	Conditional Use Permit
DC	direct current
dS/m	decisiemens per meter
EC	electrical conductivity
ESP	exchangeable sodium percentage
gen-tie	generation intertie
MMRP	Mitigation, Monitoring and Reporting Program
NAS Lemoore	Naval Air Station Lemoore
O&M	Operations and Maintenance
PG&E	Pacific Gas & Electric Company
Plan	Scarlet Solar Energy Project Reclamation Plan
PV	photovoltaic
SCADA	supervisory control and data acquisition

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1.0 INTRODUCTION

1.1 PURPOSE OF THE PLAN

The Scarlet Solar Energy Project Reclamation Plan (Plan) outlines a framework for decommissioning and post-operational restoration of the Scarlet Solar Energy Project (project). This Plan is submitted to fulfill the requirements of the Fresno County Solar Facility Guidelines (Fresno County 2017) and mitigation measures related to post-operational site reclamation.

The purpose of this Plan is to outline a framework for the removal of the installed power generation equipment and to return the project site to a condition as close to a pre-construction state as possible. The project energy generation equipment is expected to have a life of up to 35 years. At the end of the useful life of the project, the project owner or operator will prepare the project site such that it may be re-used or sold or will provide the County of Fresno (County) with the financial assurances to conduct such work in the event that the owner or operator is incapable of performing such work. The procedures outlined in this Plan will ensure that the project owner, operator, and contractors protect public health and safety, provide environmental protection, and comply with applicable regulations. Additionally, should the facility not be reused, this Plan describes methods to decommission the facility and restore the site to pre-development conditions. Should the site be recommissioned rather than decommissioned, it will be done so in accordance with County permitting requirements.

A Final Reclamation Plan will be prepared and finalized in the months prior to decommissioning which will address the approved project, proposed land uses of the site post-decommissioning, and the applicable rules and regulations in place at that time.

1.2 ADDENDUM

This Plan is the third addendum to the Scarlet Reclamation Plan, initially accepted by the Fresno County Public Works and Planning Department on October 28, 2021. Since October 2021, the Plan has been revised twice, first in June 2022 to include project decommissioning costs and then in July 2023 to note that the project site is now entirely owned by RE Scarlet LLC, a wholly owned subsidiary of EDP Renewables North America LLC, and update project decommissioning costs.

This third addendum to the Plan, adds a description of Reclamation Section I, Reclamation Section II, Reclamation Section III, and Reclamation Section IV of future project decommissioning and post-operational restoration of the Scarlet Solar Energy Project site. This addendum is precipitated by an amendment to the original Conditional Use Permit No. 3555 which in part divided the single entitled project into four separate Conditional Use Permits, No. 3789, 3790, 3791, and 3792, that allows the individual Reclamation sections to perform reclamation independently, and to allow the corresponding financial sureties to be released independently; except that Reclamation Section IV, the area where facilities that are shared by the other three Reclamation Sections and a connection to the contiguous Sonrisa Project, cannot be removed until all other sections and the Sonrisa Projects have been or are being removed and reclaimed.

1.3 FRESNO COUNTY SOLAR FACILITY GUIDELINES

The Fresno County Solar Facility Guidelines (Fresno County 2017) requires that as part of the application review process, the applicant will provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements. The Guidelines also include detailed guidance for the minimum content of Reclamation Plans (addressed in Section 2 of this Plan).

1.4 PROJECT LOCATION AND OVERVIEW

The project site is an approximately 3,766-acre site located in unincorporated Fresno County, approximately 3.5 miles west-southwest of the community of Tranquillity and approximately 6.5 miles east of Interstate 5 (I-5). The existing Pacific Gas and Electric Company's (PG&E) Tranquillity Solar Generating Facility is approximately 0.75 mile west of the project site. The project site would encompass 12 parcels[1] generally located south of West South Avenue, north of West Dinuba Avenue, east of South Ohio Avenue and State Route (SR) 33 (South Derrick Avenue), and west of South San Mateo Avenue. Some of the parcels originally described in the EIR have since been re-numbered after EDP Renewables North America LLC purchased the land from Westlands Water District. All of the parcels in the project site are currently owned by EDP Renewables North America LLC. Prior to EDP Renewables North America LLC purchasing the land, the project site encompassed 24 parcels[2], as outlined in the Scarlet Solar Project EIR (County 2021).

The project is anticipated to be constructed in three continuous phases. Of the 12 parcels, Construction Phase I encompassed 2 entire parcels and a portion of another parcel, Construction Phase II would encompass 6 entire parcels and a portion of another parcel, and Construction Phase III as well as shared facilities across all phases would encompass at least 3 parcels. Portions of parcel 028-111-71 would be used for both Construction Phase I and Construction Phase II. Refer to Figure 1, *Regional Location Map*, in Appendix A for the project site in the region, and Figure 2, *Site Location Map*, for an aerial image of the project site.

Construction of Phase I has been completed and Construction of Phase II began in October of 2023. Construction of Phase III is anticipated to start in late 2024 or early 2025. Refer to Figure 2 in Appendix A for an aerial image of the three construction phases.

The project is proposed to construct, operate, maintain, and decommission a 400-megawatt (MW) solar photovoltaic (PV) electricity generating facility, energy storage system, and associated infrastructure. The project would provide solar power to utility customers by interconnecting to the regional electricity grid at PG&E Tranquillity Switching Station. The project would operate year-round to generate solar electricity during daylight hours and would store and dispatch power to the energy storage system during both daylight and non-daylight hours.

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1 The current project parcels include: 028-071-47 (Shared Facility), 028-071-48, 028-071-49, 028-071-56, 028-081-66, 028-101-72 (Shared Facility; Portion), 028-101-74 (Shared Facility; Portion), 028-111-20 (Portion), 028-111-71, 028-111-72, 028-120-61, and 028-120-62.

2 The project parcels as described in the 2021 EIR include: 028-071-34, 028-071-39, 028-071-47 (Shared Facility), 028-071-48, 028-071-49, 028-081-66, 028-101-72 (Shared Facility; Portion), 028-101-74 (Shared Facility; Portion), 028-111-01, 028-111-02 (Portion), 028-111-04, 028-111-06, 028-111-07, 028-111-09, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16 (Portion), 028-111-17, 028-111-19 (Portion), 028-111-20 (Portion), 028-120-61, and 028-120-62.

Components of the project would include the following, which are further described below:

- Groups of solar arrays (arrays include PV modules and steel support structures, electrical inverters, transformers, cabling, and other infrastructure);
- One electrical substation;
- A switchyard, including one high-voltage 230 kV utility switchyard, telecommunications infrastructure, and two 65-foot high dead-end structures;
- Approximately 3.5 miles of 230 kV generation intertie (gen-tie) transmission line (from the substation and the project 230 kV switchyard) to connect to the existing PG&E Tranquillity Switching Station;
- Improvements to PG&E electrical infrastructure, including a minor expansion of PG&E's Tranquillity Switching Station and approximately 1,900 feet of PG&E 230 kV transmission line to connect the 230 kV gen-tie line to the Tranquillity Switching Station;
- Up to 400 MW energy storage system, consisting of battery or flywheel enclosures and electrical cabling; and
- Other necessary infrastructure, including one permanent operations and maintenance (O&M) building, a septic system and leach field, a supervisory control and data acquisition (SCADA) system, a meteorological data system, buried conduit for electrical wires, overhead collector lines, on-site access roads, a shared busbar,[3] lighting, and wildlife-friendly security fencing.

This project is anticipated to remain in operation for up to 35 years from completion of construction. Figure 2, *Site Plan*, in Appendix A shows the location of the components of the proposed project and associated facilities for all three construction phases.

2.0 RECLAMATION PLAN CONTENT

The County Solar Facility Guidelines include guidelines for preparing a Reclamation Plan (Fresno County 2020). Each of the requirements is addressed individually below.

1. Description of present use of the site;

The existing land use of the project site is primarily dry-farmed agriculture. For the past 10 years, the project site intermittently has been in low-yield agricultural production (tilled, seeded, and harvested for winter wheat); intermittently irrigated (drip or sprinkler) and harvested for alfalfa seed or other crops; or disked twice a year and left fallow.

2. Describe the proposed alternative use of the land (all equipment to be installed above and underground, structures, fencing, etc.);

[3] A busbar is a system of electrical conductors in a generating or receiving station on which power is concentrated for distribution to several electrical circuits.

Section 1.3 includes a description of the proposed project facilities. The PV modules will be installed on steel posts supported by piles. Inverters, transformers, substations, electrical storage system containers, and the O&M building will be installed on concrete pads. The collection system will be installed overhead and/or underground. Additional facilities include the 230 kV utility switchyard, telecommunications infrastructure, two 65-foot-high dead-end structures, SCADA system, meteorological data system, septic system with leach field, and wildlife-friendly security fencing.

3. Duration of the alternative use of the property (specify termination date);

The proposed facility is expected to be in commercial operation for approximately 35 years from the commencement of operations. Extension of use would be in accordance with County permitting requirements.

4. Address ownership of the property (lease or sale);

The entire project site is presently owned by RE Scarlet LLC, a wholly-owned subsidiary of EDP Renewables North America LLC. Approximately 76 acres of federally owned land are surrounded by the project site but are not proposed to be included in the project.

