PROJECT REPORT

TO: PLANNING COMMISSION **AGENDA DATE: December 17, 2020**

FROM: PLANNING & DEVELOPMENT SERVICES DEPT. AGENDA TIME 9:00 AM/No. 2a thru 2h.

PROJECT TYPE: Wister Solar Energy Facility Project SUPERVISOR DIST # 4
Water Supply Assessment, Final EIR, Findings, MMR&P
GPA #19-0001, ZC #19-0001, CUP #18-0040, CUP #20-0006 and V #19-0003
LOCATION: 8601 Wilkins Road, approx. 3 miles north of the Townsite of Niland
APN: 003-240-001-000 PARCEL SIZE: a 100-acre portion of 640 acres

GENERAL PLAN (existing) Recreation Open Space GENERAL PLAN (proposed) N/A

ZONE (existing) S-2 (Open Space/Preservation) ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: 12/17/2020

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: _____

INITIAL STUDY: #18-0026

☐ NEGATIVE DECLARATION ☐ MITIGATED NEG. DECLARATION ☒ EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☐ NONE	☒ ATTACHED
AG / APCD	☐ NONE	☒ ATTACHED
E.H.S.	☐ NONE	☒ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
OTHER	(See Attached)	

REQUESTED ACTION:

Staff recommends that the Planning Commission hold a public hearing and hear all proponents and opponents of the proposed project. Staff would then recommend that the Planning Commission take the following actions by resolution:

1. Recommend the Board of Supervisors approve the Water Supply Assessment, with findings;
2. Recommend the Board of Supervisors Certify of the Final EIR, with findings;
3. Recommend the Board of Supervisors adopt the Mitigation Monitoring and Reporting Program;
4. Recommend the Board of Supervisors approve General Plan Amendment #19-0001, with findings;
5. Recommend the Board of Supervisors approve Zone Change #19-0001, with findings;
6. Recommend the Board of Supervisors approve Conditional Use Permit #18-0040 (Solar Energy Facility Project), with finding;
7. Recommend the Board of Supervisors approve Conditional Use Permit #20-0006 (Water Well), with findings;
8. Recommend the Board of Supervisors approve Variance #19-0003, with Findings.

STAFF REPORT
Planning Commission
December 17, 2020

SUBJECT:

A. Water Supply Assessment
B. Final EIR - SCH. No. 2019110140 for Wister Solar Energy Facility and Findings of Fact,
C. Mitigation Monitoring and Reporting Program
D. General Plan Amendment #19-0001
E. Zone Change #19-0001
F. Conditional Use Permit #18-0040
G. Conditional Use Permit #20-0006
H. Variance #19-0003

PROJECT NAME: Wister Solar Energy Facility Project

APPLICANTS: ORNI 33, LLC

PROJECT LOCATION:

The proposed project is located approximately three miles north of the Townsite of Niland, a census-designated place, in the unincorporated area of Imperial County. The project site is located east of the intersection of Wilkins Road and an unnamed county road. The project footprint (physical area where proposed project components are to be located) is generally located east of Wilkins Road, north of the East Highline Canal, and west of Gas Line Road. The project site is surrounded by open desert land to the north, east and south and agriculture land (orchard) to the west identified as Assessor's Parcel Number 003-240-001-000, located at 8601 Wilkins Road, Niland, CA. Specifically, the Project area is on a 100-acre portion of 640 arces located in Sections 27, Township 10 South, Range 14 East of the San Bernardino Baseline and Meridian.

PROJECT SUMMARY:

The Wister Energy Solar Facility proposes to develop a ground mounted PV solar power generating system, supporting structure, on-site substation, access driveways, and transmission structures and fiber optic cable. It will connect from the proposed substation to the Point of Interconnection (POI) at the existing Imperial Irrigation District (IID) 92-kV "K" line, and include approximately two miles of fiber optic cable from the proposed on-site substation to the existing Niland Substation, located at 402 Beal Road in Niland. The project has a Power Purchase Agreement (PPA) with San Diego Gas and Electric for the sale of power from the project. The lifespan of the project is expected to be approximately 20 to 25 years.

The proposed PV solar generating facility would consist of 3.5 foot by 4.8-foot PV modules (or panels) on single-axis horizontal trackers in blocks that each hold 2,520 PV panels. The panels would be oriented from east to west for maximum exposure and the foundation would be designed based on soil conditions, with driven piles as the preferred method. The PV modules would be made of a poly-crystalline silicon semiconductor material encapsulated in glass. Installation of the PV arrays would include installation of mounting posts, module rail assemblies, PV modules, inverters, transformers and buried electrical conductors. Concrete would be required for the footings, foundations and pads for the transformers and substation work.

The proposed project would consist of 12 blocks. Every two blocks will be collected to an inverter and would typically encompass approximately 8 acres, including a pad for one transformer and one inverter. Approximately 96 acres of ground disturbance, including acreage for 12 blocks, is required for the proposed project. The proposed project would include design elements (e.g., non- or anti-reflective material) to reduce the potential glare impacts on adjacent sensitive receptors (e.g. local residents, aircraft, traveling public on adjacent County roads).

The electrical output from the PV modules would be low voltage DC power that would be collected and routed to a series of inverters and their associated pad-mounted transformers. Each array would have one inverter and one transformer, which are collectively known as a Power Conversion Station (PCS). The inverters would convert the DC power generated by the panels to alternating current (AC) power and the pad mounted transformers step up the voltage to a nominal level. The outputs from the transformers are grouped together in PV combining switchgear, which in turn supplies the switchyard, where the power is stepped up to 92-kV for interconnection with the transmission system.

The proposed Wister Substation would be a new 92/12-kV unstaffed, automated, low-profile substation. The dimensions of the fenced substation would be approximately 300 feet by 175 feet. The enclosed substation footprint would encompass approximately 1.2 acres of the approximately 640-acre project parcel.

A proposed fiberoptic line from the proposed Wister Substation would be connected with the existing Niland Substation approximately two miles to the south, which would then be added to connect the proposed Wister Substation to the region's telecommunications system. Overall, this would provide Supervisory Control and Data Acquisition (SCADA), protective relaying, data transmission, and telephone services for the proposed Wister Substation and associated facilities. New telecommunications equipment would be installed at the proposed Wister Substation within the Mechanical and Electrical Equipment Room (MEER).

The proposed gen-tie line would originate at the proposed Wister substation and would terminate at the POI, at a distance of approximately 2,500 feet to the south-southwest. Steel poles, standing at a maximum height of 70 feet tall, will be spaced approximately every 300 feet along the route, and would support the 92-kV conductor and fiberoptic cable to the POI. Construction of the 2,500-foot gen-tie line to the POI would utilize overland travel via an all-weather improved access road along the entire route.

The County is the "lead agency" for this Project. Lead agency is defined as, "the public agency, which has the principal responsibility for carrying out or approving a project." The County must undertake the following a discretionary actions and approvals for the Project:

- **WATER SUPPLY ASSESSMENT (WSA)**
  The purpose of this WSA is to document the Project area's existing and future water supplies and compare them to the area's future water demand including that of the proposed Project. This comparison, conducted for both normal and drought conditions during a 20 to 25 year projection, is the basis for an assessment of water supply sufficiency in accordance with the requirements of California Water Code section 10910.
- **CERTIFICATION OF THE FINAL EIR**
  The County has responded to written comments and provided errata as part of the Final EIR to be considered for certification by the Planning Commission and/or Board of Supervisors prior to making a decision on the Project.
- **MITIGATION MONITORING AND REPORTING PROGRAM**
  A Mitigation Monitoring and Reporting Program (MMRP) will be adopted as required by CEQA Guidelines Section 15097 to ensure that mitigation measures identified in the EIR are implemented as appropriate.
- **GENERAL PLAN AMENDMENT**
  An amendment to the County's General Plan, Renewable Energy and Transmission Element is required to implement the proposed project. CUP applications proposed for specific renewable energy projects not located in the Renewable Energy (RE) Overlay Zone would not be allowed without an amendment to the RE Overlay Zone. APN No. 003-240-001 (in which the solar energy facility will be located), is immediately adjacent to, but outside of the RE Overlay Zone; therefore, the applicant is requesting a General Plan Amendment to include/classify APN No. 003-240-001 into the RE Overlay Zone. The underlying "Recreation" General Plan designation would remain.
- **ZONE CHANGE**
  The project site (APN No. 003-240-001) is located immediately adjacent to, but outside of the RE Overlay Zone; therefore, the applicant is requesting a zone change to include/classify APN No. 003-240-001 (which includes the solar energy facility) into the RE Overlay Zone.
- **CONDITIONAL USE PERMIT**
  The proposed Project will require approval of CUP #18-0040 by Imperial County to allow construction and operation of the solar energy project in the proposed Wister Energy Solar Facility.
- **CONDITIONAL USE PERMIT**
  Conditional Use Permit #20-0006 would be required for the proposed water well for construction and operation.
- **VARIANCE**
  A Variance is required to exceed the height limit for transmission towers within the S-2 zone. The existing S-2 zone allows a maximum height limit of 40 feet, whereas implementation of the project may involve the construction of transmission towers of up to 70 feet in height. Therefore, a Variance for any structure exceeding the existing maximum height limit of 40 feet would be required.

ENVIRONMENTAL ANALYSIS:

Due to the potential for significant impacts resulting from the proposed Wister Solar Energy Facility Project, the County determined than an EIR would be necessary. The County prepared an Initial Study (Code of California Regulations [CCR] §15063b (1) (A)) and subsequently issued a Notice of Preparation (NOP) for the preparation of an EIR (SCH. No.2019110140) on Tuesday, November 6, 2019. The NOP was distributed to city, county, state and federal agencies, other public agencies, and various interested private organizations and individuals to define the scope of the EIR. The NOP was also published in the Imperial Valley Press on November 6, 2019. The purpose of the NOP was to identify public agencies and public concerns regarding the potential impacts of the proposed Project, and the scope and content of environmental issues to be addressed in the EIR. Circulation of the NOP ended on December 11, 2019. A public scoping meeting was held on November 13, 2019 at the Board of Supervisors meeting room to gather input from the public.

Final Environmental Impact Report SCH# 2019110140

On June 30, 2020, a Notice of Completion (NOC) was filed with the State Clearinghouse for the Draft EIR, initiating the 50-day public review period of the Draft EIR document and associated technical appendices. Concurrent with filing the NOC, the County is also required to provide notice to the public, agencies, organization and other interested parties of the availability of the Draft EIR for review and comment. A Notice of Availability (NOA) was published on June 30, 2020 in the Imperial Valley Press newspaper. In addition, the NOA was posted on the County's website and at local libraries. Public comment on the Draft EIR were accepted in written form. The public review and comment period ended on August 18, 2020 after which time all comments received were responded

A Final EIR (FEIR) was prepared following the public review and comment period for the Draft EIR. The Final EIR responded to: written comments received during the public review and comment period; and oral comments made at any public hearing held to receive comments on the Draft EIR.

CERTIFICATION OF THE EIR:

The Final EIR will be independently reviewed and considered by the County. If the Final EIR is deemed "adequate and complete," the County may certify the EIR at a public hearing. In general, the rule of adequacy holds that the EIR can be certified if it demonstrates a good faith effort at full disclosure of environmental information and provides sufficient analysis to allow decisions to be made regarding the project in terms of its environmental consequences.

Following review and consideration of the Final EIR, the County may take action to approve, conditionally approve, revise, or reject the Project. Written findings would accompany a decision to approve or conditionally approve the project (CCR §15091). Likewise, a statement of overriding considerations would be prepared if necessary (CCR §15093). A Mitigation Monitoring and Reporting Program (MMRP), as described below would also be adopted for mitigation measures that have been incorporated into or imposed upon the Project to reduce or avoid significant effects on the environment.

MITIGATION MONITORING AND REPORTING PROGRAM

The County must adopt a Mitigation Monitoring and Reporting Program (MMRP) for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment (CCR §15097). This program will be designed to ensure that these measures are carried out during project construction and operation.

The specific reporting or monitoring program required by CEQA is not required to be included in the EIR. However, any mitigation measures adopted by the County as part of the certified Final EIR will be considered as conditions of approval for the project and will be included in the MMRP to ensure and verify compliance.

SITE RESTORATION PLAN

The applicant shall submit a site restoration plan for Conditional Use Permit #18-0040 proposing to return the property to its current agricultural condition. The applicant shall provide financial assurances in the amount equal to the reclamation costs prior to issuance of any building permits.

CODES:

The applicable Title 9, Land Use Ordinance Sections are as follows:

Division 1, Chapter 3, Planning Commission and Chapter 7, CEQA
Division 2, Chapter 3, Land Use Permits (Conditional Use Permit).
Division 5, Zoning Areas Established, Chapter 19: S-2-G (Open Space Preservation)
Division 17, Chapter 1, Renewable Energy Resources

RECOMMENDED ACTIONS

Staff recommends that the Planning Commission hold a public hearing and hear all proponents and opponents of the proposed project. Staff would then recommend that the Planning Commission take the following actions by resolution:

1. Recommend the Board of Supervisors approve the Water Supply Assessment, with findings;
2. Recommend the Board of Supervisors Certify of the Final EIR, with findings;
3. Recommend the Board of Supervisors adopt the Mitigation Monitoring and Reporting Program;
4. Recommend the Board of Supervisors approve General Plan Amendment #19-0001, with findings;
5. Recommend the Board of Supervisors approve Zone Change #19-0001, with findings;
6. Recommend the Board of Supervisors approve Conditional Use Permit #18-0040 (Solar Energy Facility Project), with findings;
7. Recommend the Board of Supervisors approve Conditional Use Permit #20-0006 (Water Well), with findings;
8. Recommend the Board of Supervisors approve Variance #19-0003, with findings.

PREPARED BY: Patricia Valenzuela, Planner IV

REVIEWED BY: Michael Abraham, AICP
Assistant Director of Planning & Development Services

REVIEWED BY: Jim Minnick,
Director of Planning & Development Services

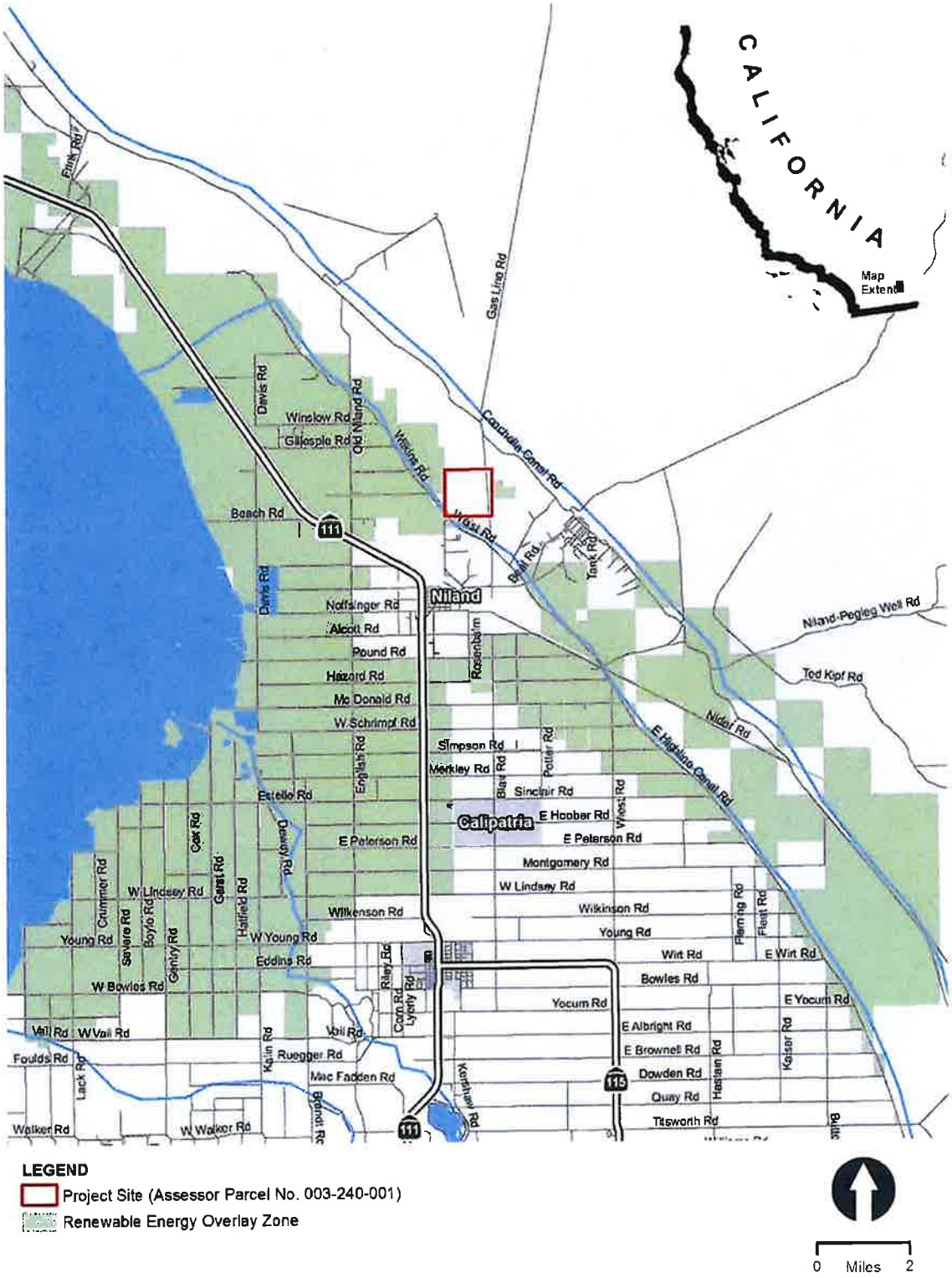
Attachments:

Attachment A: Location Map
Attachment B: Site Plan
Attachment C: Water Supply Assessment and Resolution
Attachment D: Final Environmental Impact Report (FEIR) Resolution
Attachment E: Mitigation Monitoring & Reporting Program Resolution
Attachment F: General Plan Amendment Resolution
Attachment G: Zone Change Resolution & Ordinance
Attachment H: Conditional Use Permit #18-0040 Resolution & Agreement
Attachment I: Conditional Use Permit #20-0006 Resolutions & Agreement
Attachment J: Variance #20-0003 Resolution
Attachment K: Applications/Project Description
Attachment L: Final EIR

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\Wister Staff Report.docx

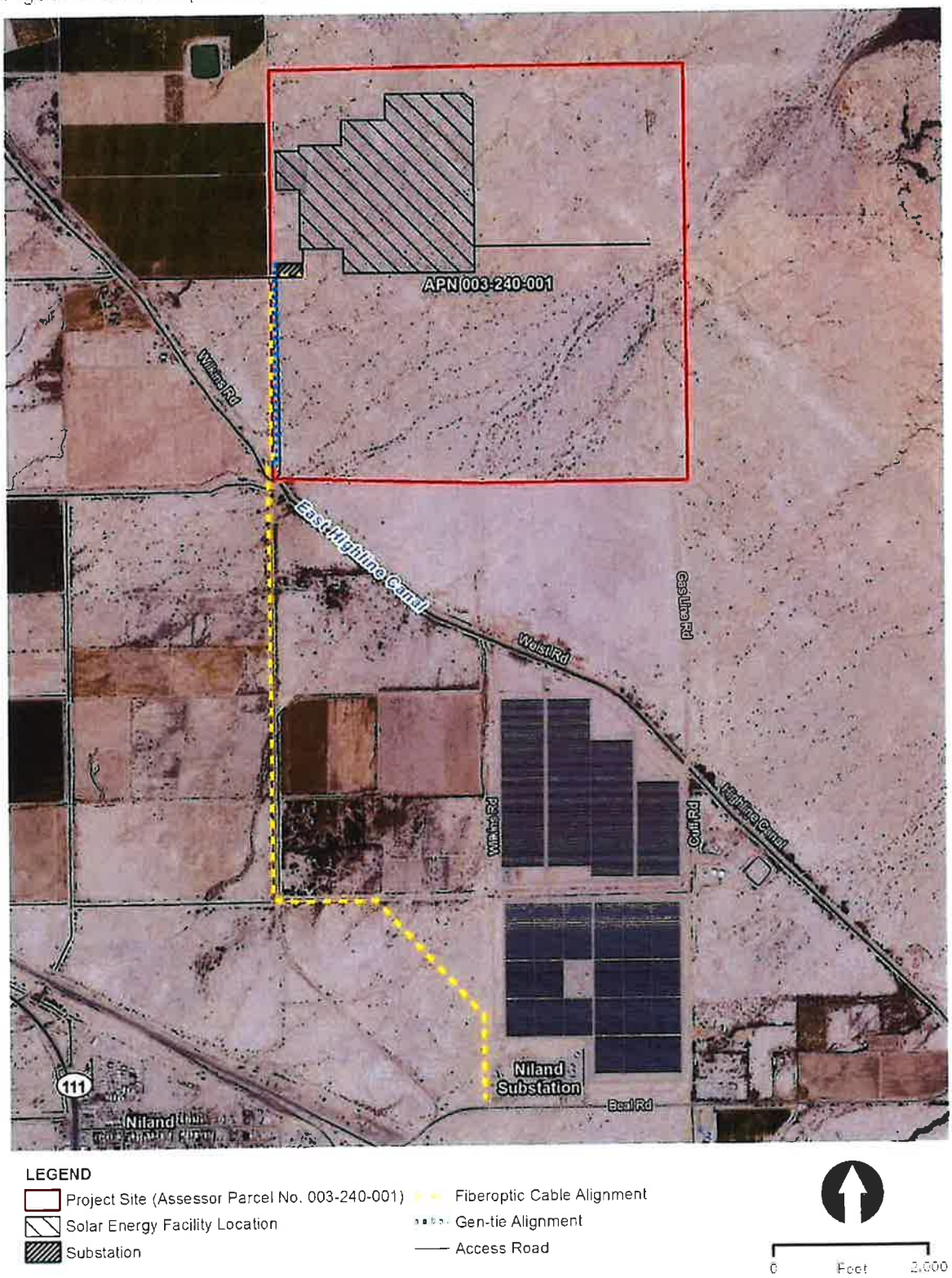
ATTACHMENT "A"

Figure 2-1. Regional Location



ATTACHMENT "B"

Figure 2-3. Fiberoptic Cable and Gen-Tie Alignment



ATTACHMENT "C"

RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, RECOMMENDING TO THE IMPERIAL COUNTY BOARD OF SUPERVISORS APPROVAL OF THE WATER SUPPLY ASSESSEMENT (WSA) FOR THE WISTER SOLAR ENERGY FACILITY PROJECT

WHEREAS, the Wister Solar Energy Facility project qualifies as a "project" under the Water Code, it triggers the need to prepare a Water Supply Assessment. The Wister Solar Energy Facility Water Supply Assessment (WSA) has been prepared in accordance with Water Code 10912(a) (7) and

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of making recommendations to the Imperial County Board of Supervisors for approval and certification; and

WEREAS, the duty to prepare a Water Supply Assessment ("WSA") falls to the County of Imperial ("County") as per the meaning of the Water Code 10912(c) and,

WEREAS, the County in consultation with an expert engineering firm who prepared the WSA, which include any and all WSA addendums and.

WEREAS, the County has independently reviewed and considered the WSA and the entire administrative record and,

WHEREAS, public notice of said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at a public hearing held with respect to this item on December 17, 2020;

NOW THEREFORE, the Planning Commission of the County of Imperial DOES HEREBY RESOLVE as follows:

SECTION 1. The Planning Commission has considered the proposed Wister Solar Energy Facility Water Supply Assessment (WSA) prior to making a decision to recommend that the Board of Supervisors to approve the proposed WSA; The Planning Commission finds and determines that the Water Assessment is adequate and prepared in accordance with the requirements of the Water Code 10912(a)(7). The analysis of the WSA demonstrates that the total projected water supplies, determined to be available by the County for the Project during normal, single dry, and multiple dry water years, will meet the projected water demand associated with the proposed project and based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning law, the County of Imperial Land Use Ordinance and General Plan, the following findings for the approval of the Wister Solar Energy Facility Water Assessment (WSA) has been made as follows:

1. The Wister Solar Facility Energy Project is considered a project as defined by section 10912 of the Water Code because it occupies more than 40 acres of land.

2. The Water Supply Assessment has determined that the ground water supply is adequate to service the Wister Solar Energy Facility project. This WSA documents water supply sources, quantifies water demands, evaluates drought impacts, and provides a comparison of water supply and demand that is the basis for an assessment of water supply sufficiency.

3. This WSA discusses water demands of the Project for the project on pages 26 and 27. Water supply information pertinent to the Project area is provided on page 27 and 28. Water supply and demands are compared on page 35 presents conclusions.

4. Water Code section 10910 requires that a WSA quantify water demands associated with the proposed project. Water demand projections for each land use type need to be made over a 20-year period in 5-year increments. Although not specifically required in Section 10910, water demands associated with the proposed project should be estimated for normal, dry and multiple dry-year hydrologic years. The first part describes the factors affecting total water demand, including climate, land use, and historic and current water use. The second part documents future water demands not only under normal climatic conditions, but also during drought.

5. Proposed future water use projections assume that construction will occur and the solar project being built by 2021. The solar project was evaluated for an annual need (per phase) 2.76, 6.54 & 0.92 AFY for a total combined usage of 10.22 AFY at build out. Water was also evaluated during construction of the solar sites. The solar project will need 10.22 AF for construction. Construction is assumed to occur in 2020 with a water use total of 10.22 AF. The proposed operational water use is estimated to be approximately 34.25 AF (over a 25 year period) or 1.37 AFY.

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial **DOES HEREBY RECOMMEND** that the Board of Supervisors

approves the proposed Water Supply Assessment (WSA) for the Wister Solar Energy Facility ("Project");

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on November 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

Jim Minnick, Director of Planning and Development Services
Secretary to the Planning Commission

ATTACHMENT "D"

RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, RECOMMENDING TO THE IMPERIAL COUNTY BOARD OF SUPERVISORS CERTIFICATION OF THE FINAL PROJECT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE WISTER SOLAR ENERGY FACILITY PROJECT

WHEREAS, a Final Project EIR SCH 2019110140 and Candidate CEQA Findings have been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's Rules to Implement CEQA as amended for the Wister Solar Energy Facility Project which consists of one Conditional Use Permit (the "Project"); and,

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of making recommendations to the Imperial County Board of Supervisors regarding the Project for approval and certification; and,

WHEREAS, the FEIR has been provided in a timely manner to public agencies; and

WHEREAS, timely public notice of the Planning Commission's hearing on the Project application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at that public hearing held with respect to this item on December 17, 2020; and,

WHEREAS, the Final Project EIR includes analysis of various alternatives as required by CEQA, including a Conditional Use Permits, the Preferred Project, and

NOW THEREFORE, the Planning Commission of the County of Imperial DOES HEREBY RESOLVE as follows:

SECTION 1. The Planning Commission independently has reviewed and considered the proposed Final Environmental Impact Report (FEIR), Mitigation Monitoring and Reporting Program (MM&RP), and Candidate CEQA Findings prior to making a decision to recommend that the Board of Supervisors approve the proposed FEIR and Findings of Fact. The Planning Commission finds and determines that the Environmental Impact Report is adequate and prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with, CEQA, State Planning and Zoning law and the County of Imperial Land Use Ordinance, the following findings for the recommendation for approval and certification of the FEIR, MM&RP and Findings of Fact have been made as follows:

1. That the Final Project EIR **SCH# 2010110140**, Candidate CEQA Findings for the Wister Solar Energy Facility ("Project") have been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's Rules to Implement CEQA as amended, and such findings are incorporated by reference herein

2. That the County independently has reviewed, analyzed, and considered the Final Project EIR, the environmental impacts therein identified for this Project, the Candidate CEQA Findings, and the Mitigation Monitoring and Reporting Program, and the entire Record of Proceedings prior to recommending approval of this project.

3. That the Final Project EIR and the Candidate CEQA Findings reflect the independent judgment of the County.

4. That the Candidate CEQA Findings are supported by substantial evidence and backed by information provided to the County by experts, including but not limited to the County staff and the EIR preparer, on whom the County relies.

5. That the County accept as its own, incorporate as if set forth in full herein, and make each and every one of the findings contained in the Candidate CEQA Findings, including feasibility of mitigation measures pursuant to Public Resources Code 21081(a)/CEQA Guidelines 15091, and the infeasibility of project alternatives.

6. That the Mitigation Monitoring and Reporting Program is designed to ensure that during project implementation, the Developer and any other responsible parties implement the Project components and comply with feasible mitigation measures identified in the CEQA Findings, the Project entitlements, and the Mitigation Monitoring and Reporting Program and that these measures are fully enforceable through permit conditions, agreements, and/or other measures, such as their inclusion in the Mitigation Monitoring and Reporting Program.

7. That the Project will not individually or cumulative have an unmitigated adverse effect on fish and wildlife resources, as defined in Section 711.2 of the Fish and Game Code.

8. That the Record of Proceedings consists of the Final Project EIR (and all its technical reports and addendums thereto); the County staff reports; the CEQA Findings; the Mitigation Monitoring and Reporting Program; the various Project entitlements and documents referenced therein; all final reports, applications, memoranda, maps, letters, and other planning documents prepared and/or utilized by the EIR planning/environmental consultant; all final reports, memoranda, maps, letters, and other planning documents prepared and/or utilized by the County staff; all documents submitted by members of the public and public agencies in connection with the Final Project EIR; minutes and transcripts of all public meetings and public hearings; all written and verbal public testimony presented during a noticed public hearing for the proposed project which such testimony was taken and any and all other materials which constitute the record of proceeding pursuant to Public Resources Code section 21167.6(e); and matters of

common knowledge to the County staff, Planning Commission, and Board of Supervisors, including, but not limited to the County General Plan, the County Zoning Ordinance, and County policies, which may be found at the Clerk's Office located at 940 Main Street, Suite 209, El Centro, CA, 92243 during regular business hours, and the Imperial County Planning & Development Services Department at 801 Main Street, El Centro, CA 92243.

9. That the County does hereby recommend that the Board of Supervisors of the County of Imperial certify the Final Project EIR.

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial **DOES HEREBY RECOMMEND** that the Board of Supervisors certify the Final Project EIR **SCH# 2019110140**, Candidate CEQA Findings, for the Wister Solar Energy Facility ("Project").

_____
Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on November 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

ATTACHMENT "E"

RESOLUTION

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, RECOMMENDATING ADDOPTION OF THE MITIGATION MONTORING AND REPORTING PROGRAM FOR THE WISTER SOLAR ENGERY FACILITY PROJECT.

WHEREAS, a Mitigation Monitoring and Reporting Program has been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's Rules to Implement CEQA as amended; and

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility for recommending approval to the Board of Supervisors; and

WHEREAS, public notice of said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at a public hearing held with respect to this item on December 17, 2020.

NOW THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered the proposed Mitigation Monitoring and Reporting Program (MM&RP) prior to recommending approval of the proposed MM&RP. The Planning Commission finds and determines that the Final EIR is adequate and prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning law, Imperial County Land Use Ordinance and the County of Imperial General Plan, the following findings for recommending the approval of the MM&RP have been made as follows:

1. That the Final Project FEIR and Mitigation Monitoring and Reporting Program, and CEQA Findings for the Wister Solar Energy Facility ("Project") have been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's "Rules and Regulations to Implement CEQA as amended".

2. That the County has reviewed, analyzed, and considered the Final EIR, the environmental impacts therein identified for this Project, the CEQA Findings, and the Mitigation Monitoring and Reporting Program, and the entire Record of Proceedings prior to approving this project.

3. That the Mitigation Monitoring and Reporting Program is designed to ensure that during project implementation, the Developer and any other responsible parties implement the Project components and comply with feasible mitigation measures identified in the CEQA Findings, the Project entitlements, and the Mitigation Monitoring and Reporting Program and that these measures are fully enforceable through permit conditions, agreements, and/or other measures, such as their inclusion in the Mitigation Monitoring and Reporting Program.

4. That the Project will not individually or cumulative have an adverse effect on fish and wildlife resources, as defined in Section 711.2 of the Fish and Game Code.

6. That the County Planning Commission does hereby recommend approval of the Mitigation Monitoring and Reporting Program.

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial **DOES HEREBY** recommend to the Board of Supervisors to adopt the proposed Mitigation Monitoring and Reporting Program for the Wister Solar Energy Facility ("Project").

_____
Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on December 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
Jim Minnick, Director of Planning & Development Services
Secretary of the Planning Commission

ATTACHMENT "F"

RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, RECOMMENDING APPROVAL TO THE IMPERIAL COUNTY BOARD OF SUPERVISORS ON THE AMENDMENT TO THE GENERAL PLAN FOR THE EXPANSION OF THE RENEWABLE ENERGY AND TRANSMISSION ELEMENT FOR THE WISTER SOLAR ENERGY FACILITY PROJECT

WHEREAS, the applicant ORNI, 21, LLC filed a request for a General Plan Amendment GPA #19-0001 for the proposed Wister Solar Energy Facility project; and,

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of making recommendations to the Imperial County Board of Supervisors regarding the Project for approval and,

WHEREAS, the General Plan Amendment (GPA) has been provided in a timely manner to public agencies; and

WHEREAS, timely public notice of the Planning Commission's hearing on the Project application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at that public hearing held with respect to this item on December 17, 2020; and,

WHEREAS, the General Plan Amendment includes analysis for the inclusion and revision to the Renewable Energy and Transmission Element Section III (Goals and Objectives) Island Overlay (page 34 of the General Plan Renewable Energy & Transmission Element) first bullet which states in part that an amendment may be made to the renewable energy overlay zone if the Project "is adjacent to the Existing RE Overlay Zone."

WHEREAS, the General Plan Amendment will include the update & revision to the Imperial County Title 9, Division 17 Renewable Energy Resources, Chapter 1 Section 91701.01 to include the language "Is Adjacent to the Existing RE Overlay Zone."