5. Describe how the subject property will be reclaimed to its previous agricultural condition (if applicable), specifically:

    a. Timeline for completion of reclamation after solar facility lease has terminated (identify phasing if needed);
    b. Handling of any hazardous chemicals/materials to be removed;
    c. Removal of all equipment, structures, buildings, and improvements at and above grade;
    d. Removal of any below-grade foundations;
    e. Removal of any below-grade infrastructure (cables/lines, etc.) that are no longer deemed necessary by the local public utility company;
    f. Detail any grading necessary to return the site to original grade;
    g. Type of crops to be planted; and
    h. Irrigation system details to be used (existing wells, pumps, etc. should remain throughout the solar facility use);

Procedures to remove the facility and restore the project back to pre-project conditions are included in Section 3 of this Plan. In consideration of these restrictions, this Plan contemplates decommissioning the project and stabilizing the site but does not propose additional actions to restore agricultural capacity to the property beyond its present condition on those parcels.

6. A Site Plan shall be submitted along with the text of the Reclamation Plan showing the location of equipment, structures, above and underground utilities, fencing, buffer area, reclamation phasing, etc.;

A Site Plan is included in Appendix A.

7. An engineering cost estimate of reclaiming the site to its previous agricultural condition shall be submitted for review and approval;

Per the Solar Facility Guidelines for a Final Reclamation Plan, the engineer cost estimate to implement the Reclamation Plan for each independent area/section for Reclamation is included in this Plan as Appendix B.

8. Financial assurances equal to the cost of reclaiming the land to its previous agricultural condition shall be submitted to ensure the reclamation is performed according to the approved plan. Financial assurances shall be made to the County of Fresno and may take the form of cash, letter of credit or bond that complies with Section 66499 of the California Government Code, et seq.;

Financial assurances will be provided based on the engineer cost estimate noted under item 7, above.

9. Evidence that all owners of record have been notified of the proposed Reclamation Plan.

As discussed under item 4, above, RE Scarlet LLC, a wholly-owned subsidiary of EDP Renewables North America LLC, owns the entire project site.

3.0 BASELINE CONDITIONS

3.1 SOIL CONDITIONS

Table 1, *Project Site Soils Land Capability Classification and Storie Index Scores*, describes the project's soil classifications according to various systems used in California. Refer to Figure 4, *Soils Map*, in Appendix A for the distribution of soils on the project site. The majority of the site consists of the Tranquillity clay and Ciervo clay as only 0.01 acre of Calfax clay soil exists on-site.

Table 1
PROJECT SITE SOILS LAND CAPABILITY CLASSIFICATION AND STORIE INDEX SCORES

Map Symbol	Mapping Unit	Acres	Proportion Project Site	LCC Rating	LCC Rating Value	Storie Index Rating	Storie Index Rating Class
286	Tranquility clay, saline-sodic, wet	2,394.6	0.64	IIIw	60	5	Grade 5 – Poor
461	Ciervo clay, saline-sodic, wet	1,371.6	0.36	IIIs	60	26	Grade 4 – Poor
482	Calfax clay loam, saline-sodic, wet	0.01	0.00	IIIs	60	39	Grade 4 – Poor
	TOTAL	**3,766.21**	**1.00**	**--**	**--**	**--**	

Source: NRCS 2023
Notes: LCC – Land Capability Classification.

Land Capability Classification (LCC) demonstrates the suitability of soils for growing field crops. Based on LCC, the site's LCC soil rating is Class 3. Class 3 soils have severe limitations that reduce the choice of plants or require special conservation practices, or both. The letter "s" shows that the soil is limited mainly because it is shallow, droughty, or stony, and the letter "w" shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage).

The Storie Index Rating provides a numeric rating (based on a 100-point scale) of the relative degree of suitability or value of a given soil for intensive agriculture use. This rating is based upon soil characteristics only. Named components are assigned grades according to their suitability for general intensive agriculture as shown by their Storie index ratings. The six grades and their range in index ratings are: Grade 1—80 to 100; Grade 2—60 to 79; Grade 3—40 to 59; Grade 4—20 to 39; Grade 5—10 to 19; and Grade 6—less than 10 (USDA 2006).

The LCC rating for each soil type and the Storie Index rating was determined based on the Soil Survey for Fresno County (USDA 2006).

3.2 HISTORICAL AGRICULTURAL USE

The project site is primarily dry-farmed agriculture that has been intermittently irrigated. For the past 10 years, the project site has been in low-yield agricultural production (tilled, seeded, and harvested for winter wheat); intermittently irrigated (drip or sprinkler) and harvested for alfalfa seed or other crops; or disced twice a year and left fallow. The site is subject to high levels of selenium and a water table that does not provide sufficient drainage for most commercially irrigated crops.

For the portion of the project site that is cultivated without the benefit of irrigation, the productivity of these crops depends entirely on rainfall. When the unirrigated crops fail to mature to harvest, the land is grazed as rangeland grasses.

4.0 PROJECT FACILITY AND EQUIPMENT

The project will be comprised of solar panels, inverters, access roads, an O&M building, septic system and leach field, and electrical equipment including substations, battery storage enclosures, and wiring.

The site will be secured by an up to 8-foot-high chain link perimeter fence, topped with three-strand barbed wire, through which multiple points of ingress/egress would be accessed by locked gates.

4.1 FOUNDATIONS

Concrete foundations (equipment pads) will be required for energy storage containers, substation dead-end structures, project inverters, transformers, and switchgear. The O&M building will be constructed on a concrete foundation. Foundations will vary in depth based on micro-siting of these elements but will range from approximately 6 inches to 36 inches. PV arrays will be supported by steel piles that are driven directly into the substrate and will not require concrete foundations.

4.2 SOLAR PV ARRAYS AND RACKING

The PV modules will be manufactured at an off-site location and then transported to the Project site. The PV modules will be mounted on a galvanized metal racking system (that would include a metal single-axis utility-scale tracker or a fixed-tilt racking system) and would be connected to inverter-transformer stations. The modules will be made of a semiconductor material covered by a tempered glass pane or otherwise sealed for long-term outdoor durability. PV modules would be dark colored, highly absorptive, and minimally reflective. As previously mentioned, the structures supporting the PV modules consist of steel piles, driven into the substrate.

4.3 ENERGY STORAGE SYSTEM

The project will include a battery storage system capable of storing up to 400 MW of electricity and conducting energy to the regional electricity grid. The battery storage system will be located in the southwestern portion of parcel 028-071-47. The storage system will consist of battery banks housed in electrical enclosures and buried electrical conduit. The project will use one of a number of commercially available energy storage technologies, including but not limited to Lithium-ion (Li-ion) or flow batteries. The energy storage system will be concentrated in one location on the site, connected to the PV array via alternating current ("AC-coupled").

4.4 ELECTRICAL COLLECTION, INVERTERS, AND TRANSFORMERS

Panels will be electrically connected into panel strings using wiring attached to the panel racking system. Panel strings will be electrically connected to one other via overhead and/or underground wiring installed from the panel strings to combiner boxes located throughout the PV arrays. Wire depths will be in accordance with local, state, and federal codes, and will likely be buried at a minimum of 18 inches below grade by excavating a trench wide enough to accommodate the cables. To accommodate the cables, a polyvinyl chloride (PVC) conduit may be installed in the trench, or, alternatively, cable rated for direct burial would be installed. Where used, overhead cables will be installed on wood poles up to 50 feet in height.

Each 2 MW block of the project will include an inverter-transformer station. Each inverter-transformer station will be constructed on a concrete pad or steel skid measuring approximately 40 feet by 25 feet; however, the final size will depend on available technology and market conditions. Each inverter and transformer station will contain a DC combiner (which will collect DC electrical power from the PV modules), up to four inverters, a transformer, an auxiliary power transformer, and a switchboard approximately eight to 11 feet high. If required based on site meteorological conditions, an inverter shade structure will be installed at each pad. The shade structure would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the top of the inverter pad.

4.5 SUBSTATION AND GEN-TIE TRANSMISSION LINES

The project will include one substation. The substation will occupy an approximately 27,000-square-foot (150 feet by 180 feet) area enclosed by an approximately 8-foot-high chain link fence topped with one foot of barbed wire. The substation is anticipated to be shared with the proposed Sonrisa Solar Energy Project and will be located in the southwestern portion of parcel 028-071-47.

Structural components in the substation area will include transformers, footings, control buildings, metering stand, capacitor bank, circuit breaker and air disconnect switches, fiber optic telecommunications infrastructure, lighting mast, dead-end structure, and equipment storage containers. The substation area will be graded and compacted, and the equipment placed on concrete pads.

Because the substation transformers will contain oil as an insulating fluid, the substation will be designed to accommodate an accidental spill of transformer fluid using containment-style mounting. Each of the dead-end structures will require foundations excavated to a depth of 20 feet or more.

The gen-tie structures will include tubular steel poles and H-frame structures with foundations excavated to a depth of 20 feet or more. The overhead gen-tie line will be up to approximately 3.5 miles long and consist of up to 30 structures. The structures could be up to 150 feet tall, although most would likely be no more than 110 feet. Overhead gen-tie lines are anticipated to be shared with the proposed Sonrisa Solar Energy Project and would be located on portions of parcels 028-101-72 and 028-101-74.

4.6 SUPPORT FACILITIES

Support facilities include the 700-square-foot O&M building, SCADA system, and the meteorological data collection system. The O&M building will be located on a concrete foundation and will include plumbing, a septic system and leach field. The O&M building is anticipated to be shared with the proposed Sonrisa Solar Energy Project and will be located in the southwestern portion of parcel 028-071-47.

The SCADA system will include buried fiber optic cables, and the SCADA system cabinet will be located in the control buildings in the substation facility. Telecommunication systems associated with the SCADA system will interconnect at PG&E’s Tranquillity Switching Station.

4.7 FENCING

A dual purpose security and wildlife fence will be constructed around the project and will enclose all operational areas throughout the lifetime of the project through decommissioning. The fence design will reach up to 8 feet high and will consist of approximately 6-foot-high chain-link galvanized metal fence topped by three strands of barbed wire approximately one foot high.

4.8 DRIVEWAYS

The perimeter road and main access roads will be approximately 20 to 30 feet wide and constructed to be consistent with facility maintenance requirements and Fresno County Fire Department standards. These roads will be surfaced with gravel, compacted dirt, or another commercially available surface. Internal roads will have permeable surfaces and be approximately 12 to 20 feet in width or as otherwise required by Fresno County Fire Department standards. They will be treated to create a durable, dustless surface for use during construction and operation. This will likely involve surfacing with gravel, compacted native soil, or a dust palliative.

5.0 DECOMMISSIONING AND RESTORATION PROCESS

Decommissioning of the project is assumed to begin approximately 35 years after operation of the project is initiated. Project decommissioning may incorporate sale and/or recycling of some components; however, this Draft Reclamation Plan assumes that all equipment and facilities within and associated with the facility will be removed.

All decommissioning, reclamation, and restoration activities will adhere to the requirements of appropriate governing authorities, and will be in accordance with all applicable federal, provincial, and local permits. The reclamation and restoration process comprises removal of above ground structures; removal of below ground foundations and infrastructure; and restoration of topsoil, re-vegetation, and seeding. Appropriate temporary (construction-related) erosion and sedimentation control best management practices (BMP) will be used during the reclamation of the project. The BMPs will be inspected on a regular basis to ensure their function.

Reclamation of the project will occur within 24 months of either: (i) the expiration of the project's Conditional Use Permit (CUP) or (ii) the abandonment of the project without the project owner making efforts to cure a disruption of electricity production, whichever occurs first.

Construction of the Scarlet Solar Energy Project will occur in three phases. Construction Phase I has been completed and Construction Phase II began in October of 2023. Construction Phase III is anticipated to start in late 2024 or early 2025. Refer to Figure 2 in Appendix A for an aerial image of the three construction phases.

Construction of Reclamation Section IV entitled under CUP 3792 will include the construction of energy facilities that will be shared by the Scarlet Solar Energy Project and the proposed Sonrisa Solar Energy Project. The shared facilities will be located on parcels 028-071-47, 028-101-72, 028-101-74, 028-071-39, 028-111-01, 028-111-07, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, and 028-111-19. Reclamation Section IV is shown on Figure 3 in Appendix A. Note that Reclamation Section IV boundaries are approximate at this time and legal descriptions would be provided to support any Reclamation Agreement. It is anticipated that the Scarlet Solar Energy Project and the proposed Sonrisa Energy Project will share a general substation and O&M facility and parking area located in the southwestern portion of parcel 028-071-47. Additionally, shared transmission lines will be located on portions of parcels 028-101-72, 028-101-74, 028-071-39, 028-111-01, 028-111-07, 028-111-10, 028-111-13, 028-111-14, 028-111-15, 028-111-16, 028-111-17, and 028-111-19.

Decommissioning and reclamation of the project may occur in four independent reclamation areas/sections. Infrastructure that solely supports Reclamation Section I, Reclamation Section II, and Reclamation Section III will be decommissioned at the end of the useful life of each Section and could occur independently of the other Sections and would not need to be decommissioned in a particular order. All infrastructure that may be shared to serve Sections I - III which is located within Reclamation Section IV as well as with the connection to the contiguous proposed Sonrisa Solar Energy Project will be decommissioned at the end of decommissioning and reclamation the other Reclamations Sections that utilizes that infrastructure. In other words, reclamation of the infrastructure that would be shared across projects will occur within 24 months of either: (i) the later of the expiration of the Sonrisa Solar Energy Project or the Scarlet Solar Energy Project's Conditional Use Permit (CUP) or (ii) the abandonment of both the Sonrisa Solar Energy Project and the Scarlet Solar Energy Project without the project owner making efforts to cure a disruption of electricity production, whichever occurs first.

5.1 SITE PREPARATION ACTIVITIES

The project site will be prepared prior to commencement of decommissioning and salvage activities (including removal of facilities, Section 5.3, and site restoration, Section 5.6). These preparatory measures will include electrical inspections as well as inspections of any water tanks on site, access routes, drainage crossings, security fences, and gates to ensure all such components are safe and functional. Following these inspections, preparatory measures may be required including, but not limited to, electrical improvements, road improvements, as-needed vegetation clearing, fencing and gate repair, and removal and disposal of materials generated from the above-listed activities. Creation of temporary work area(s) to provide sufficient area for the lay-down of the disassembled project components and loading onto trucks will be required.

5.2 REMOVAL OF FACILITIES

This section describes the materials and other equipment that will require removal or salvage during the decommissioning process. Prior to, during, and after removal, project equipment and components will be inspected to ensure all components are safe and functional.

The equipment will generally be removed in reverse order of the installation, as follows:

1. Solar Array and Rack Disassembly

    a. The solar facility will be disconnected from the utility power grid.

    b. PV modules will be disconnected, collected, and either shipped to another project, salvaged, or submitted to a collection and recycling or disposal program. During decommissioning, PV panels will be de-energized and dismantled from the torque tubes by sliding the panels off the mounting saddles once the connector clips are removed. Next, the PV solar panels and rack supports will be removed in their entirety from the site. The panels will be carefully removed by hand and the rack supports will be removed by excavators with attachments, or other similar equipment. The panels will be placed on pallets and transported off-site.

    c. Aboveground and underground electrical interconnection and distribution cables that are no longer deemed necessary by the local public utility company will be removed to approximately three feet below ground surface and disposed of or recycled off-site by an approved recycling facility.

    d. PV module racking systems will be removed and may be recycled off-site by a metals recycler. The racking structure supporting the PV panels will be unbolted and disassembled using standard hand tools. The vertical steel piles, poles, and posts supporting the racks and all steel support piles will be completely removed and transported off-site for salvage or reuse. Other equipment and/or material will be removed from the site for resale, scrap value, recycled, or disposal depending on market conditions.

2. Pier and Foundation Removal

    The larger slab-on-grade concrete foundations and support pads will be broken up by mechanical equipment (such as a backhoe-hydraulic hammer/shovel, or jackhammer), loaded onto trucks, and removed from the site. Concrete pads will be recycled or reused as clean fill at another location.

3. Electrical Demolition

a. Electrical demolition includes the electrical equipment and infrastructure. DC combiner boxes, power aggregation wiring, Power Conversion Stations (DD recombiner/inverter/transformer modular units), sensors, weather stations, the gen-tie line connecting to the substation. Power Conversion Stations will be removed by cutting and removing the conduit and using a crane to place the unit in a salvage truck. All additional above ground cables would be cut and removed, including above ground conductors and grounding cable, and overhead lines. Decommissioning will require dismantling and removal of all aboveground electrical equipment and conduit or improvements placed above or below ground. Removal of substation equipment includes transformers, switches, structures, overhead lines, equipment pads, and grounding grid. Underground equipment to be removed consists of underground cables, conduit, and electrical lines. Equipment will be de-energized prior to removal; salvaged (where possible); placed in appropriate shipping containers; and secured in a truck transport trailer for transport off-site. All conductors are assumed to be removed and aggregated for recycling. All subterranean conduit, Power Conversion Stations, and other electrical equipment will be removed for off-site recycling or disposal. All decommissioning, recycling, and disposal of electrical devices, equipment and wiring/cabling will be conducted in accordance with applicable local, state, and federal standards and guidelines.

b. The gen-tie to the PG&E Tranquillity Switching Station will be removed. Overhead electrical lines and poles will be removed and recycled, reused, or disposed of in accordance with regulatory requirements at the time of decommissioning, and holes from pole removal will be filled with clean fill.

4. Civil Site Reclamation

   a. The septic system and leach field will be removed.

   b. Fencing will be removed and will be recycled off-site by an approved recycler.

   c. Interior driveways and pre-fabricated bridges can either remain on-site for future use or be removed. Gravel will be repurposed either on- or off-site.

5.3 DEBRIS MANAGEMENT, DISPOSAL, AND RECYCLING

During the demolition process, removed materials and demolition debris will be placed in designated locations within the project site. The stockpiles will then be transported to an off-site recycling center, used equipment market for resale, or an approved landfill depending on the material being disposed of. Equipment will be salvaged or recycled wherever possible.

5.4 HAZARDOUS WASTE

Relatively small quantities of hazardous materials would be used during decommissioning. Disposal and transportation of hazardous waste will be conducted in compliance with appropriate state and federal laws, ordinances, regulations, and standards.

5.5 SITE RESTORATION

Soils will be restored to pre-project topographic conditions to prepare the site for the continuation of agricultural land uses. Areas planned for crop production within 12 months following decommissioning will be left unplanted.

All driveways and other areas compacted during original construction or by equipment used in the decommissioning will be tilled in a manner adequate to restore the sub-grade material to the proper density and depth consistent with adjacent properties. Holes and low areas resulting from the removal of project features such as piles, poles, and foundations will be filled with clean, compatible sub-grade material resulting from on-site decommissioning activities. After proper sub-grade depth is established, locally-sourced topsoil would be placed to a depth and density consistent with adjacent properties.

As previously mentioned, areas that will be revegetated may be limited to areas disturbed during decommissioning activities and that won't be used for crop production within 12 months following decommissioning. Areas planned for revegetation restoration will be prepared as followed: 1) Mow area; 2) Disk area; 3) Hydraulic seeding project site using a rangeland seed mix of grasses and forage crops.

6.0 DECOMMISSIONING COSTS AND FINANCIAL ASSURANCES

6.1 ESTIMATED COST AND SALVAGE VALUES

The estimated budget will present a probable cost, in present value, for the decommissioning based on the assumption that the solar modules, module support structures, racking, electrical system, interconnection facilities, and other project components may be disassembled and recycled and disposed of following completion of the solar electric power system. Per the Solar Facility Guidelines for a Final Reclamation Plan, the engineer cost estimate to implement the Reclamation Plan will be provided following project approval and will be included in this Plan as Appendix B. The cost estimates are applicable for a five-year period from the date of submission.