NOW THEREFORE, the Planning Commission of the County of Imperial DOES HEREBY RESOLVE as follows:

SECTION 1. The Planning Commission independently has reviewed and considered the proposed General Plan Amendment GPA #19-0001 prior to making a decision to recommend that the Board of Supervisors to approve this General Plan Amendment (GPA #19-0001). The Planning Commission finds and determines that the Environmental Impact Report is adequate and prepared in accordance with the

requirements of the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with, CEQA, State Planning and Zoning law and the County of Imperial Land Use Ordinance, the following findings for the recommendation for approval and certification of the General Plan Amendment (GPA) #19-0001 have been made as follows:

1. That the Final Project EIR **SCH# 2019110140**, Candidate CEQA Findings for the Wister Solar Energy Facility ("Project") have been prepared in accordance with the requirements of the California Environmental Quality Act, the State CEQA Guidelines, and the County's Rules to Implement CEQA as amended, and such findings are incorporated by reference herein
2. That the County independently has reviewed, analyzed, and considered the Final Project EIR, the environmental impacts therein identified for this Project, the Candidate CEQA Findings, and the Mitigation Monitoring and Reporting Program, and the entire Record of Proceedings prior to recommending approval of this project.
3. The General Plan Amendment (map and text revision) for the Wister Solar Energy Facility project is consistent with the Imperial County General Plan's Renewable Energy & Transmission Element, which allows for inclusion into the Renewable Energy Overlay Zone, as the project is not located in some sensitive areas, the project will not create significant environmental impacts, and is adjacent to the Existing RE Overlay Zone.
4. The General Plan Amendment is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat. Surveys have been accomplished for biological and fish and impacts are less than significant with required mitigation.
5. The development and improvements are not likely to cause serious health problems.

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial **DOES HEREBY RECOMMEND** that the Board of Supervisors approve General Plan Amendment GPA #19-0001, for the Wister Solar Energy Faciility ("Project").

_____
Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on **December 17, 2020** by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____

Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\GPA resolution for Wister (10242020).docx

ATTACHMENT "G"

RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE RECOMMENDATION TO THE BOARD OF SUPERVISORS FOR AN APPROVAL OF S ZONE CHANGE TO CHANGE THE ZONING CLASSIFICATION FROM "S-2" (OPEN SPACE PRESERVATION/GEOTHERMAL OVERLAY)" TO "OPEN SPACE PRESERVATION/ RERENEWABLE ENERGY "RE" OVERLAY (ZONE CHANGE #19-0001) AND THE ADOPTION OF THE ZONE CHANGE TO THE CODIFIED ORDIANCE.

WHEREAS, Project Applicant: ORNI 21, LLC has filed an application to re-zone parcels 003-240-001 from S-2-G "Open Space Preservation/Geothermal Overlay" to " S-2-RE with Renewable Energy Overlay. Wister Solar Energy Facility project area is mostly bounded on the east by the Gas Line Road (Cuff Road) and on the west by existing Orchard and the north and south by open space.

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of making a recommendation to the Board of Supervisors on a decision for changes to Zoning Map No. 11 Niland area and Zoning Map No 71 Renewable Energy Overlay Map; and

WHEREAS, public notice of said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department and other interested parties at a public hearing held with respect to this item on December 17, 2020;

NOW THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered the proposed Zone Change No. 19-0001, prior to making a recommendation to the Board of Supervisors on a decision for the proposed amendment to the Zoning Map. Planning Commission finds and determines that the Environmental Impact Report is adequate and prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning law and the County of Imperial General Plan and Zoning Ordinances, the following findings for the approval of Zone Change No. 19-0001 have been made as follows:

1. The proposed Zone Change has been analyzed relative to its potential to be detrimental to the health, safety, comfort and welfare of the persons residing or

working within the neighborhood of the proposed Zone Change. Staff concluded that the project does not propose land uses, densities, or development patterns that will jeopardize the health and safety of the persons residing or working within the neighborhood of the property. Health, safety, and welfare will not be degraded as a result of this project.

2. The Zone Change is consistent with the General Plan's underlying land use overlay designation of Renewable Energy (RE). The Zone Change will allow development of 20 megawatts of solar energy.

3. The proposed Renewable Energy Overlay on the S-2 Open Space Preservation site subject to this recommendation is consistent with the uses allowed by Imperial County's Land Use Ordinances 90519.02 for property in the aforementioned zones, provided that the applicant obtains a conditional use permit. Ordinances No. 90519.02 represent the county's long-standing determination that approved solar projects are not inconsistent with S-2.

4. The site physically is suitable of this type of development and zoning. The project site consists of generally flat terrain with very gentle topography.

5. The change of zone will not conflict with any easements required by the public at large for access through or use of the property with the proposed zone change. Several easements surround and traverse the area. The Imperial Irrigation District (IID) owns several easements associated with existing electrical lines. The easements and their associated facilities will be retained, vacated or realigned as appropriate.

6. The change of zone is consistent with the Imperial County Board of Supervisors' Resolution 2012-005, which established guidelines for the county's "Public Benefit Program for Use with Solar Power Plants," a codification of the county's commitment to "developing solar energy projects while addressing all environmental and economic negative effects and community concerns related to solar projects."

7. The change of zone is also consistent with the General Plan Land Use Element goals and objectives, including objectives to "achieve balance economic and residential growth while reserving the unique natural, scenic, and agriculture resources of Imperial County while supporting the safe and orderly development of renewal energy in conformance with the goals and objectives of the Renewable Energy and Transmission Element" (Goal 3, Objective 3.15).

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial DOES HEREBY recommend for the Board of Supervisors to approve the proposed Zone Change 19-0001 to rezone from the current zoning of S-2-G (Open Space Preservation/Geothermal Overlay), to S-2 RE Overlay Zone" and the proposed change to the Imperial County Codified Zoning Ordinance.

_____
Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on December 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____
Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\Zone Change Resolution Wister (1022020).doc

Ordinance No._____

AN ORDINANCE AMENDING THE CODIFIED ORDINANCES OF THE COUNTY OF IMPERIAL RELATING TO ZONES

The Board of Supervisors of the County of Imperial, State of California, ordain as follows:

SECTION 1: Section **92511.0_**, is added to Chapter 40 of Division 25 of Title 9, and Division of the Codified Ordinances of the County of Imperial, State of California, to read as follows:

Section **92511.01** Amendment to Zoning Map No. 11 "Niland; ZC 19-0001 Wister Solar Energy Facility."

The map entitled "Renewable Energy Overlay" Zoning Map No. 71 (Section 92571.00 of the Codified Ordinances) is hereby amended in the following particular only.

Section **92571.01** Amendment to Zoning Map No. 71 "Renewable Energy Overlay." Zone Change ZC 19-0001"; Wister Solar Energy Facility Overlay".

The zone classification of those certain parcels of real property situated in the County of Imperial, State of California, and more particularly described as:

LEGAL DESCRIPTION: Section 27. Township 10 South, Range 14 East, San Bernardino Base and Meridian 640 Acres **003-240-001-000**

"S-2-G" (Open Space Preservation/Geothermal Overlay) to S-2-RE" (Open Space Preservation/Renewable Energy Overlay Zone) AS DESIGNATED in the Renewable Energy and Transmission Element.

SECTION 2: This Ordinance shall take effect thirty (30) days after the date of its adoption and prior to the expiration of fifteen (15) days from the passage thereof, shall be published at least once in a newspaper of general circulation printed and published in the County of Imperial, State of California, together with the names of the Board of Supervisors voting for and against the same.

SECTION 3: That in accordance with State Planning and Zoning law and the County of Imperial General Plan and zoning ordinances, the following findings for the approval of Zone Change No. 19-0001 have been made as follows:

1. The proposed Zone Change has been analyzed relative to its potential to be detrimental to the health, safety, comfort and welfare of the persons residing or working within the neighborhood of the proposed Zone Change. Staff concluded that the project does not propose land uses, densities, or development patterns that will jeopardize the health and safety of the persons residing or working within the neighborhood of the property. Health, safety, and welfare will not be degraded as a result of this project.

2. The Zone Change is consistent with the General Plan's underlying land use overlay designation of Renewable Energy (RE). The Zone Change will allow for the development of 20 megawatts of solar facilities.

3. The proposed Renewable Energy Overlay on the S-2 (Open Space/Preservation) site subject to this recommendation is consistent with the uses allowed by Imperial County's Land Use Ordinance 90519.02 for properties in the aforementioned zones, provided that the applicant obtains a conditional use permit. Ordinances Nos. 90519.02 represent the county's long-standing determination that conditionally-approved solar projects are not inconsistent with S-2 zones.

4. The site physically is suitable of this type of development and zoning. The project site consists of generally flat terrain with very gentle topography.

5. The change of zone will not conflict with any easements required by the public at large for access through or use of the property with the proposed zone change. Several easements surround and traverse the area. The Imperial Irrigation District (IID) owns several easements associated with existing canals, drains and electrical lines. The easements and their associated facilities will be retained, vacated or realigned as appropriate.

6. The change of zone is consistent with the Imperial County Board of Supervisors' Resolution 2012-005, which established guidelines for the county's "Public Benefit Program for Use with Solar Power Plants," a codification of the county's commitment to "developing solar energy projects while addressing all environmental and economic negative effects and community concerns related to solar projects."

7. The change of zone is also consistent with the General Plan Land Use Element goals and objectives, including objectives to "achieve balance economic and residential growth while reserving the unique natural, scenic, and agriculture resources of Imperial County while supporting the safe and orderly development of renewal energy in conformance wit the

goals and objective of the Renewable Energy and Transmission Element" (Goal 3,, Objective 3.15).

PASSED, ADOPTED AND APPROVED by the Board of Supervisors of the County of Imperial this December 17, 2020.

ATTEST:

Clerk of the Board of Supervisors

Luis A. Plancarte
Chairman of the Board
Board of Supervisors

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\ZONE CHANGE ORDINANCE.doc

ATTACHMENT "H"

RESOLUTION NO. ____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, RECOMMENDING APPROVAL FOR "CONDITIONAL USE PERMIT CUP #18-0040" FOR WISTER SOLAR ENERGY FACILITY PROJECT

WHEREAS, ORNI 21, LLC has submitted an application for Conditional Use Permit #18-0040 for the construction, operation, maintenance and decommissioning of solar photovoltaic (PV) facilities); and

WHEREAS, an Environmental Impact Report and CEQA Findings have been prepared in accordance with the requirements of the California Environmental Quality Act, the State Guidelines, and the County's "Rules and Regulations to Implement CEQA," as Amended; and

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility of approvals, certifications and making recommendations to the Imperial County Board of Supervisors for approvals of conditional use permits; and

WHEREAS, public notice of said application has been given, and the Planning Commission has heard, received and considered all oral and written protests, objections and evidence presented by interested parties at a public hearing held with respect to this item on December 17, 2020; and

WHEREAS, the Draft EIR was received by the State Clearinghouse on June 22, 2020 and circulated for a period of 50 days ending on August 18, 2020, (SCH# 2019110140).

NOW, THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered the proposed Conditional Use Permit #18-0040 prior to recommending approval and the County's consideration of the Project has been noticed in compliance with law.

SECTION 2. That the Project complies with the requirements of the Imperial County Code and is in accordance with State Planning and Zoning law therefore, the following findings are made pursuant to Imperial County Code § 90203.09 as follows:

A. The proposed use is consistent with goals and policies of the adopted County General Plan. (Imperial County Code § 90203.09.A)

The General Plan goals and objectives serve as guidelines and policy statements. The County Board of Supervisors has the authority to interpret the meaning of its General Plan and determine whether the proposed project is consistent

1. The General Plan designates the subject site as "Recreational/Open Space." Sections 90519.00 of the County Land Use Ordinance identify the permitted and conditional uses within the S-2, zoning designations. Uses identified as conditionally permitted require a Conditional Use Permit (CUP), which is subject to the discretionary approval of the County Board of Supervisors (Board) per a recommendation by the County Planning Commission. The projects include several uses identified as conditionally permitted within the S-2 zones. These uses include electrical substations in an electrical transmission system (92/12-kV); facilities for the transmission of electrical energy (92-kV); solar energy plants; and solar energy electrical generators.

2. The Planning Commission also examined the relevant, applicable portions of the Imperial County General Plan's Land Use Element and the Renewable & Transmission Element and has determined that the Land Use Element's statement that "geothermal, hydroelectric, wind and solar facilities may be regulated differently than other types of power plants by implementing zoning" demonstrates that the proper regulating process for solar facilities is the County's Zoning Ordinance. Per the General Plan, Land Use. Element, Objective 3.15 – Support the safe and orderly development of renewable energy in conformance with the goals and objective of the Renewal Energy and Transmission Element (page. 38). Further, the Land Use Compatibility Matrix in the ICGP provides that industrial uses are permissible on lands zones S-2 with a CUP, General Plan, Land Use Element., Table 4.

3. The Renewable & Transmission Element authorizes renewable energy projects if the renewable energy project: 1) is not located in a sensitive area and 2 Would not result in any significant environmental impacts. The EIR shows all significant impacts being mitigated. Additionally, pursuant to Land Use Ordinance, Section 90519.02, solar is permitted with approval of a Conditional Use Permit for "Solar Power Plants."

4. The Renewal Energy and Transmission Element and the Land Use Element contain no express prohibition of non-agricultural uses on land designated

within the Agricultural category. Rather, the Agricultural Element specifically allows non-agricultural development on land within the Agricultural Category. According to the Land Use Element, agriculture is the principal and dominant use, but the Land Use Element expressly allows non-agricultural uses on agricultural land and places an appropriate burden on those proposing a non-agricultural use to demonstrate that (1) the use "does not conflict with agricultural operations and will not result in the premature elimination of such agricultural operations" and (2) it meets the requirement that "no use should be permitted which would have a significant adverse effect on agricultural production." (General Plan Land Use Elem. IV.C.5.)

5. The Planning Commission finds that the evidence in the record demonstrates that the Project does not conflict with any existing agricultural operations and will not result in the premature elimination of agricultural operations. While the Project temporarily will cause the project site to be unavailable for agricultural production during construction, operation, maintenance, and decommissioning/reclamation of the Project, this temporary loss is mitigated to less than significant by the mitigation measures identified in the EIR, which ensure that opportunities for active agriculture production in the County will continue to be available, supported, and promoted. The affected agricultural land will remain within the Agricultural land use category. Further, the Project applicant will be required to submit to Imperial County a site-specific decommissioning and reclamation plan capable of restoring the site back to current agricultural conditions, which will further ensure availability of the land for future agricultural production.

6. The Planning Commission further finds that the Project does not have a significant adverse effect on agricultural production. The CUP is for a for the proposed Wister Solar Energy Facility is for a temporary period. The County policy requires preparation and implementation of an open space reclamation plan that will return the site to it original state at the end of the proposed operational life, which is assured though a Project mitigation measure. Additionally, at the time the County adopted the Public Benefit Program via Resolution 2012-005, which is implemented through the Project's Development Agreement, the County Board of Supervisors noted that the solar projects subject to the Public Benefit Program would not have a significant impact on agricultural production. Section 4.9 of the EIR confirms that only 4.5% of the farmland in Imperial County (24,244 acres out of 539,273) would be converted assuming the proposed Project and all other cumulative projects were fully

built-out. Accordingly, the County finds that there is no significant impact on agriculture production.

7. Pursuant to SB 2X, California utilities have been mandated to obtain 33% of their energy from renewable sources (wind, solar, geothermal, biofuels, etc.) by 2020. The County General Plan actively promotes both alternative energy and opportunities for economic growth. For example, Goal I of the Geothermal/Alternative Energy and Transmission Element ("Alternative Energy Element") provides that the County "supports and encourages the full, orderly, and efficient development of geothermal/alternative energy resources while at the same time preserving and enhancing where possible agricultural, biological, human, and recreational resources

8. The proposed use is also consistent with the County's goal of becoming a major source of renewable energy for California, and fulfill its mission to help California meet its statutory and regulatory goal of increasing renewable power generation, including greenhouse gas reduction goals of Assembly Bill (AB) 832 (California Global Warming Solutions Act of 2006). Imperial County is a major source of renewable energy for the State of California. One of the purposes of the Imperial Valley Renewable Energy Development Program is to "maximize development of all renewable energy resources." An objective of the Project is "to assist the State of California in achieving and exceeding the Renewable Portfolio Standard".

9. As summarized in the Goals and Objectives of the Renewable Energy and Transmission Element of the Imperial County General Plan (Goal 1), "...The County of Imperial supports the safe and orderly development of renewable energy while providing for the protection of environmental resources.

   Therefore, the proposed project will be compatible with the objectives, policies, general land uses and programs specified in the applicable plan." *Id.* (internal quotations and citations omitted).

10. The proposed use may provide an economic benefit to the county, if an agreement entered. Solar energy projects provide economic growth to the region and economic benefit to the County and Goal 2 of the Land Use Element states that the County should "[d]diversify employment and economic opportunities in the County while preserving agricultural activity". Goal 3, Objective 3.2 of the Land Use Element recognizes the need to "[p]reserve agricultural and natural resources while promoting diverse economic growth through sound land use planning." The project is located outside of agricultural

land and would not impact agricultural; however, it would create jobs and other economic opportunities in the County at a time of high County unemployment.

B. The proposed use is consistent with the purpose of the zone or sub-zone within which the use will be used. (Imperial County Code § 90203.09.B)

The purpose of the project is for the construction of a PV solar facility. Pursuant to Title 9, Division 5, Chapter 19, "Solar energy electrical generator," "Electrical power generating plant," "Major facilities relating to the generation and transmission of electrical energy," and "Resource extraction and energy development," are uses that are permitted in the S-2 zones subject to approval of a CUP from the County. The Project site is zoned S-2. The purpose of these zones is to designate areas that are suitable for open space uses, as well as areas that support other compatible uses consistent with the identified permitting requirements. Solar energy facilities are permitted with a conditional use permit in S-2 zones (Imperial County Code § 90519.02). Therefore, the proposed use is consistent with the purpose of the zone or sub-zone within which the use will be located.

C. The proposed use is listed as a use within the zone or sub-zone or is found to be similar to a listed conditional use according to the procedures of Section 90203.00. (Imperial County Code § 90203.09.C)

The proposed solar facility is listed as a use subject to a Conditional Use Permit in Land Use Ordinance, Sections 90519.02.

D. The proposed use meets the minimum requirements of this Title applicable to the use and complies with all applicable laws, ordinances and regulations of the County of Imperial and the State of California. (Imperial County Code § 90203.09.D)

The Project complies with the minimum requirements of this Title by, among other things, obtaining a CUP, complying with the California Environmental Quality Act, and participating in the public review and hearing process. Development standards have been established for the Project pursuant to these processes, and will be enforced via imposition and enforcement of the Mitigation Monitoring and Reporting Program recommended for approval by separate Resolution, as well as the Conditions of Approval imposed on this CUP. The Conditions of Approval will further insure that the project complies with all applicable regulations of the County of Imperial and the State of California. Therefore, the proposed project will meet the minimum requirements of the Land Use Ordinance, Section 90203.00.

E. The proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity. (Imperial County Code § 90203.09.E)

The PV solar energy facilities are located in a largely undeveloped and unincorporated portion of the northwest Imperial County. Land surrounding the solar complex site consists of previously farmed lands and undeveloped open desert with a checkerboard of federal, state and private land. Noise associated with solar panel operation would also meet the County's noise ordinance requirements at the Project's property lines. The Environmental Impact Report prepared for the Project analyzed the Project's potential effects on the health, safety, and welfare of the public and property and found that, with mitigation, the Project has less than significant effects in all resources areas.

Finally, the Project applicant has agreed to conditions of approval that support and promote the protection of the health, safety, and welfare of the County's citizens and property, and ensures that the County will not be negatively impacted environmentally or fiscally.

F. The proposed use does not violate any other law or ordinance. (Imperial County Code § 90203.09.F)

The proposed project will be subject to the Conditional Use Permit and current Federal, State and Local regulations. State Planning and Zoning Law (Cal. Govt. Code §§ 65000-66035) establishes minimum statewide standards for the regulation of local land use through planning and zoning. The County regulates local land use via Title 9 of the Imperial County Code. As found above, the proposed project is conditioned to be consistent with Imperial County, Title 9, Land Use Ordinance and CEQA mitigation measures and therefore complies with both State and local laws and ordinance. Pursuant to CEQA, the County has prepared an EIR for the Project, which EIR analyzes the Project's compliance and consistency with other federal, state, and local laws and ordinances regulating the environment. .

G. The proposed use is not granting a special privilege. (Imperial County Code § 90203.09.G)

The PV solar energy facility is a permitted use subject to approval of a Conditional Use Permit under Land Use Ordinance, Section 92102.00 *et. seq*. The proposed

use is and will not granting a special privilege because the County has granted similar CUPs to properties in the area for PV solar energy facility.

SECTION 3. Approval of the Project should be conditioned upon the terms and conditions set forth in the Agreement for Conditional Use Permit No. 18-0040, attached hereto and incorporated herein by this reference.

NOW, THEREFORE, based on the above findings, the Imperial County Planning Commission **DOES HEREBY RECOMMEND APPROVAL OF** Conditional Use Permit #18-0040 to the Board of Supervisors, subject to the attached Conditions of Approval.

_____

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on December 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

_____

Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

Recording Requested By and
When Recorded Return To:

Imperial County
Planning & Development Services
801 Main Street
El Centro, California 92243

AGREEMENT FOR
CONDITIONAL USE PERMIT #18-0040
Wister Solar Energy Facility
APN 003-240-001-000
(_____by Planning Commission)
(_____by Board of Supervisors)

This Agreement is made and entered into on this ___day of _____, 2020, by and between ORNI 21, LLC, hereinafter referred to as the Permittee (Permittee), and the COUNTY OF IMPERIAL, a political subdivision of the State of California, (hereinafter referred to as "COUNTY") related to the Wister Solar Energy Facility.

RECITALS

WHEREAS, Permittee is the lessee or successor-in-interest of certain land in Imperial County with the proposed photovoltaic solar energy facility, electrical switch station, substation, and internal solar development transmission lines, on approximately 100 acres within a 640 acre parcel in Imperial County. The proposed facility is located approximately 3 miles northeast of the Townsite of Niland; Assessor Parcel Number 003-240-001-000, Section 27, Township 10 South, Range 14 East, San Bernardino Base & Meridian (SBBM).

WHEREAS, Permittee has applied to the County of Imperial for a Conditional Use Permit #18-0040 for constructing and operating a new 20 megawatt (MW) solar photovoltaic (PV) energy facility using high-efficiency PV technology, supporting structures, on-site substation, access driveways, and transmission structures, and connection to the existing 92kV line (the "Project").

The Permittee for the Wister Solar Energy Facility Project shall fully comply with all of the terms and conditions of the Project as specified hereinafter within this Conditional Use Permit.

GENERAL CONDITIONS:

The "GENERAL CONDITIONS" are shown by the letter "G". These conditions are conditions that are either routinely and commonly included in all Conditional Use Permits as "standardized conditions" and/or are conditions that the Imperial County Planning Commission has established as a requirement on all CUP's for consistent application and enforcement. The Permittee is hereby advised that the General Conditions are as applicable as the SITE SPECIFIC conditions.

G-1 GENERAL LAW:

The Permittee shall comply with all local, state and/or federal laws, rules, regulations, ordinances, and/or standards (LORS) as they may pertain to the Project whether specified herein or not.

G-2 PERMITS/LICENSES:

The Permittee shall obtain any and all local, state and/or federal permits, licenses, and/or other approvals for the construction and/or operation of the Project. This shall include, but not be limited to, local requirements by the Imperial County EHS/Health Department, Planning and Development Services Department, Imperial County Air Pollution Control District (ICAPCD), Imperial Irrigation District (IID), Imperial County Public Works Department, Imperial County Sheriff/Coroner's office, Imperial County Fire Protection/Office of Emergency Services, among others. Permittee shall likewise comply with all such permit requirements. Additionally, Permittee shall submit a copy of such additional permits and/or licenses to the Planning and Development Services Department within thirty (30) days of receipt, including amendments or alternatives thereto, when requested.

G-3 RECORDATION:

This permit shall not be effective until it is recorded at the Imperial County Recorder's Office and payment of the recordation fee shall be the responsibility of the Permittee. If the Permittee fails to pay the recordation fee within six (6) months from the date of approval, this permit shall be deemed null and void.

G-4 CONDITION PRIORITY:

The Project shall be constructed and operated as described in the Conditional Use Permit, CUP application, Mitigation Monitoring & Reporting Program, and the Final Environmental Impact Report, (FEIR).

G-5 INDEMNIFICATION:

As a condition of this permit, Permittee agrees to defend, indemnify, hold harmless, and release the County, its agents, officers, attorneys, and employees from any claim, action,

or proceeding brought against any of them, the purpose of which is to attack, set aside, void, or annul the entitlements permit, approvals or adoption of the environmental document which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorney's fees, or expert witness fees that may be asserted by any person or entity, including the Permittee, arising out of or in connection with the approval of this permit, whether there is concurrent, passive or active negligence on the part of the County, its agents, officers, attorneys, or employees. This indemnification shall include Permittee's actions involved in drilling, grading, construction, operation or abandonment of the permitted activities. Permittee further agrees to comply with the terms of the indemnification agreement incorporated by this reference and attached hereto as Exhibit A. Failure to provide payment of any fees shall cause Permittee to be in non-compliance with this permit. Upon notification of non-compliance, County may, at its sole discretion, cease processing, defending any lawsuit or paying for costs associated with this project.

G-6 INSURANCE:

The Permittee and/or Permittee's prime contractor assigned site control during construction, shall secure and maintain liability in tort and property damage, insurance at a minimum of **$1,000,000** or proof of financial responsibility to protect persons or property from injury or damage caused in any way by construction and/or operation of permitted facilities. The Permittee shall require that proper Workers' Compensation insurance cover all laborers working on such facilities as required by the State of California. The Permittee and/or Permittee's prime contractor assigned site control during construction, shall also secure liability insurance and such other insurance as may be required by the State and/or Federal Law. Evidence of such insurance shall be provided as applicable to the County prior to commencement of any activities authorized by this permit, e.g. a Certificate of Insurance is to be provided to the Planning and Development Services Department by the insurance carrier and said insurance and certificate shall be kept current for the life of the permitted Project. Certificate(s) of Insurance shall be sent directly to the Planning and Development Services Department by the insurance carrier and shall name the Department as a recipient of both renewal and cancellation notices.

G-7 INSPECTION AND RIGHT OF ENTRY:

The County reserves the right to enter the premises to make appropriate inspection(s) and to determine if the condition(s) of this permit are complied with. The owner or operator shall allow an authorized County representative access into the site upon the presentation of credentials and other documents as may be required by law to:

(a) Enter at reasonable times upon the owner's or operator's premises where a permitted facility or activity is located or conducted, or where records must be kept under the conditions of the permit.

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit.

(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit.

(d) Sample or monitor, at reasonable times, for the purpose of assuring permit compliance or, otherwise authorized by law, any substances or parameters at any location.

G-8 SEVERABILITY:

Should any condition(s) of this permit be determined by a Court or other agency with proper jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-9 PROVISION TO RUN WITH THE LAND/PROJECT:

The provisions of this Permit are to run with the land/project and shall bind the current and future owner(s), successor(s)-in-interest, assignee(s) and/or transferee(s) of said Project pursuant to the recordation required by Condition G-3. Permittee shall not without prior notification to the Planning and Development Services Department assign, sell or transfer, or grant control of Project or any right or privilege therein granted by this permit. The Permittee shall provide a minimum of thirty (30) days written notice prior to any proposed transfer becoming effective. The permitted use identified herein is limited for use upon the permitted properties described herein and may not be transferred to any another other parcel(s) without prior approval.

G-10 TIME LIMIT:

Unless otherwise specified within the specific conditions, this permit shall be limited to a maximum of twenty-five (25) years from the approval date of the CUP. The Conditional Use Permit may be extended for a five (5) year period by the Imperial County Planning & Development Services Director. If an extension is necessary, the Permittee shall file a written extension request with the Planning Director at least sixty (60) days prior to the expiration date of the permit. Such an extension request shall include the appropriate extension fee. If the original approval was granted by the Planning Commission and/or the Board of Supervisors, such an extension shall only be considered by the approving body, after a noticed public hearing. Nothing stated or implied within this permit shall constitute a guarantee that an extension will be granted. An extension may not be granted if the Project is in violation of any one or all of the conditions or if there is a history of non-compliance with the permit conditions. I.C.P.D.S Div. 2, Chapter 3, Section 90203.13.

G-11 COST:

The Permittee shall pay any and all amounts determined by the County of Imperial to defray any and all cost(s) for the review of reports, field investigations, monitoring, and other activities directly related to the enforcement/monitoring for compliance of this

Conditional Use Permit, County Ordinance or any other applicable law. All County Departments, directly involved in the monitoring/enforcement of this permit may bill Permittee under this provision, however said billing shall only be through and with the approval of the Planning and Development Services Department. All County staff time will be billed on a time and materials basis. Failure by Permittee to provide any payment required of Permittee to the County in the CUP shall cause Permittee to be in non-compliance of the CUP. Upon Permittee being in such noncompliance, County may, at its sole discretion, cease processing, defending any lawsuit or paying for costs associated with the Project.

G-12 REPORTS/INFORMATION:

If requested by the Planning Director, Permittee shall provide any such documentation/report as necessary to ascertain compliance with the Conditional Use Permit. The format, content and supporting documentation shall be as required by the Planning Director.

G-13 DEFINITIONS:

In the event of a dispute the meaning(s) or the intent of any word(s), phrase(s) and/or conditions or sections herein shall be determined by the Planning Commission of the County of Imperial. Their determination shall be final unless an appeal is made to the Board of Supervisors within the required time.

G-14 MINOR AMENDMENTS:

The Planning Director may approve minor changes or modification(s) to the design, construction, and/or operation of the Project provided said changes are necessary for the Project to meet other laws, regulations, codes, or conditions of the CUP, EIR and MMRP, and provided such changes will not result in any additional environmental impacts.

G-15 SPECIFICITY:

The issuance of this permit does not authorize the Permittee to construct or operate the Project in violation of any state, federal, or local law nor beyond the specified boundaries of the Project as shown the application/project description/permit, nor shall this permit allow any accessory or ancillary use not specified herein. This permit does not provide any prescriptive right or use to the Permittee for future addition and or modifications to the Project.

G-16 NON-COMPLIANCE (ENFORCEMENT & TERMINATION):

Should the Permittee violate any condition herein, the County shall give written notice of such violation and actions required of Permittee to correct such violation. If Permittee does not act to correct the identified violation within sixty (60) days after written notice, County may revoke the CUP. If Permittee pursues correction of such violation with

reasonable diligence, the County may extend the cure period. Upon such revocation, County may, at its sole discretion, cease processing, defending any lawsuit or paying for costs associated with the Project.

G-17 GENERAL WELFARE:

All construction and operations of the solar energy facility shall be conducted with consistency with all laws, conditions, adopted County policies, plans, mitigation measures and the permit application so that the Project will be in harmony with the area and not conflict with the public health, safety, comfort, convenience, and general welfare of those residing in the area.

G-18 PERMITS OF OTHER AGENCIES INCORPORATED:

Permits granted by other governmental agencies in connection with the Project are incorporated herein by reference. The County reserves the right to apply conditions of those permits, as the County deems appropriate and subject to its having jurisdiction; provided, however, that enforcement of a permit granted by another governmental agency shall require written concurrence by the respective agency. Permittee shall provide to the County, upon request, copies and amendments of all such permits.

G-19 HEALTH HAZARD:

If the County Health Officer reasonably determines that a significant health hazard exists to the public, the Health Officer may require appropriate measures and the Permittee shall implement such measures to mitigate the health hazard. If the hazard to the public is determined to be imminent, such measures may be imposed immediately and may include temporary suspension of permitted activities. The measures imposed by the County Health Officer shall not prohibit the Permittee from requesting a special Planning Commission meeting, provided the Permittee bears all related costs.

G-20 APPROVALS AND CONDITIONS SUBSEQUENT TO GRANTING PERMIT:

Permittee's acceptance of this permit shall be deemed to constitute agreement with the terms and conditions contained herein. Where a requirement is imposed in this permit that Permittee conduct a monitoring program, and where the County has reserved the right to impose or modify conditions with which the Permittee must comply based on data obtained there from, or where the Permittee is required to obtain additional conditional use permits for County approval for subsequent activities, and disagreement arises, the Permittee, operator and/or agent, the Planning and Development Services Director or other affected party, as determined by the Planning and Development Services Director, may request that a hearing before the Imperial County Planning Commission. Upon receipt of a request, the Planning Commission shall conduct a hearing and make a written determination. The Planning Commission may request support and advice from a technical advisory committee. Failure of the Planning Commission to act shall constitute endorsement of staff's determination with respect to implementation.

SITE SPECIFIC CONDITIONS:

S-1 AUTHORIZED SCOPE OF ACTIVITIES:

1. ORNI 21, LLC shall be the developer for this Project and shall be responsible as for all improvements, septic, sewer, approved potable water system(s), pipelines, roads and other improvements discussed in the Conditional Use Permit Application and Conditions, FEIR, and MMRP. Water shall be provide from either the existing on-site well located at the north-western portion of the project site or from a local water source utilizing a 10,000-galon aboveground water storage facility as required by ICFD. If ORNI 21, LLC sells all or part of this Project, an approved agreement shall be in place for new Project owner to build and maintain as agreed to by the conditions set forth in this CUP. The Planning and Development Services Director shall approve of such agreement between ORNI 21, LLC and a new developer for this Project. The County Assessor's Office shall be notified of any ownership change.

2. ORNI 21, LLC shall develop this CUP property as a separate solar energy facility. Any development with a combination of parcels will require the owner(s) to have a recorded deed restriction to "hold the parcel as one parcel" that runs with the land. This deed restriction shall be for a minimum of 25 years and shall only be released upon the expiration of the 25 years, the expiration or termination of the Conditional Use Permit, or upon approval of the Planning & Development Director that the restriction is no longer needed based on a change in the development or regulation.