6.2 FINANCIAL GUARANTEES FOR DECOMMISSIONING

In accordance with CUP No. 3555 Condition of Approval 5, prior to the issuance of the grading permit, the project owner will provide financial assurance in an amount sufficient to reclaim the site to its previous conditions in accordance with the approved Reclamation Plan. Financial assurances will be made to the County of Fresno and maintained through a cash escrow arrangement or other form of security acceptable at the discretion of the Board of Supervisors.

The financial assurance under the agreement shall (1) initially cover the project owner's cost of performing its obligations under the reclamation agreement, as stated above, based on the final County-approved design of the project, which cost estimate shall be provided by the project owner to the county and be subject to approval by the County, and (2) be automatically increased annually, due to increases in costs, using the Engineering News-Record construction cost index. This estimate will consider any project components that are expected to be left in place at the request of and for the benefit of the subsequent landowner (e.g., access roads, electrical lines, O&M building).

7.0 REFERENCES

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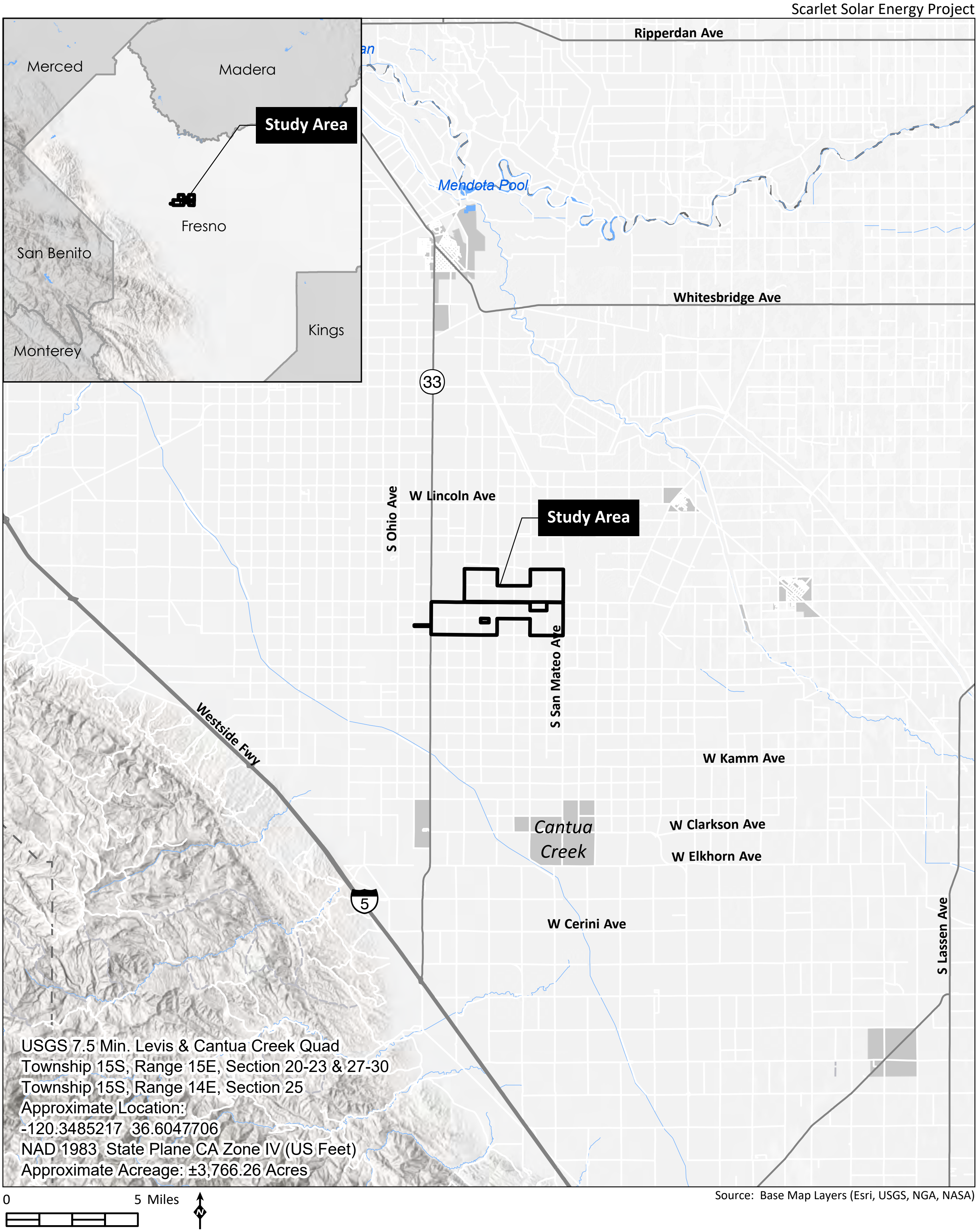
Appendix A

Figures

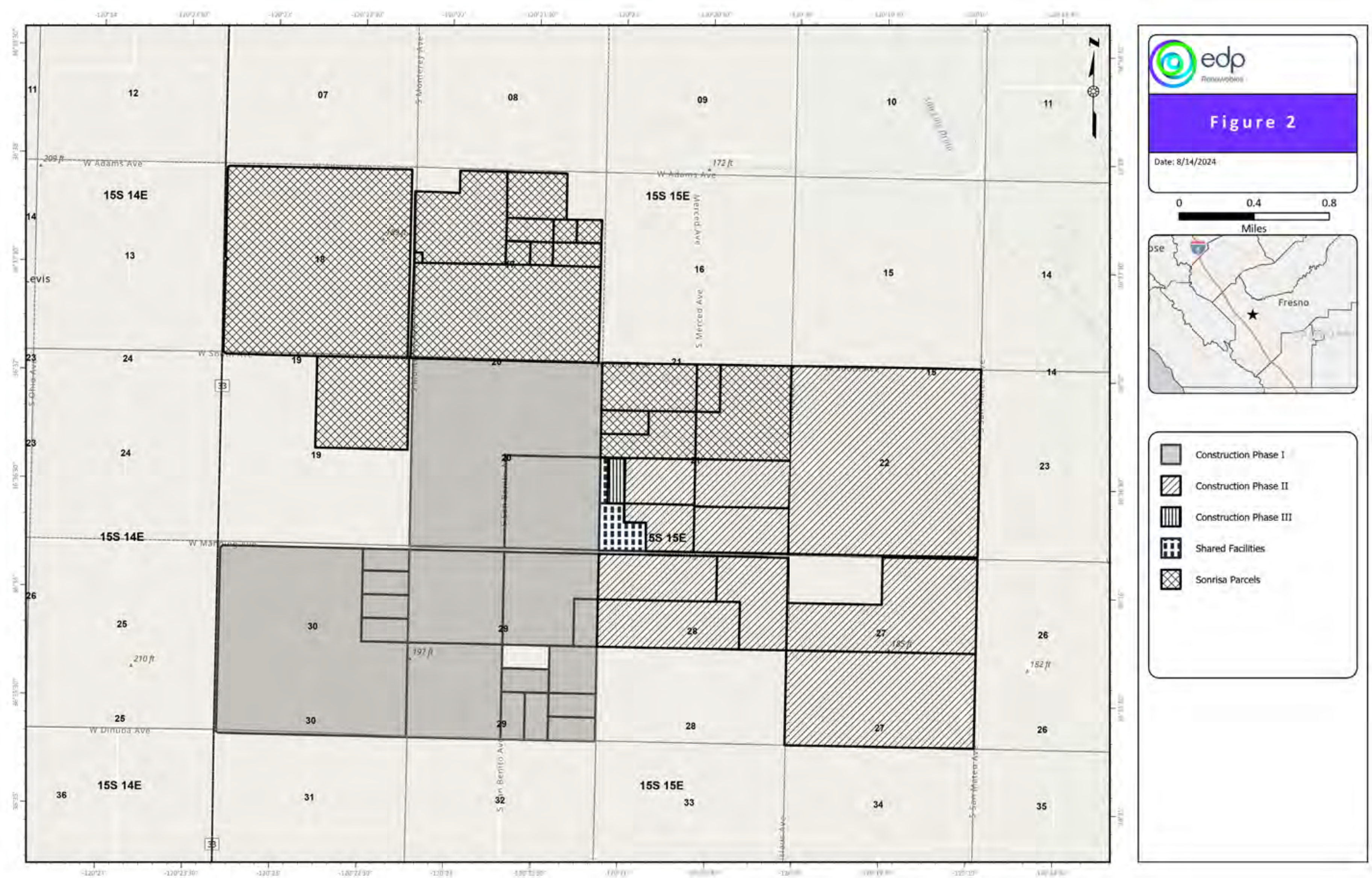


Source: Base Map Layers (Esri, USGS, NGA, NASA)

HELIX Environmental Planning

Regional Location Map

Figure 1



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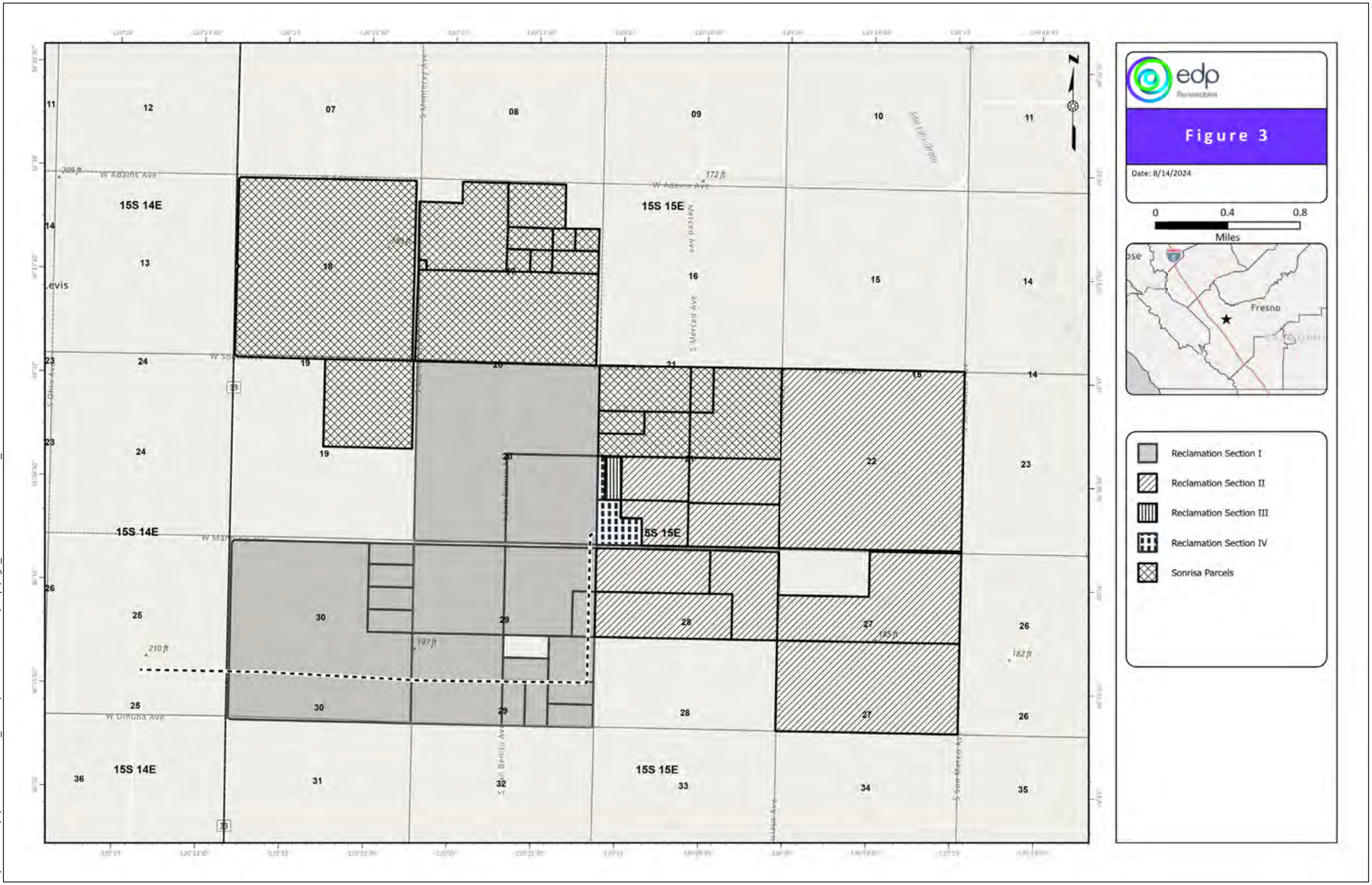
HELIX
Environmental Planning

Construction Phases

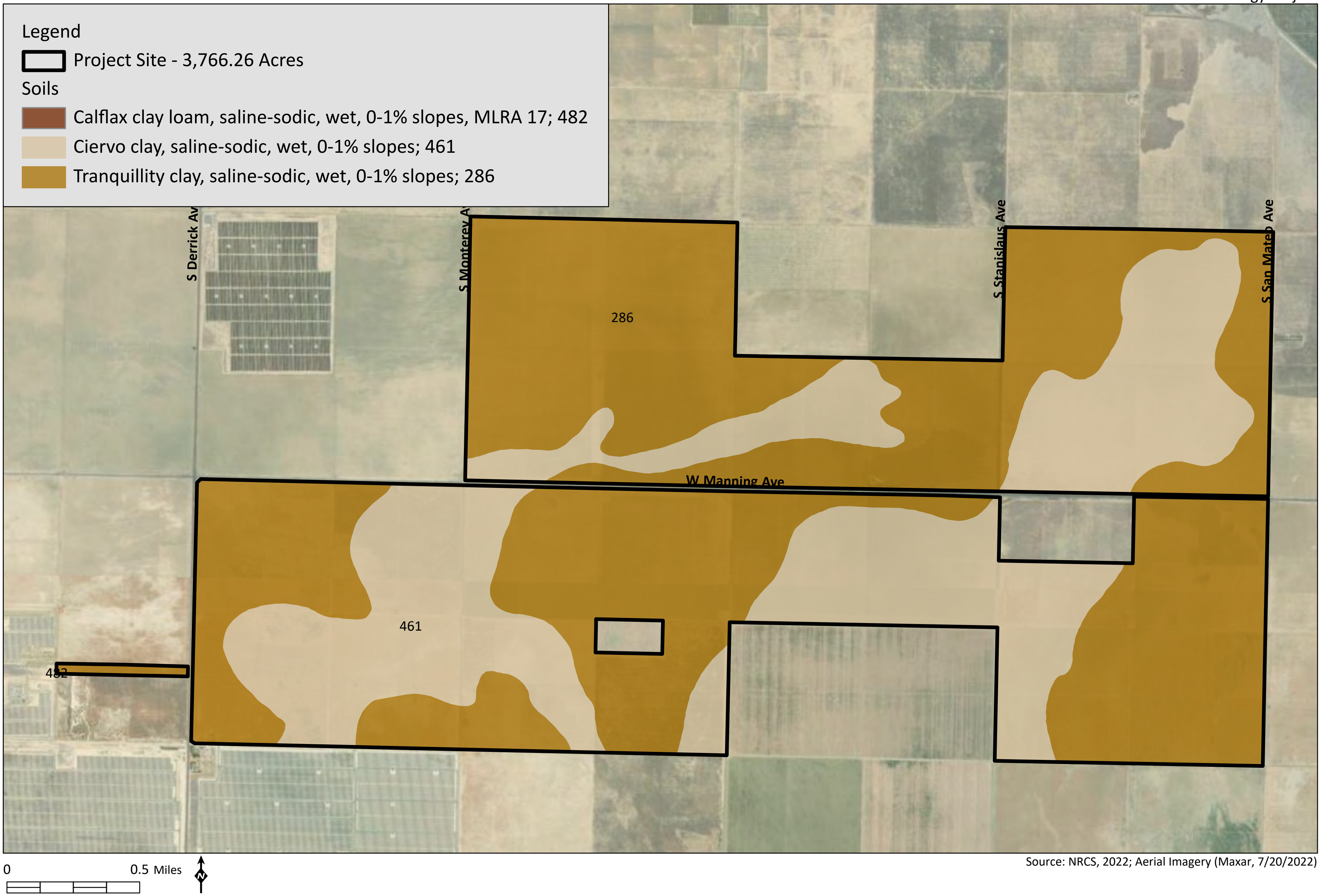
Figure 2



HELIX Environmental Planning

Reclamation Sections

Figure 3



Source: NRCS, 2022; Aerial Imagery (Maxar, 7/20/2022)

HELIX Environmental Planning

Soils Map

Figure 4

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Development Services Division
220 Tulare Street, Sixth Floor
Fresno, California 93721

January 16, 2024

Subject: Scarlet Phase I, II, III, and IV Solar Project Decommissioning Cost Estimate

Dear Mr. Ahmad,

At the request of Madison Novak of EDPR, I have reviewed the attached cost estimate. Methodologies for determining quantities and costs appear appropriate based on the Project Decommissioning Plan provided and based on the Fresno County Reclamation Plan Cost Estimate Guide. I find this cost estimate to be reasonable based on current pricing standards of the construction industry.

Please do not hesitate to contact me at 760.685.0735, or at cgreely@dudek.com should you have any questions.