3. The Permittee may construct and operate the following facilities in compliance with the Conditional Use Permit, the County's General Plan's Land Use Element, Land Use Ordinance and all other applicable local, state, and federal laws, ordinances, regulations and standards (LORS), to include any other permits which are incorporated herein by reference:

   a. Construction, operation, maintenance, replacement and removal of a solar energy facility as described in Permittee's CUP Application. The solar energy facility would include photovoltaic modules, mounting structures, electrical wiring, inverters, transformers and AC electric collector system, project electric substation and ancillary facilities. Ancillary facilities would include safety and security equipment, retention basins, perimeter fencing, access gates, lighting systems, access roads, and could include temporary construction trailers, equipment enclosures, water treatment system, septic system, parking, and fire protection including a minimum 10,000 gallon fire water tank, and monitoring and control systems.

   b. The Project proposes to use either thin film or crystalline solar photovoltaic (PV) technology modules mounted on fixed or horizontal single-axis tracker (HSAT)

systems; concentrating photovoltaic (CPV) systems mounted on a dual-axis tracking system; or a mix of the technologies.

c. **PV module** arrays would be mounted on racks supported by driven piles. The depth of the piles would be dependent on the geotechnical recommendations for the Project. If HSAT technology is used, the PV modules would rotate around the north-south HSAT axis so that the PV modules would face the sun as it moves across the sky throughout the day. The PV modules would reach their maximum height (up to nine feet above the ground, depending on the final design) when the HSAT is rotated to point the modules at the rising or setting sun at both sunrise and sunset. When the HSAT system is rotated so that the PV modules are horizontal (at noon, or when stowed during high winds), the nominal height would be approximately six feet above the ground, depending on the final design. The individual PV systems would be configured in large arrays by placing them in columns spaced approximately ten feet apart to maximize operational performance and to allow access for panel cleaning and maintenance. These arrays would be separated from each other and the perimeter security fence by nominal 20-foot wide roads, consistent with emergency access requirements.

d. Substations- a substation, would developed and located in close coordination with IID, to transform the collected 92-Kv power generation to IID transmission system voltages. The substation would include a main power transformer, facility protection equipment, and a control enclosure. The substation structure's maximum height would be equal to or less than existing IID facility structures. The substation will convert the collection-level electricity (92-KV) to the IID existing 92-kV line located at the southwest corner of the property. All interconnection equipment would be installed aboveground and within the footprint of the project substation. The overall footprint of the project substation is anticipated to be approximately 300 by 175 feet and poles up to 70 feet in height.

e. **Gen-Tie Line**- The proposed project may require one transmission structures to connect the project substation to IID's existing 92-Kv line located at the southwest corner of the property. Final structure heights would be determined by IID, but shall not exceed 70 feet.

f. Telecommunications

The project requires telecommunications connections for remote operations and utility telemetry. The region in which the project is proposed is known to be without significant fiber infrastructure or high-speed copper based telecommunication options. As is typical for facilities of this nature in the project region, microwave point to point service would likely be required. Satellite based solutions may also be considered, if such solutions can meet the project requirements. Microwave solutions do require the installation of a radio antenna pole or tower, typical ranging in height from 20 to 100 feet. Any such structure would be located immediately adjacent to the substation control enclosure.

g. **Site Access-** The nearest paved road, Wilkins Road, is located at the southwest corner of project site. The primary means of access (all public) is from Wilkins Road Road. For all access to the site, active dust control mitigation measures would be utilized for all un-paved portions during construction of the facility. To accommodate emergency access, PV panels would be spaced to maintain proper clearance. A 20-foot-wide access road would be constructed along the perimeter fence and solar panels to facilitate vehicle access and maneuverability for emergency unit vehicles. The internal access road would be graded and compacted (native soils) as required for construction, operations, maintenance, and emergency vehicle access.

h. **Panel Washing** - Water required for operations and maintenance of the project would be provided from an existing well site located on project site or from a local water source. One water storage tank would be installed as required by the ICFD. Water would be used for periodic cleaning of the solar PV panels. It is anticipated that the solar PV panels would be washed up to four times per year to ensure optimum solar absorption by removing dust particles and other buildup. Total water demand during operation, including panel washing and other domestic water needs, is estimated to be approximately 1.37 acre-feet per year (AFY). One or two small above ground portable sanitary waste facilities may be installed to retain wastewater for employee use. If installed, these facilities would remain onsite for the duration of the project. These facilities would be installed in accordance with state requirements and emptied as needed by a contracted wastewater service vehicle. No wastewater would be generated during panel washing as water would continue to percolate through the ground, as a majority of the surfaces within the project site would remain pervious. Except as specifically authorized in the permit, supplemental activities which require additional major equipment or facilities will require separate permits. The County, in issuing this Permit, in no way assures, or otherwise vests any right, with respect to the issuance of a permit or permits for such supplemental activities.

S-2 AESTHETICS:

1. The Permittee shall design and maintain all buildings and equipment enclosures to have exterior surfaces with neutral, non-reflective colors. The construction and maintenance of County-approved landscaping along the access into the Operation/Maintenance Facility shall be in compliance with the Land Use Ordinance, Division 3, Chapters 1 and 2, Sections 90302.00 through 90302.19 and as indicated in the FEIR and Mitigation Monitoring and Reporting Program.

2. The Permittee shall design and install lighting at construction storage yards and staging areas, such that light bulbs and reflectors are not visible from public viewing areas; lighting does not create reflected glare; and illumination of the Project facilities, vicinity, and nighttime sky is minimized.

3. Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to minimize light trespass outside the Project boundary.

4. All lighting shall be of minimum necessary brightness consistent with worker safety and OSHA-Requirements.

5. High illumination areas not occupied on a continuous basis shall have switches or motion detectors to light the area only when occupied.

S-3 AGRICULTURE COMMISSIONER:

1. The Project Developer shall:

a) Develop and implement an approved Pest Management Plan for the duration of the project that will reduce negative impacts to surrounding farmland. Plan shall be reviewed and approved by the Imperial County Agricultural Commissioner's Office.

b) Monitor for all pests including insects, vertebrates, weeds, and pathogens. Promptly control or eradicate pests when found, or when notified by the Agricultural Commissioner's office that a pest problem is present on the project site. The assistance of a licensed pest control advisor (PCA) is recommended.

S-4 AIR QUALITY:

1. The Permittee shall comply at all times with the Imperial County Air Pollution Control District's (ICAPCD) Regulation VIII, Fugitive Dust Control. The primary pollutant controlled by this regulation is PM10, "fugitive dust." All identified PM10 sources associated with the construction and operation of the facility, such as open areas, roads, stock piles, material transport and grading activities, shall be controlled such that surface areas are stabilized and visible dust emissions are below 20%. Any control measure not listed within the appropriate sections of Regulation VIII, such as but not limited to watering, graveling, chemical stabilizers and wind barriers shall not be utilized without prior approval from the ICAPCD.

2. The Permittee shall submit to the ICAPCD for approval a dust control plan identifying all sources of PM10 emissions and associated mitigation measures during the construction and operational phases of the project. Permittee shall submit a "Construction Notification Form" to the ICAPCD 10 days prior to the commencement of any earthmoving activity.

3. The Permittee shall comply with all applicable standard mitigation measures for construction combustion equipment for the reduction of excess NOx emissions as

identified in the air quality analysis and as contained in the Imperial County CEQA Air Quality Handbook and associated regulations.

- Utilize all Tier 3 or Tier 4 construction equipment.
- Prohibit idling of equipment not in use; for equipment in use reduce idling time to a maximum of 5 minutes.
- Where feasible replace fossil fuel burning equipment with electrically driven equivalents provided they are not powered via a portable generator
- Register all portable engines 50 horse power or greater with the ICAPCD

4. Permittee shall also apply enhanced measures to assure reduced levels of NOx are maintained during the construction phase of the project.

- Submit to the Air District prior to any earthmoving activity a complete list of all construction equipment to be utilized during the construction phase identifying Make, Model, Year, Horsepower and estimated hours of usage.
- In the event, NOx emissions are calculated to exceed ICAPCD thresholds for construction the Permittee shall provide for "offsite" mitigation or comply with Policy number 5. Policy number 5 allows a project to pay in-lieu impact fees utilizing the most current Carl Moyer Cost Effective methodology to reduce excess NOx emissions.
-

Mitigations for Air Quality

AQ-1 Construction Equipment

Construction equipment shall be equipped with an engine designation of EPA Tier 2 or better (Tier 2+). A list of the construction equipment, including all off-road equipment utilized at each of the projects by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. ICAPCD shall utilize this list to calculate air emissions to verify that equipment use does not exceed significance thresholds. The Planning and Development Services Department and ICAPCD shall verify implementation of this measure.

AQ-2 Fugitive Dust Control

Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. Whereas these Regulation VIII measures are mandatory and are not considered project environmental mitigation measures, the ICAPCD CEQA Handbook's required additional standard and enhanced mitigation measures listed below shall be implemented prior to and during construction. The County Department of Public Works will verify implementation and compliance with these measures as part of the grading permit review/approval process.

ICAPCD Standard Measures for Fugitive Dust (PM10) Control

- All disturbed areas, including bulk material storage, which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.
- All on-site and offsite unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants, and/or watering.

ICAPCD "Discretionary" Measures for Fugitive Dust (PM10) Control

- Water exposed soil with adequate frequency for continued moist soil.
- Replace ground cover in disturbed areas as quickly as possible.
- Automatic sprinkler system installed on all soil piles.
- Vehicle speed for all construction vehicles shall not exceed 15 miles per hour on any unpaved surface at the construction site.
- Develop a trip reduction plan to achieve a 1.5 average vehicle ridership for construction employees.
- Implement a shuttle service to and from retail services and food establishments during lunch hours.

Standard Mitigation Measures for Construction Combustion Equipment

- Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

Enhanced Mitigation Measures for Construction Equipment

- To help provide a greater degree of reduction of PM emissions from construction combustion equipment, ICAPCD recommends the following enhanced measures.
- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to reduce short term impacts).

AQ-3 Dust Suppression.

The project applicant shall employ a method of dust suppression (such as water or chemical stabilization) approved by ICAPCD. The project applicant shall apply chemical stabilization as directed by the product manufacturer to control dust between the panels as approved by ICAPCD, and other non-used areas (exceptions will be the paved entrance and parking area, and Fire Department access/emergency entry/exit points as approved by Fire/Office of Emergency Services [OES] Department).

AQ-4 Dust Suppression Management Plan.

Prior to any earthmoving activity, the applicant shall submit a construction dust control plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

AQ-5 Operational Dust Control Plan.

Prior to issuance of a Certificate of Occupancy, the applicant shall submit an operations dust control plan and obtain ICAPCD and ICPDS approval. ICAPCD Rule 301 Operational Fees apply to any project applying for a building permit. At the time that building permits are submitted for the proposed project, ICAPCD

shall review the project to determine if Rule 310 fees are applicable to the project.

S-5 GEOLOGY/SOILS AND MINERAL RESOURCES

1. Prior to approval of final engineering and grading plans for the Wister Solar Energy Facility Project site, the Permittee shall verify that all recommendations contained in the final Geotechnical Evaluation and Corrosion Analysis, or subsequent additional studies, have been incorporated into final engineering and grading plans to the extent applicable. The County's soil engineer and engineering geologist shall review engineering and grading plans prior to finalization, to verify plan compliance with the recommendations of the report. All development on the Project site shall be in accordance with Title 24, California Code of Regulations.

2. Structure placement in areas of high shrink/swell potential shall be avoided where possible; and if not avoided, structures shall be designed to resist the forces of the shrink/swell or such soils removed and replaced as determined by final geotechnical investigations and design.

3. Structures shall be placed in geologically stable areas, avoiding fault lines, brittle surface rock and bedrock, etc.

4. Project construction activities shall be designed and implemented to avoid or minimize new disturbance, erosion on manufactured slopes, and off-site degradation from accelerated sedimentation. Maintenance of cut and fill slopes created by Project construction activities shall consist primarily of erosion repair. Where re-vegetation is necessary to improve the success of erosion control, planting or seeding with native seed mix shall be done on slopes.

5. Prior to approval of final building plans, structures within the Project area shall be designed and constructed to resist the effects of seismic ground motions as provided in Section 1613 of the 2010 California Building Code.

6. The Project shall be engineered using the 2010 California Building Code, Section 1613 Design Coefficients for the proposed structures.

7. Prior to issue of building permits, the design of foundations and slabs-on-ground shall be performed in accordance with the procedures outlined in Sections 1808.6.1 and 1808.6.2 of the 2010 CBC and the latest edition of the Wire Reinforcement Institute (WRI) publication "Design of Slab-on-Grade Foundations." An effective plasticity index of 12 shall be used by the project structural engineer to design slabs-on-grade within an interior grade beam system in accordance with the WRI publication.

8. Prior to the issue of Building permits: The type of concrete to be used in construction of the Project shall follow the recommendation of a structural engineer and the contractor responsible for concrete placement used in footings and interior slabs-on-ground, foundation walls, and concrete exposed to weather.

9. Prior to the issue of Building permits, the thickness of the concrete cover over the reinforcement shall be determined by a structural engineer to protect against elevated chloride levels. The thickness shall be determined based upon the chloride concentration of on-site soils. Prior to the issue of Building permits,

a) The recommendations of a corrosion engineer shall be implemented to mitigate the detrimental effects of corrosive soils on buried metallic and other building materials that may be exposed to corrosive soils.
b) Any ferrous metal or copper components of the proposed buildings or panel foundations placed in direct contact with Project soils shall be protected against detrimental effects of severely corrosive soils.
c) Sampling and testing of near-surface soils shall be performed during the final stages of site grading by a qualified corrosion engineer to provide a complete assessment of soil corrosively.

Mitigations for Geology and Soils

GEO-1 Prepare Geotechnical Report(s) as Part of Final Engineering for the Project and Implement Required Measures.

Facility design for all project components shall comply with the site-specific design recommendations as provided by a licensed geotechnical or civil engineer to be retained by the project applicant. The final geotechnical and/or civil engineering report shall address and make recommendations on the following:

Site preparation

Soil bearing capacity

Appropriate sources and types of fill

Potential need for soil amendments

Structural foundations

Grading practices

Soil corrosion of concrete and steel

Erosion/winterization

Seismic ground shaking

Liquefaction

Expansive/unstable soils

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the project applicant. The final geotechnical and/or civil engineering report shall be submitted to Imperial County Public Works Department, Engineering Division for review and approval prior to issuance of building permits.

GEO-2 Paleontological Resources.

In the event that unanticipated paleontological resources or unique geologic resources are encountered during ground-disturbing activities, work must cease within 50 feet of the discovery and a paleontologist shall be hired to assess the scientific significance of the find. The consulting paleontologist shall have knowledge of local paleontology and the minimum levels of experience and expertise as defined by the Society of Vertebrate Paleontology's Standard Procedures (2010) for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. If any paleontological resources or unique geologic features are found within the project site, the consulting paleontologist shall prepare a paleontological Treatment and Monitoring Plan to include the methods that will be used to protect paleontological resources that may exist within the project site, as well as procedures for monitoring, fossil preparation and identification, curation of specimens into an accredited repository, and preparation of a report at the conclusion of the monitoring program.

S-6 CULTURAL RESOURCES:

1. The Archaeological Monitor shall oversee the effectiveness of the protective measures described in this measure at least twice per month during construction to ensure that unanticipated cultural resources are avoided. If an unanticipated cultural resource is discovered, the monitor will immediately notify the Construction Manager and give interim directions for protecting the site, which may include mandatory cessation of activity within 100 feet or more of the discovery. The Construction Manager will be responsible for promptly implementing those interim measures. The Archaeological Monitor shall oversee the removal of the temporary fencing after construction is completed. The Construction Manager shall be

required to provide a minimum of 48 hours advance notice to the archaeological monitor before fence removal occurs.

2. A qualified paleontological monitor shall be present during ground-breaking activities associated with Project construction. The depth of excavation that requires paleontological monitoring shall be determined by the paleontological monitor and the construction contractor based on initial observations during construction earth moving. The paleontological monitor will be equipped to salvage fossils as they are unearthed (to help avoid construction delays) and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. Monitors are empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens.

3. Recovered specimens shall be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Fossil specimens shall be curated by accessioning them into an established, accredited museum repository with permanent retrievable paleontological storage. A report of findings with an appended itemized inventory of specimens will be prepared. The report and inventory, when submitted to the Imperial County Department of Planning and Development Services, along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontological resources.

Mitigations for Cultural Resources

CR-1

Pursuant to CEQA Guidelines §15064.5(f), in the event that previously unidentified unique archaeological resources are encountered during construction or operational repairs, archaeological monitors will be authorized to temporarily divert construction work within 100 feet of the area of discovery until significance and the appropriate mitigation measures are determined by a qualified archaeologist familiar with the resources of the region.

Applicant shall notify the County within 24 hours. Applicant shall provide contingency funding sufficient to allow for implementation of avoidance measures or appropriate mitigation.

CR-2

In the event of the discovery of previously unidentified archaeological materials, the contractor shall immediately cease all work activities within approximately 100 feet of the discovery. After cessation of excavation, the contractor shall immediately contact the Imperial County Department of Planning and Development Services. Except in the case of cultural items that fall within the scope of the Native American

Grave Protection and Repatriation Act, the discovery of any cultural resource within the project area shall not be grounds for a "stop work" notice or otherwise interfere with the project's continuation except as set forth in this paragraph.

In the event of an unanticipated discovery of archaeological materials during construction, the applicant shall retain the services of a qualified professional archaeologist, meeting the Secretary of the Interior's Standards for a Qualified Archaeologist, to evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the qualified archaeologist determines that the discovery constitutes a significant resource under CEQA and it cannot be avoided, the applicant shall implement an archaeological data recovery program.

S-7 HEALTH, SAFETY AND HAZARDOUS MATERIAL/FIRE AND FUELS MANAGEMENT

1. All trash and debris within the Project site shall be disposed of off-site, in accordance with current, local, state, and federal disposal regulations. Compliance with this measure shall be verified by the Planning and Development Services Department.

2. If it is determined that hazardous wastes are, or will be generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Div 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5).

3. If it is determined that hazardous wastes will be generated, the Permittee should also obtain a United States Environmental Protection Agency, Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous material, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting the local CUPA.

4. Firearms shall be prohibited in all Project areas except for those used by licensed security personnel.

5. Prior to the demolition of any building, structure, or transit pipe, the Applicant shall hire a California Certified Lead Inspector/Assessor and Certified asbestos Consultant to evaluate these features for the presence of lead based paint (LBP) and/or asbestos containing materials (ACM). Confirmed LBP and/or ACM shall be handled by a licensed LBP contractor and/or Licensed Asbestos Contractor. All contaminants shall be remediated in compliance with California environmental regulations and policies. LBP and/or ACM shall be disposed of according to appropriate regulations.

S-8 HYDROLOGY AND WATER QUALITY

1. Construction and operation activities within Flood Zone A shall be halted during flash flood warnings and events or any other flooding events as predicted by local weather forecasts, the National Weather Service to which the solar farm complex site is subject. Upon notification of potential flood events in the Project vicinity, any non-stationary equipment and personnel located within Flood Zone A shall be relocated outside of the flood zone until such time as the threat of flooding has passed.

Hydrology Mitigation Measure

HYD-1 Prepare SWPPP and Implement BMPs Prior to Construction and Site Restoration

The project applicant or its contractor shall prepare a SWPPP specific to the project and be responsible for securing coverage under SWRCB's NPDES stormwater permit for general construction activity (Order 20090009DWQ). The SWPPP shall identify specific actions and BMPs relating to the prevention of stormwater pollution from project related construction sources by identifying a practical sequence for site restoration, BMP implementation, contingency measures, responsible parties, and agency contacts. The SWPPP shall reflect localized surface hydrological conditions and shall be reviewed and approved by the project applicant prior to commencement of work and shall be made conditions of the contract with the contractor selected to build and decommission the project. The SWPPP(s) shall incorporate control measures in the following categories:

- Soil stabilization and erosion control practices (e.g., hydroseeding, erosion control blankets, mulching)
- Dewatering and/or flow diversion practices, if required (Mitigation Measure HYD2)
- Sediment control practices (temporary sediment basins, fiber rolls)
- Temporary and post-construction on and offsite runoff controls
- Special considerations and BMPs for water crossings, wetlands, and drainages
- Monitoring protocols for discharge(s) and receiving waters, with emphasis place on the following water quality objectives: dissolved oxygen, floating material, oil and grease, pH, and turbidity
- Waste management, handling, and disposal control practices
- Corrective action and spill contingency measures
- Agency and responsible party contact information
- Training procedures that shall be used to ensure that workers are aware of permit requirements and proper installation methods for BMPs specified in the SWPPP

The SWPPP shall be prepared by a qualified SWPPP practitioner with BMPs selected to achieve maximum pollutant removal and that represent the best available technology that is economically achievable. Emphasis for BMPs shall be placed on controlling discharges of oxygen depleting substances, floating material, oil and grease, acidic or caustic substances or compounds, and turbidity. BMPs for soil stabilization and erosion control practices and sediment control practices will also be required. Performance and effectiveness of these BMPs shall be determined either by visual means where applicable (i.e., observation of above normal sediment release), or by actual water sampling in cases where verification of contaminant reduction or elimination, (inadvertent petroleum release) is required to determine adequacy of the measure.

HYD-2 Incorporate Post-Construction Runoff BMPs into Project Drainage Plan

The project Drainage Plan shall adhere to County's Engineering Guidelines Manual, IID "Draft " Hydrology Manual, or other recognized sources with approval by the County Engineer to control and manage the on and offsite discharge of stormwater to existing drainage systems. Infiltration basins will be integrated into the Drainage Plan to the maximum extent practical. The Drainage Plan shall provide both short and long term drainage solutions to ensure the proper sequencing of drainage facilities and management of runoff generated from project impervious surfaces as necessary.

S-9 BIOLOGICAL RESOURCES:

1. The Permittee's Designated Biologist shall coordinate with the U.S. Fish & Wildlife Service (USF&WS) and the California Department of Fish and Wildlife(CD&FW) for the preparation, implementation and monitoring for protection of biological resources at the solar site.

BIOLOGICAL MITIGATION MEASURES

BIO-1 Pre-Construction Plant Survey.

Prior to initiating ground disturbance, a focused survey for Harwood's milkvetch shall occur during its blooming period. A reference population shall be identified and confirmed to be blooming at the time that surveys are conducted on the project site.

Should Harwood's milkvetch be present on site, project design will be evaluated to determine if modifications can be made to avoid at least 90-percent of the observed individuals or compensatory mitigation shall be provided through off-site preservation of an equivalent population.

BIO-2 General Impact Avoidance and Minimization Measures.

The following measures will be applicable throughout the life of the project:

To reduce the potential indirect impact on migratory birds, bats and raptors, the project will comply with the APLIC 2012 Guidelines for overhead utilities, as appropriate, to minimize avian collisions with transmission facilities (APLIC 2012)

All electrical components on the project site shall be either undergrounded or protected so that there will be no exposure to wildlife and therefore no potential for electrocution.

The Project proponent shall will designate a Project Biologist who shall be responsible for overseeing compliance with protective measures for the biological resources during vegetation clearing and work activities within and adjacent to areas of native habitat. The Project Biologist will be familiar with the local habitats, plants, and wildlife. The Project Biologist will also maintain communications with the Contractor to ensure that issues relating to biological resources are appropriately and lawfully managed and monitor construction. The Project Biologist will monitor activities within construction areas during critical times, such as vegetation removal, the implementation of Best Management Practices (BMP), and installation of security fencing to protect native species. The Project Biologist will ensure that all wildlife and regulatory agency permit requirements, conservation measures, and general avoidance and minimization measures are properly implemented and followed.

The boundaries of all areas to be newly disturbed (including solar facility areas, staging areas, access roads, and sites for temporary placement of construction materials and spoils) will be delineated with stakes and flagging prior to disturbance. All disturbances, vehicles, and equipment will be confined to the flagged areas.

No potential wildlife entrapments (e.g., trenches, bores) will be left uncovered overnight. Any uncovered pitfalls will be excavated to 3:1 slopes at the ends to provide wildlife escape ramps. Alternatively, man-made ramps may be installed. Covered pitfalls will be covered completely to prevent access by small mammals or reptiles.

To avoid wildlife entrapment (including birds), all pipes or other construction materials or supplies will be covered or capped in storage or laydown area, and at the end of each work day in construction, quarrying and processing/handling areas. No pipes or tubing of sizes or inside diameters ranging from 1 to 10 inches will be left open either temporarily or permanently.

No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the project site, on off-site project facilities and activities, or in support of any other project activities.

Avoid wildlife attractants. All trash and food-related waste shall be placed in self-closing containers and removed regularly from the site to prevent overflow. Workers shall not feed wildlife. Water applied to dirt roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract wildlife. Pooled rainwater or floodwater within retention basins will be removed to avoid attracting wildlife to the active work areas.

To minimize the likelihood for vehicle strikes on wildlife, speed limits will not exceed 15 miles per hour when driving on access roads. All vehicles required for O&M must remain on designated access/maintenance roads.

Avoid night-time construction lighting or if nighttime construction cannot be avoided use shielded directional lighting pointed downward and towards the interior of the project site, thereby avoiding illumination of adjacent natural areas and the night sky.

All construction equipment used for the Project will be equipped with properly operating and maintained mufflers.

Hazardous materials and equipment stored overnight, including small amounts of fuel to refuel hand-held equipment, will be stored within secondary containment when within 50 feet of open water to the fullest extent practicable. Secondary containment will consist of a ring of sand bags around each piece of stored equipment/structure. A plastic tarp/visqueen lining with no seams shall be placed under the equipment and over the edges of the sandbags, or a plastic hazardous materials secondary containment unit shall be utilized by the Contractor.

The Contractor will be required to conduct vehicle refueling in upland areas where fuel cannot enter waters of the U.S. and in areas that do not have potential to support federally threatened or endangered species. Any fuel containers, repair materials, including creosote-treated wood, and/or stockpiled material that is left on site overnight, will be secured in secondary containment within the work area and staging/assembly area and covered with plastic at the end of each work day.

In the event that no activity is to occur in the work area for the weekend and/or a period of time greater than 48 hours, the Contractor will ensure that all portable fuel containers are removed from the project site.

All equipment will be maintained in accordance with manufacturer's recommendations and requirements.

Equipment and containers will be inspected daily for leaks. Should a leak occur, contaminated soils and surfaces will be cleaned up and disposed of following the guidelines identified in the Stormwater Pollution Prevention Plan or equivalent,

Materials Safety Data Sheets, and any specifications required by other permits issued for the project.

The Contractor will utilize off-site maintenance and repair shops as much as possible for maintenance and repair of equipment.

If maintenance of equipment must occur onsite, fuel/oil pans, absorbent pads, or appropriate containment will be used to capture spills/leaks within all areas. Where feasible, maintenance of equipment will occur in upland areas where fuel cannot enter waters of the U.S. and in areas that do not have potential to support federally threatened or endangered species.

Appropriate BMPs will be used by the Contractor to control erosion and sedimentation and to capture debris and contaminants from bridge construction to prevent their deposition in waterways. No sediment or debris will be allowed to enter the creek or other drainages. All debris from construction of the bridge will be contained so that it does not fall into channel. Appropriate BMPs will be used by the Contractor during construction to limit the spread of resuspended sediment and to contain debris.

Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

Firearms, open fires, and pets would be prohibited at all work locations and access roads. Smoking would be prohibited along the Project alignment.

Cross-country vehicle and equipment use outside of approved designated work areas and access roads shall be prohibited to prevent unnecessary ground and vegetation disturbance.

Any injured or dead wildlife encountered during project-related activities shall be reported to the project biologist, biological monitor, CDFW, or a CDFW-approved veterinary facility as soon as possible to report the observation and determine the best course of action. For special-status species, the Project Biologist shall notify the County, USFWS, and/or CDFW, as appropriate, within 24 hours of the discovery.

Stockpiling of material will be allowed only within established work areas.

Actively manage the spread of noxious weeds (See Mitigation Measure BIO-5)

The ground beneath all parked equipment and vehicles shall be inspected for wildlife before moving.

BIO-3 Worker Environmental Awareness Program.

Prior to project construction, a Worker Environmental Awareness Program shall be developed and implemented by a qualified biologist, and shall be available in both English and Spanish. Handouts summarizing potential impacts to special-status biological resources and the potential penalties for impacts to these resources shall be provided to all construction personnel. At a minimum, the education program shall including the following:

the purpose for resource protection;

a description of special status species including representative photographs and general ecology;

occurrences of USACE, RWQCB, and CDFW regulated features in the Project study area;

regulatory framework for biological resource protection and consequences if violated;

sensitivity of the species to human activities;

avoidance and minimization measures designed to reduce the impacts to special-status biological resources;

environmentally responsible construction practices;

reporting requirements;

the protocol to resolve conflicts that may arise at any time during the construction process; and workers sign acknowledgement form indicating that the Environmental Awareness Training and Education Program that has been completed and would be kept on record.

BIO-4 Desert Tortoise Avoidance and Minimization

A qualified biologist shall conduct focused presence/absence surveys for Desert Tortoise for 100-percent of the project footprint pursuant to the October 19, 2019 Version of the USFWS Desert Tortoise Survey Protocol. If no live desert tortoise or sign of active desert tortoise if detected, no further avoidance and minimization is required.

If live desert tortoise or sign of active desert tortoise is detected, the project proponent shall initiate consultation with USFWS and CDFW to obtain the necessary federal and state ESA authorizations and the following avoidance, minimization and compensatory mitigation measures will be implemented:

Permanent tortoise-proof fencing shall be along the perimeter of the project site. Fencing shall be installed, inspected, and maintained according to specifications in the current USFWS *Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)*. An authorized desert tortoise biologist shall conduct pre-construction clearance surveys for the project site no more than 14-days prior to the initiation of fence installation. All potentially active burrows shall be identified for hand excavation. Pre-construction clearance surveys shall be repeated within the fenced impact area after fence installation is complete. If desert tortoise are observed they shall be relocated from within the work area to outside the fenced area by a permitted biologist.

The authorized biologist shall conduct desert tortoise pre-construction clearance surveys along all existing and new dirt access road alignments, and the Gen-tie alignment before any ground disturbing activities are initiated and prior to the start of construction activities each day during ground-disturbing activities and weekly thereafter. Relocate desert tortoises as necessary. Any handling of special-status species must be approved by the appropriate Federal and State agencies and be done in accordance with species-specific handling protocols.

Where burrows would be unavoidably destroyed, they would be excavated carefully using hand tools under the supervision of the authorized biologists with demonstrated prior experience with this species.

Inspect construction pipes, culverts, or similar structures: (a) with a diameter greater than 3 inches, (b) stored for one or more nights, (c) less than 8 inches aboveground and (d) within desert tortoise habitat, before the materials are moved, buried, or capped.

Incorporate Raven Management into the Pest Control Plan (See BIO-5)

Inspect the ground under vehicles and equipment for the presence of desert tortoise any time a vehicle or construction equipment is parked in desert tortoise habitat. If a desert tortoise is seen, it may move on its own. If it does not move within 15 minutes, an authorized biologist or biological monitor under the direction of the authorized biologist may remove and relocate the animal to a safe location.

All culverts for access roads or other barriers will be designed to allow unrestricted access by desert tortoises and will be large enough that desert tortoises are unlikely to use them as shelter sites (e.g., 36 inches in diameter or larger). Desert tortoise exclusion fencing may be utilized to direct tortoise use of culverts and other passages. If possible, pipes and culverts greater than 3 inches in diameter would be stored on dunnage to prevent wildlife from taking refuge in them, to the extent feasible.

To fully mitigate for habitat loss and potential take of the Mojave desert tortoise, the Applicant will provide compensatory mitigation at a ratio of 1:1 3:1. For the

purposes of this measure, the project site (i.e., footprint) means all Project areas with new direct ground disturbance during construction and operation of the Project. This includes all lands directly disturbed that will no longer provide viable long-term habitat for the Mojave desert tortoise, such as the solar field, substation and new access roads. Areas within the gen-tie line corridor where no ground disturbance will occur are not included in the area to be mitigated through compensation. Compensatory mitigation could include agency-approved payment of an in-lieu fee; acquiring mitigation land or conservation easements; restoration or habitat enhancement activities on preservation lands; or a combination of the three.

BIO-5 Prepare and Implement an Operation and Maintenance Worker Education Plan.

An Operation and Maintenance Worker Education Plan shall be prepared to advise personnel on general operations measures. The Worker Education Plan shall be submitted to the County of Imperial Planning and Development Services Department for review and approval prior to issuance of building permits. The following provisions shall be included in the Worker Education Plan and implemented throughout the operational lifespan of the Project: Operation and maintenance personnel shall be prohibited from:

Exceeding nighttime and daytime vehicle speeds of 10 miles per hour and 25 miles per hour, respectively, within the facility, on access roads and within the Gen-Tie line corridor. Speed limit signs shall be posted throughout the project site to remind workers of travel speed restrictions.

Harming, harassing, or feeding wildlife and/or collecting special-status plant or wildlife species.

Disturbing active avian nests

Traveling (either on foot or in a vehicle) outside of the Project footprint except on public roads.

Littering on the Project area.

Allowing persons not employed at the facility to remain on site after daylight hours.

Exceeding normal nighttime operational noise or lighting levels

Bringing domestic pets and firearms to the site.

The Operation and Maintenance Worker Education Plan shall require that:

All operation and maintenance vehicles and equipment park in approved designated areas only.

The project site and Gen-Tie line corridor be kept clear of trash and other litter to reduce the attraction of opportunistic predators such as common ravens, coyotes, and feral dogs that may prey on sensitive species.

Operation and maintenance employees maintain Hazardous Materials Spill Kits on-site. All operation and maintenance staff shall be trained in how to use Hazardous Materials Spill Kits in the event of a spill.

An approved Long-Term Maintenance Plan for the retention/detention basins be developed and implemented.

Weed and Raven management shall be addressed in a project-specific pest management plan (See BIO-5)

Maintain shielding on external lighting to direct down and towards the project site and away from adjacent undeveloped land.

Workers sign acknowledgement form indicating that the Environmental Awareness Training and Education Program that has been completed and would be kept on record

desert tortoise avoidance and minimization measures be implemented if desert tortoise is detected during pre-construction surveys

The ground beneath all parked equipment and vehicles shall be inspected for wildlife before moving.

Personnel are trained to avoid causing wildfires and manage them safely and promptly if necessary

BIO-6 Burrowing Owl Avoidance and Minimization.