Sincerely,

Charles Greely, PE, LEED AP, QSD
Principal Engineer

Att.: Decommissioning Cost Estimate
Excel Spreadsheet

REGISTERED PROFESSIONAL ENGINEER
CHARLES H. GREELY
No. 69056
EXP. 06-30-24
CIVIL
STATE OF CALIFORNIA

Table 1: Scarlet I Decommissioning Cost Summary Table

Dismantling Civil Components

	Labor Cost				Major Equipment Cost					
	Personnel	*Total $/ Hr Rate*[1]	*Total Hours Among All Personnel*	*Total*	*Amount of Equipment*	*Delivery*	*$/ Month*	*Months*	*Total*	*Labor + Major Equipment Cost*
Solar Photovoltaic Modules/ Panels[2]	-			**$ 617,470.00**	-				**$ 37,780.00**	**$ 655,250.00**
Electrician de-energizes circuits and disconnects module	6	$ 66.47	3000	$ 199,410.00	-					
General laborer dismounts modules and palletizes (for shipping)	6	$ 61.31	3500	$ 214,585.00	-					
Equipment operator utilizes forklift (to transfer onto transport truck)	4	$ 81.39	2500	$ 203,475.00	4	$ 250.00	$ 2,085.00	4.5	$ 37,780.00	
Battery Modules + Containers[3]	-			**$ 14,777.64**	-				**$ 3,688.00**	**$ 18,465.64**
Electrician/ BESS technician de-energizes circuits, disconnects BESS containers from distribution system, and ensures safe and secure container removal	4	$ 66.47	51	$ 3,389.97	-					
General laborer performs mechanical disconnection, frees BESS container from grade beams, and performs demolition of grade beam support structures	6	$ 61.31	63	$ 3,862.53	-					
Equipment operator utilizes crane	2	$ 91.53	42	$ 3,844.26	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
Equipment operator utilizes end loader	2	$ 87.64	42	$ 3,680.88	2	$ 250.00	$ 1,030.00	0.5	$ 1,280.00	
Solar Racking Structure	-			**$ 12,511.80**	-				**$ 1,280.00**	**$ 13,791.80**
General laborer unbolts and dissassembles	6	$ 61.31	84	$ 5,150.04	-					
Equipment operator utilizes end loader	2	$ 87.64	84	$ 7,361.76	2	$ 250.00	$ 1,030.00	0.5	$ 1,280.00	
Steel Piles	-			**$ 37,591.40**	-				**$ 4,750.00**	**$ 42,341.40**
General laborer performs removal	7	$ 61.31	430	$ 26,363.30	-					
Equipment operator utilizes vibratory pier extractor	1	$ 86.37	130	$ 11,228.10	1	$ 250.00	$ 4,500.00	1	$ 4,750.00	
Fencing	-			**$ 7,149.60**	-				**$ 2,310.00**	**$ 9,459.60**
General laborer detaches fence and aggregates	4	$ 61.31	48	$ 2,942.88	-					
Equipment operator utilizes backhoe (to pull and load fence posts)	4	$ 87.64	48	$ 4,206.72	4	$ 250.00	$ 1,030.00	0.5	$ 2,310.00	
Roads	-			**$ 6,397.72**	-				**$ 2,310.00**	**$ 8,707.72**
Equipment operator utilizes end loader	4	$ 87.64	73	$ 6,397.72	4	$ 250.00	$ 1,030.00	0.5	$ 2,310.00	
Concrete Foundations (including PCS, transformer, battery container)	-			**$ 1,489.50**	0.5				**$ 765.00**	**$ 2,254.50**
General laborer performs demolition	2	$ 61.31	10	$ 613.10	-					
Equipment operator utilizes end loader	1	$ 87.64	10	$ 876.40	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	

Dismantling Electrical Components

	Labor Cost				Major Equipment Cost					
	Personnel	*Total $/ Hr Rate*[1]	*Total Hours Among All Personnel*	*Total*	*Amount of Equipment*	*Delivery*	*$/ Month*	*Months*	*Total*	*Labor + Major Equipment Cost*
Underground Conductors and Communications Cables	-			**$ 7,000.50**	-				**$ 2,734.50**	**$ 9,735.00**
General laborer pulls wire	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes excavator	1	$ 90.65	30	$ 2,719.50	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Conductors and Messenger Support Cables	-			**$ 6,910.20**	-				**$ 2,057.50**	**$ 8,967.70**
General laborer removes conductors from tracker structures	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Power Conversion Stations (recombiner/ inverter/ transformer units)	-			**$ 6,474.30**	-				**$ 2,408.00**	**$ 8,882.30**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10	-					
General laborer cuts and removes conduit	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes crane to place in truck	1	$ 88.03	30	$ 2,640.90	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
Load Break Disconnect Switches	-			**$ 6,462.60**	-				**$ 765.00**	**$ 7,227.60**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10	-					
General laborer cuts conduit/ wire	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Additional Electrical Equipment (including sensors and weather stations)	-			**$ 6,462.60**	-				**$ 765.00**	**$ 7,227.60**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10	-					
General laborer cuts conduit/ wire	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
MV Underground Collection Cabling (34.5 kV)	-			**$ 9,629.70**	-				**$ 3,499.50**	**$ 13,129.20**
General laborer decouples and loads on forklift	2	$ 61.31	30	$ 1,839.30	-					
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Equipment operator utilizes excavator	1	$ 90.65	30	$ 2,719.50	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Cables	-			**$ 2,377.60**	-				**$ 3,700.50**	**$ 6,078.10**
Electrician disconnects cables	2	$ 66.47	8	$ 531.76	-					
Equipment operator utilizes crane to lower cable to the ground	1	$ 88.03	8	$ 704.24	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
General laborer coils cable	2	$ 61.31	8	$ 490.48	-					
Equipment operator utilizes forklift to place cable on truck	1	$ 81.39	8	$ 651.12	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	

Site Final Restoration

	Labor Cost				Major Equipment Cost					
	Personnel	*Total $/ Hr Rate*[1]	*Total Hours Among All Personnel*	*Total*	*Amount of Equipment*	*Delivery*	*$/ Month*	*Months*	*Total*	*Labor + Major Equipment Cost*
Re-Grading of Site (after excavation and removal of underground materials and	-			**$ 2,881.57**	-				**$ 2,362.00**	**$ 5,243.57**
General operator utilizes grader	2	$ 61.31	47	$ 2,881.57	1	$ 400.00	$ 3,924.00	0.5	$ 2,362.00	
Site Rehabilitation (including seeding)[4]	-			**$ 2,881.57**	-				**$ 44,547.50**	**$ 47,429.07**
General laborer mows/ disks area with seeding	6	$ 61.31	47	$ 2,881.57	-				$ 44,547.50	

Hauling and Disposal/Recycling

	Hauling Cost					Disposal/Recycling Cost			
	Cost per Truck per Day	*Weight (ton)*	*Tons per Truck*	*Trips per Day*	*Total*	*Disposal/Recycling Rate ($/ton)*	*Weight (ton)*	*Total*	*Total Hauling + Disposal Costs*
General Refuse[5]	$ 1,650.00	34,358.08	24	4	$ 590,529.43	$ 26.75	34,358.08	$ 919,078.54	**$ 1,509,607.97**
Other Waste[6]	$ 1,650.00	19580.51	24	2	$ 673,079.98	$ 50.00	19,580.51	$ 979,025.42	**$ 1,652,105.40**

Project Administrative Fees

County Adminstrative Costs (including legal services, preparation of bid plans and specs, contract development and awarding, project management and monitoring of contractors)	-	**$ 20,000.00**
SUBTOTAL		**$ 4,045,904.17**
Contingency (15%)		**$ 606,885.62**
TOTAL		**$ 4,652,789.79**

1. Estimate reflects use of prevailing wage scales.

2. Estimate assumes approximately 5.2 total solar panel dismantling labor hours per approximate solar panel impact acreage (approximately 1 total solar panel dismantling labor minute per solar panel).

3. Estimate assumes approximately 66 total battery dismantling labor hours per approximate battery impact acreage (approximately 3.2 total battery dismantling labor hours per battery container).

4. Estimate assumes that around 5% of the site (approximately 1730 acres) will require seeding with a seeding material cost of approximately $515/ acre.

5. The general disposal/ recycling site address assumed for this estimate is located at 18950 W American Avenue, Kerman, CA 93630. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 17.5 miles from the project site to the facility (approximately 20 minutes). It is assumed that 4 trips will be made per day. Disposal/ Reycling rate is based on public County of Fresno fees effective July 2022.

6. The disposal/ recycling site address assumed for this estimate is located at 3243 S East Avenue, Fresno, CA 93725. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 37.5 miles from the project site to the facility (approximately 45 minutes). It is assumed that 2 trips will be made per day. Disposal/ Reycling rate is based on estimations received from recycling centers.

General Note: No salvage value of materials is assumed in the estimate either as a direct credit or as a reduce unit cost.

Table 2: Scarlet II Decommissioning Cost Summary Table

Dismantling Civil Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Solar Photovoltaic Modules/ Panels[2]		-		**$ 617,470.00**			-		**$ 33,610.00**	**$ 651,080.00**
Electrician de-energizes circuits and disconnects module	6	$ 66.47	3000	$ 199,410.00			-			
General laborer dismounts modules and palletizes (for shipping)	6	$ 61.31	3500	$ 214,585.00			-			
Equipment operator utilizes forklift (to transfer onto transport truck)	4	$ 81.39	2500	$ 203,475.00	4	$ 250.00	$ 2,085.00	4	$ 33,610.00	
Battery Modules + Containers[3]		-		**$ 55,402.16**			-		**$ 6,876.00**	**$ 62,278.16**
Electrician/ BESS technician de-energizes circuits, disconnects BESS containers from distribution system, and ensures safe and secure container removal	4	$ 66.47	189	$ 12,562.83			-			
General laborer performs mechanical disconnection, frees BESS container from grade beams, and performs demolition of grade beam support structures	6	$ 61.31	237	$ 14,530.47			-			
Equipment operator utilizes crane	2	$ 91.53	158	$ 14,461.74	1	$ 250.00	$ 4,316.00	1	$ 4,566.00	
Equipment operator utilizes end loader	2	$ 87.64	158	$ 13,847.12	2	$ 250.00	$ 1,030.00	1	$ 2,310.00	
Solar Racking Structure		-		**$ 11,320.20**			-		**$ 1,280.00**	**$ 12,600.20**
General laborer unbolts and dissassembles	6	$ 61.31	76	$ 4,659.56			-			
Equipment operator utilizes end loader	2	$ 87.64	76	$ 6,660.64	2	$ 250.00	$ 1,030.00	0.5	$ 1,280.00	
Steel Piles		-		**$ 49,629.60**			-		**$ 4,750.00**	**$ 54,379.60**
General laborer performs removal	7	$ 61.31	570	$ 34,946.70			-			
Equipment operator utilizes vibratory pier extractor	1	$ 86.37	170	$ 14,682.90	1	$ 250.00	$ 4,500.00	1	$ 4,750.00	
Fencing		-		**$ 7,447.50**			-		**$ 2,310.00**	**$ 9,757.50**
General laborer detaches fence and aggregates	4	$ 61.31	50	$ 3,065.50			-			
Equipment operator utilizes backhoe (to pull and load fence posts)	4	$ 87.64	50	$ 4,382.00	4	$ 250.00	$ 1,030.00	0.5	$ 2,310.00	
Roads		-		**$ 7,274.12**			-		**$ 2,310.00**	**$ 9,584.12**
Equipment operator utilizes end loader	4	$ 87.64	83	$ 7,274.12	4	$ 250.00	$ 1,030.00	0.5	$ 2,310.00	
Concrete Foundations (including PCS, transformer, battery container)		-		**$ 1,489.50**			-		**$ 765.00**	**$ 2,254.50**
General laborer performs demolition	2	$ 61.31	10	$ 613.10			-			
Equipment operator utilizes end loader	1	$ 87.64	10	$ 876.40	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	