Take Avoidance (pre-construction) surveys for burrowing owl shall be completed prior to project construction. Surveys shall be conducted as detailed within Appendix D of the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game [CDFG] 2012). If burrowing owl is not detected, construction may proceed.

If burrowing owl is identified during the non-breeding season (September 1 through January 31), then a 50 meter buffer will be established by the biological monitor. Construction within the buffer will be avoided until a qualified biologist determines that burrowing owl is no longer present or until a CDFW-approved exclusion plan has been implemented. The buffer distance may be reduced if noise attenuation buffers such as hay bales are placed between the occupied burrow and construction activities.

If burrowing owl is identified during the breeding season (February 1 through August 31), then an appropriate buffer will be established by the biological monitor in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Construction within the buffer will be avoided until a qualified biologist determines that burrowing owl is no longer present or until young have fledged. The buffer distance may be reduced in consultation with CDFW if noise attenuation buffers such as hay bales are placed between the occupied burrow and construction activities.

BIO-7 Pre-Construction Nesting Bird Surveys.

To the extent possible, construction shall occur outside the typical avian breeding season (February 15 through September 15). If construction must occur during the general avian breeding season, a pre-construction nest survey shall be conducted within the impact area and a 500-foot (150-meter) buffer by qualified biologist no more than 7 days prior to the start of vegetation clearing and/or ground disturbing construction activities in any given area of the Project footprint. Construction crews shall coordinate with the qualified biologist at least 7 days prior to the start of construction in a given area to ensure that the construction area has been adequately surveyed. A nest is defined as active once birds begin constructing or repairing the nest in readiness for egg-laying. A nest is no longer an "active nest" if abandoned by the adult birds or once nestlings or fledglings are no longer dependent on the nest. If no active nests are discovered, construction may proceed. If active nests are observed that could be disturbed by construction activities, these nests and an appropriately sized buffer (typically a 200-foot (61-meter) buffer for non-raptor species nests and at least a 500-foot (150-meter) buffer for raptor or federally listed species nests) would be avoided until the young have fledged. Final construction buffers or setback distances shall be determined by the qualified biologist in coordination with USFWS and CDFW on a case-by-case basis, depending on the species, season in which disturbance shall occur, the type of disturbance, and other factors that could influence susceptibility to disturbance (e.g., topography, vegetation, existing disturbance levels, etc.). Active nests shall be avoided until the young have fledged and/or the monitor determines that no impacts are anticipated to the nesting birds or their young. If vegetation clearing and/or ground disturbing activities cease for 14 or more consecutive days during the nesting season in areas where suitable nesting habitat remains, repeat nesting bird surveys shall be required to ensure new nesting locations have not been established within the impact area and the defined buffers.

BIO-8 Develop a Bird and Bat Conservation Strategy (BBCS).

A BBCS shall be developed by the Project Applicant in coordination with the County of Imperial, USFWS, and CDFW.

The BBCS will include the following components:

A description and assessment of the existing habitat and avian and bat species;

An avian and bat risk assessment and specific measures to avoid, minimize, reduce, or eliminate avian and bat injury or mortality during all phases of the project.

A post-construction monitoring plan that will be implemented to assess impacts on avian and bat species resulting from the Project.

The post-construction monitoring plan will include a description of standardized carcass searches, scavenger rate (i.e., carcass removal) trials, searcher efficiency trials, and reporting. Statistical methods will be used to estimate Project avian and bat fatalities if sufficient data is collected to support statistical analysis.

An injured bird response plan that delineates care and curation of any and all injured birds.

A nesting bird management strategy to outline actions to be taken for avian nests detected within the impact footprint during operation of the Project.

A conceptual adaptive management and decision-making framework for reviewing, characterizing, and responding to monitoring results.

Monitoring studies following commencement of commercial operation of each CUP area. Monitoring results will be reviewed annually by the Applicant and the County of Imperial, in consultation with CDFW and USFWS, to inform adaptive management responses. During Project construction, incidental avian carcasses or injured birds found during construction shall be documented. Should a carcass be found by Project personnel, the carcass shall be photographed, the location shall be marked, the carcass shall not be moved, and a qualified biologist shall be contacted to examine the carcass. When a carcass is detected, the following data shall be recorded (to the extent possible): observer, date/time, species or most precise species group possible, sex, age, estimated time since death, potential cause of death or other pertinent information, distance and bearing to nearest structure (if any) that may have been associated with the mortality, location (recorded with Global Positioning System), and condition of carcass.

> If any federal listed, state listed or fully protected avian carcasses or injured birds are found during construction or post-construction monitoring, the Project Applicant shall notify USFWS and CDFW within 24 hours via email or phone and work with the resource agencies to determine the appropriate course of action for these species. For such listed species, the CUP owner shall obtain or retain a biologist with the appropriate USFWS Special Purpose Utility Permit(s) and CDFW Scientific Collecting Permit(s) to collect and salvage all dead and injured birds, and store/curate them in freezers for later disposition and analysis.

BIO-9 Pre-Construction Surveys for American Badger.

Preconstruction surveys shall be conducted by a qualified biologist for the presence of American badger dens within 14 days prior to commencement of construction activities. The surveys shall be conducted in areas of suitable habitat for American badger, which include desert scrub habitats. Surveys need not be conducted for all areas of suitable habitat at one time; they may be phased so that surveys occur within 14 days prior to that portion of the project site disturbed. If potential dens are observed and avoidance is feasible, the following buffer distances shall be established prior to construction activities:

American badger potential den: 30 feet.

American badger active den: 100 feet.

American badger natal den: 500 feet.

If avoidance of the potential dens is not possible, the following measures are required to avoid potential adverse effects to the American badger

Outside the reproductive season defined as February 1 through September 30 for American badger if the qualified Lead Biologist determines through camera monitoring for three consecutive days that potential dens are inactive, the biologist shall excavate these dens by hands with a shovel to prevent American badgers from re-using them during construction.

Outside of the reproductive season defined as February 1 through September 30 for American badger if the Lead Biologist determines that potential dens may be active, an onsite passive relocation program shall be implemented. This program shall consist of excluding American badgers from occupied burrows by installation of one-way doors at burrow entrances, monitoring of the burrow for seven days to confirm usage has discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the qualified biologist determines that American badgers have stopped using the dens within the project boundary, the dens shall be hand-excavated with a shovel to prevent use during construction.

BIO-10 Compensatory Mitigation for Riparian Woodland and Ephemeral Wash.

Following the completion of project construction, Palo Verde- Ironwood Woodland will be created, enhanced and or conserved within the undeveloped portions of the project site at a ratio of 3:1 (i.e., 3 acres created or enhanced for each acre impacted)by permanent or temporary project activities).

Permanent impacts to jurisdictional waters and wetlands shall be mitigated at a minimum 1:1 ratio either through on-site and/or off-site re-establishment, enhancement and conservation of jurisdictional waters or through an

approved-mitigation bank or in lieu fee program, if one is available. The type of mitigation, mitigation location and the final mitigation ratios will be established during the permit process for the Project's USACE Section 404 permit, the RWQCB Section 401 Water Quality Certification, and a CDFW Streambed Alteration Agreement.

BIO-11 Develop and Implement a Pest Management Plan.

The Project shall develop and implement a Pest Management Plan that will reduce negative impacts to surrounding (not necessarily adjacent) farmland during construction, operation and reclamation. The Plan shall include:

Methods for Preventing the Introduction and Spread of pests, including weeds.

Monitoring methods for all agricultural pests and weeds with potential to adversely impact adjacent native habitat (Species on California Invasive Plants Council Inventory rated as Moderately to Highly Invasive) to including insects, vertebrates, weeds, and pathogens.

Eradication and Control Methods All treatments must be performed by a qualified applicator or a licensed pest control business.

"Control" means to reduce the population of common pests below economically damaging levels, and includes attempts to exclude pests before infestation, and effective control methods after infestation.
Effective control methods may include physical/mechanical removal, biocontrol, cultural control, or chemical treatments.

Use of "permanent" soil sterilants to control weeds or other pests is prohibited due to the fact that this would interfere with reclamation.

Notification Requirements: o Notify the Agricultural Commissioner's office immediately regarding any suspected exotic/invasive pest species as defined by the California Department of Food Agriculture (CDFA) and the USDA.

Request a sample be taken by the Agricultural Commissioner's Office of a suspected invasive species.

Eradication of exotic pests will be done under the direction of the Agricultural Commissioner's Office and/or CDFA.

Obey all pesticide use laws, regulations, and permit conditions.

Allow access by Agricultural Commissioner staff for routine visual and trap pest surveys, compliance inspections, eradication of exotic pests, and other official duties.

Ensure that all project employees that handle pest control issues are appropriately trained and certified, that all required records are maintained and available for inspection, and that all permits and other required legal documents are current.

Maintain records of pests found and treatments or pest management methods used. Records should include the date, location/block, project name (current and previous if changed), and methods used. For pesticides include the chemical(s) used, EPA Registration numbers, application rates, etc. A pesticide use report may be used for this.

Reporting Methods

Submit a report of monitoring, pest finds, and treatments, or other pest management methods to the Agricultural Commissioner quarterly within 15 days after the end of the previous quarter, and upon request.

The report is required even if no pests were found or treatment occurred. It may consist of a copy of all records for the previous quarter, or may be a summary letter/report as long as the original detailed records are available upon request.

S-10 FIRE PREVENTION BUREAU:

O&M Buildings:

The type of suppression system that will be used for the O&M Building must be described in the project; also the hours and amounts of staffing that wil be used. In addition, include a description of your emergency and hazardous material plan. Provide the square footage of all supporting structures to determine if the buildings will require sprinkler systems.

Road Access and Array Requirements:

Dimensions: Alley roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm). The width in-between arrays shall be a minimum of 9 feet (2704mm). The width between arrays shall not be less than 10 feet (3048mm). Any array that exceeds a distance in length of 500 feet shall provide a turn around.

Turning radius: The required turning radius of a fire apparatus access road shall be a minimum of 70 by 90 degrees diameter

Access and loading: Facilities, buildings or portions of buildings hereafter constructed shall be accessible to fire department apparatus by way of an approved fire apparatus access road with an asphalt, all weathered, concrete, or other

approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 75,000 pounds (34 050 kg).
Fire apparatus access road gates: Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. The minimum gate width shall be 20 feet (6096 mm).

2. Gates shall be of the swinging or sliding type.

3. Construction of gates shall be of materials that allow manual operation by one person.

4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.

5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.

6. Locking device specifications shall be submitted for approval by the fire code official

7. Any gates on-site shall have a "Knox" lock and be rapidly accessible by the Imperial County Fire Department/OES

Water Requirement:

1) Provide a 10,000 gallon water storage tank dedicated for fire suppression for any proposed O&M structures.
2) Provide a 10,000 gallon water storage tank dedicated for fire suppression before any combustible material is moved on site for during construction.

Fiscal Impacts:

For operation and maintenance fees associated with Fire Department/OES

(a) Permittee shall pay a fee of $50 per acre per year prior to commencement of the construction period to address the Imperial County Fire/OES expenses for service calls within the project Utility/Transmission area. Said amount shall be prorated on a monthly basis for periods of time less than a full year. Permittee shall provide advance, written notice to County Executive Office of the construction schedule and all revisions thereto.

Permittee shall pay an annual fee of $20 per acre per year during the post-construction, operational phase of the project to address the Imperial County Fire/OES expenses for service calls within the Project Utility/Transmission area.

Said fee will be paid to the Fire Department to cover on-going maintenance and operations cost created by the project.

(b) Cost associated with items two above items shall annually adjusted on January 1st to add a CPI (Los Angeles) increase. Such costs associated with these items can be readjusted in the County's sole discretion if a new service analysis is prepared and that service analysis is approved by both the County and the Permittee.

Fire- In lieu of providing all-weather access roads for fire protection vehicles, the permittee shall be permitted to provide compacted dirt roads (in compliance with ICAPCD's rules and regulations) for fire protection vehicles if prior to the issuance of any grading permit for the Project shall purchase an Fire Engine with All Terrain Capabilities as specified and approved by the Fire Department. The Fire Engine cost estimate will be at Current Market Value for approved Fire Engine. Final Cost, conditions and equipment of the Fire Engine shall be determined prior to the issuance of the initial grading permit. The County agrees to require, as a condition of approval, other developers in the area to reimburse the Applicant for the expenses associated with the purchase of the Fire Engine. The Permittee shall be reimbursed only for those expenses in excess of their proportionate share for the purchase of the Fire Engine that the Permittee would have been required to pay. Furthermore, if a Fire Engine was already purchased by another developer in t the area, then the Permittee shall only be required to pay a fire mitigation in the amount of up to $100 per acre that would represent their proportionate share to reimburse the purchaser of the Fire Engine. The County shall be responsible for the managing the reimbursement component of this condition of approval.

Permittee shall participate in the Imperial County Public Benefit Program for the life of the CUP and shall at all times be a party to a public benefit agreement in a form acceptable to the County Counsel in order to pay for all cost, benefits, and fees associated with the approved project. Approval of this public benefit agreement will be by the Board of Supervisors prior to the issuance of the first building permit.

S-11 PUBLIC SERVICES:

1. If Permittee receives an exclusion of applicable sales and use tax payable to the County of Imperial under Senate Bill 71 under the State Public Resource Code (Section 26003, et al.) and the California Alternative Energy and Advanced Transportation Financing Authority (CAETFA), Permittee shall pay to the County and Local Transportation Authority an amount equal to the sales tax (currently at 1.5%) which would have been received if Permittee had not obtained such exclusion.

a) Permittee shall require that its general construction contractor exercise its option to obtain a Board of Equalization (BOE) sub-permit for the jobsite and allocate

all eligible use tax payments to Imperial County and LTA. Permittee will require that the general contractor provide County of Imperial with either a copy of their BOE account number and sub-permit. To accomplish this, Permittee shall either cause its general construction contractor to treat the project in accordance with California Regulation 1521(b)(2)(B),California Regulation 1521(c)(13)(B), and California Regulation 1826(b) for sales and use tax purposes or form a "Buying Company" as defined in the State of California Board of Equalization Regulation 1699(h). Permittee can adopt an alternate methodology to accomplish this goal if such methodology is approved by the County Executive Officer prior to issuance of building permits. Permittee shall require its general construction contractor to use commercially reasonable best efforts to cause its subcontractors and vendors to obtain similar sub-permits for the jobsite and to allocate all eligible sales and use tax payment to Imperial County and LTA.

b) Permittee shall direct use taxes on out-of-County taxable purchased construction related items to Imperial County, to the extent permitted and consistent with state use tax law.

c) Permittee shall use its best efforts, consistent with state law, to source taxable purchases from price competition construction retail vendors within the County of Imperial in order to further source sales to County.

d) The Permittee shall exclude from assessment and taxation under California Revenue and Taxation Code Section 73 (AB 1451) only that property qualifying as an Active Solar Energy System, pursuant to the applicable guidelines issued by the Board of Equalization.

2. The Permittee shall widely publicize to County residents the availability of job opportunities associated with the project (whether or not those job opportunities are within Imperial County or are regional). Since the majority of the population residents in the incorporated Cities of the County, dissemination of the information should be relatively easy. Postings at City Halls, newspaper and television advertisements, local job centers, and dedicated website shall offer sufficient avenues of communication. The Imperial County Office of Employment and Training in addition to the Imperial Valley College presents viable sources for community awareness. The information shall provide available positions, details of positions including qualifications, number of openings, indicated the anticipated start date for each, and application process. In order to maintain oversight of the process, the application process can be completed both on a dedicated website and at dedicated computers at the County which would afford those without Internet connection the ability to apply. The Permittee's information shall be forwarded to the Permittee or their contractor and copies of applications files are maintained at the County.

3. During the development phase of the project, the Permittee shall provide a roster of employees to include their position and place of residence. Permittee shall also attempt to coordinate a ride-share program with Caltrans and other regional

employers to facilitate the employment of Imperial County residents in jobs related to this project.

4. Unless prohibited by local, state or federal law or regulation, Permittee shall make good faith efforts to hire qualified residents of the Imperial County with the objective that a majority of the total work force is comprised of the Imperial County residents.

5. The Permittee shall install and implement security measures which may include, but not limited to, secured perimeter fencing with barbed wire, sensors, with controlled access points, security alarms, security camera systems, security guard vehicle patrols to deter trespass or unauthorized activities that would interfere with operation of the proposed project.

6. Permittee shall compensate the County pursuant to the Department of Environmental Health Fee Schedule for any costs of calls related to bees and mosquitoes.

7. The Permittee shall reimburse the Sheriff's Department for any investigations regarding theft on the Project site and related law enforcement.

8. Permittee shall enter into a Public Benefit Agreement with the County of Imperial to provide for a monetary benefit payable to the County to maximize the benefits of the Project to the Imperial County prior to the issuance of the first Building/Grading permit.

9. All construction supervisors and foremen shall be provided with communication devices, cell phones or walkie-talkies, in the event of an emergency situation on-site.

10. For operation and maintenance fees associated with Fire Department/OES:

    a. Permittee shall pay a fee of $50 per acre per year prior to commencement of the construction period to address the Imperial County Fire/OES expenses for service calls within the Project's Utility/Transmission area. Said amount shall be prorated on a monthly basis for periods of time less than a full year. Permittee shall provide advance, written notice to County Executive Office of the construction schedule and all revisions thereto.

    b. Permittee shall pay an annual fee of $20 per acre per year during the post-construction, operational phase of the Project to address the Imperial County Fire/OES expenses for service calls within the Project's Utility/Transmission area. Said fee will be paid to the Fire Department to cover on-going maintenance and operations costs created by the project.

    c. Costs associated with items two above items shall be annually adjusted on January 1st to add a CPI (Los Angeles) increase. Such costs associated with

these items can be readjusted in the County's sole discretion if a new service analysis is prepared and that service analysis is approved by both the County and the Permittee.

S-12 COMMENCEMENT OF WORK:

1. Permittee shall commence construction of the permitted activities or provide substantial evidence of substantial progress within 12 months from the effective date of this permit, i.e. approval date.

S-13 CONSTRUCTION STANDARDS

1. The solar energy facility structures shall be built in accordance with the California Building Code requirements applicable to "Seismic Category D". All structures and facilities shall be designed in accordance with the publication entitled "Recommended Lateral Force Requirements and Commentary by the Structural Engineers Association of California". The structural components of the permitted facilities shall be reviewed by the Building Official/Planning and Development Services Director. Applicable building permits shall be procured from the County for facilities prior to commencement of construction of such facilities.

.

S-14 EMERGENCY RESPONSE/ACTION PLAN:

1. The Permittee shall prepare an Emergency Response/Action Plan that has been approved by the Imperial County Fire/OES Department, and the Local Enforcement Agency. Any hazardous materials storage areas shall be designed with curbs or other containment measures, e.g. double-walled storage tanks, to contain spills and leaks and if on-site hazardous materials exceed 55 gallons, a "Hazardous Material Management Plan" shall be prepared and approved by the County LEA and CUPA.

2. The Emergency Response/Action Plan shall cover all possible emergencies, e.g. major fluid spills, earthquakes, fires, floods or other emergencies. At all times, there shall be at least one employee either on the facility premises or on-call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility of coordinating all emergency response measures. This Emergency Coordinator shall be thoroughly familiar with all aspects of the solar facility's Emergency Response/Action Plan, all operations and activities at the facility, location of all records within the facility and the facilities layout. This person shall have the authority to commit the resources needed to carry out the contingency plan. Adequate personnel and equipment shall be available to respond to emergencies and to insure compliance with the conditions of the permit.

3. The Emergency Response/Action Plan shall be prepared in consultation with, but not be limited to, the Imperial County Fire Protection/Office of Emergency Services, County Environmental Health Services/Health Department, County Sheriff/Coroner's office, County Public Works Department, Planning and

Development Services Department, and other appropriate state and county agencies. The plan shall include a notification list of response agencies which shall be notified immediately upon the discovery of a reportable unauthorized discharge and the list shall include: Imperial Fire Protection/Office of Emergency Services, Planning and Development Services Department, County Environmental Health Services/Health Department, County Department of Public Works (DPW), California Highway Patrol, as applicable.

4. All employees shall be trained by classroom and hands-on training on safety procedures, maintenance programs and emergency response protocols to ensure safety and reliability in the event of an unforeseen emergency situation.

5. The Permittee shall provide adequate safety devices against the hazard of fire and explosion for activities that involve the use and storage of flammable, explosive or highly corrosive or reactive materials as well as provide adequate fire-fighting and fire suppression equipment and using devices standard within the industry in compliance with all applicable state and local laws as determined by the Fire Chief, Office of Emergency Services.

6. The Permittee shall implement all State and County-approved worker safety and fire protection plans and programs.

7. Any gates on-site shall have a "knox" lock and be rapidly accessible by the Imperial Fire Protection/Office of Emergency Services.

8. Appropriate first aid provisions for facility operations shall be made for emergency response during Project construction, operation, and maintenance activities with appropriate first aid training for Project employees.

9. During construction, a member of each working crew shall be trained in basic first aid and supplied with necessary medical equipment to respond to emergencies as provided for in the Emergency Response/Action Plan required above.

10. Permittee shall identify a responsible agent for emergency purposes, whose name, title, e-mail address and telephone number, which shall be provided to the County Department of Public Works, County Fire Protection/OES Department, County Environmental Health Services/Health Department, County Sheriff/Coroner's office, Imperial Irrigation District (IID), and County Planning and Development Services Department.

S-15 LAND USE IMPROVEMENTS

1. The Permittee shall prepare an appropriate parking plan for review and approval by the County Planning and Development Services and County Public Works Department for all proposed Operation & Maintenance buildings if applicable.

2. The Permittee shall surface with a minimum of three (3) inches of asphaltic concrete paving or material of higher quality all access drives, parking areas, and

vehicular maneuvering areas from Simpson Road to any constructed operation and maintenance buildings.

3. Prior to any grading permit issuance, the Imperial County Building Official and or Planning and Development Services Director shall review and approve of the Floodplain Development Permit" for (APN 025-260-024-000 & 025-280-003-000) within any area of special flooding hazards or areas of mudslides (i.e. mudflow) established in Section 91603.01 of the Imperial County Land Use Ordinance.

S-16 NOISE STANDARDS:

1. During the construction period, heavy truck traffic to/from the solar facilities shall be limited to the hours between 7:00 AM and 7:00 PM. If construction is needed outside the standard hours of operation, the Permittee will be required to submit a request to the Planning & Development Services Director.

2. During construction, in accordance with Imperial County Noise Element of the General Plan, the noise level shall not exceed 75 dBA_{Leq} at the property boundary when averaged over an 8-hour period.

3. During operation of the facility, the maximum permitted continuous sound level shall be not more than 45 dBA_{Leq}, as measured at the nearest residence using the "A" scale and measured with a sound level meter and associated octave band analyzer. The level may be exceeded by ten percent (10%) if the noise is intermittent and during daylight hours.

4. Haul trucks and other engine-powered equipment shall be muffled and operated with engine exhaust brake use limited to emergencies.

S-17 ODOR CONTROL.

1. The Permittee shall control all odor-causing, harmful, noxious emissions to insure that quantities or air contaminants released as a result of the permitted facilities do not exceed County, State or Federal standards, nor constitute a public nuisance, per the Land Use Ordinance, Division 13, Enforcement, Chapter 2, Abatement of Nuisances, Sections 91302.00 through 91301.02.

S-18 PLAN APPROVALS:

1. Permittee shall submit to the County Planning and Development Services Department, architectural, landscaping and lighting plans prior to construction of those facilities, to include painting of structures, planting of trees and/or vegetation, and shall receive all approvals prior to commencing construction of the applicable permitted facilities. Approval shall not be unreasonably withheld so long as the plans are consistent with applicable Land Use Ordinance requirements.

S-19 PROJECT DESIGN:

1. All facility access and parking areas shall be constructed to the standards of the Land Use Ordinance.

2. All permitted activities shall provide for the minimum feasible surface land disturbance for compatibility with the existing uses wherever possible.

3. All equipment and electrical interconnection facilities used at the solar plant facilities shall be maintained in a manner that prevents breaking, cracking, and leaking, e.g. operator staffing and training, including appropriate quality assurance procedures, with the operation of back-up or auxiliary facilities when necessary.

4. A Storm-water Pollution Prevention Plan (SWPPP) shall be prepared for construction of the project in accordance with the requirements of the County of Imperial and the RWQCB (See S-8, Hydrology and Water Quality, Item #1).

5. All on-site basins shall be designed and constructed under the supervision of a California-licensed Civil Engineer meeting sound engineering standards, with all applicable regulations and all requirements of the County Environmental Health Services/Health Department and Public Works Departments are complied with.

6. Obtain encroachment permits for any construction or operation on IID existing right of way or easements.

S-20 REPORTING AND MONITORING:

1. The Permittee shall furnish to the County, within a reasonable time, any relevant reports/information which the County requires for monitoring purposes to determine whether cause exists for revoking this permit, or to determine compliance with this permit. The Permittee shall submit all required reports to the Planning Director, County Planning and Development Services Department, 801 Main Street, El Centro, CA 92243.

2. Permittee and Imperial County Development Services Department Director shall agree upon a third party environmental consultant for overseeing all the required mitigation, conditional use permit conditions and public benefit agreement requirements during the construction of project.

3. Permittee shall pay for this third party environmental consultant monitoring and compliance through a memorandum of understanding (MOU) between the County of Imperial, the Developer and the third party consultant. This environmental consultant shall oversee and manage the entire team of specialists needed for the environmental compliance of project, i.e. biologist, cultural experts, burrowing owls monitoring, etc.

4. The Planning and Development Services Department, in consultation with the third party Environmental Consultant and the County Executive Office, will require that all mitigation measures be satisfied, all mitigation monitoring and Reporting Program requirements have been satisfied, all Conditions of Approval in the Conditional Use Permit are in full compliance and all conditions of the Development Agreement have been satisfied before the Final Certificate of Occupancy Certificate is issued.

5. During the operation of solar facility, an Annual Compliance Report shall be submitted to the Planning & Development Services Department, documenting the implementation of the conditions and general measures as well as any resource-specific measures.

6. The Permittee shall reimburse the Imperial County Planning & Development Services Department for monitoring and investigations related to the construction and operation of the Project. Permittee shall compensate the County pursuant to the Imperial County Planning & Development Services Department Fee Schedule for any costs incurred.

Permittee shall pay for all costs as required to comply with the Conditions of Approval, and shall implement all required mitigation measures as indicated in the Final Environmental Impact Report (FEIR) and Mitigation Monitoring, Reporting Program (MMRP). If mitigation measures for FEIR and MM&RP are more stringent than the conditions in this permit, the FEIR & MM&RP mitigations will be required.

S-21 SPILLS AND RUNOFF:

1. The Permittee shall design and construct the permitted facilities to prevent spills from endangering adjacent properties and to prevent runoff from any source being channeled or directed in an unnatural way so as to cause erosion, siltation, or other detriments pursuant to the construction Storm Water Pollution Prevention Plan approved by the Regional Water Quality Control Board.

S-22 SOLAR FACILITIES CLOSURE AND SITE RESTORATION:

1. Permittee shall implement the site restoration plan as outlined within the plan when the operation of the permitted facilities herein authorized has ceased, all facilities shall be dismantled, and the lands involved restored to their pre-construction condition and available for agricultural production uses as agreed to by the County Planning and Development Services Director. Within thirty (30) days prior to

ground disturbance, a Bond, or other acceptable surety, in the amount of the estimated site restoration financial calculations/bond, for the developed project area as specified in the [or grading plan(s) area], or other forms of security acceptable to County Counsel's office, shall be filed with the County that guarantees restoration of the land to its condition prior to the permitted solar plant development. Upon completion of such site restoration, and demonstration that the land has been restored to the current existing condition prior to the permitted solar plant development the Bond or other surety shall be released by the County.

2. The above financial calculations/bond shall be reviewed every five (5) years in December and adjusted on January 1st to add a CPI (Los Angeles) increase by the Planning and Development Services Director. This readjustment can be made in the County's sole discretion if approved by both the County and the Permittee.

S-22 PUBLIC WORKS

1. Cuff Road is classified as Local County (Residential)-two (2) lands, requiring sixty feet (60) of right of way, being thirty (30) feet from existing centerline. It is required that sufficient right of way be provided to meet this road classification.

2. Wilkins Road is classified as Minor Collector-Local Collector, two (2) lanes, requiring seventy (70) feet of right of way, being thirty (30) feet from existing centerline. It is required that sufficient right of way be provided to meet this road classification.

3. According to the County of Imperial Codified Ordinances, any site plan submitted with an application for permitting shall show the dimensions, which includes bearings, of all properties lines. All distances from the property lines(s) to the structures shall also be shown on the site plan. The applicant shall revised the site plan and submit at the earliest convenience.

4. The access road on the east side of the property connecting to Cuff Road (Gas Line Road) as illustrated on Figure 3-3 of the Project Description Document has the potential to encroach into Zone A of the FEMA Flood Insurance Map Panel 06025C0450C.

   The findings of the Initial Study under Section X-Hydrology and Water Quality, Subsection c) iv, shall state that either no access road will be constructed within the flood zone or that mitigation measures will be provided during the EIR.

5. Section XVII – Transportation, Subsection d), of the Initial Study refers to site emergency access and is evaluated as having Less than Significant Impacts. This section does not make a mention of access roads from the project site to County roads.

The findings on Section XVII-Transportation, Subsection d), of the Initial Study shall include impacts the access road east of the project site to Cuff Road (Gas Line Road and the two access roads west of the project site to Wilkins Road. This finding shall be revised to be Potential Significant Impact.

Prior to development, the developer shall meet the following requirements:

A. Any access roads to the project site shall abut to County roads. Access roads through private properties shall require easement from property owners.

B. Any activities and/or work within Imperial County right-of-way shall be completed under a permit issued by this Department (encroachment permit) as per Chapter 12.12.-Excation on or Near a Public Road of the Imperial County Ordinance.

   a. Any activity and/or work may include, but not be limited to, the installation of temporary stabilized construction entrances, primary access driveways, secondary emergency access driveways, site fence installation, underground/overhead electrical crossing, road improvements, temporary traffic control, etc.

C. Corner record is required to be filed with the Imperial County Surveyor for monuments prior to construction:

   8771. (b) When monuments exist that control the location of subdivision, tracts, boundaries, roads, streets, or highways, or provide horizontal or vertical survey control, the monuments shall be located and referenced by or under the direction of a licensed land surveyor or licensed civil engineer legally authorized to practice land surveying, prior to the tie when any streets, highways, other right-of-way, or easement are improved, constructed, reconstructed, maintained, resurfaces, or relocated, and a corner record or record of survey of the reference shall be filed with the county surveyor.

D. A second corner record is required to be filed with the Imperial County Surveyor for monuments:

   8771. (c) A permanent monument shall be reset in the surface of the new construction or a witness monument or monuments set to perpetuate the location if any monument could be destroyed, damaged, covered, disturbed, or otherwise obliterated, and a corner record or record of survey shall be filed with the county surveyor prior to the recording of a certificate of completion for the project. Sufficient controlling monuments shall be retained or replace in their original positions to enable property, right -of-way and easement lines, property corners, and subdivision and tract boundaries to be reestablished without devious surveys necessarily originating on monuments differing from those that currently control the area.

E. The Developer will be required to repair any damage caused to County roads by construction traffic during construction and maintain them in safe conditions.

F. All off-site improvements within Imperial County right-of-way shall be financially secured by either a road improvement bond or letter of credit prior to issuance of a grading permit, building permit, and encroachment permit.

G. Prior to the issuance of grading and building permits, the Developer shall complete the installation of temporary stabilized construction entrances and secondary emergency access driveways.

H. Prior to issuance of final certificate of occupancy, the Developer shall be responsible for repairing any damage caused to County roads and bridges during construction as determined by the Imperial County Road Commissioner.

I. The Developer shall furnish a Drainage and Grading Plan/Study to provide for property grading and drainage control, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. The Developer shall implement the approved plan. Employment of the appropriate Best Management Practices (BMP's) shall be included.

J. Any permanent structures shall be located outside of the ultimate County Right-of Way.

K. Off-site improvement shall be constructed in compliance with the material specifications, horizontal/vertical alignments and notes of engineered approve project plans and shall conform to County of Imperial Department of Public works Engineering Design Guidelines Manual.

L. On-site read shall be constructed on compacted Class II Aggregate Base.

M. Primary and secondary emergency access driveways from paved roads shall be constructed of Asphalt Concrete Pavement. Primary and secondary emergency access driveways from unpaved roads shall be constructed of Class II Aggregate Base.

N. The Developer shall prepare and submit a haul route study for the proposed construction haul route to evaluate any impacts to County roads. Said study shall be submitted to this Department for review and approval. The haul route study shall include pictures and/or other documents to verify the existing conditions of the impacted County roads before construction begins. The haul route study shall also include recommended mitigation improvements to impacted County roads along with any fair share costs for such improvements.

O. The Developer shall enter into a Roadway Maintenance Agreement with the County of Imperial prior to issuance of a Certificate of Occupancy. The Developer shall provide financial security to maintain the roads on the approved haul route study during construction.

INFORMATIVE:

The following items are for informational purposed only. The Developer is responsible to determine if the enclosed items affect the subject project.

- All solid and hazardous waste shall be disposed of in approved solid waste disposal sites in accordance with existing County, State and Federal regulations (Per Imperial County Code of Ordinances, Chapter 8.72).

- All on-site traffic areas shall be hard surfaced to provide all weather access for emergency vehicles.

- The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water Quality control Board (RWQCB) prior to County approval of onsite grading permit (40 CFR 122.28).

- A Transportation Permit may be required from road agency(s) having jurisdiction over the haul route(s) for any hauls of heavy equipment and/or large vehicles which impose greater than legal loads on riding surfaces, including bridges. (Per Imperial County Code of Ordinances, Chapter 10.12-Overweight Vehicles and Loads.

- As this project proceeds through the planning and the approval process, additional comments and/or requirements may apply as more information is received.

S-23 WASTE DISPOSAL

The Permittee shall insure that all solar plant facilities waste, liquid, gas or solid, which are generated on-site shall be disposed of in compliance with appropriate local, state, and federal regulations, in effect or as subsequently duly-enacted. All solid waste debris and/or any hazardous wastes located on the Project site must be satisfactorily removed to a permitted facility prior to the commencement of grading earthen material at the site.

1. Littering shall not be allowed. Project personnel shall not deposit or leave any food or waste in the Project area, and no biodegradable or non-biodegradable debris shall remain in the right-of-way or on the Project site following completion of construction.

S-24 CALTRANS

1. An encroachment permit shall be required for any work performed within Caltrans right-of-way. If required, any traffic control will need to be addressed as part of Caltrans permit approval. Stoppage of traffic for placement of aerial lines, installation or removal of overhead conductors crossing a highway requires traffic control will be addressed in accordance with the Caltrans Standard Plans and the California Manual on Uniform Traffic Control Devices (MUTCD).

2. Any work performed within Caltrans right-of-way must provide an approved final environmental document including the California Environmental Quality Act (CEQA) determination addressing any environmental impacts within the Caltrans right-of-way and any corresponding technical studies, if required. If these materials are not included with the encroachment permit application, the Permittee will be required to acquire and provide these to Caltrans before the permit application will be accepted. Identification of avoidance and/or mitigation measures will be a condition of encroachment permit approval as well as procurement of any necessary regulatory and resource agency permits.

S-25 ACCEPTANCE:

Acceptance of this permit shall be deemed to constitute agreement by Permittee with all terms and conditions herein contained.

The rest of this page is intentionally left blank.

NOW THEREFORE, County hereby issues the Conditional Use Permit #18-0040, and Permittee hereby accepts such permit upon the terms and conditions set forth herein.

IN WITNESS THEREOF, the parties hereto have executed this Agreement the day and year first written.

PERMITTEE -ORNI 21, LLC

_____ _____
Date

ORNI 21, LLC

COUNTY OF IMPERIAL, a political subdivision of the STATE OF CALIFORNIA

_____ _____
Date

James Minnick, Director
Planning & Development Services
Department

PERMITTEE NOTARIZATION

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

Dated_____

STATE OF CALIFORNIA

COUNTY OF _____} S.S.

On _____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature_____

_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

Dated_____

COUNTY NOTARIZATION

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA

COUNTY OF IMPERIAL } S.S.

On _____ before me, _____ a Notary Public in and for said County and State, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could Prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document_____
Number of Pages_____ Date of Document_____
Signer(s) Other Than Named Above_____

ATTACHMENT I

RESOLUTION NO. _____

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE RECOMENDATION APPROVAL FOR "CONDITIONAL USE PERMIT #20-0006" FOR WISTER SOLAR ENERGY FACILITY PROJECT, WATER WELL.

WHEREAS, ORNI 21, LLC submitted an application for Conditional Use Permit #20-0006 proposing to utilize the existing water well. The water well will provide water for the Wister Solar Energy Facility, drawing up to 10.22 acre-foot of water per year for construction and up to 1.37 acre-feet for operation and maintenance; and

WHEREAS, an Environmental Impact Report and CEQA Findings have been prepared in accordance with the requirements of the California Environmental Quality Act, the state Guidelines, and the County's "Rules and Regulations to Implement CQA" as Amended; and

WHEREAS, Planning Commission of the County of Imperial has been delegated with the responsibility of approval, certification and making recommendations to the Imperial County Board of Supervisors for approvals of conditional use permit; and

WHEREAS, the Draft EIR was received by the State Clearinghouse on June 30, 2020 and circulated for a period of 50 days ending on August 18, 2020 (SCH #2019110140).

NOW, THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered Conditional Use Permit #20-0006 and Conditions of Approval prior to making a recommendation to the Board of Supervisors for the approval of this Conditional Use Permit. The Planning Commission finds and determines that the Conditional Use Permit and Conditions of Approval are adequate and prepared in accordance with the requirements of the Imperial County General Plan and Land Use Ordinance, and the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning Law and the County of Imperial, the following findings for the approval of Conditional Use Permit #20-0006 have been made:

A. The proposed use is consistent with the goals and policies of the adopted County General Plan.

The subject property is designated as "Recreational/Open Space" by the County's General Plan, Land Use Element, and is currently zoned "S-2-G" (Open Space Preservation/Geothermal Overlay) by the Imperial County Land Use Ordinance. The proposed project is therefore, consistent with the County

G. The proposed use is not granting a special privilege.

The proposed water well is a permitted use subject to the conditions of approval of CUP#20-0006 (Land Use Ordinance, Section 92102.00) and will not grant a special privilege.

NOW, THEREFORE, based on the above findings, the Imperial County Planning Commission **DOES HEREBY RECOMMEND APPROVAL OF** Conditional Use Permit #20-0006 to the Board of Supervisors, subject to the Conditions of Approval.

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certified that the preceding Resolution was taken by the Planning Commission at a meeting conducted on December 17, 2020 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

Jim Minnick,
Director of Planning & Development Services
Secretary to the Planning Commission

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\CUP20-0006 PC Resolution.docx

Recording Requested By and
When Recorded Return To:

Imperial County Planning & Development Services Department
801 Main Street
El Centro, California 92243

AGREEMENT FOR CONDITIONAL USE PERMIT #20-0006
FOR A COMMERCIAL WATER WELL
(ORNI 21, LLC)

This Agreement is made and entered into on _____, of 2020 by and between ORNI 21, LLC, (herein referred to as Permittee) and the COUNTY OF IMPERIAL, a political subdivision of the State of California, (hereinafter referred to as "COUNTY").

RECITALS

WHEREAS, Permittee is the owner, lessee or successor in interest in certain land in Imperial County identified as a 640 acre parcel, located at 8601 Wilkins Road, Niland, California, identified as a portion of Northeast Quarter of Section 27, Township 10 South, Range 14 East, SBBM. It is further identified as Assessors' Parcel Number 003-240-001-000.

WHEREAS, Permittee has applied to the County to be allowed to construct and operate a commercial water well to facilitate the Solar Facility commonly referred to as the Wister Solar Energy Facility.

WHEREAS, ORNI 21, LLC. and/or any subsequent owner(s) would be required to and intend to fully comply with all of the terms and conditions of the project as specified in this Conditional Use Permit.

WHEREAS, County, after a noticed public hearing, agreed to issue Conditional Use Permit #20-0006 to Permittee, and/or his or her successor in interest subject to the following conditions:

---

*The "GENERAL CONDITIONS" are shown by the letter **"G"**. These conditions are conditions that are either routinely and commonly included in all Conditional Use Permits as "standardized" conditions and/or are conditions that the Imperial County Planning Commission has established as a requirement on all CUP's for consistent application and enforcement. The Permittee is advised that the General Conditions are as applicable as the SITE SPECIFIC conditions!*

GENERAL CONDITIONS:

G-1 ACQUISITION OF PERMITS/LICENSES AND COMPLIANCE WITH GENERAL LAWS:

The Permittee shall obtain, comply with, and maintain all applicable County, State, and Federal permits, licenses, and/or approvals, including, but not limited to those required by Imperial County Planning & Development Services Department, Air Pollution Control District (APCD), County Division of Environmental Health Services (EHS), and Public Works Department. Additionally, Permittee agrees to comply with all applicable laws, ordinances, and/or regulations promulgated by County, State, and Federal jurisdictions whether specified herein or not. Furthermore, Permittee shall submit a copy of such additional permit(s)/license(s) to the Planning & Development Services Department within thirty (30) days of receipt, including amendments or alterations thereto.

G-2 COSTS

The Permittee shall pay any and all amounts as determined by the County to defray all costs for the review of reports, field inspections, enforcement, monitoring, or other activities related to compliance with this permit, County Ordinances, and/or other applicable regulations.

G-3 PERMITS/LICENSES

The Permittee shall obtain any and all local, state, and/or federal permits, licenses, contracts, and/or other approvals for the construction and/or

operation of this project. This shall include, but not be limited to, the County Environmental Health Services/Health Department, Imperial County APCD and the County Public Works Department. Permittee shall also comply with all such permit requirements for the life of the project. Additionally, Permittee shall submit a copy of any such additional permit, license and/or approval to the Planning and Development Services Department within thirty (30) calendar days from the date of receipt when requested.

G-4 RECORDATION:

This permit shall not be effective until it is recorded at the Imperial County Recorders Office, and payment of the recordation fee shall be the responsibility of the Permittee. If the Permittee fails to pay the recordation fee within six (6) months of the approval date, this permit shall be deemed null and void.

G-5 COMPLIANCE/REVOCATION

Upon the determination by the Planning and Development Services Department, (if necessary upon consultation with other Departments or Agency(ies) that the project is or may not be in full compliance with any one or all of the conditions of this Conditional Use Permit, or upon the finding that the project is creating a nuisance as defined by law, the PERMIT and the noted violation(s) shall be brought immediately to the attention of the appropriate enforcement agency or to the Planning Commission for hearing to consider appropriate response including but not limited to the revocation of the CUP or to consider possible amendments to the CUP. The hearing before the Planning Commission shall be held upon due notice having been provided to the Permittee and to the public in accordance with established ordinance/policy.

G-6 PROVISION TO RUN WITH LAND

The provisions of this project are to run with the land/project and shall bind the current and future owner(s) successor(s) of interest, assignee(s) and/or transferee(s) of said project. Permittee shall not without prior notification to the Planning and Development Services Department assign, sell, or transfer, or grant control of this Permit or any right or privilege herein. The Permittee shall provide a written notice a minimum of sixty (60) calendar days prior to such proposed transfer becoming effective.

G-7 RIGHT OF ENTRY

The County reserves the right to enter the premises to make the appropriate inspection(s) at any time, announced or unannounced, in order to make appropriate inspection(s) and to determine if the condition(s) of this permit are complied with. Access to authorized enforcement agency personnel shall not be denied.

G-8 TIME LIMIT

Unless otherwise specified within the project specific conditions this project shall be limited to a maximum of (3) three years from the recordation date of the CUP. The CUP may be extended for successive

three (3) years by the Planning Director upon a finding by the Planning & Development Services Department that the project is in full and complete compliance with all conditions of the CUP and any applicable land use regulation(s) of the County of Imperial. Unless specified otherwise herein, no conditional use permit shall be extended for more than four (4) consecutive periods. If an extension is necessary or requested beyond fifteen (15) years, the Permittee shall file a written request with the Planning Director for a hearing before the Planning Commission. Such request shall include the appropriate extension fee. An extension shall not be granted if the project is in violation of any one or all of the conditions or if there is a history of non-compliance with the project conditions.

G-9 DEFINITIONS

In the event of a dispute the meaning(s) or the intent of any word(s), phrase(s), and/or conditions or sections herein shall be determined by the Planning Commission of the County of Imperial. Their determination shall be final unless an appeal is made to the Board of Supervisors within the required time. In this permit, the term Permittee may also apply to any other facility user whether specified by name herein or not. To the extent that this site may be used by more than one service provider other than the applicant (Permittee), all of the conditions of this permit shall be equally applicable to the other "user(s)" as if they were the "Permittee".

G-10 SPECIFICITY

The issuance of this permit does not authorize the Permittee to construct or operate this project in violation of any state, federal, local law nor beyond the specified boundaries of the project as shown on the application/project description, nor shall this permit allow any accessory or ancillary use not specified herein. This permit does not provide any prescriptive right or use to the Permittee for future addition and/or modification to this project. The site specific use authorized by this permit is listed under the SITE SPECIFIC ("S") conditions, and only the use or uses listed shall be deemed as approved by this permit.

G-11 HEALTH HAZARD

If the County Health Officer determines that a significant health hazard exists to the public, the County Health Officer may require appropriate measures and the Permittee shall implement such measures to mitigate the health hazard. If the hazard to the public is determined to be imminent, such measures may be imposed immediately and may include temporary suspension of the subject operations. However, within forty-five (45) days of any such suspension of operations, the measures imposed by the County Health Officer must be submitted to the Planning Commission for review and approval. Nothing shall prohibit Permittee from requesting a special Planning Commission meeting provided Permittee bears all costs.

G-12 REPORT(S)

Permittee shall file an annual report with the Planning and Development Services Department to show that Permittee is in full compliance with this Conditional Use Permit. The report shall be filed at least fifteen (15) days prior to the anniversary (recordation date) of this permit. It shall be the responsibility of the Permittee to provide all reports and to include the information about other users. The County may request information at any time from the Permittee or other users if applicable; however, it shall be the responsibility of the Permittee to assure that the County receives such information in a timely manner.

G-13 RESPONSIBLE AGENT

Permittee shall maintain on file with the Planning and Development Services Department the name and phone number of the responsible agent for the site. A back-up name shall also be provided, and a phone number for twenty-four (24) hour emergency contact shall also be on file. If there are other users, the same information (as applicable) required from the Permittee shall also be made available to the County from such other users.

G-14 INDEMNIFICATION:

Permittee shall defend, indemnify and hold harmless County and its agents, including consultants, officers and employees from any claim, action or proceeding against the County or its agents, including consultants, officers or employees to attack, set aside, void, or annul the approval of this application or adoption of the environmental documents which accompanies it. This indemnification obligation shall include, but not be limited to, damages, costs, expenses, attorneys fees, or expert witness costs that may be asserted by any person or entity, including the Permittee arising out of or in connection with the approval of this application, including any claim for private attorney general fees claimed by or awarded to any party from the County.

G-15 CHANGE OF OWNER/OPERATOR

In the event the ownership of the site or the facilities or the operation of the site transfers from the current Permittee to a new successor Permittee, the successor Permittee shall be bound by all terms and conditions of this permit as if said successor was the original Permittee. Current Permittee shall inform the County Planning and Development Services Department in writing at least sixty (60) calendar days prior to any such transfer. Failure of a notice of change of ownership or change of operator shall be grounds for the immediate revocation of the CUP. In the event of a change, the new Owner/Operator shall file with the

Planning and Development Services Department via Certified Mail, a letter stating that they are fully aware of all conditions and acknowledge that they will adhere to all conditions and/or regulations. If this permit or any subservient or associated permit requires financial surety, the transfer of this permit shall not be effective until the new Permittee has the requisite surety on file. Furthermore, the existing surety shall not be released until a replacement surety is accepted by County Counsel's office.

G-16 MINOR AMENDMENTS

The Planning Director may approve minor changes or administrative extensions, as requested in writing by the Permittee, provided it does not result in additional environmental impacts and/or are generally procedural or technical and/or which may be necessary to comply with other government permit compliance requirements.

G-17 CONDITION PRIORITY

This project shall be constructed and operated as described in the Conditional Use Permit application, the Environmental Assessment, the project description, and as specified in these conditions. Where a conflict occurs, the Conditional Use Permit conditions shall govern and take precedence.

G-18 SEVERABILITY

Should any condition(s) of this permit be determined by a Court or other agency with proper jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-19 INVALID CONDITIONS/SEVERABILITY:

Should any condition(s) of this permit be determined by a Court or other agency with property jurisdiction to be invalid for any reason, such determination shall not invalidate the remaining provision(s) of this permit.

G-20 REVOCATION:

Upon the determination by the Planning & Development Services Department that the project is or may not be in full compliance with any one or all of the conditions of this Conditional Use Permit, or upon the finding that the project is creating a nuisance as defined by law, the issue shall be brought immediately to the appropriate enforcement agency or to the Planning Commission for hearing to consider appropriate response including but not limited to the revocation of the CUP or to consider possible amendments to the CUP. The hearing shall be held upon due notice having been provided to the Permittee and to the public in accordance with established ordinance/policy.

(TOTAL "G" CONDITIONS are 20)

(The balance of this page was intentionally left blank)

PROJECT SPECIFIC CONDITIONS:

S-1 The Conditional Use Permit (CUP) allows the Permittee to draw up to 10.22 acre-feet of groundwater per year for construction purposes. The use of the water well shall be for non-potable use only, i.e. for construction and 1.37 acre-feet per year for operation and maintenance and up to 5 acre-feet for decommissioning of the Wister Solar Energy Facility.

S-2 Water from the well shall not be used, sold, given, exported, or transported from the immediate site area of the Wister Solar Energy Facility.

S-3 A flow meter shall be installed and sealed by a California State Licensed Water Well Drilling Contractor. Registered user shall submit an annual report to the Planning & Development Services Department indicating the yearly amount of water extracted from the well. A photograph (dated and signed) of the flow meter readings shall be included in the annual report. The report shall be received within thirty (30) days following the anniversary date of the issuance of this registration. In the event of a flow meter failure, the registered user shall be required to cease the water well operation and notify the Planning & Development Services Department. The registered user may be allowed to temporarily substitute the flow meter for an alternative measuring device, at the approval of the Planning & Development Services Department. In this case two (2) separate reports shall be submitted as stipulated herein. (Pursuant to Title 9, Division 22: Groundwater Ordinance 92202.04 Extraction Facility Water Flow Measurements)

S-4 This permit does not authorize Permittee to "slant drill" under adjoining property.

S-5 Should the water well be "abandoned" at any time for more than 360 consecutive days, Permittee shall seal/cap the well according to standards set by the State and in a manner acceptable to the County Building Official. (Abandonment shall mean as follows:

ABANDONMENT: A well is deemed "abandoned" when it has not been used for one (1) year. An owner may have the well deemed "inactive" by filling a written notice with the Department stating his/her intentions to use the well under specific conditions and/or time frames. As evidence of his/her intentions, the conditions contained in Bulletin 74-81 (Sec. 21) shall be met. Any well that is open or whose services/operating equipment (e.g. pumps/motors/pipes, etc.) has been removed shall be deemed abandoned.

S-6 The Permittee shall construct the water well as the specific location shown on the site plan. If an alternate location on the property for the water well is desired, Permittee shall submit a revised site plan for review and approval by Environmental Health Services and the Planning & Development Services Department prior to construction of the water well.

S-7 The water well shall be registered with the Planning & Development Services Department to comply with the Imperial County's Groundwater Ordinance (Title 9, Division 22) and Water Well Regulations (Title 9, Division 21). The applicant is required to sign the registration form prior to recordation of the CUP.

S-8 Water Well Replacement: In the event the proposed water well under this CUP requires replacement, and the CUP is still active and in compliance, said replacement water well shall be constructed by a California Licensed Driller in accordance with California Department of Water Resources Bulletin 74-81 and 74-90 (including any subsequent revisions), and with the Imperial County Water Well Ordinance, Section 92101.00 et seq

Permittee shall submit copies of the "Report of Completion" (as required by the California Water Code, Section 13751), by the California Licensed Driller on the construction of any water well replaced. Copies shall be submitted to the Environmental Health Services, Planning & Development Services Department, and Public Works within thirty (30) days of the construction or destruction of the well, this report shall include:

1. A description of the exact location of the well'
2. A detailed log of the well
3. A description of the type and depth of casings
4. Details of perforation
5. The methods used for sealing off surface or contaminated waters.
6. Methods for preventing contaminated waters from one aquifer to mix with another aquifer.
7. Name of person who constructed the well.

S-9 PUBLIC SERVICE:

1. If Permittee receives an exclusion of applicable sales and use tax payable to the County of Imperial under Senate Bill 71 under the State Public Resource Code (Section 26003, et al.) and the California Alternative Energy and Advanced Transportation Financing Authority (CAETFA), Permittee shall pay to the County and Local Transportation

Authority an amount equal to the sales tax (currently at 1.5%) which would have been received if Permittee had not obtained such exclusion.

a) Permittee shall require that its general construction contractor exercise its option to obtain a Board of Equalization (BOE) sub-permit for the jobsite and allocate all eligible use tax payments to Imperial County and LTA. Permittee will require that the general contractor provide County of Imperial with either a copy of their BOE account number and sub-permit. To accomplish this, Permittee shall either cause its general construction contractor to treat the project in accordance with California Regulation 1521(b)(2)(B),California Regulation 1521(c)(13)(B), and California Regulation 1826(b) for sales and use tax purposes or form a "Buying Company" as defined in the State of California Board of Equalization Regulation 1699(h). Permittee can adopt an alternate methodology to accomplish this goal if such methodology is approved by the County Executive Officer prior to issuance of building permits. Permittee shall require its general construction contractor to use commercially reasonable best efforts to cause its subcontractors and vendors to obtain similar sub-permits for the jobsite and to allocate all eligible sales and use tax payment to Imperial County and LTA.

b) Permittee shall direct use taxes on out-of-County taxable purchased construction related items to Imperial County, to the extent permitted and consistent with state use tax law.

c) Permittee shall use its best efforts, consistent with state law, to source taxable purchases from price competition construction retail vendors within the County of Imperial in order to further source sales to County.

d) The Permittee shall exclude from assessment and taxation under California Revenue and Taxation Code Section 73 (AB 1451) only that property qualifying as an Active Solar Energy System, pursuant to the applicable guidelines issued by the Board of Equalization.

2. The Permittee shall widely publicize to County residents the availability of job opportunities associated with the project (whether or not those job opportunities are within Imperial County or are regional). Since the majority of the population residents in the incorporated Cities of the County, dissemination of the information should be relatively easy. Postings at City Halls, newspaper and television advertisements, local job centers, and dedicated website shall offer sufficient avenues of communication. The Imperial County Office of Employment and Training in addition to the Imperial Valley College presents viable sources for community awareness. The information shall provide available positions,

details of positions including qualifications, number of openings, indicated the anticipated start date for each, and application process. In order to maintain oversight of the process, the application process can be completed both on a dedicated website and at dedicated computers at the County which would afford those without Internet connection the ability to apply. The Permittee's information shall be forwarded to the Permittee or their contractor and copies of applications files are maintained at the County.

3. During the development phase of the project, the Permittee shall provide a roster of employees to include their position and place of residence. Permittee shall also attempt to coordinate a ride-share program with Caltrans and other regional employers to facilitate the employment of Imperial County residents in jobs related to this project.

4. Unless prohibited by local, state or federal law or regulation, Permittee shall make good faith efforts to hire qualified residents of the Imperial County with the objective that a majority of the total work force is comprised of the Imperial County residents.

5. The Permittee shall install and implement security measures which may include, but not limited to, secured perimeter fencing with barbed wire, sensors, with controlled access points, security alarms, security camera systems, security guard vehicle patrols to deter trespass or unauthorized activities that would interfere with operation of the proposed project.

6. Permittee shall compensate the County pursuant to the Department of Environmental Health Fee Schedule for any costs of calls related to bees and mosquitoes.

7. The Permittee shall reimburse the Sheriff's Department for any investigations regarding theft on the Project site and related law enforcement.

8. Permittee shall enter into a Public Benefit Agreement with the County of Imperial to provide for a monetary benefit payable to the County to maximize the benefits of the Project to the Imperial County prior to the issuance of the first Building/Grading permit.

9. All construction supervisors and foremen shall be provided with communication devices, cell phones or walkie-talkies, in the event of an emergency situation on-site.

10. For operation and maintenance fees associated with Fire Department/OES:

a. Permittee shall pay a fee of $50 per acre per year prior to commencement of the construction period to address the Imperial County Fire/OES expenses for service calls within the Project's Utility/Transmission area. Said amount shall be prorated on a monthly basis for periods of time less than a full year. Permittee shall provide advance, written notice to County Executive Office of the construction schedule and all revisions thereto.

b. Permittee shall pay an annual fee of $20 per acre per year during the post-construction, operational phase of the Project to address the Imperial County Fire/OES expenses for service calls within the Project's Utility/Transmission area. Said fee will be paid to the Fire Department to cover on-going maintenance and operations costs created by the project.

c. Costs associated with items two above items shall be annually adjusted on January 1st to add a CPI (Los Angeles) increase. Such costs associated with these items can be readjusted in the County's sole discretion if a new service analysis is prepared and that service analysis is approved by both the County and the Permittee.

TOTAL "S" CONDITIONS are 9

NOW THEREFORE, County hereby issues Conditional Use Permit #20-0006 and Permittee hereby accepts such permit upon the terms and conditions set forth herein.

IN WITNESS THEREOF, the parties hereto have executed this Agreement the day and year first written.

PERMITTEE

By: _____ Dated: _____
ORNI 21, LLC (Permittee)

_____
(Print name and title)

COUNTY OF IMPERIAL, a political Subdivision of the STATE OF CALIFORNIA

By: _____ Dated: _____

James A. Minnick, Director
Planning & Development Services

FOR PERMITTEES NOTARIZATION

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF IMPERIAL} S.S.

On _____ before me, _____, a Notary Public in and for said County and State, personally appeared _____ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature_____
ORNI 21, LLC
By:_____
(Print name and Title)

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document

_____

Number of Pages_____ Date of Doucument: _____
Signer(s) Other Than Named above _____

FOR COUNTY'S NOTARIZATION

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF IMPERIAL} S.S.

On _____ before me, _____, a Notary Public in and for said County and State, personally appeared _____ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature_____

_____

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to unauthorized document.

Title or Type of Document

_____

Number of Pages_____ Date of Document_____
Signer(s) Other Than Named above_____

ATTACHMENT "J"

RESOLUTION NO.

A RESOLUTION OF THE PLANNING COMMISSION OF THE COUNTY OF IMPERIAL, CALIFORNIA, FOR THE CONSIDERATION FOR RECOMMENDATION TO THE BOARD OF SUPERVISORS OF THE VARIANCE 19-0003 FOR THE WISTER SOLAR ENERGY FACILITY

WHEREAS, a Variance 19-0003 has been prepared in accordance with the requirements of the State Planning and Zoning Law, California Environmental Quality Act, the State CEQA Guideline, the County's "Rules and Regulations to Implement CEQA, and the County's Land Use Ordinance, Title 9 as amended; and

WHEREAS, the Planning Commission of the County of Imperial has been delegated with the responsibility for recommendation to the Board of Supervisors for consideration of approval for the Variance 19-0003 for the Wister Solar Energy Facility; and,

WHEREAS, public notice of the public hearing for said application has been given, and the Planning Commission has considered evidence presented by the Imperial County Planning & Development Services Department, the Planning Commission determination at a public hearing on November 19, 2020 other interested parties at a public hearing held with respect to this item on November 19, 2020.

NOW THEREFORE, the Planning Commission of the County of Imperial **DOES HEREBY RESOLVE** as follows:

SECTION 1. The Planning Commission has considered the proposed Variance 19-0003 prior to making a recommendation to the Board of Supervisors approve the proposed Variance. The Planning Commission finds and determines that the Variance is adequate and prepared in accordance with the requirements of the State Planning and Zoning Law, the County's Land Use Ordinance, Title 9 as amended, and the California Environmental Quality Act (CEQA) which analyzes environmental effects, based upon the following findings and determinations.

SECTION 2. That in accordance with State Planning and Zoning law; the County's Land Use Ordinance, Title 9 as amended; and the County of Imperial regulations, the following findings for the approval and certification of the Variance 19-0003 and Findings has been made as follows:

1. That there are special circumstances applicable to the property described in the application filed for such variance, or to its intended use, that do not apply generally to the property or class of use in the same zone or vicinity. (Imperial County Code§ 90202.08 A. (1)

The 70 foot height of the gen-tie structures and or transmission lines is a small, but necessary increase for several reasons considering the uniqueness and special circumstances of the site, thus, the Project site is subject to special circumstances that do not apply generally to the agricultural property in the same vicinity because the Wister Solar Energy Facility project, unlike most industrial operations, requires the construction of tall gen-tie structures to facilitate the transmission of this generated electricity to the Niland Substation transmission structures A proposed gen-tie with a height limit not to exceed 70 feet will be needed to carry this generated electricity from the project area to the Niland Substation.

The applicant ORNI 21, LLC submitted a Variance application to address the gen-tie structures that may exceed the S-2 Open Space/Preservationof 40 feet. This Variance 19-0003 would permit a maximum height of 70 feet for the required gen-tie transmission lines.

2. **That the granting of such variance will not be materially detrimental to the public welfare or injurious to the property or improvements in such zone or vicinity in which the property is located. County Code§ 90202.08 A (2)**

The proposed project was presented and discussed at the County's Airport Land Use Commission (ALUC) Meeting held June 17, 2020 The ALUC reviewed the proposed application, including the variance for transmission tower height described in subsection 2.1, of the Draft Environmental Impact Report (DEIR). The Commission found the proposed project consistent with the 1996 Airport Land Use Compatibility Plan (ALUCP) with no conditions. An Environmental Impact Report SCH 2019110140 was completed with mitigation measures that reduced all significant impacts in the project area to a less than significant level of impact.

The Project's CUP imposes a condition to follow all applicable local, state and federal laws many of which are designed to protect public welfare, safety or impacts to other lands, including but not limited to the County's Right to Farm Ordinance and nuisance laws assuring the continued operation of any neighboring agricultural uses.

Moreover, the 70-foot gen-tie/transmission towers are not materially detrimental to the public welfare or injurious to the property or improvements in the vicinity because the Project would share use of (by linking into) existing gen-tie structures that would allow the Project to otherwise avoid constructing a parallel set of transmission towers were necessary.

Finally, the height variance is necessary in order to construct 70-foot gen-tie/transmission structures that can safely span the transmission lines over long distances and comply with minimum construction and safety requirements for building gen-tie lines per state and Imperial Irrigation Districts regulations. Specifically, by increasing the height of the gen-tie structures, the safety of the Project is enhanced because the additional height creates more clearance between the shorter existing utility lines as well as water facilities maintained by the Imperial Irrigation District.

3. **That because of special circumstances applicable to subject property, including size, shape, topography, location or surroundings, the strict application of the zoning laws is found to deprive subject property of privileges enjoyed by other properties in the vicinity and under identical zone classifications. County Code§ 90202.08 A (3)**

The construction and operation of the Wister Solar Energy Facility project requires the transmission of the electricity to the ISEC Substation located south southwest of project area. A gen-tie with a height limit not to exceed 70 feet will be needed to carry this electricity across the project area to the Substation. This photovoltaic solar energy facility is located on flat ground with elevation levels consistently below sea level. Due to the scope of the project size and the generation up to 20MW of electricity, the gen-tie transmission line will need to be constructed up to 70 feet above the ground level.

The Project site is subject to special circumstances including size, shape, topography or surroundings, such that the strict application of the height restriction in the County's applicable agricultural zones would deprive he property of privileges enjoyed by other solar generation properties in the vicinity and in the same agricultural zoning classifications. There are several special circumstances that require tall gen-tie structures to accommodate the long-range energy transmission lines that would extend from the Project's solar fields in the south to the existing 92-kV line structures to the south.

4. **That the granting of such variance will not adversely affect the comprehensive General Plan.**

The Imperial County General Plan and Land Use Ordinance Division 2: Land Use Permits (Variance) is defined in § 90202.01 as an approval granted upon a legal parcel of land to construct a structure not otherwise directly allowed by the exact interpretation of Title 9, Division 1 through 8. A variance runs with the land and allows for minimal deviation from the standards. The project zoning of S-2 allows for maximum height of 40 feet above ground. The Variance 19-0003 will allow for a minimal deviation of height of 70- feet above ground level. This extension above current S-2 height limits is a minimal and necessary deviation.

Additionally, the variance will not adversely affect the comprehensive General Plan because it facilitates the development of a project that is consistent with the General Plan for the reasons identified in the Laurel Cluster Solar Farm EIR and the General Plan Consistency finding of the CUP approval resolution, which are incorporated herein by reference

NOW, THEREFORE, based on the above findings, the Planning Commission of the County of Imperial **DOES HEREBY Recommend for Approval to the Board of Supervisors** the proposed Variance 19-0003 for the Wister Solar Energy Facility Project.

_____

Rudy Schaffner, Chairperson
Imperial County Planning Commission

I hereby certify that the preceding resolution was taken by the Planning Commission at a meeting conducted on November 19, 2020 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

ATTEST:

_____

Jim Minnick, Director of Planning & Development Services
Secretary to the Planning Commission

S:\AllUsers\APN\003\240\001\GPA19-0001,ZC19-0001,CUP18-0040\PC Pkg\VAR resolution.docx

ATTACHMENT "K"

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue, Thousand Oaks, CA 91361-4972

July 22, 2019

Attention: Patricia Valenzuela
Imperial County Planning and Development Services
801 Main Street
El Centro, CA 92243

Reference: Orni 21, LLC Request for General Plan Amendment

Orni 21, LLC hereby requests from the County of Imperial a General Plan Amendment for the construction and operation of a solar facility, pursuant to a Conditional Use Permit (CUP). The Wister Solar Energy Facility (the Project) will use photovoltaic (PV) technology in the construction and operation of a 20 Megawatt (MW) solar farm on approximately 100-acres within the 640-acre Section (T10S, R14E, Section 27) owned by ORNI 21, LLC. The Project is located within Assessor's Parcel No. 003-240-001 and is currently zoned Open Space/Preservation (S-2). The proposed site is located east of the intersection of Wilkins and an unnamed private road, about 3 miles north of the unincorporated town of Niland.

Regards,

Kevin Kohan
Senior Environmental Planner
Phone: 805-719-9391
Kevin.Kohan@stantec.com

CHANGE OF ZONE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black & blue) SPACES – Please type or print -

1. PROPERTY OWNER'S NAME ORNI 21, LLC		EMAIL ADDRESS borcutt@ormat.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV		ZIP CODE 89519	PHONE NUMBER (775) 356-9029 x 32258
3. ENGINEER'S NAME TBD	CA. LICENSE NO.	EMAIL ADDRESS TBD	
4. MAILING ADDRESS (Street / P O Box, City, State) TBD		ZIP CODE TBD	PHONE NUMBER TBD

5. ASSESSOR'S PARCEL NO. 003-240-001	ZONING (existing) S-2-G	ZONING (proposed) S-2-REG
6. PROPERTY (site) ADDRESS 8601 Wilkins Road, Niland, CA 92257		SIZE OF PROPERTY (in acres or square foot) 640
7. GENERAL LOCATION (i.e. city, town, cross street) North of Niland, at the corner of Wilkins and Weist Roads.		
8. LEGAL DESCRIPTION Section 27, Township 10 South, Range 14 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat therof.		

8. DESCRIBE CURRENT USE ON / OF PROPERTY (list and describe in detail)

The property is currently vacant land and is located adjacent to agricultural lands. The property is intersected by transmission lines.