Dismantling Electrical Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Underground Conductors and Communications Cables		-		**$ 7,000.50**			-		**$ 2,734.50**	**$ 9,735.00**
General laborer pulls wire	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes excavator	1	$ 90.65	30	$ 2,719.50	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Conductors and Messenger Support Cables		-		**$ 6,910.20**			-		**$ 2,057.50**	**$ 8,967.70**
General laborer removes conductors from tracker structures	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Power Conversion Stations (recombiner/ inverter/ transformer units)		-		**$ 6,474.30**			-		**$ 2,408.00**	**$ 8,882.30**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10			-			
General laborer cuts and removes conduit	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes crane to place in truck	1	$ 88.03	30	$ 2,640.90	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
Load Break Disconnect Switches		-		**$ 6,462.60**			-		**$ 765.00**	**$ 7,227.60**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10			-			
General laborer cuts conduit/ wire	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Additional Electrical Equipment (including sensors and weather stations)		-		**$ 6,462.60**			-		**$ 250.00**	**$ 6,712.60**
Electrician de-energizes circuits and removes terminations	2	$ 66.47	30	$ 1,994.10			-			
General laborer cuts conduit/ wire	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 250.00	
MV Underground Collection Cabling (34.5 kV)		-		**$ 9,629.70**			-		**$ 3,499.50**	**$ 13,129.20**
General laborer decouples and loads on forklift	2	$ 61.31	30	$ 1,839.30			-			
Equipment operator utilizes forklift	1	$ 81.39	30	$ 2,441.70	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	30	$ 2,629.20	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Equipment operator utilizes excavator	1	$ 90.65	30	$ 2,719.50	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Cables (including project transmission line)		-		**$ 2,972.00**			-		**$ 3,700.50**	**$ 6,672.50**
Electrician disconnects cables	2	$ 66.47	10	$ 664.70			-			
Equipment operator utilizes crane to lower cable to the ground	1	$ 88.03	10	$ 880.30	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
General laborer coils cable	2	$ 61.31	10	$ 613.10			-			
Equipment operator utilizes forklift to place cable on truck	1	$ 81.39	10	$ 813.90	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	

Site Final Restoration

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Re-Grading of Site (after excavation and removal of underground materials and		-		**$ 3,065.50**			-		**$ 2,362.00**	**$ 5,427.50**
General operator utilizes grader	2	$ 61.31	50	$ 3,065.50	1	$ 400.00	$ 3,924.00	0.5	$ 2,362.00	
Site Rehabilitation (including seeding)[4]		-		**$ 3,065.50**			-		**$ 46,247.00**	**$ 49,312.50**
General laborer mows/ disks area with seeding	6	$ 61.31	50	$ 3,065.50			-		$ 46,247.00	

Hauling and Disposal/Recycling

	Hauling Cost					Disposal/Recycling Cost			
	Cost per Truck per Day	Weight (ton)	Tons per Truck	Trips per Day	Total	Disposal/Recycling Rate ($/ton)	Weight (ton)	Total	Total Hauling + Disposal Costs
General Refuse[5]	$ 1,650.00	41,133.13	24	4	$ 706,975.70	$ 26.75	41,133.13	#############	**$ 1,807,286.98**
Other Waste[6]	$ 1,650.00	24391.16	24	2	$ 838,446.13	$ 50.00	24,391.16	#############	**$ 2,058,004.14**

Project Administrative Fees

County Adminstrative Costs (including legal services, preparation of bid plans and specs, contract development and awarding, project management and monitoring of contractors)	-	**$ 20,000.00**
SUBTOTAL		**$ 4,803,292.10**
Contingency (15%)		**$ 720,493.81**
TOTAL		**$ 5,523,785.91**

1. Estimate reflects use of prevailing wage scales.

2. Estimate assumes approximately 5.2 total solar panel dismantling labor hours per approximate solar panel impact acreage (approximately 1 total solar panel dismantling labor minute per solar panel).

3. Estimate assumes approximately 106 total battery dismantling labor hours per approximate battery impact acreage (approximately 3.2 total battery dismantling labor hours per battery container).

4. Estimate assumes that around 5% of the site (approximately 1796 acres) will require seeding with a seeding material cost of approximately $515/ acre.

5. The general disposal/ recycling site address assumed for this estimate is located at 18950 W American Avenue, Kerman, CA 93630. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 17.5 miles from the project site to the facility (approximately 20 minutes). It is assumed that 4 trips will be made per day. Disposal/ Reycling rate is based on public County of Fresno fees effective July 2022.

6. The disposal/ recycling site address assumed for this estimate is located at 3243 S East Avenue, Fresno, CA 93725. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 37.5 miles from the project site to the facility (approximately 45 minutes). It is assumed that 2 trips will be made per day. Disposal/ Reycling rate is based on estimations received from recycling centers.

General Note: No salvage value of materials is assumed in the estimate either as a direct credit or as a reduce unit cost.

Table 3: Scarlet III Decommissioning Cost Summary Table

Dismantling Civil Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Battery Modules + Containers[3]	-			**$ 78,799.00**	-				**$ 10,064.00**	**$ 88,863.00**
Electrician/ BESS technician de-energizes circuits, disconnects BESS containers from distribution system, and ensures safe and secure container removal	4	$ 66.47	270	$ 17,946.90	-					
General laborer performs mechanical disconnection, frees BESS container from grade beams, and performs demolition of grade beam support structures	6	$ 61.31	335	$ 20,538.85	-					
Equipment operator utilizes crane	2	$ 91.53	225	$ 20,594.25	1	$ 250.00	$ 4,316.00	1.5	$ 6,724.00	
Equipment operator utilizes end loader	2	$ 87.64	225	$ 19,719.00	2	$ 250.00	$ 1,030.00	1.5	$ 3,340.00	
Fencing	-			**$ 446.85**	-				**$ 2,310.00**	**$ 2,756.85**
General laborer detaches fence and aggregates	4	$ 61.31	3	$ 183.93	-					
Equipment operator utilizes backhoe (to pull and load fence posts)	4	$ 87.64	3	$ 262.92	4	$ 250.00	$ 1,030.00	0.5	$ 2,310.00	
Roads	-			**$ 350.56**	-				**$ 4,370.00**	**$ 4,720.56**
Equipment operator utilizes end loader	4	$ 87.64	4	$ 350.56	4	$ 250.00	$ 1,030.00	1	$ 4,370.00	
Concrete Foundations (including PCS, transformer, battery container)	-			**$ 1,489.50**	-				**$ 765.00**	**$ 2,254.50**
General laborer performs demolition	4	$ 61.31	10	$ 613.10	-					
Equipment operator utilizes end loader	1	$ 87.64	10	$ 876.40	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	

Dismantling Electrical Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Underground Conductors and Communications Cables	-			**$ 700.05**	-				**$ 2,734.50**	**$ 3,434.55**
General laborer pulls wire	2	$ 61.31	3	$ 183.93	-					
Equipment operator utilizes forklift	1	$ 81.39	3	$ 244.17	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes excavator	1	$ 90.65	3	$ 271.95	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Conductors and Messenger Support Cables	-			**$ 691.02**	-				**$ 2,057.50**	**$ 2,748.52**
General laborer removes conductors from tracker structures	2	$ 61.31	3	$ 183.93	-					
Equipment operator utilizes forklift	1	$ 81.39	3	$ 244.17	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	3	$ 262.92	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
MV Underground Collection Cabling (34.5 kV)	-			**$ 3,209.90**	-				**$ 3,499.50**	**$ 6,709.40**
General laborer decouples and loads on forklift	2	$ 61.31	10	$ 613.10	-					
Equipment operator utilizes forklift	1	$ 81.39	10	$ 813.90	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	
Equipment operator utilizes end loader	1	$ 87.64	10	$ 876.40	1	$ 250.00	$ 1,030.00	0.5	$ 765.00	
Equipment operator utilizes excavator	1	$ 90.65	10	$ 906.50	1	$ 250.00	$ 2,384.00	0.5	$ 1,442.00	
Aboveground Cables (including project transmission line)	-			**$ 2,674.80**	-				**$ 3,700.50**	**$ 6,375.30**
Electrician disconnects cables	2	$ 66.47	9	$ 598.23	-					
Equipment operator utilizes crane to lower cable to the ground	1	$ 88.03	9	$ 792.27	1	$ 250.00	$ 4,316.00	0.5	$ 2,408.00	
General laborer coils cable	2	$ 61.31	9	$ 551.79	-					
Equipment operator utilizes forklift to place cable on truck	1	$ 81.39	9	$ 732.51	1	$ 250.00	$ 2,085.00	0.5	$ 1,292.50	

Site Final Restoration

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
foundations)	-			**$ 61.31**	-				**$ 4,324.00**	**$ 4,385.31**
General operator utilizes grader	2	$ 61.31	1	$ 61.31	1	$ 400.00	$ 3,924.00	1	$ 4,324.00	
Site Rehabilitation (including seeding)[4]	-			**$ 61.31**	-				**$ 360.50**	**$ 421.81**
General laborer mows/ disks area with seeding	6	$ 61.31	1	$ 61.31	-				$ 360.50	

Hauling and Disposal/Recycling

	Hauling Cost					Disposal/Recycling Cost			
	Cost per Truck per Day	Weight (ton)	Tons per Truck	Trips per Day	Total	Disposal/Recycling Rate ($/ton)	Weight (ton)	Total	Total Hauling + Disposal Costs
General Refuse[5]	$ 1,650.00	2,171.63	24	4	$ 37,324.89	$ 26.75	2,171.63	$ 58,091.11	**$ 95,416.00**
Other Waste[6]	$ 1,650.00	9433.25	24	2	$ 324,267.97	$ 50.00	$ 9,433.25	$ 471,662.50	**$ 795,930.47**

Project Administrative Fees

County Adminstrative Costs (including legal services, preparation of bid plans and specs, contract development and awarding, project management and monitoring of contractors)	-	**$ 20,000.00**
SUBTOTAL		**$ 1,034,016.27**
Contingency (15%)		**$ 155,102.44**
TOTAL		**$ 1,189,118.71**

1. Estimate reflects use of prevailing wage scales.

2. Estimate assumes approximately 11.1 total battery dismantling labor hours per approximate battery impact acreage (approximately 3.2 total battery dismantling labor hours per battery container).