9. PLEASE STATE REASON FOR PROPOSED USE (be specific)

ORNI 33, LLC proposes to construct and operate a 20 MW photo voltaic solar farm on approximately 100 acres of the 640 acre property, which is located just outside of Imperial County's current Renewable Energy Overlay.

10. DESCRIBE SURROUNDING PROPERTY USES

The adjacent land uses are a combination of agriculture (to the west and south) and open space (to the north and east). The East Highland Canal touches the property's southwest corner.

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Connie Stechman — Print Name

7/22/19 — Date

Connie Stechman — Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. PRELIMINARY TITLE REPORT (6 months or newer)
C. FEE _____
D. OTHER _____

APPLICATION RECEIVED BY: _____ DATE _____
APPLICATION DEEMED COMPLETE BY: _____ DATE _____
APPLICATION REJECTED BY: _____ DATE _____
TENTATIVE HEARING BY: _____ DATE _____
FINAL ACTION: ☐ APPROVED ☐ DENIED DATE _____

REVIEW / APPROVAL BY OTHER DEPT'S required.
☐ P. W.
☐ E. H. S.
☐ A. P. C. D.
☐ O. E. S.
☐ _____
☐ _____

ZC # _____

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES – Please type or print -

1. PROPERTY OWNER'S NAME ORNI 21, LLC	EMAIL ADDRESS borcutt@ormat.com	
2. MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV	ZIP CODE 89519-6075	PHONE NUMBER (775) 356-9029 Ext. 32258
3. APPLICANT'S NAME ORNI 33, LLC	EMAIL ADDRESS borcutt@ormat.com	
4. MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV	ZIP CODE 89519-6075	PHONE NUMBER (775) 356-9029 Ext. 32258
4. ENGINEER'S NAME CA. LICENSE NO. Eric Hafner (FastGrid Energy)	EMAIL ADDRESS eric.hafner@fastgridenergy.com	
5. MAILING ADDRESS (Street / P O Box, City, State) 225 E. Germann Road, Suite 140, Gilbert, AZ	ZIP CODE 85297	PHONE NUMBER (602) 290-2149

6. ASSESSOR'S PARCEL NO. 003-240-001	SIZE OF PROPERTY (in acres or square foot) 640 Acres	ZONING (existing) S-2-G
7. PROPERTY (site) ADDRESS 8601 Wilkins Road, Niland, CA 92257 (T10S, R14E, Section 27)		
8. GENERAL LOCATION (i.e. city, town, cross street) North of Niland		
9. LEGAL DESCRIPTION Section 27, Township 10 South, Range 14 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat therof.		

PLEASE PROVIDE CLEAR & CONCISE INFORMATION (ATTACH SEPARATE SHEET IF NEEDED)

10. DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail) 20 MW solar farm on approximately 100 acres of a 640 acre parcel north of Niland, California, sited in a manner to avoid potentially significant environmental impacts, especially those related to the local hydrology.	
11. DESCRIBE CURRENT USE OF PROPERTY	vacant
12. DESCRIBE PROPOSED SEWER SYSTEM	TBD
13. DESCRIBE PROPOSED WATER SYSTEM	TBD
14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	TBD
15. IS PROPOSED USE A BUSINESS? ☐ Yes ☒ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE?

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Connie Stechman — Print Name
7-22-19 — Date
Connie Stechman — Signature

Print Name — Date
Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. FEE
C. OTHER
D. OTHER

APPLICATION RECEIVED BY:		DATE	REVIEW / APPROVAL BY OTHER DEPT'S required.
APPLICATION DEEMED COMPLETE BY:		DATE	☐ P. W.
APPLICATION REJECTED BY:		DATE	☐ E. H. S.
TENTATIVE HEARING BY:		DATE	☐ A. P. C. D.
FINAL ACTION: ☐ APPROVED ☐ DENIED		DATE	☐ O. E. S.

CUP #

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES – Please type or print -

1.	PROPERTY OWNER'S NAME ORNI 21, LLC	EMAIL ADDRESS borcutt@ormat.com	
2.	MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV	ZIP CODE 89519-6075	PHONE NUMBER (775) 356-9029 Ext. 32258
3.	APPLICANT'S NAME ORNI 33, LLC	EMAIL ADDRESS borcutt@ormat.com	
4.	MAILING ADDRESS (Street / P O Box, City, State) 6140 Plumas Street, Reno, NV	ZIP CODE 89519-6075	PHONE NUMBER (775) 356-9029 Ext. 32258
4.	ENGINEER'S NAME Eric Hafner (FastGrid Energy)	CA. LICENSE NO.	EMAIL ADDRESS eric.hafner@fastgridenergy.com
5.	MAILING ADDRESS (Street / P O Box, City, State) 225 E. Germann Road, Suite 140, Gilbert, AZ	ZIP CODE 85297	PHONE NUMBER (602) 290-2149

6.	ASSESSOR'S PARCEL NO. 003-240-001	SIZE OF PROPERTY (in acres or square foot) 640 Acres	ZONING (existing) S-2-G
7.	PROPERTY (site) ADDRESS 8601 Wilkins Road, Niland, CA 92257 (T10S, R14E, Section 27)		
8.	GENERAL LOCATION (i.e. city, town, cross street) North of Niland		
9.	LEGAL DESCRIPTION Section 27, Township 10 South, Range 14 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat therof.		

PLEASE PROVIDE CLEAR & CONCISE INFORMATION (ATTACH SEPARATE SHEET IF NEEDED)

10.	DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail) In addition to a 20 MW solar farm on approximately 100 acres of a 640 acre parcel north of Niland, California, a 400-ft deep groundwater well is proposed to provide water for construction (~10.2 acre-feet total) and solar panel washing (0.8 afa).	
11.	DESCRIBE CURRENT USE OF PROPERTY vacant	
12.	DESCRIBE PROPOSED SEWER SYSTEM TBD	
13.	DESCRIBE PROPOSED WATER SYSTEM Proposed groundwater well (8-in diameter) drilled to approximately 400 ft below surface	
14.	DESCRIBE PROPOSED FIRE PROTECTION SYSTEM TBD	
15.	IS PROPOSED USE A BUSINESS? ☐ Yes ☒ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE?

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Connie Stechman — May 11, 2020
Print Name — Date
Signature

Print Name — Date
Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. FEE
C. OTHER
D. OTHER

APPLICATION RECEIVED BY: _____ DATE _____
APPLICATION DEEMED COMPLETE BY: _____ DATE _____
APPLICATION REJECTED BY: _____ DATE _____
TENTATIVE HEARING BY: _____ DATE _____
FINAL ACTION: ☐ APPROVED ☐ DENIED DATE _____

REVIEW / APPROVAL BY OTHER DEPT'S required.
☐ P. W.
☐ E. H. S.
☐ A. P. C. D.
☐ O. E. S.
☐ _____
☐ _____

CUP # _____

VARIANCE

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES – Please type or print -

1. PROPERTY OWNER'S NAME	ORNI 21, LLC	EMAIL ADDRESS	borcutt@ormat.com
2. MAILING ADDRESS (Street / P O Box, City, State)	6140 Plumas Street, Reno, NV	ZIP CODE 89519-6075	PHONE NUMBER (775) 356-9029 Ext. 32258
3. ENGINEERS NAME / CA. LICENSE NO.		EMAIL ADDRESS	
4. MAILING ADDRESS (Street / P O Box, City, State)		ZIP CODE	PHONE NUMBER

5. ASSESSOR'S PARCEL NO.	003-240-001	ZONING (existing)	S-2-G
6. PROPERTY (site) ADDRESS	T10S, R14E, Section 27	SIZE OF PROPERTY (in acres or square foot)	640 acres

7. GENERAL LOCATION (i.e. city, town, cross street) WILKINS RD, NORTH OF NILAND, CALIFORNIA

8. LEGAL DESCRIPTION Section 27, Township 10 South, Range 14 East, San Bernardino Base and Meridian, in an unincorporated area of the County of Imperial, State of California, according to the Official Plat thereof.

8. DESCRIBE VARIANCE REQUESTED (i.e. side yard set-back reduction, etc.)

Height variance requested for the installation of gen-tie poles that will connect the proposed Wister Solar Substation to the existing IID electrical grid. The steel poles will be no higher than 70 feet above ground surface and would be spaced approximately 300 feet apart.

9. DESCRIBE REASON FOR, OR WHY VARIANCE IS NECESSARY :

Electrical engineering on the proposed gen-tie line indicate the current requirement on height restrictions cannot be met in this zoning (Open Space/Preservation) per County requirements. Based on the 92 kV voltage of the proposed line from the new substation to the point of interconnection, new poles would be taller that County requirements.

10. DESCRIBE THE ADJACENT PROPERTY

East	vacant
West	orchard
North	vacant
South	East-Highline Canal

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Connie Stechman — Print Name — 10-10-19 — Date

Connie Stechman — Signature

Print Name — Date

Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. FEE
C. OTHER
D. OTHER

APPLICATION RECEIVED BY:	DATE	REVIEW / APPROVAL BY OTHER DEPT'S required.	
APPLICATION DEEMED COMPLETE BY:	DATE	☐ P. W.	
APPLICATION REJECTED BY:	DATE	☐ E. H. S.	
TENTATIVE HEARING BY:	DATE	☐ A. P. C. D	
FINAL ACTION: ☐ APPROVED ☐ DENIED	DATE	☐ O. E. S.	
		☐	
		☐	

V #

Stantec

Orni 21, LLC

Wister Solar Energy Facility

Project Description

June 6, 2020

Prepared for:

ORNI 21, LLC
6140 Plumas Street
Reno, NV 89519

Prepared by:

Stantec Consulting Services
290 Conejo Ridge Ave.
Thousand Oaks, CA 91361

ORNI 21, LLC WISTER SOLAR ENERGY FACILITY

This document entitled ORNI 21, LLC Wister Solar Energy Facility was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of ORNI 21, LLC (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Reviewed by _____
(signature)

Kevin Kohan, Senior Environmental Planner

Table of Contents

1.0 INTRODUCTION 4

2.0 BACKGROUND 2
2.1 OBJECTIVES 2
2.2 SOLAR PHOTOVOLTAIC TECHNOLOGY 3
2.3 LOCATION 3
2.4 REGIONAL SETTING 4
2.4.1 Agriculture 4
2.4.2 Air Quality 5
2.4.3 Biological Resources 5
2.4.4 Cultural Resources 5
2.4.5 Geologic Resources 6
2.4.6 Hydrologic Resources 6
2.4.7 Noise 6
2.5 PROJECT SITE GENERAL PLAN DESIGNATION AND ZONING 6

3.0 PROJECT DESCRIPTION 8
3.1 PROJECT CHARACTERISTICS 8
3.2 PROJECT FACILITIES 9
3.2.1 Fiberoptic Cable 10
3.2.2 Substation 10
3.3 CONSTRUCTION SEQUENCE AND EQUIPMENT 10
3.4 WORKFORCE 11
3.5 MATERIALS AND PREPARATION 11
3.5.1 Site Preparation 16
3.5.2 Start-up 17
3.5.3 Clean-up and Demobilization 18
3.0 SCHEDULING 18

4.0 OPERATION AND MAINTENANCE ACTIVITIES 18

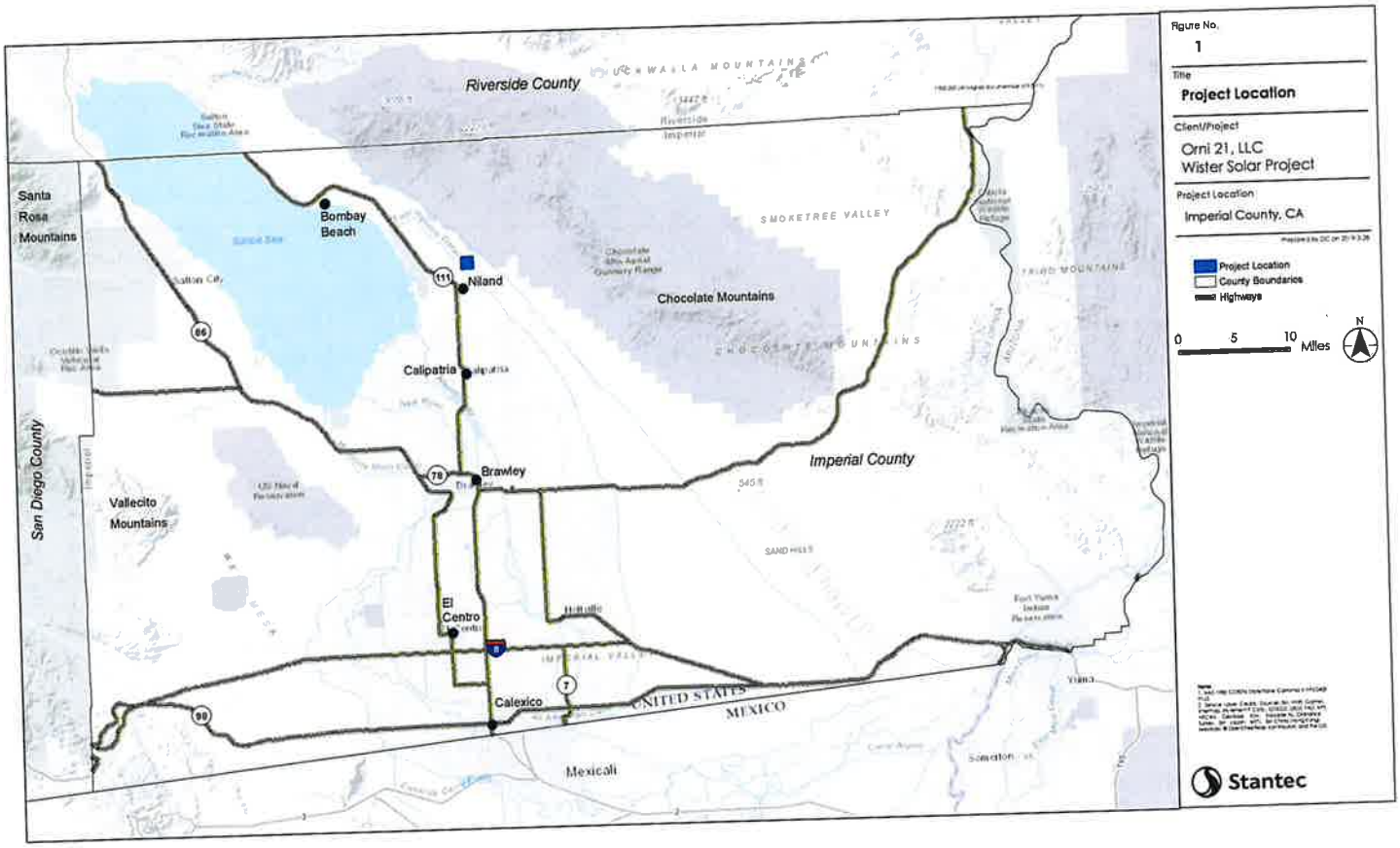
5.0 DECOMMISSIONING 19

1.0 INTRODUCTION

ORNI 21, LLC (Orni) is proposing to build, operate and maintain a solar power plant on private lands owned by Orni in unincorporated Imperial County (refer to Figure 1). The Wister Solar Energy Facility (the Project) will use photovoltaic (PV) technology and would include the construction and operation of a 20 Megawatt (MW) solar farm on approximately 100-acres within the 640-acre Section (T10S, R14E, Section 27) owned by ORNI 21, LLC. The Project is located within Assessor's Parcel No. 003-240-001 and is currently zoned Open Space/Preservation with Geothermal Overlay (S-2-G). The proposed site is located east of the intersection of Wilkins and Wiest Roads, about 3-miles north of the unincorporated town of Niland.

Orni is developing the Wister Solar Energy Facility in order to reasonably maximize the Project's generating capacity, taking into account land and environmental constraints. Orni intends to begin construction on the Project upon acquisition of all County entitlements and environmental clearance. Assuming one year to complete all permits, construction would begin the first quarter of 2020.

A Power Purchase Agreement (PPA) for 20 MW to San Diego Gas & Electric (SDG&E) has been secured by Orni. The remaining portion of the property will remain undeveloped in order to protect sensitive environmental resources.


Riverside County
Santa Rosa Mountains
Bombay Beach
Niland
Chocolate Mountains
SMOKETREE VALLEY
Calipatria
Brawley
Imperial County
San Diego County
Vallecito Mountains
El Centro
Calexico
UNITED STATES
MEXICO
Mexicali
Figure No.
1
Title
Project Location
Client/Project
Orni 21, LLC
Wister Solar Project
Project Location
Imperial County, CA
Project Location
County Boundaries
Highways
0 5 10 Miles
N
Stantec

2.0 BACKGROUND

According to the County of Imperial Municipal Code, a solar development is permitted within an Open Space, Preservation Zone with Geothermal Overlay pursuant to a Conditional Use Permit (CUP). As shown in **Figure 1**, the Project consists of one parcel located within unincorporated Imperial County. The proposed Project site is currently vacant. No Williamson Act contract encumbers the Project site. Power generated at the Project would be low voltage direct current (DC) power that would be collected and routed to a series of inverters and their associated pad-mounted transformers. Each 2.5 MW array would have (1) one 2.5 MW inverter and (1) one 2.5 MW transformer, which are collectively known as a Power Conversion Station (PCS). The inverters would convert the DC power generated by the panels to alternating current (AC) power and the pad mounted transformers would step up the voltage to a nominal 12.47 kV voltage level. The proposed substation would connect to an existing Imperial Irrigation District 92 kV "K" Line. The power would then be sold to the wholesale market or retail electric providers in furtherance of the goals of the California Renewable Energy Portfolio Standards and other similar renewable programs in the Pacific Southwest power market.

2.1 OBJECTIVES

Orni's objectives for the proposed Project are to:

- Construct, operate and maintain an efficient economic, reliable, safe and environmentally sound solar-powered electricity generating facility.
- Help meet California's Renewable Portfolio Standard (RPS) requirements, which require that by 2030, California's electric utilities are to obtain 50 percent of the electricity they supply from renewable sources.
- Generate renewable solar-generated electricityfrom proven technology, at a competitive cost, with low environmental impact, and deliver it to markets as soon as possible.
- Develop, construct, own and operate the Wister Solar Energy Facility, and ultimately sell its electricity and all renewable and environmental attributes to an electric utility purchaser under a long-term contract to meet California's RPS goals.
- Utilize a location that is in close proximity to an existing switching station and power lines.
- Minimize and mitigate any potential impact to sensitive environmental resources within the project area.

2.2 SOLAR PHOTOVOLTAIC TECHNOLOGY

Solar cells, also called photovoltaic (PV) cells, convert sunlight directly into electricity. PV gets its name from the process of converting light (photons) to electricity (voltage), which is called the *PV effect*. The panels are mounted at a fixed angle facing south, or they can be mounted on a tracking device that follows the sun, allowing them to capture the most sunlight. Many solar panels combined together to create one system is called a solar array. For large electric utility or industrial applications, hundreds of solar arrays are interconnected to form a large utility-scale PV system.

Traditional solar cells are made from silicon, are usually flat-plated, and generally are the most efficient. Second-generation solar cells are called thin-film solar cells because they are made from amorphous silicon or non-silicon materials such as cadmium telluride (CdTe). Thin film solar cells use layers of semiconductor materials only a few micrometers thick. Because of their flexibility, thin film solar cells can double as rooftop shingles and tiles, building facades, or the glazing for skylights.

Third-generation solar cells are being made from variety of new materials besides silicon, including solar inks using conventional printing press technologies, solar dyes, and conductive plastics. Some new solar cells use plastic lenses or mirrors to concentrate sunlight onto a very small piece of high efficiency PV material. The PV material is more expensive, but because so little is needed, these systems are becoming cost effective for use by utilities and industries. However, because the lenses must be pointed at the sun, the use of concentrating collectors is limited to the sunniest parts of the country. Insolation is a measure of solar radiation energy received on a given surface area in a given time. The name comes from a portmanteau of the word's *in*cident *sol*ar radi*ation*. It is commonly expressed as average irradiance in watts per square meter (W/m_2) or kilowatt-hours per square meter per day ($kW \cdot h/(m_2 \cdot day)$ (or hours/day). In the case of PV's, it is commonly measured as $kWh/(kW_p \cdot y)$ (kilowatt hours per year per kilowatt peak rating).

2.3 LOCATION

The undeveloped Project site is located in Imperial Valley and is regionally bounded by Mexico on the south, the Algodones Sand Hills on the east, the Salton Sea on the north, San Diego County on the northwest, and the alluvial fans bordering the Coyote Mountains and the Yuha Desert to the southwest. The Project site is under the jurisdiction of the Imperial County General Plan, located within a portion of Meridian San Bernardino, Section 27, Township 10S, Range 14E. The Project site is located within Assessor's Parcel No. 003-240-001 and is currently zoned Open Space, Preservation Zone with Geothermal Overlay (S-2-G). The entire Project site is contained within a 640-acre lot. The proposed Project site is located east of the intersection of Wilkins and Wiest Roads, about 3 miles north of the unincorporated town of Niland. The Project site (development footprint where proposed Project components are to be located) is generally located east of Wilkins Road, north of the East Highline Canal, and west of Gas Line Road in Section 27 of Township 10 South, Range 14 East (San Bernardino Baseline and Meridian). The Project site's proposed entrance would be located near the intersection of Wilkins Road and a private road abutting the property. A substation located on the Project site would connect to an existing 92KV transmission lines along Wilkins Road.

2.4 REGIONAL SETTING

The surrounding area is predominantly located on a plain that slopes gently downward from the northeast to the southwest. Small rivulets run across the proposed Project site. The site is vacant with minimal vegetation. The site is mostly surrounded by vacant land. An agricultural field lies to the northwest and shares a corner with the Project site, and an irrigation canal intersects with the southwest corner of the Project Site. The most visible structures in the area are the numerous transmission lines that are readily visible throughout the area.

2.4.1 Agriculture

The proposed Project would be developed close to productive agricultural and developed lands. Much of the land base in the vicinity is considered productive farmland where irrigation water is available. Farming operations in this area generally consist of medium to large-scale crop production with related operational facilities. Crops generally cultivated in the area may include alfalfa, barley, and/or Bermuda grass in any given year.

2.4.2 Air Quality

The Project site is located in the Salton Sea Air Basin (SSAB) under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). The SSAB, which contains part of Riverside County and all of Imperial County, is governed largely by the large-scale sinking and warming of air within the semi-permanent subtropical high-pressure center over the Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in winter when the high is weakest and farthest south. When the fringes of mid-latitude storms pass through the Imperial Valley in winter, the coastal mountains create a strong "rain shadow" effect that makes Imperial Valley the second driest location in the U.S. The flat terrain near the Salton Sea, intense heat from the sun during the day, and strong radiational cooling at night create deep convective thermals during the daytime and equally strong surface-based temperature inversions at night. The temperature inversions and light nighttime winds trap any local air pollution emissions near the ground. The area is subject to frequent hazy conditions at sunrise, followed by rapid daytime dissipation as winds pick up and the temperature warms.

Currently, the SSAB is either in attainment or unclassified for all federal and state air pollutant standards with the exception of 8-hour ozone, Particulate Matter (PM10), and PM2.5. Imperial County is classified as a "serious" nonattainment area for PM10 for the National Ambient Air Quality Standards (NAAQS). On November 13, 2009, EPA published Air Quality Designations for the 2006 24-Hour Fine Particle (PM2.5) NAAQS wherein Imperial County was listed as designated nonattainment for the 2006 24-hour PM2.5 NAAQS. However, the nonattainment designation for Imperial County is only for the urban area within the County and it has been determined that the proposed Project is located within the nonattainment boundaries for PM2.5. On April 10, 2014, the CARB gave final approval to the 2013 Amendments to Area Designations for California

Ambient Air Quality Standards (CAAQS). For the state PM2.5 standard, effective July 1, 2014, the City of Calexico will be designated nonattainment, while the rest of the SSAB will be designated attainment.

Greenhouse Gas (GHG) are gases that trap heat in the atmosphere. These emissions occur from natural processes as well as human activities. GHGs present in the Project site primarily include Carbon Dioxide (CO2) and Nitrous Oxide (N2O) from farm equipment and local traffic. Please see supplemental Air Quality Study prepared by Stantec for more information.

2.4.3 Biological Resources

Approximately 500,000 acres of the Colorado Desert in Imperial County has been converted to agricultural use and this 640-acre parcel is immediately adjacent to that conversion area. The plant community would largely be considered Larrea tridentata Shrubland Alliance (creosote bush scrub) within the Project Area. The Project site is not active used as agricultural lands but is located immediately adjacent to agricultural crops. Ruderal vegetation is found within the Imperial Irrigation District (IID) canal and drains located immediately adjacent to the Project site. Non-native plants such as salt cedar and Russian thistle were found on site. Presence of these weedy plants on the Project site could be attributed to the site's proximity to agricultural activities. Sensitive habitats are those that are designated either rare within the region by governmental agencies or known to support sensitive animal or plant species and/or they serve as "corridors" for wildlife within the region. Although the burrowing owl (species of special concern) is abundant in the area, its presence is due to manmade features such as the irrigation canals, ditches and drains and the cultivation of agricultural crops within the region and none "native" factors. This would also apply to the mountain plover and several species of raptors. As this Project site is located immediately adjacent to agricultural activities, sensitive species found within the agricultural areas could be incidentally attracted to this site. Please see attached Biological Study prepared by Stantec for more information.

2.4.4 Cultural Resources

A sensitivity map for cultural resources, prepared by Mr. Jay Von Werlhof in 1990, and presented in the County of Imperial General Plan, indicated that areas along the base of East Mesa to the East Highline Canal are very sensitive for cultural resources. However, the current Project site includes areas that have all been previously developed and are now considered to have little likelihood of significant cultural resources. The proposed Project would not require large grading activities that would alter significant amount of soil nor affect any sensitive cultural resources during construction.

2.4.5 Geologic Resources

The proposed Project area is located on what was once the bottom of Lake Cahuilla and near the margins of an ancient shoreline. Within the Project area, the terrain gently slopes down to the southwest, with an elevation of between 20 feet above and 40 feet below mean sea level. The Project consists of Holocene age alluvium. Soils are made up of fine-grained silts and sand. The soils within the Project area belong to the Niland soil series and include Niland gravelly sand, Niland gravelly sand wet, and Niland Imperial complex wet. Niland series soils are moderately well drained, non-saline to moderately saline, and are located primarily in basins. Niland soils are found in alluvium derived from mixed sources.

2.4.6 Hydrologic Resources

The Project site is located within the Colorado River Basin Region. The Colorado River Basin Region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California. It includes all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. The Colorado River Basin Region is divided into seven major planning areas on the basis of different economic and hydrologic characteristics.

The Project site is located within the Imperial Valley Planning Area of the Colorado River Basin. The Imperial Valley Planning Area consists of the following hydrological units (HU): Imperial (723.00) comprised of 2,500 square miles in the southern portion of the Colorado River Basin Region, with the majority located in Imperial County; Davies (724.00) and Amos-Ogilby (726.00). The Project site is located within the East Salton Sea Hydrological Area (California RWQCB 2017).

The source of nearly all surface waters in Imperial County is the Colorado River. The water is diverted from the Colorado River at the Palo Verde Weir north of Blythe by the Palo Verde Irrigation District for use in the Palo Verde Valley of northeast Imperial County and southeast Riverside County; and at the Imperial Dam into the All-American Canal by the IID and the Bard Irrigation District for use in the Imperial, Yuma, Bard, and Coachella Valleys. The 82-mile All-American Canal has several main canals that branch off: the East Highline, Central Main, and Westside Main canals (IID n.d. (a)). These three canals supply water service to Imperial Valley and are operated and maintained by IID (IID n.d. (a)). The IID serves irrigation water and electric power to farmers and residents in the lower southeastern portion of California's desert.

2.4.7 Noise

The predominant source of noise in the Project area includes vehicular traffic on local roads and highways, and off-site agricultural operations. The use of heavy-duty equipment such as front-end loaders, tractors, forklifts, and diesel-powered trucks are common noise sources typically associated with agricultural uses. Agricultural operational equipment can reach maximum levels of approximately 84 dBA at 50 feet (Caltrans 2013). With the soft surfaces characterizing the agricultural landscape, these noise levels attenuate to approximately 60 dBA at distances over 800 feet. However, operation of the proposed Project would not exceed noise levels within the area and potential impacts would be less than significant. Overall, there are no sensitive resources near the Project area that would be affected by the proposed Project.

2.5 PROJECT SITE GENERAL PLAN DESIGNATION AND ZONING

The Project site is under the jurisdiction of the Imperial County General Plan, located within a portion of Meridian San Bernardino, Section 27, Township 10S, Range 14E. The Project site is located within Assessor's Parcel No. 003-240-001 and is currently zoned Open Space/Preservation with Geothermal Overlay (S-2-G) and contained within a 640-acre lot.

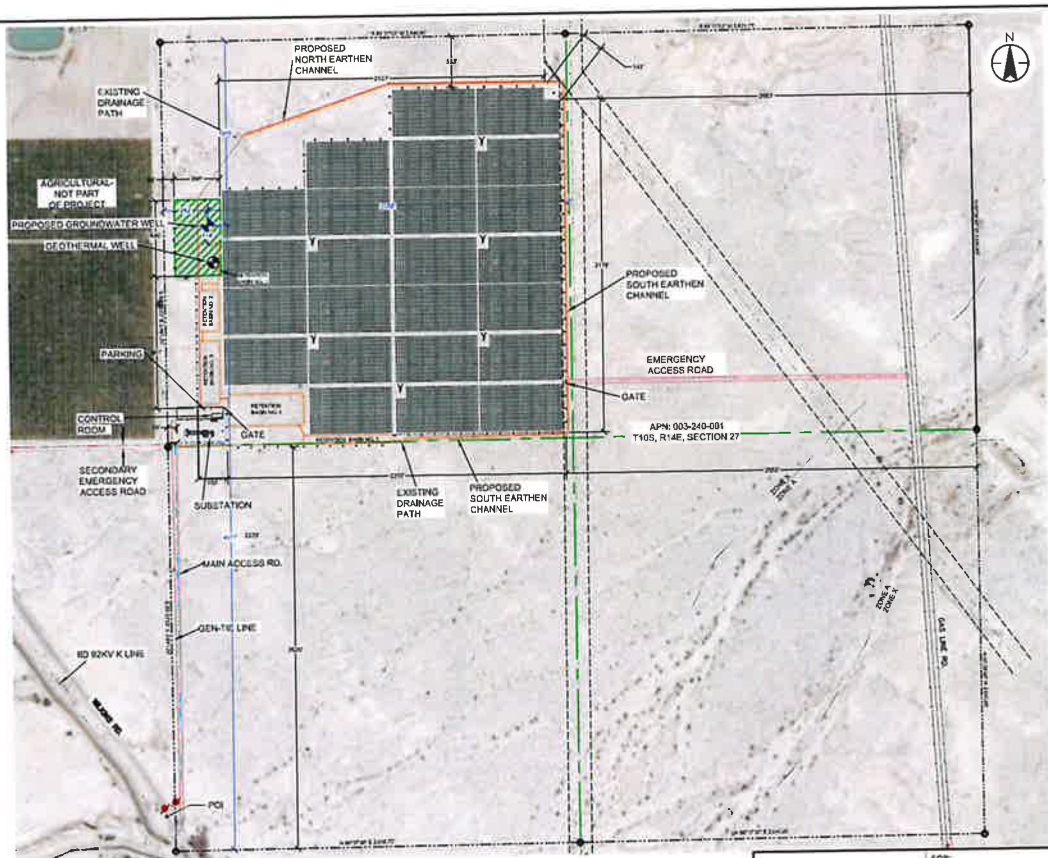
ORNI 21, LLC WISTER SOLAR ENERGY FACILITY

June 3, 2020

Project Vicinity

- **North**
  - Vacant land borders the northern boundary of the Project site.
- **South**
  - A private road and the East Highline Canal border the Project site to the south.
- **East**
  - Transmission lines border the Project site to the east.
- **West**
  - Active agricultural fields border the western boundary of the Project site.

Project Site Aerial



LEGEND

- PROPOSED GROUNDWATER WELL
- GEOTHERMAL WELL 12-27
- PARCEL BOUNDARY
- PROPOSED CHAIN LINK FENCE
- PROPOSED INVERTER LOCATION
- MAIN ACCESS ROAD
- EMERGENCY ACCESS ROAD
- GRAVEL ROAD
- LAYDOWN/TEMP OFFICE LOCATION

NOTES

SOLAR FIELD
99.83± ACRES

25 MW-DC

SINGLE AXIS

TRACKING SYSTEM

370 WATTS SOLAR PANELS

1. MAP REFERENCES: FASTGRID, LLC OVERALL SITE PLAN, SHEET NO. E-100.2, DATED FEBRUARY 26, 2019.
2. NOT A SURVEYED MAP, SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

0 600 1200

APPROXIMATE SCALE (FEET)

Stantec 290 Conejo Ridge Avenue Thousand Oaks, CA 91361 PHONE:(805) 230-1266 FAX:(805) 230-1277	FOR: Ormat Wister PV Solar Power Plant Winkins Road, North of Niland, CA		CONCEPTUAL SITE PLAN	FIGURE: 2
	JOB NUMBER: 185804156	DRAWN BY: R. Ocampo	CHECKED BY: D. Christie / APPROVED BY: K. Kohan	DATE: 07/26/19

3.0 PROJECT DESCRIPTION

The project will produce 20 MW of energy and cover approximately 100 acres. The solar PV generating component would consist of a 3.2 foot by 6.5-foot PV modules (or panels) on single-axis horizontal trackers in blocks that each hold 2,520 PV panels, with 90 modules in each of the 28 rows. Each PV module would be constructed out of a poly-crystalline silicon semiconductor material encapsulated in glass, in which the PV effect would allow the electrons to flow through that material to produce electricity. The panels would be oriented from east to west for maximum exposure and the foundation would be designed based on soil conditions. The PV modules are made of a poly-crystalline silicon semiconductor material encapsulated in glass. Installation of the PV arrays would include installation of mounting posts, module rail assemblies, PV modules, inverters, transformers and buried electrical conductors. Concrete would be required for the footings, foundations and pads for the transformers and substation work. Tracker foundations would be comprised of either driven or vibrated steel posts/pipes, and/or concrete in some places (depending on soil and underground conditions).

The proposed Project would be operated on an "unstaffed" basis and, therefore, would not include construction of a permanent office. Proposed Project facilities are described in more detail below.

Primary access to the Project site is anticipated from a 20-foot dirt road, which traverses along the east edge of the site. Secondary access into the site would be from Jasper Road into the southeast corner of the subject site. The emergency access road would be constructed with an all-weather surface, to meet the County Fire Department's standards, and lead to a locked gate that can be opened by any emergency responders. The attached site plan (Figure 2) illustrates the proposed Project site layout and access points.

An all-weather surface access road, to meet the County's standards, would surround the perimeter of the site parcel. In addition, there would be approximately 10 feet of access on the Project site between the PV panels. The proposed Project would be required to conform to all California Public Utilities Commission (CPUC) safety standards. The Project site would be fenced with a 6-foot high chain link security fence topped with barbed wire and two gates would be located in each fenced area.

3.1 PROJECT CHARACTERISTICS

The net amount of land covered by the PV panels and associated structures would be approximately 100 acres. The power produced by the proposed Project would be conveyed to the local power grid via a 92-kV substation connected to the grid, which will be tied directly to the IID 92 kV transmission line.

The proposed Project is intended to operate year-round. Using an array of thin film PV modules to convert solar energy directly to electrical power for export to the electrical grid, the proposed Project would generate electricity during daylight hours when electricity demand is at its peak.

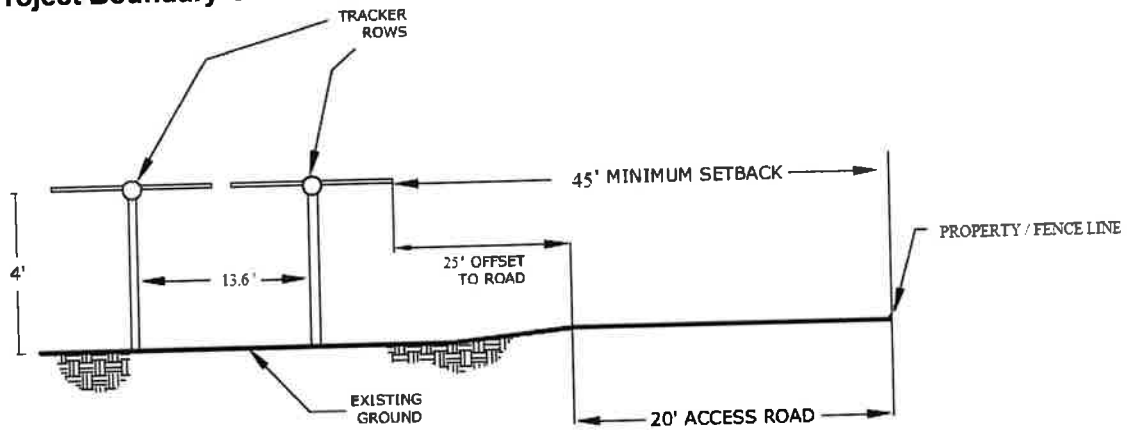
3.2 PROJECT FACILITIES

The solar PV generating facility would consist of 3.5 foot by 4.8-foot PV modules (or panels) on single-axis horizontal trackers in blocks that each hold 2,520 PV panels. The panels would be oriented from east to west for maximum exposure and the foundation would be designed based on soil conditions, with driven piles as the preferred method. The PV modules are made of a poly-crystalline silicon semiconductor material encapsulated in glass. Installation of the PV arrays would include installation of mounting posts, module rail assemblies, PV modules, inverters, transformers and buried electrical conductors. Concrete would be required for the footings, foundations and pads for the transformers and substation work.

PV modules would be organized into electrical groups referred to as "blocks," and the proposed Project will require approximately 28 blocks. Every four blocks will be collected to an inverter and would typically encompass approximately 20 acres, including a pad for one transformer and one inverter. Approximately 100 acres of ground disturbance, including acreage for 28 blocks, is required for the Project. The proposed Project would include design elements to reduce the potential glare impacts on adjacent sensitive receptors, e.g. local residents, aircraft, traveling public on adjacent County roads, which may include fencing and landscaping.

The electrical output from the PV modules would be low voltage DC power that would be collected and routed to a series of inverters and their associated pad-mounted transformers. Each array would have one inverter and one transformer, which are collectively known as a Power Conversion Station (PCS). The inverters would convert the DC power generated by the panels to AC power and the pad mounted transformers step up the voltage to a nominal level. The outputs from the transformers are grouped together in PV combining switchgear, which in turn supplies the switchyard, where the power is stepped up to 92 kV for interconnection with the transmission system. The proposed Project would consist of solar arrays that are located to avoid potential flood plains and undevelopable easements.

Project Boundary Cross-section



3.2.1 Fiberoptic Cable

A proposed fiberoptic line from the proposed Wister Substation would be connected with the existing Niland Substation approximately 2 miles to the south, which would then be added to connect the proposed Wister Substation to the region's telecommunications system. Overall, this would provide Supervisory Control and Data Acquisition (SCADA), protective relaying, data transmission, and telephone services for the proposed Wister Substation and associated facilities. New telecommunications equipment would be installed at the proposed Wister Substation within the Mechanical and Electrical Equipment Room (MEER). A proposed fiber optic telecommunications cable would then connect the proposed Wister Substation to the substation located at the IV Solar Company site, utilizing existing transmission lines. The length of this proposed fiber optic telecommunications cable route would be approximately 2 miles.

3.2.2 Substation

The proposed Wister Substation would be a new 92/12 kV unstaffed, automated, low-profile substation. The dimensions of the fenced substation would be approximately 300 feet by 175 feet. The enclosed substation footprint would encompass approximately 1.2 acres of the approximately 640-acre Project parcel. The proposed Wister Substation site would be located at the northeast corner of Wilkins and Weist Roads. The California Building Code and the IEEE 693, Recommended Practices for Seismic Design of Substations, will be followed for the substation's design, structures, and equipment.

3.3 CONSTRUCTION SEQUENCE AND EQUIPMENT

Construction activities would be sequenced and conducted in a manner that addresses storm water management and soil conservation. During construction, electrical equipment would be placed in service at the completion of each 2,500-kW power-block. The activation of the power-blocks is turned over to interconnection following the installation of transformer and interconnection equipment upgrades. This in-service timing is critical because PV panels can produce power as soon as they are exposed to sunlight, and because the large number of blocks and the amount of time needed to commission each block requires commissioning to be integrated closely with construction on a block-by-block basis. Construction is expected to last approximately 6-9 months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel, and construction management personnel. The average number of construction workers would be approximately 50-60 people per day.

Construction would generally occur during daylight hours, Monday through Friday. However, non- daylight work hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For example, during hot weather, it may be necessary to start work earlier to avoid pouring concrete during high ambient temperatures. If construction is to occur outside of the County's specified working hours, permission in writing will be sought at the time. Construction of the proposed Project would occur in phases beginning with site preparation and grading and ending with equipment setup and commencement of commercial operations. Overall, construction would consist of three major phases over a period of approximately 6-9 months:

1. Site Preparation, which includes clearing grubbing, grading, service roads, fences, drainage, and concrete pads; (1 month)
2. PV system installation and testing, which includes installation of mounting posts, assembling the structural components, mounting the PV modules, wiring; (7 months) and
3. Site clean-up and restoration. (1 month)

3.4 WORKFORCE

Construction is expected to last approximately 6-9 months. The on-site workforce would consist of laborers, electricians, supervisory personnel, support personnel and construction management personnel. The average number of construction workers would be approximately 50-60 people per day. Construction would generally occur during daylight hours, Monday through Friday; however, non-daylight work hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For example, during hot weather, it may be necessary to start work earlier to avoid pouring concrete during high ambient temperatures. If construction is to occur outside of the County's specified working hours, permission in writing will be sought at the time. Nonetheless, construction activities would be conducted in a manner consistent with Imperial County Municipal Code. Noise generating sources in Imperial County are regulated under the County of Imperial Codified Ordinances, Title 9, Division 7 (Noise Abatement and Control). Noise limits are established in Chapter 2 of this ordinance. Under Section 90702.00 of this rule, average hourly noise in residential areas is limited to 50 to 55 dB(A) from 7 AM to 10 PM, and to 45 to 50 dB(A) from 10 PM to 7 AM.

3.5 MATERIALS AND PREPARATION

The proposed Project would require general construction materials (i.e., concrete, wood, metal, fuel, etc.) as well as the materials necessary to construct the proposed PV arrays. Most construction waste is expected to be non-hazardous and to consist primarily of cardboard, wood pallets, copper wire, scrap steel, common trash and wood wire spools. Although field equipment used during construction activities could contain various hazardous materials (i.e., hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints, etc.), these materials are not considered to be acutely hazardous and would be used in accordance with the manufacturer's specifications and all applicable regulations.

Each PV module would be constructed out of poly-crystalline silicon semiconductor material encapsulated in glass, in which the PV effect would allow the electrons to flow through that material to produce electricity The PV effect is defined as the process of converting light (i.e., photons) to electricity (i.e., voltage). Construction of the PV arrays will include installation of support beams, module rail assemblies, PV modules, inverters, transformers, and underground electrical cables. Concrete will be required for the footings, foundations, pads for transformers, and substation equipment. Concrete will be purchased from a local supplier and transported to the proposed Project site by truck. The PCS housing the inverters will have a precast concrete base. Final concrete specifications will be determined during detailed design engineering in accordance with applicable building codes.

Example Construction Equipment

Equipment	Use
1-ton crew trucks	Transport construction personnel
2-ton flatbed trucks: flatbed boom trucks	Haul and unload materials
Mechanic truck	Service and repair equipment
Aerial bucket trucks	Access poles, string conductor, and other uses
Shop vans	Store tools
Bulldozers	Grade pole sites; reclamation
Truck-mounted diggers or backhoes	Excavate
Small mobile cranes (12 tons)	Load and unload materials
Large mobile cranes (75 tons)	Erect structures
Transport	Haul poles and equipment
Drill rigs with augers	Excavate and install fences
Semi tractor-trailers	Haul structures and equipment
Splice trailers	Store splicing supplies
Air compressor	Operate air tools
Air tampers	Compact soil around structure foundations
Concrete trucks	Pour concrete
Dump trucks	Haul excavated materials/import backfill
Fuel and equipment fluid trucks	Refuel and maintain vehicles
Water trucks	Suppress dust and fire

3.5.1 Site Preparation

Project construction would include the renovation of existing dirt roads to all-weather surfaces (to meet the County minimum standards) from Wilkins Road for access to the Project site. Construction of the proposed Project would begin with clearing of existing brush and installation of fencing around the Project boundary. Construction of the proposed Project would begin with clearing of existing brush and installation of fencing around the Project boundary.

Fencing will consist of a six-foot chain-link fence with barbed wire. A 20' road of engineering-approved aggregate will surround the site within the fencing. Approximately 20,000 – 30,000 gallons of water per day would initially be required for grading, dropping to much less for the remainder of the Project construction. Construction water needs would be limited to earthwork, soil conditioning, dust suppression, and compaction efforts. Water would be provided from an on-site water well. Material and equipment staging areas would be established on-site within an approximate 10-acre area. The staging area would include an airconditioned temporary construction office, a first-aid station and other temporary facilities including, but not limited to, sanitary facilities, worker parking, truck loading and unloading, and a designated area for assembling the support structures for the placement of PV modules. The location of the staging area would change as construction progresses throughout the Project site. The Project construction contractor would then survey, clear and grade road corridors in order to bring equipment, materials, and workers to the various areas under construction within the Project site. Road corridors buried electrical lines, PV array locations and locations of other facilities may be flagged and staked in order to guide construction activities.

3.5.2 Start-up

PV system installation would include earthwork, grading and erosion control, as well as erection of the PV modules, mounting posts and associated electrical equipment. If previously unrecorded subsurface deposits located within the Project area are discovered during construction, a qualified archaeological monitor would be retained to monitor all ground-disturbing activities in native soils to mitigate against potential impacts.

The PV modules require a moderately flat surface for installation and therefore some earthwork, including grading, fill, compaction and erosion control, may be required to accommodate the placement of PV arrays, concrete for foundations, access roads and/or drainage features. Construction of the PV arrays would be expected to take place at a rate of approximately 0.075 MW per day. Construction of the PV arrays would include installation of the mounting posts, module assemblies, PV modules, inverters, transformers and buried electrical conductors. The module assemblies would then be cut off at the appropriate heights since the center posts must be completely level. Field welding would be required to attach the module assemblies to the top of the mounting posts. Finally, the PV panels would be attached to the module assemblies. Heavy equipment lifters (e.g., forklift) would be required to get the module assemblies in position, while welding and cutting equipment would be necessary to cut off the posts at the appropriate height.

Concrete would be required for the footings, foundations and pads for the transformers and substation equipment. Concrete would be produced at an off-site location by a local provider and transported to the site by truck. The PCS housing the inverters utilize a precast concrete base. Final specifications for concrete would be determined during detailed design engineering, but any related production would meet applicable building codes. Wastes generated during construction would be non-hazardous and may contain any of the following: cardboard, wood pallets, copper wire, scrap steel, common trash and wood wire spools. No hazardous waste is expected to be generated during construction of the proposed Project.

However, field equipment used during construction would contain various hazardous materials such as hydraulic oil, diesel fuel, grease, lubricants, solvents, adhesives, paints and other petroleum-based products contained in most construction vehicles. Potable water would be brought to the Project site for drinking and domestic needs.

Construction water needs would be limited to earthwork, soil conditioning, dust suppression and compaction efforts. Approximately 20,000 to 30,000 gallons of water per day would be required during construction and would be provided from an on-site water well. A dust palliative with low environmental toxicity would also be used to suppress dust as approved by California Air Resources Board (CARB) and the Imperial Valley Air Pollution Control District (IVAPCD).

3.5.3 Clean-up and Demobilization

After construction is complete, all existing roads would be left in a condition equal to or better than their preconstruction condition. All other areas disturbed by construction activities would be recontoured and decompacted.

Waste materials and debris from construction areas would be collected, hauled away, and disposed of at approved landfill sites. Cleared vegetation would be shredded and distributed over the disturbed site as mulch and erosion control or disposed of offsite, depending on agency agreements. Rocks removed during foundation excavation would be redistributed over the disturbed site to resemble adjacent site conditions. Interim reclamation would include also re-contouring of impacted areas to match the surrounding terrain, and cleaning trash out of gullies. Equipment used could include a blader, front-end loader, tractor, and a dozer with a ripper.

A covered portable dumpster would be kept on site to contain any trash that can be blown away. After completion of the proposed Project, the project engineer would complete a final walk-through and note any waste material left on site and any ruts or terrain damage or vegetation disturbance that has not been repaired. The construction contractor would be given this list and final payment would not be received until all items are completed.

3.0 SCHEDULING

Construction is anticipated to start in 2021 and would take approximately 9 months to complete. Construction would commence only after all required permits and authorizations have been secured.

4.0 OPERATION AND MAINTENANCE ACTIVITIES

Once fully constructed, the proposed Project would be operated on an unstaffed basis and be monitored remotely, with periodic on-site personnel visitations for security, maintenance and system monitoring. Therefore, no full-time site personnel would be required on-site during operations and employees would only be on-site four times per year to wash the panels. As the Project's PV arrays produce electricity passively, maintenance requirements are anticipated to be very minimal. Any required planned maintenance activities would generally consist of equipment inspection and replacement and would be scheduled to avoid peak load periods. Any unplanned maintenance would be responded to as needed, depending on the event. Preventive maintenance kits and certain critical spares would be stored on-site.

Estimated annual water consumption for operation and maintenance of the proposed Project, including periodic PV module washing, would be approximately 0.81-acre feet annually (af/y), which would be accessed by an on-site water well.

5.0 DECOMMISSIONING

Solar equipment has a lifespan of approximately 20 to 25 years. At the end of the Project's operation term, the applicant may determine that the Project should be decommissioned and deconstructed. Should the Project be decommissioned, concrete footings, foundations, and pads would be removed using heavy equipment and recycled at an off-site location. All remaining components would be removed, and all disturbed areas would be reclaimed and recontoured.

ATTACHMENT "L"

Final Environmental Impact Report

Wister Solar Energy Facility Project

SCH No. 2019110140

Imperial County, California

December 2020

Prepared for

County of Imperial

801 Main Street

El Centro, CA 92243

Prepared by

HDR

591 Camino de la Reina

Suite 300

San Diego, CA 92108

This page is intentionally blank.

Table of Contents

0.1 Introduction and Summary 0.1-1
0.2 Response to Comments 0.2-1
0.3 Errata to the Draft EIR 0.3-1
0.4 Mitigation Monitoring and Reporting Program 0.4-1
Executive Summary ES-1
Project Overview ES-1
Purpose of an EIR ES-2
Eliminated from Further Review in Notice of Preparation ES-2
Summary of Significant Impacts and Mitigation Measures that Reduce or Avoid the Significant Impacts ES-7
Areas of Controversy and Issues to be Resolved ES-8
Project Alternatives ES-39
Environmentally Superior Alternative ES-43
1 Introduction 1-1
1.1 Overview of the Proposed Project 1-1
1.1.1 Agency Roles and Responsibilities 1-1
1.2 Relationship to Statutes, Regulations, and Other Plans 1-4
1.2.1 County of Imperial General Plan and Land Use Ordinance 1-4
1.2.2 Renewables Portfolio Standard Program 1-4
1.2.3 California Global Warming Solutions Act of 2006, Assembly Bill 32 (Statutes 2006; Chapter 488; Health and Safety Code Sections 38500 et seq.) 1-5
1.2.4 Title 17 California Code of Regulations, Subchapter 10, Article 2, Sections 95100 et seq 1-5
1.2.5 Federal Clean Air Act 1-5
1.2.6 Imperial County Air Pollution Control District 1-5
1.2.7 Federal Clean Water Act (33 United States Code Section 1251-1387) 1-5
1.2.8 Federal Clean Water Act and California Porter-Cologne Water Quality Control Act 1-6
1.2.9 Federal Endangered Species Act 1-6
1.2.10 National Historic Preservation Act 1-6
1.2.11 California Endangered Species Act 1-6
1.2.12 California Lake and Streambed Program (Fish and Game Code Section 1602) 1-7
1.3 Purpose of an EIR 1-7
1.4 EIR Process 1-7
1.4.1 Availability of Reports 1-7
1.4.2 Public Participation Opportunities/Comments and Coordination 1-7
1.4.3 Environmental Topics Addressed 1-8
1.4.4 Areas of Controversy and Issues to be Resolved 1-14
1.4.5 Document Organization 1-14
2 Project Description 2-1
2.1 Project Location 2-1
2.1.1 Solar Energy Facility and Gen-Tie Line 2-1
2.1.2 Fiberoptic Cable 2-1
2.1.3 Renewable Energy Overlay Zone 2-5
2.2 Project Objectives 2-5

2.3 Project Characteristics....2-5
2.3.1 Photovoltaic Panels/Solar Arrays....2-9
2.3.2 Substation....2-10
2.3.3 Fiberoptic Cable....2-11
2.3.4 Gen-Tie Line....2-11
2.3.5 Auxiliary Facilities....2-11
2.4 Project Construction....2-12
2.4.1 Construction Sequence....2-12
2.4.2 Workforce....2-13
2.4.3 Materials....2-13
2.4.4 Site Preparation....2-14
2.4.5 Start-up....2-15
2.4.6 Construction Water Requirements....2-15
2.4.7 Dust Suppression....2-15
2.4.8 Clean-up and Demobilization....2-15
2.5 Operations and Maintenance....2-16
2.6 Facility Decommissioning....2-16
2.7 Required Project Approvals....2-16
2.7.1 Imperial County....2-16
2.7.2 Discretionary Actions and Approvals by Other Agencies....2-18
2.7.3 Potential Actions/Approvals by Other Agencies....2-18
3 Environmental Analysis, Impacts, and Mitigation....3.1-1
3.1 Introduction to Environmental Analysis....3.1-1
3.1.1 Organization of Issue Areas....3.1-1
3.1.2 Format of the Impact Analysis....3.1-1
3.2 Aesthetics and Visual Resources....3.2-1
3.2.1 Existing Conditions....3.2-1
3.2.2 Regulatory Setting....3.2-11
3.2.3 Impacts and Mitigation Measures....3.2-13
3.2.4 Decommissioning/Restoration and Residual Impacts....3.2-26
3.3 Air Quality....3.3-1
3.3.1 Existing Conditions....3.3-1
3.3.2 Regulatory Setting....3.3-6
3.3.3 Impacts and Mitigation Measures....3.3-11
3.3.4 Decommissioning/Restoration and Residual Impacts....3.3-22
3.4 Biological Resources....3.4-1
3.4.1 Existing Conditions....3.4-1
3.4.2 Regulatory Setting....3.4-19
3.4.3 Impacts and Mitigation Measures....3.4-23
3.4.4 Decommisssioning/Restoration and Residual Impacts....3.4-43
3.5 Cultural Resources....3.5-1
3.5.1 Existing Conditions....3.5-1
3.5.2 Regulatory Setting....3.5-7
3.5.3 Impacts and Mitigation Measures....3.5-12
3.5.4 Decommissioning/Restoration and Residual Impacts....3.5-17
3.6 Geology and Soils....3.6-1
3.6.1 Existing Conditions....3.6-1
3.6.2 Regulatory Setting....3.6-4
3.6.3 Impacts and Mitigation Measures....3.6-7
3.6.4 Decommissioning/Restoration and Residual Impacts....3.6-13
3.7 Greenhouse Gas Emissions....3.7-1

3.7.1 Existing Conditions 3.7-1
3.7.2 Regulatory Setting 3.7-4
3.7.3 Impacts and Mitigation Measures 3.7-11
3.7.4 Decommissioning/Restoration and Residual Impacts 3.7-15
3.8 Hydrology/Water Quality 3.8-1
3.8.1 Existing Conditions 3.8-1
3.8.2 Regulatory Setting 3.8-3
3.8.3 Impacts and Mitigation Measures 3.8-10
3.8.4 Decommissioning/Restoration and Residual Impacts 3.8-19
3.9 Land Use Planning 3.9-1
3.9.1 Existing Conditions 3.9-1
3.9.2 Regulatory Setting 3.9-4
3.9.3 Impacts and Mitigation Measures 3.9-13
3.9.4 Decommissioning/Restoration and Residual Impacts 3.9-17
3.10 Transportation/Traffic 3.10-1
3.10.1 Existing Conditions 3.10-1
3.10.2 Regulatory Setting 3.10-5
3.10.3 Impacts and Mitigation Measures 3.10-6
3.10.4 Decommissioning/Restoration and Residual Impacts 3.10-11
3.11 Utilities/Service Systems 3.11-1
3.11.1 Environmental Setting 3.11-1
3.11.2 Regulatory Setting 3.11-2
3.11.3 Impacts and Mitigation Measures 3.11-4
3.11.4 Decommissioning/Restoration and Residual Impacts 3.11-7
4 Analysis of Long-Term Effects 4-1
4.1 Growth-Inducing Impacts 4-1
4.2 Significant Irreversible Environmental Changes 4-3
4.3 Unavoidable Adverse Impacts 4-3
5 Cumulative Impacts 5-1
5.1 Geographic Scope and Timeframe of the Cumulative Effects Analysis 5-2
5.2 Projects Contributing to Potential Cumulative Impacts 5-2
5.3 Cumulative Impact Analysis 5-2
5.3.1 Aesthetics and Visual Resources 5-7
5.3.2 Air Quality 5-7
5.3.3 Biological Resources 5-9
5.3.4 Cultural Resources 5-11
5.3.5 Geology and Soils 5-12
5.3.6 Greenhouse Gas Emissions 5-12
5.3.7 Hydrology and Water Quality 5-13
5.3.8 Land Use Planning 5-13
5.3.9 Transportation/Traffic 5-14
5.3.10 Utilities/Service Systems 5-14
6 Effects Found Not Significant 6-1
6.1 Agriculture and Forestry Resources 6-1
6.1.1 Agriculture Resources 6-1
6.1.2 Forestry Resources 6-1
6.2 Energy 6-1
6.3 Hazards and Hazardous Materials 6-2
6.4 Mineral Resources 6-3

6.5 Noise....6-3
6.6 Population and Housing....6-3
6.7 Public Services....6-4
6.8 Recreation....6-5
6.9 Utilities and Service Systems....6-5
6.10 Wildfire....6-6

7 Alternatives....7-1
7.1 Introduction....7-1
7.2 Criteria for Alternatives Analysis....7-1
7.3 Alternatives Considered but Rejected....7-2
7.3.1 Alternative Site....7-2
7.3.2 Original Site Plan Submittal....7-5
7.4 Alternative 1: No Project/No Development Alternative....7-9
7.4.1 Environmental Impact of Alternative 1: No Project/No Development Alternative....7-9
7.5 Alternative 2: Development within Renewable Energy Overlay Zone – Agricultural Lands....7-12
7.5.1 Environmental Impact of Alternative 2: Development within Renewable Energy Overlay Zone – Agricultural Lands....7-14
7.6 Alternative 3: Development within Renewable Energy Overlay Zone – Desert Lands....7-16
7.6.1 Environmental Impact of Alternative 3: Development within Renewable Energy Overlay Zone – Desert Lands....7-19
7.7 Alternative 4: Distributed Commercial and Industrial Rooftop Solar Only Alternative....7-22
7.7.1 Environmental Impact of Alternative 4: Distributed Commercial and Industrial Rooftop Solar Only Alternative....7-22
7.8 Environmentally Superior Alternative....7-25

8 References....8-1

9 EIR Preparers and Persons and Organizations Contacted....9-1
9.1 EIR Preparers....9-1
9.2 Persons and Organizations Contacted....9-2

Tables

Table 0.2-1. Wister Solar Energy Facility Project Draft EIR Comment Letters 0.2-1
Table 0.2-2. Project Maximum Daily Construction Emissions 0.2-188
Table 0.2-3. Project Maximum Daily Operations Emissions 0.2-188
Table 0.3-1. Summary of Environmental Impacts 0.3-17
Table 0.4-1. Mitigation Measures 0.4-3
Table ES-1. Summary of Project Impacts and Proposed Mitigation Measures ES-9
Table ES-2. Comparison of Alternative Impacts to Proposed Project ES-45
Table 2-1. Example Construction Equipment 2-14
Table 3.2-1. Consistency with Applicable General Plan Conservation and Open Space Policies 3.2-12
Table 3.3-1. Health Effects of Criteria Air Pollutants 3.3-2
Table 3.3-2. Attainment Status of Imperial County 3.3-3
Table 3.3-3. Criteria Air Pollutants – Ambient Data Summary 3.3-4
Table 3.3-4. Ambient Air Quality Standards 3.3-7
Table 3.3-5. Project Consistency with Applicable Plan Policies 3.3-11
Table 3.3-6. Imperial County Air Pollution Control District Significance Thresholds for Operation 3.3-12
Table 3.3-7. Imperial County Air Pollution Control District Significance Thresholds for Construction Activities 3.3-13
Table 3.3-8. Estimated Construction Emissions by Phase 3.3-16
Table 3.3-9. Estimated Operational Emissions Summary 3.3-17
Table 3.4-1. Vegetation Communities or Land Cover Types within the Biological Study Area 3.4-4
Table 3.4-2. Known and Potential Occurrences of Special-Status Plant Species within the Biological Study Area 3.4-8
Table 3.4-3. Known and Potential Occurrences of Special-Status Wildlife Species within the Biological Study Area 3.4-11
Table 3.4-4. Project Consistency with General Plan Goals and Policies 3.4-22
Table 3.4-5. Vegetation Communities and Other Land Cover Types Impacted by the Project 3.4-24
Table 3.4-6. Jurisdictional Features Occurring within the Biological Study Area and Impacts 3.4-38
Table 3.5-1. Previously Recorded Cultural Resources Located Within a 1-Mile Radius of the Project Area 3.5-5
Table 3.5-2. Cultural Resources Located within 640-acre Survey Area 3.5-6
Table 3.5-3. Project Consistency with Applicable General Plan Goals and Objectives 3.5-12
Table 3.6-1. Nearby Faults 3.6-2
Table 3.6-2. Project Consistency with Applicable General Plan Policies 3.6-6
Table 3.7-1. California Greenhouse Gas Emissions Inventory 2000 to 2017 ..... 3.7-3
Table 3.7-2. Greenhouse Gas Emissions Summary 3.7-14
Table 3.8-1. Beneficial Uses of Receiving Waters 3.8-5
Table 3.8-2. Project Consistency with Applicable General Plan Policies 3.8-6
Table 3.8-3. Site Design Best Management Practices 3.8-12
Table 3.8-4. Source Control Best Management Practices 3.8-12
Table 3.9-1. Project Consistency with Applicable Plan Policies 3.9-5
Table 3.9-2. Project Consistency with “Adjacent to the Existing Renewable Energy Overlay Zone” Criteria 3.9-15
Table 3.10-1. Level of Service Thresholds for Unsignalized Intersections 3.10-7
Table 3.10-2. Project Trip Generation 3.10-8
Table 3.11-1. County of Imperial General Plan Consistency Analysis – Water Service 3.11-3

Table 3.11-2. Construction Water Demand 3.11-5
Table 3.11-3. Operational and Decommissioning Water Demand 3.11-5
Table 3.11-4. Amortized Water Demand 3.11-6
Table 5-1. Projects Considered in the Cumulative Impact Analysis 5-5
Table 7-1. Comparison of Alternative Impacts to Proposed Project 7-27

Figures

Figure 2-1. Regional Location 2-2
Figure 2-2. Project Site 2-3
Figure 2-3. Fiberoptic Cable and Gen-Tie Alignment 2-4
Figure 2-4. Preliminary Site Plan 2-7
Figure 2-5. Representative Example of Typical Single-Axis Tracking Solar Panels 2-10
Figure 2-6. Representative Example of Typical Substation Design 2-11
Figure 3.2-1. Key Observation Points 3.2-3
Figure 3.2-2. Existing View at Key Observation Point 1 ..... 3.2-5
Figure 3.2-3. Existing View at Key Observation Point 2 ..... 3.2-9
Figure 3.2-4. Flight Path Analysis 3.2-15
Figure 3.2-5. Project View Simulation at Key Observation Point 1 ..... 3.2-21
Figure 3.2-6. Project View Simulation at Key Observation Point 2 ..... 3.2-23
Figure 3.4-1. Vegetation Communities and Land Cover Types in the Biological Study Area 3.4-5
Figure 3.4-2. Potentially Jurisdictional Waters 3.4-17
Figure 3.9-1. General Plan Land Use Designations 3.9-2
Figure 3.9-2. Zoning Designations 3.9-3
Figure 3.10-1. Proposed Haul Routes 3.10-3
Figure 5-1. Cumulative Projects 5-3
Figure 7-1. Alternative Site 7-4
Figure 7-2. Original Site Plan 7-7
Figure 7-3. Alternative 2: Development within Renewable Energy Overlay Zone – Agricultural Lands 7-13
Figure 7-4. Alternative 3: Development within Renewable Energy Overlay Zone – Desert Lands 7-18

Appendices

Appendix A Initial Study and Notice of Preparation and Comment Letters
Appendix B Visual Resources Technical Report
Appendix C Glare Hazard Analysis Rpeort
Appendix D Air Quality Technical Study
Appendix E Biological Resources Technical Report
Appendix F Flat-Tailed Horned Lizard Survey
Appendix G Preliminary Jurisdictional Waters/Wetlands Delineation Report
Appendix H Cultural Resources Survey
Appendix I CEQA Level Geotechnical Study
Appendix J Water Quality Management Plan
Appendix K Hydrological Evaluation
Appendix L Water Supply Assessment

Acronyms

°F	degrees Fahrenheit
AB	Assembly Bill
ABPP	avian and bat protection plan
AC	alternating current
AF	acre-feet
AFY	acre-feet per year
ALUCP	Airport Land Use Compatibility Plan
amsl	above mean sea level
AP	Alquist-Priolo
APLIC	Avian Powerline Interaction Committee
APN	assessor parcel number
AQAP	air quality attainment plan
AQMP	air quality management plan
AQUA	aquaculture
AST	aboveground storage tank
BAU	business as usual
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
BMP	best management practice
BP	Before present
BSA	biological survey area
BRTR	Biological Resources Technical Report
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFÉ	Corporate Average Fuel Economy
Cal EPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFA	California Department of Food Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CMP	congestion management program
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Imperial County
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CUP	conditional use permit
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel

DC	direct current
DDT	Dichlorodiphenyltrichloroethane
DOC	Department of Conservation
DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FGC	Fish and Game Code
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	farmland mapping and monitoring program
FRSH	freshwater replenishment
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	Geographic Information System
GPS	Global Positioning System
GWP	global warming potential
H	High
HCP	habitat conservation plan
HFC	hydrofluorocarbon
HSC	Health and Safety Code
HU	hydrological unit
Hz	hertz
ICAPCD	Imperial County Air Pollution Control District
ICFD	Imperial County Fire Department
ICPDS	Imperial County Planning and Development Services Department
IEEE	Institute of Electrical and Electronics Engineers
IGR	Intergovernmental Review
IID	Imperial Irrigation District
IND	industrial service supply
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
IRWMP	Integrated Regional Water Management Plan
IS	Initial Study
IVAG	Imperial Valley Association of Governments
IVC	Imperial Valley College
IVT	Imperial Valley Transit
IWSP	Interim Water Supply Policy
KOP	key observation point
kV	kilovolt
kW	kilowatt
L	low
LCFS	low carbon fuel standard
L_{dn}	day-night average sound level
LE	land evaluation
L_{eq}	equivalent sound level
LESA	land evaluation site assessment
L_{max}	maximum noise level
LOS	level of service
M	moderate
MBTA	Migratory Bird Treaty Act
MEER	Mechanical and Electrical Equipment Room
MH	moderately high

MHMP	Multi-Hazard Mitigation Plan
ML	moderately low
MLD	most likely descendant
MMT	million metric tons
$MMTCO_2e$	million metric tons of CO_2 equivalent
MPO	metropolitan planning organization
MS4	Municipal Separate Storm Sewer System
MSL	mean sea level
MT	metric tons
MW	megawatt
MWh	megawatt hours
N/A	not applicable
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGO	nongovernmental organizations
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
No.	Number
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NOI	Notice of Intent
NOP	notice of preparation
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operations and maintenance
O_3	ozone
OES	Office of Emergency Services
OHP	Office of Historic Preservation
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	lead
PCB	polychlorinated biphenyls
PCS	Power Conversion Station
PFC	perfluorocarbon
pH	potential of hydrogen
Phase I ESA	Phase I Environmental Site Assessment
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POI	Point of Interconnection
POW	hydropower generation
PPA	power purchase agreement
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PV	photovoltaic
RARE	Preservation of Rare, Threatened, or Endangered Species
RCP	Regional Comprehensive Plan

RE	renewable energy
REC	Renewable-Energy Credits
REC I	water contact recreation
REC II	non-contact water recreation
RECUP	Renewable Energy Conditional Use Permit
ROG	reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RV	recreational vehicle
RWQCB	Regional Water Quality Control Board
SA	site assessment
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCIC	South Coastal Information Center
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SLF	sacred lands file
SO_2	sulfur dioxide
SO_x	sulfur oxide
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SSAB	Salton Sea Air Basin
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
tCO2e	tonnes of carbon dioxide equivalents
TMDL	total maximum daily load
TSS	total suspended solids
U.S.	United States
UNFCCC	United Nations Framework Convention on Climate Change
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USMC	United States Marine Corps
UST	underground storage tank
V/C	volume to capacity
VOC	volatile organic compound
WARM	warm freshwater habitat
WILD	wildlife habitat
WSA	Water Supply Assessment
$\mu g/m^3$	microgram per cubic meter

0.1 Introduction and Summary

This Final Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code Section 21000 et seq.), and CEQA Guidelines (California Administrative Code Section 15000 et seq.).