3. Estimate assumes that around 5% of the site (approximately 14 acres) will require seeding with a seeding material cost of approximately $515/ acre.

4 . The general disposal/ recycling site address assumed for this estimate is located at 18950 W American Avenue, Kerman, CA 93630. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 17.5 miles from the project site to the facility (approximately 20 minutes). It is assumed that 4 trips will be made per day. Disposal/ Reycling rate is based on public County of Fresno fees effective July 2022.

5. The disposal/ recycling site address assumed for this estimate is located at 3243 S East Avenue, Fresno, CA 93725. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 37.5 miles from the project site to the facility (approximately 45 minutes). It is assumed that 2 trips will be made per day. Disposal/ Reycling rate is based on estimations received from recycling centers.

General Note: No salvage value of materials is assumed in the estimate either as a direct credit or as a reduce unit cost.

Table 4: Scarlet IV Decommissioning Cost Summary Table

Dismantling Civil Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Fencing	-			**$ 297.90**	-				**$ 2,310.00**	**$ 2,607.90**
General laborer detaches fence and aggregates	*4*	*$ 61.31*	*2*	*$ 122.62*	-					
Equipment operator utilizes backhoe (to pull and load fence posts)	*4*	*$ 87.64*	*2*	*$ 175.28*	*4*	*$ 250.00*	*$ 1,030.00*	*0.5*	*$ 2,310.00*	
Roads	-			**$ 262.92**	-				**$ 2,310.00**	**$ 2,572.92**
Equipment operator utilizes end loader	*4*	*$ 87.64*	*3*	*$ 262.92*	*4*	*$ 250.00*	*$ 1,030.00*	*0.5*	*$ 2,310.00*	
Support Facilities/ Buildings (including O&M building)	-			**$ 11,916.00**	-				**$ 765.00**	**$ 12,681.00**
General laborer performs demolition	*6*	*$ 61.31*	*80*	*$ 4,904.80*	-					
Equipment operator utilizes end loader	*1*	*$ 87.64*	*80*	*$ 7,011.20*	*1*	*$ 250.00*	*$ 1,030.00*	*0.5*	*$ 765.00*	
Substation (transformers, switches, structures, equipment pads, and grounding grid, control building and electrical cabinets)	-			**$ 40,360.20**	-				**$ 6,724.00**	**$ 47,084.20**
Equipment Operator utilizes crane for control building and other electrical items (including structures)	*1*	*$ 91.53*	*240*	*$ 21,967.20*	*1*	*$ 250.00*	*$ 4,316.00*	*1.5*	*$ 6,724.00*	
General laborer removes oils from transformer, utilizes jack-and-slide mechanism for moving main power transformer, gathers cable, and disassembles metal structure	*6*	*$ 61.31*	*300*	*$ 18,393.00*	-					
Concrete Foundations (including PCS, transformer, substation structure, and O&M building support)	-			**$ 10,426.50**	-				**$ 765.00**	**$ 11,191.50**
General laborer performs demolition	*4*	*$ 61.31*	*70*	*$ 4,291.70*	-					
Equipment operator utilizes end loader	*1*	*$ 87.64*	*70*	*$ 6,134.80*	*1*	*$ 250.00*	*$ 1,030.00*	*0.5*	*$ 765.00*	
Transmission Line Poles	-			**$ 71,094.00**	-				**$ 11,192.00**	**$ 82,286.00**
General laborer performs demolition	*4*	*$ 61.31*	*300*	*$ 18,393.00*	-					
Equipment operator utilizes end loader	*1*	*$ 87.64*	*300*	*$ 26,292.00*	*1*	*$ 250.00*	*$ 1,030.00*	*2*	*$ 2,310.00*	
Equipment operator utilizes crane to lift the poles out of the ground	*1*	*$ 88.03*	*300*	*$ 26,409.00*	*1*	*$ 250.00*	*$ 4,316.00*	*2*	*$ 8,882.00*	

Dismantling Electrical Components

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Power Conversion Stations (recombiner/ inverter/ transformer units)	-			**$ 9,711.45**	-				**$ 2,408.00**	**$ 12,119.45**
Electrician de-energizes circuits and removes terminations	*2*	*$ 66.47*	*45*	*$ 2,991.15*	-					
General laborer cuts and removes conduit	*2*	*$ 61.31*	*45*	*$ 2,758.95*	-					
Equipment operator utilizes crane to place in truck	*1*	*$ 88.03*	*45*	*$ 3,961.35*	*1*	*$ 250.00*	*$ 4,316.00*	*0.5*	*$ 2,408.00*	
Aboveground Cables (including project transmission line)	-			**$ 11,888.00**	-				**$ 3,700.50**	**$ 15,588.50**
Electrician disconnects cables	*2*	*$ 66.47*	*40*	*$ 2,658.80*	-					
Equipment operator utilizes crane to lower cable to the ground	*1*	*$ 88.03*	*40*	*$ 3,521.20*	*1*	*$ 250.00*	*$ 4,316.00*	*0.5*	*$ 2,408.00*	
General laborer coils cable	*2*	*$ 61.31*	*40*	*$ 2,452.40*	-					
Equipment operator utilizes forklift to place cable on truck	*1*	*$ 81.39*	*40*	*$ 3,255.60*	*1*	*$ 250.00*	*$ 2,085.00*	*0.5*	*$ 1,292.50*	

Site Final Restoration

	Labor Cost				Major Equipment Cost					
	Personnel	Total $/ Hr Rate[1]	Total Hours Among All Personnel	Total	Amount of Equipment	Delivery	$/ Month	Months	Total	Labor + Major Equipment Cost
Re-Grading of Site (after excavation and removal of underground materials and foundations)	-			**$ 183.93**	-				**$ 2,362.00**	**$ 2,545.93**
General operator utilizes grader	*2*	*$ 61.31*	*3*	*$ 183.93*	*1*	*$ 400.00*	*$ 3,924.00*	*0.5*	*$ 2,362.00*	
Site Rehabilitation (including seeding)[4]	-			**$ 183.93**	-				**$ 2,446.25**	**$ 2,630.18**
General laborer mows/ disks area with seeding	*6*	*$ 61.31*	*3*	*$ 183.93*	-				*$ 2,446.25*	

Hauling and Disposal/Recycling

	Hauling Cost					Disposal/Recycling Cost			
	Cost per Truck per Day	Weight (ton)	Tons per Truck	Trips per Day	Total	Disposal/Recycling Rate ($/ton)	Weight (ton)	Total	Total Hauling + Disposal Costs
General Refuse[5]	*$ 1,650.00*	*7,036.79*	*24*	*4*	*$ 120,944.75*	*$ 26.75*	*7,036.79*	*$ 188,234.01*	**$ 309,178.76**
Other Waste[6]	*$ 1,650.00*	*282.30*	*24*	*2*	*$ 9,704.06*	*$ 50.00*	*282.30*	*$ 14,115.00*	**$ 23,819.06**

Project Administrative Fees

County Adminstrative Costs (including legal services, preparation of bid plans and specs, contract development and awarding, project management and monitoring of contractors)	-	**$ 20,000.00**
SUBTOTAL		**$ 544,305.40**
Contingency (15%)		**$ 81,645.81**
TOTAL		**$ 625,951.22**

1. Estimate reflects use of prevailing wage scales.
2. Estimate assumes approximately 5.2 total solar panel dismantling labor hours per approximate solar panel impact acreage (approximately 1 total solar panel dismantling labor minute per solar panel).
3. Estimate assumes approximately 94 total battery dismantling labor hours per approximate battery impact acreage (approximately 3.2 total battery dismantling labor hours per battery container).
4. Estimate assumes that around 5% of the site (approximately 95 acres) will require seeding with a seeding material cost of approximately $515/ acre.
5. The general disposal/ recycling site address assumed for this estimate is located at 18950 W American Avenue, Kerman, CA 93630. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 17.5 miles from the project site to the facility (approximately 20 minutes). It is assumed that 4 trips will be made per day. Disposal/ Reycling rate is based on public County of Fresno fees effective July 2022.
6. The disposal/ recycling site address assumed for this estimate is located at 3243 S East Avenue, Fresno, CA 93725. The project site address is 30750 Manning Ave, Cantua Creek, CA 93608. Weight is broken out in Table 2. Using recent transportation rates to transport material to the project site, the estimated cost to ship per truck per day is $1,650 and estimated tons per truck is 24 tons. The trip is approximately 37.5 miles from the project site to the facility (approximately 45 minutes). It is assumed that 2 trips will be made per day. Disposal/ Reycling rate is based on estimations received from recycling centers.

General Note: No salvage value of materials is assumed in the estimate either as a direct credit or as a reduce unit cost.