According to CEQA Guidelines §15132, the Final EIR shall consist of the following:

a. The Draft EIR or a revision of the Draft;

b. Comments and recommendations received on the Draft EIR, either verbatim or in summary;

c. A list of persons, organizations, and public agencies commenting on the Draft EIR;

d. The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and

e. Any other information added by the Lead Agency.

In accordance with these requirements, the Wister Solar Project Final EIR is comprised of the following:

- Draft EIR, June 2020 (SCH No. 2019110140); and
- This Final EIR document, dated December 2020, that incorporates the information required by §15132.

Format of the Final EIR

Section 0.1 Introduction

This section describes CEQA requirements and content of this Final EIR.

Section 0.2 Responses to Comment Letters Received on the Draft EIR

This section provides copies of the comment letters received and individual responses to written comments. In accordance with Public Resources Code 21092.5, copies of the written proposed responses to public agencies will be forwarded to the agencies at least 10 days prior to certifying the EIR. The responses conform to CEQA Guideline 15088, providing "… good faith, reasoned analysis in response."

Section 0.3 Errata to the Draft EIR

This section of the Final Environmental Impact Report (EIR) identifies the location of, or contains revisions to, information included in the Draft EIR dated June 2020, based upon additional or revised information required to prepare a response to a specific comment. The information added to the EIR does not meet the requirements for recirculation pursuant to Section 15088.5 of the State *California Environmental Quality Act (CEQA) Guidelines*.

Section 0.4 Mitigation Monitoring and Reporting Program

This section includes the Mitigation Monitoring and Reporting Program (MMRP) which identifies the mitigation measures, timing, and responsibility for implementation of the measures.

This page is intentionally blank.

0.2 Response to Comments

This section contains responses to all comment letters received on the Draft EIR. Seven letters were received during the comment period, which began on June 30, 2020, and closed on August 18, 2020. A copy of each letter with bracketed comment numbers on the right margin is followed by the response for each comment as indexed in the letter. The comment letters are listed in Table 0.2-1.

Table 0.2-1. Wister Solar Energy Facility Project Draft EIR Comment Letters

Letter	Commenter	Date
A	United States Marine Corps	August 13, 2020
B	Department of Transportation	August 18, 2020
C	Imperial County Air Pollution Control District	July 29, 2020
D	Imperial County Sheriff's Office	July 24, 2020
E	Stantec	August 4, 2020
F	Adams Broadwell Joseph & Cardozo	August 14, 2020
G	Imperial Irrigation District	October 8, 2020 August 18, 2020
H	Imperial County Fire Prevention Bureau	May 27, 2020[1]

Notes:
[1] Received prior to commencement of the Draft EIR public review period.

UNITED STATES MARINE CORPS
MARINE CORPS AIR STATION YUMA
BOX 99100
YUMA AZ 85369-9100

5726
CP&L
SCH 2019110140
August 13,2020

Ms. Patricia Valenzuela
Imperial County Planning and
Development Services
801 Main Street
El Centro, CA 92243

Dear Ms. Valenzuela:

We have received the Notice of Availability of a Draft Environmental Impact Report for the Wister Solar Energy Facility Project. The project site is identified as Assessor's Parcel No 003-240-001 located approximately three miles north of Niland, the Chocolate Mountain Aerial Gunnery Range (CMAGR), and Camp Billy Machen desert warfare training facility. The proposed project involves the construction and operation of a 20 Megawatt (MW) photovoltaic (PV) solar energy facility on approximately 100 acres of the 640 acres within the identified APN. A.1

Marine Corps Air Station (MCAS) Yuma has reviewed this request, and does not oppose to this project. It is requested that if a glint/glare analysis has been completed, please provide a copy to MCAS Yuma. In addition, due to continuous military flight operations, we request lights are placed on towers above 20 feet Above Ground Level (AGL). A.2

Thank you for the opportunity to review and provide MCAS Yuma's comments. MCAS Yuma point of contact is Mr. Antonio Martinez at (928) 269-2103 or MCASYUMA_CPLO@usmc.mil. Thank you for the opportunity to comment. A.3

Sincerely,

MARY E. FINCH
By direction

Letter A

United States Marine Corps

August 13, 2020

A.1 This is an introductory comment and provides a general summary of the project characteristics. No further response is necessary.

A.2 The County acknowledges that the Marine Corps does not express opposition to the project. Additionally, the County acknowledges the Marine Corps review and consideration of the project in relation to the Chocolate Mountain Aerial Gunnery Range (CMAGR) and Camp Billy Machen desert warfare training facility.

During the initial planning and entitlement processing for the project, the project applicant coordinated with Bill Sellars, Director, MCAS Yuma Range Management to address the project's potential visual impacts to the CMAGR. A Glare Hazard Analysis Report was prepared and provided as Appendix C of the Draft EIR. The analysis is based on the flight path as requested by the USMC during initial applicant consultation/coordination with USMC. Draft EIR Appendix C Figure 1 depicts the flight path assumed for the glare hazard analysis. This report is also provided as part of the Final EIR transmitted to the USMC, and is also available on the County's website at: www.icpds.com. Glare is not predicted for the USMC flight path from approximately one (1) to three (3) Nautical Miles east of the target with a heading of 270 deg at an altitude of 5,500' MSL as shown in Figure 1 (also see EIR Figure 3.2-4 Flight Path Analysis).

Transmissions towers exceeding 20 feet above ground level will be designed to include appropriate aviation warning lighting. As shown in EIR Section 2 Project Description (see Figure 2-3), the proposed gen-tie line would originate at the proposed Wister substation and would terminate at the point of interconnect (POI), at a distance of approximately 2,500 feet to the south-southwest. Steel poles, standing at a maximum height of 70 feet tall, will be spaced approximately every 300 feet along the route, and would support the 92-kV conductor to the POI.

A.3 Comment noted.

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
PHONE (619) 688-6075
FAX (619) 688-4299
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

August 18, 2020

11-IMP-111
PM 41.3
Wister Solar Energy Facility
DEIR/SCH# 2019110140

Ms. Patricia Valenzuela
Imperial County
Planning and Development Services
801 Main Street
El Centro, CA 92243

Dear Ms. Valenzuela:

Thank you for including the California Department of Transportation (Caltrans) in the review of the Wister Solar Energy Facility Draft Environmental Impact Report (DEIR) (SCH# 2019110140) located near State Route 111 (SR-111). The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with Caltrans' mission and state planning priorities. B.1

Caltrans has the following comments:

Traffic Control Plan/Hauling

Terra-Gen shall prepare and submit to Caltrans closure plans as part of the encroachment permit application. The plans shall require that closure or partial closure of SR-111 be limited to times as to create the least possible inconvenience to the traveling public and that signage be posted prior to the closure to alert drivers of the closure in accordance with Caltrans requirements. Traffic shall not be unreasonably delayed. The plan shall also outline suggested detours to use during the closures, traffic, including routes and signage. B.2

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

The Highway Closure Plan, as part of the encroachment permit, should be submitted to Caltrans at least 30 days prior to initiating installation of the crossings. No work shall begin in Caltrans Right of Way (R/W) until an encroachment permit is approved.

B.2, cont.

Any work performed within Caltrans R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction. As part of the encroachment permit process, the applicant must provide an approved final environmental document including the California Environmental Quality Act (CEQA) determination addressing any environmental impacts with the Caltrans' R/W, and any corresponding technical studies.

Please see Section 600 of the Encroachment Permits Manual for requirements regarding utilities and state R/W: https://dot.ca.gov/programs/traffic-operations/ep/ep-manual

B.3

Caltrans has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Issuance Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway System. Additional information is provided online at: http://www.dot.ca.gov/trafficops/permits/index.html

Potential impacts to the highway facilities (SR-111) and traveling public from the detour, demolition and other construction activities should be discussed and addressed before work begins.

B.4

If you have any questions, please contact Mark McCumsey, of the Caltrans Development Review Branch, at (619) 688-6802 or by e-mail sent to mark.mccumsey@dot.ca.gov. B.5

Sincerely,

electronically signed by

MAURICE EATON, Branch Chief
Local Development and Intergovernmental Review Branch

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Letter B

Department of Transportation

August 18, 2020

B.1 This is an introductory comment and provides a general summary of the project characteristics. No further response is necessary.

B.2 The County acknowledges Caltrans encroachment permit requirements summarized in this comment. However, this comment references a different project (i.e., the Terra-Gen project). With respect to the proposed Wister Solar Project, no development or construction activities (including closures to SR-111 as referenced in this comment) is proposed or would otherwise be required in order to construct the proposed project. All project work will be performed along County and IID roadways.

B.3 No work within Caltrans right of way is proposed associated with the proposed project. However, the County does acknowledge that any work performed within Caltrans right of way requires approval of an encroachment permit.

B.4 The County acknowledges that a special transportation permit would be required for any oversize/overweight vehicles exceeding the maximum limitations specified in the California Vehicle Code. Although not anticipated at this time, the Applicant will apply for a special transportation permit, should it be determined that special vehicle construction equipment will be required that would exceed maximum limitations specified in the California Vehicle Code.

Please also refer to response to comment B.3. No encroachment into SR-111 right of way, or other Caltrans facilities will be required for project implementation.

B.5 Comment noted.

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

July 29, 2020

Mr. Jim Minnick
Planning & Development Services Director
801 Main St.
El Centro, CA 92243

SUBJECT: Draft Environmental Impact Report (EIR) for the Wister Solar Energy Facility

Dear Mr. Minnick:

The Imperial County Air Pollution Control District (Air District) appreciates the opportunity to review and comment on the Draft EIR (DEIR) for the Wister Solar Energy Facility (Project). The Project involves 1) the construction and operation of a 20-Megawatt photovoltaic solar energy facility including a substation and access roads; 2) a gen-tie line to connect the proposed on-site substation to the existing Imperial Irrigation District's 92-kilovolt "K" line; and 3) nearly two miles of fiber optic telecommunications cable from the proposed on-site substation to the existing Niland substation. C.1

The Air District reviewed the DEIR for adherence to prior comments[1] and for the most part found the DEIR consistent in addressing those remarks, with the following exceptions. Among these are the exclusion of Appendix A containing CalEEMod output files as referenced in Impact AQ-2 of Appendix D—Air Quality Technical Study.[2] These files should be provided in the Final EIR for disclosure purposes.

Mitigation measures as discussed in AQ-1 of the Executive Summary and Air Quality Section 3.3-17 discuss the periodic submission of an offroad equipment list for NOx evaluations, but do not discuss this in the context of Policy 5 should construction emissions exceed thresholds of significance. Policy 5 mitigation needs to be included in the proposed mitigation measures of the Executive Summary. Finally, the Air District requests that the Conditional Use Permit contain the NOx evaluation with the submittal of the periodic equipment list and the Operational Dust Control Plan (ODCP) as conditions for this Project. C.2

[1] 2nd Administrative Draft Environmental Impact Report (EIR) for the Wister Solar Energy Facility. Imperial County Air Pollution Control District. 3 June 2020.
[2] Air Quality Technical Study for the Wister Solar Facility Project Imperial County, California. Stantec Consulting Services. Section 5—Impact Analysis. 24 June 2020. Pg. 31.

Should you have questions, please call the Air District offices at (442) 265-1800. C.3

Respectfully submitted,

Curtis Blondell

Curtis Blondell
APC Environmental Coordinator

Reviewed by Monica Soucier
APC Division Manager

Letter C

Imperial County Air Pollution Control District

July 29, 2020

C.1 The introductory comments including general summary of the project characteristics are acknowledged.

The County provided Appendix A (CalEEMod output files) to the Imperial County Air Pollution Control District (ICAPCD) within 24 hours of ICAPCD's request during the 50-day Draft EIR public review period.

Regarding the availability of Appendix A (CalEEMod output files) as part of Draft EIR Appendix D, as indicated in the Notice of Availability, the appendices to Appendix D were made available on file at the County Planning and Development Services Department during the 50-day Draft EIR public review period. The Draft EIR and appendices were available in both hard copies and CDs to the public on request to the County during the review period. Public Resources Code Section 21092 and CEQA Guidelines Section 15087 only require notice of where and how the public can access the documents, and the County is in substantial compliance with CEQA as required by Public Resources Code Section 21092(b)(2).

Appendix A to Appendix D of the EIR is included in the Final EIR document.

C.2 Consistent with ICAPCD Policy 5, Mitigation Measures AQ-1 Construction Equipment, requires that a list of the construction equipment, including all off-road equipment utilized at each of the projects by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit.

This measure also requires that the equipment list shall be submitted periodically to ICAPCD to perform a NOx analysis. ICAPCD shall utilize this list to calculate air emissions to verify that equipment use does not exceed significance thresholds. Based on the Draft EIR air quality analysis, NOx emission thresholds are not anticipated to be exceeded (please see EIR Table 3.3-8, page 3.3-16). However, if the ICAPCD's NOx analysis indicates exceedances of the thresholds, the Project exceedances would be mitigated pursuant to Policy 5.

Mitigation Measure AQ-1 as well as the requirement to prepare and submit the Operational Dust Control Plan (ODCP) (Mitigation Measure AQ-2) and other measures for dust control required by Mitigation Measures AQ-3 and AQ-4 will be incorporated into the conditions of approval required as part of the Conditional Use Permit (CUP) for the project.

C.3 Comment noted.

July 24, 2020

Imperial County Planning and Development Services
Patricia Valenzuela, Planner IV
801 Main Street
El Centro, Ca. 92243
RE: Draft Environmental Report for the Wister Solar Energy Facility Project

Ms. Valenzuela,

The Imperial County Sheriff's Office is the chief law enforcement agency in Imperial County. The Sheriff's Office provides general law enforcement, detention and court services for the residents, business owners and visitors of Imperial County. We have a service area of approximately 4,597 square miles bordering on Mexico to the South, Riverside County to the North, San Diego County on the West, and the State of Arizona on the East. The terrain varies from 235 feet below sea level at the Salton Sea to 4,548 feet at Blue Angel Peak. In addition, the Sheriff's Office maintains substations in the surrounding areas and communities of Brawley, Palo Verde, Niland, Salton City, and Winterhaven.

The proposed project site is located approximately 3 miles northeast of the Niland Substation (300 E 1st St). The Niland Substation is a satellite office which North County Patrol (Brawley Station) officers utilize in the course of their duties. 13 deputies and 4 Sergeants normally patrol the Niland area while only one deputy is generally assigned to the Niland "beat" on any given shift. This staffing allows the North County Patrol Station to provide a minimum of 2 deputy sheriff's on duty 24 hours per day, 7 days per week.

D.1

Due to the road system inside this parcel, and the public safety need to access this property in all types of weather, the sheriff's office would request funding for a marked and equipped four wheel drive patrol vehicle. The cost is approximately $70,000. This equates to roughly $700 per acre. This mitigation measure will be required for the sheriff's office to provide services.

D.2

The projects on-site security equipment such as 8 foot high fencing with barbed wire around the perimeter, with lighting and remotely monitored closed circuit camera system will assist greatly in mitigating our needs. However, if alarmed, the project applicant would be required to obtain an alarm permit from the sheriff's office to be in compliance with County Ordinance 8.04.040. Fees for the alarm permit are covered under **County Ordinance 8.04.070** and are as follows:

Alarm permit	**$22.00**
Alarm permit renewal	**$22.00**
First reissued permit in original two-year period:	**$50.00**
Second reissued permit in original two-year period:	**$100.00**

D.3

Third reissued permit in original two-year period: **$200.00**
Fourth and additional reissued permit in original two-year period: **$500.00**

Multiple alarm permit fees are based on the single alarm fee of twenty-two dollars ($22.00) for up to five alarm systems at one location. Regardless of the number of permits, the total fee shall not exceed five times the single permit fee for any one location.

D.3, cont.

In looking at other similar projects throughout the County, we have seen an increase in calls for service to those areas, especially during the construction phase. The sheriff's office feels that this project would create a significant impact and have a cumulatively considerable effect on our station should similar type of calls for service arise. If there is an increase for calls for service as a result of this project and the sheriff's office maintains its current personnel allocations, funding and equipment, service levels may drop below acceptable levels or industry standards.

D.4

Letter D
Imperial County Sheriff's Office

July 24, 2020

D.1 This is an introductory comment that summarizes the sheriff's services in Imperial County and provides a general summary of the project characteristics. No further response is necessary.

D.2 As discussed in the Initial Study prepared for the project (see EIR Appendix A), as well as EIR Section 6 Effects Found Not Significant, it is recognized that although the potential is low, the proposed project could attract trespassers or other unauthorized uses. The increase in construction related traffic could temporarily increase demand on law enforcement services. However, the project site would be fenced with 6-foot high chain link security fence topped with barbed wire and points of ingress/egress would be accessed via locked gates. In addition, periodic on-site personnel visitations for security would occur during operations and maintenance of the proposed project, thereby minimizing the need for police surveillance.

It should be noted that project conditions of approval (COA's) include participation in public financing that can contribute to the purchase of a new vehicle or equipment. Project COA's include the following:

- The Permittee shall install and implement security measures which may include, but not limited to, secured perimeter fencing and barbed wire, sensors, with controlled access points, security alarms, security camera systems, security guard vehicle patrols to deter trespass or unauthorized activities that would interfere with operation of the proposed project.
- Permittee shall participate in the Imperial County Public Benefit Program for the life of this CUP and shall at all times be a party to a public benefit agreement in a form acceptable to County Counsel in order to pay for all costs, benefits, and fees associated with the approved project. Approval of this public benefit agreement will be by the Board of Supervisors prior to the issuance of the first building permit.
- The Permittee shall reimburse the Sheriff's Department for any investigations regarding theft on the Project site and related law enforcement.

The environmental impact associated with any increase in law enforcement patrols has been determined to be a less than significant impact. The conclusion is based on the CEQA Guidelines threshold which states: "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 public services." With respect to the Wister Solar Project, the project would not result in a physical impact to the environment associated with the provision of new or physically altered law enforcement services. While the sheriff's comment indicates that an all-terrain vehicle would be needed in order to patrol the project site, the fenced and secure project does not result in an increase in demand on law enforcement that would require existing or new facilities to be upgraded in order to maintain service ratios, which would, in turn, result in a physical impact to the environment.

EIR pages ES-5 and 6-4 have been revised as follows to clarify this conclusion:

Police Protection. Police protection services in the project area is provided by the Imperial County Sheriff's Department. Although the potential is low, the proposed project ~~may~~ could attract ~~vandals~~ trespassers or other ~~security risks~~ unauthorized uses. The increase in construction related traffic could temporarily increase demand on law enforcement services. However, the project site would be fenced with a 6-foot high chain link security fence topped with barbed wire and points of ingress/egress would be accessed via locked gates. In addition, periodic on-site personnel visitations for security would occur during operations and maintenance of the proposed project, thereby minimizing the need for police surveillance. While the proposed project may result in a~~n~~ temporary increase in demand for law enforcement service, the project would not result in an increase in demand that would, in turn, result in a substantial adverse physical impact associated with the provision of new or physically altered sheriff facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services. The sheriff's department has indicated that an all-terrain vehicle would be needed in order to patrol the project site; however, the fenced and secure project site does not result in an increase in demand on law enforcement that would require existing or new facilities to be upgraded in order to maintain service ratios. Further, as conditions of approval of the project, the project applicant will be required to participate in the Imperial County Public Benefit Program for the life of this CUP and shall at all times be a party to a public benefit agreement in a form acceptable to County Counsel in order to pay for all costs, benefits, and fees associated with the approved project, and the applicant will be required to reimburse the Sheriff's Department for any investigations regarding theft on the Project site and related law enforcement. Approval of this public benefit agreement will be by the Board of Supervisors prior to the issuance of the first building permit. ~~This~~ These potential impacts are less than significant. ~~is considered a less than significant impact.~~

D.3 The County acknowledges that if the applicant obtains an alarm permit through the sheriff's office, the applicant would be responsible for payment of applicable alarm permit fees per County Ordinance 8.04.070.

D.4 Please refer to preceding responses to comments D.1 through D.3.

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue, Thousand Oaks CA 91361-4972

August 4, 2020
Project: Wister Solar Energy Facility Project

Attention: Patricia Valenzuela
Planner IV
Imperial County Planning & Development Services
801 Main Street
El Centro, CA 92243
442-265-1749

Reference: Draft Environmental Impact Report SCH No. 2019110140

Dear Mrs. Valenzuela,

Stantec Consulting Services Inc. (Stantec), as the designated environmental consultant on behalf of ORNI 33, LLC, the applicant of the proposed Wister Solar Energy Facility Project (Project), has prepared the following comment letter in response to Draft Environmental Impact Report SCH No. 2019110140.

The proposed Project site occurs on the western margin of the known range of the federally and state threatened Mojave Desert tortoise (*Gopherus agassizii*). Federally designated critical habitat for the Mojave Desert tortoise occurs approximately 4-miles northeast of the Biological Survey Area (BSA), which includes the Project footprint and a 500-foot buffer. Marginally suitable habitat for this species exists within and adjacent to the BSA. However, according to California Natural Diversity Database (CNDDB), the nearest recorded occurrence to the BSA is approximately 4.3 miles to the northeast.

Indirect and direct impacts are described within the Draft Environmental Impact Report (DEIR) prepared by HDR Consulting. Direct impacts initially identified in the DEIR describe that if tortoises are present or within the vicinity of the Project site, then grading and vehicular traffic could potentially crush and kill individual tortoises. In addition, they could potentially become trapped in open trenches and could be killed due to an increased exposure to predators or extreme weather.

The DEIR also initially describes the potential indirect impact, in which disturbed lands associated with construction and grading of the proposed Project may no longer provide viable long-term habitat for the Mojave Desert tortoise. The Project's solar field, substation, and new access roads are considered a direct impact that could cause the long-term loss of 115.4 acres of potential habitat. Indirect impacts of construction could include an increase in desert tortoise predators such as ravens and crows that may be drawn to the Project site by ground disturbing activities that expose wildlife and produce carcasses and waste for scavenging. Trash or carcass remains could also increase the presence of scavengers, which may prey on other species' eggs or juveniles. In addition, infrequent panel washing could change drainage patterns or transport pollutants or sediment off-site where it may adversely impact downstream aquatic resources.

E.1

Therefore, to fully mitigate for habitat loss and potential take of the Mojave Desert tortoise, the DEIR initially established a compensatory mitigation at a ratio of 3:1. However, based on Stantec's further review of the Project, we recommend a 1:1 compensatory mitigation ratio for Mojave Desert tortoise given the following reasons:

E.2

Reference: **Draft Environmental Impact Report SCH No. 2019110140**

- Although there is designated critical habitat and the nearest recorded occurrence approximately four miles northeast, the Coachella Canal, located approximately 0.8 mile to the northeast of the Project site, provides a substantial barrier to tortoise movement. E.2a
- Stantec recommends the applicant establish a conservation easement within the southwest section of their privately owned parcel (APN 003-240-001), which has the highest quality habitat available to preserve. E.2b
- Stantec recommends the conservation easements be increased to 115.4 acres to mitigate for potential impacts to Mojave Desert tortoise, Blue Palo Verde Ironwood – Woodland, and waters. Therefore, compensatory mitigation ratios for Blue Palo Verde Ironwood – Woodland and waters would significantly increase from the original 3:1 and 1:1 ratios, respectively. E.2c

We appreciate the opportunity to provide comment on the Wister Solar Energy Facility DEIR. If you have any further questions, please feel free to give us a call. E.3

Regards,

Stantec Consulting Services Inc.

Jared Varonin
Principal Biologist/Ecosystems Practice Leader
Phone: 805.358.7696
jared.varonin@stantec.com

c. Tim Gnibus, HDR Consulting

Letter E

Stantec

August 4, 2020

E.1 This comment summarizes information presented in Draft EIR Section 3.4 Biological Resources. The information summarized in this comment is consistent with the information contained in the Draft EIR.

E.2 As stated on Draft EIR page 3.4-33, Mitigation Measure BIO-4, Desert Tortoise Avoidance and Minimization, a qualified biologist shall conduct focused presence/absence surveys for Desert Tortoise for 100-percent of the project footprint pursuant to the October 19, 2019 Version of the USFWS Desert Tortoise Survey Protocol. If no live desert tortoise or sign of active desert tortoise if detected, no further avoidance and minimization is required. Per Mitigation Measure BIO-4, the recommended 3:1 mitigation ratio for habitat loss would only apply should presence of the tortoise be determined through the presence/absence surveys. However, please refer to responses to comments E.2a through E.2c regarding the quality of habitat and proposed compensatory mitigation ratio if live or active desert tortoise is detected on-site.

E.2a This comment is acknowledged and consistent with the Draft EIR analysis provided on page 3.4-41, which states that the project site is not situated within is significant dispersal corridor. In fact several north-south trending features already disrupt east to west movement including SR 111, Coachella Canal and East Highline Canal. Local North-South movement can continue east of the project.

E.2b Comment noted. As noted in this comment, quality habitat is located in the southern portions of the entire 640-acre parcel. Disturbance to this habitat was largely avoided at the time the project was redesigned and reduced in size from the originally-submitted site plan, which proposed a 40 megawatt facility on approximately 300 acres. The southern area would be biologically suitable for establishment of a conservation easement.

E.2c Establishment of a conservation easement on the southern portion of the property in the amount of 115.4 acres, which would address Blue Palo Verde Ironwood-Woodland and waters; would be considered appropriate mitigation for desert tortoise as well with consideration of the marginal habitat located in the portion of the project site proposed for development, as well as the limited biological connectivity of the northern portion of the site as addressed in response to comment E.2a. As such, Mitigation Measure BIO-4 has been revised as follows:

- To fully mitigate for habitat loss and potential take of the Mojave desert tortoise, the Applicant will provide compensatory mitigation at a ratio of ~~3:1~~ 1:1. For the purposes of this measure, the project site (i.e., footprint) means all Project areas with new direct ground disturbance during construction and operation of the Project. This includes all lands directly disturbed that will no longer provide viable long-term habitat for the Mojave desert tortoise, such as the solar field, substation and new access roads. Areas within the gen-tie line corridor where no ground disturbance will occur are not included in the area to be mitigated through compensation. Compensatory mitigation could include agency-approved payment of an in-lieu fee; acquiring mitigation land or conservation easements; restoration or habitat enhancement activities on preservation lands; or a combination of the three.

E.3 Comment noted.

ADAMS BROADWELL JOSEPH & CARDOZO
A PROFESSIONAL CORPORATION
ATTORNEYS AT LAW
601 GATEWAY BOULEVARD, SUITE 1000
SOUTH SAN FRANCISCO, CA 94080-7037
TEL: (650) 589-1660
FAX: (650) 589-5062
amessing@adamsbroadwell.com

SACRAMENTO OFFICE
520 CAPITOL MALL, SUITE 350
SACRAMENTO, CA 95814-4721
TEL: (916) 444-6201
FAX: (916) 444-6209

DANIEL L. CARDOZO
CHRISTINA M. CARO
THOMAS A. ENSLOW
ANDREW J. GRAF
TANYA A. GULESSERIAN
KENDRA D. HARTMANN*
KYLE C. JONES
RACHAEL E. KOSS
NIRIT LOTAN
AARON M. MESSING
WILLIAM C. MUMBY

MARC D. JOSEPH
Of Counsel

*Admitted in Colorado

August 14, 2020

VIA EMAIL AND U.S. MAIL

Patricia Valenzuela, Planner IV
Planning & Planning and Development Services Department
Imperial County
801 Main Street
El Centro, CA 92243
Email: PatriciaValenzuela@co.imperial.ca.us

Re: **Comments on Ormat Wister Solar Energy Facility Project Draft Environmental Impact Report (SCH No. 2019110140)**

Dear Ms. Valenzuela:

We are writing on behalf of Citizens for Responsible Solar to provide comments on the Draft Environmental Impact Report ("DEIR") prepared by Imperial County ("County") for the Wister Solar Energy Facility Project ("Project"), State Clearinghouse Number 2019110140. The Project, proposed by Orni 21, LLC ("Applicant"), would include the construction and operation of a solar photovoltaic ("PV") power generating facility and associated facilities, including a substation and access roads, that would generate a combined total of approximately 20 megawatts ("MW") of renewable electrical energy on approximately 100 acres of private land in Imperial County. The Project will also include the installation of a gen-tie line that would connect the proposed on-site substation to the Point of Interconnection (POI) at the existing Imperial Irrigation District's (IID) 92-kilovolt (kV) "K" line site and a fiberoptic cable. The Project is located approximately three miles north of Niland, a census-designated place, in the unincorporated area of Imperial County. F.1

The Applicant is seeking (a) a Conditional Use Permit to allow for the construction and operation of the 20 MW solar PV facility; (b) a Conditional Use Permit to allow for the construction of a groundwater well; and (c) an Amendment to the Renewable Energy and Transmission Element of the Imperial County General Plan to allow for the Project, which is not located in the RE Overlay Zone,

to be reclassified as being in the RE Overlay Zone; (d) a Zone Change for the implementation of the General Plan Amendment; (e) a Variance allowing the Project's transmission towers of up to 70 feet high to comply with the existing S-2 zone's 40 feet maximum height limit; and (f) certification of the EIR.

F.1, cont.

Based on our review of the DEIR, appendices, and other relevant records, we have determined that the DEIR fails to meet the requirements of the California Environmental Quality Act ("CEQA"). Specifically, the DEIR suffers from the following deficiencies:

- Failure to properly establish the environmental setting for and adequately disclose, analyze, and mitigate the Project's impacts on biological resources;
- Failure to adequately disclose, analyze, and mitigate the Project's impacts on air quality and public health, including a previously undisclosed significant air quality impact;
- Failure to adequately disclose, analyze, and mitigate potentially significant impacts on climate change from greenhouse gas emissions; and
- Failure to adequately disclose, analyze, and mitigate health risk impacts from hazardous materials and Valley Fever.

F.2

For each of these reasons, the County must revise and recirculate the DEIR in order to properly disclose, analyze, and mitigate the Project's significant impacts. The County cannot certify the EIR or approve the project until a revised draft EIR addresses these issues.

These comments were prepared with the assistance of conservation biologist Shawn Smallwood and air quality experts Matt Hagemann and Paul E. Rosenfeld of Soil/Water/Air Protection Enterprise ("SWAPE"). Mr. Smallwood's comments and curricula vitae are attached to this letter as **Exhibit A**.[1] SWAPE's technical comments and curriculum vitae are attached to this letter as **Exhibit B**.[2] Exhibits 1 and 2 are fully incorporated herein and submitted to the County herewith.

F.3

[1] **Exhibit A** – Letter from Shawn Smallwood, Re: Wister Solar Energy Facility EIR, dated August 11, 2020 ("**Smallwood Comments**").
[2] **Exhibit B** – Letter from SWAPE, Re: Comments on Wister Solar Energy Facility Project (SCH No. 2019110140), dated August 6, 2020 ("**SWAPE Comments**").
4106-013acp

Therefore, the County must separately respond to the technical comments of SWAPE and Mr. Smallwood in addition to our comments. F.3, cont.

I. STATEMENT OF INTEREST

Citizens for Responsible Solar ("Citizens") is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards and environmental and public service impacts of the Project. The association includes California Unions for Reliable Energy ("CURE") and its member labor organizations, and their members and families, and other individuals that live and/or work in Imperial County.

The individual members of Citizens and the members of the affiliated labor organizations live, work, recreate and raise their families in Imperial County. They would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work constructing the Project itself. They will be first in line to be exposed to any health and safety hazards that may be present on the Project site. They each have a personal interest in protecting the Project area from unnecessary, adverse environmental and public health impacts.

The organizational members of the Citizens also have an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for the members that they represent. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live there. This, in turn, jeopardizes future development by causing construction moratoriums and otherwise reduces future employment opportunities for construction workers. The labor organization members of the Citizens therefore have a direct interest in enforcing environmental laws to minimize the adverse impacts of projects that would otherwise degrade the environment. F.4

Finally, the organizational members of the Citizens are concerned about projects that risk serious environmental harm without providing countervailing economic benefits. CEQA provides a balancing process whereby economic benefits are weighed against significant impacts to the environment and it is in this spirit that we offer these comments.

4106-013acp

II. LEGAL BACKGROUND

CEQA requires that an agency analyze the potential environmental impacts of its proposed actions in an EIR, except in limited circumstances.[3] The EIR is the very heart of CEQA.[4] "The foremost principle in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language."[5]

CEQA has two primary purposes. First, CEQA is designed to inform decisionmakers and the public about the potential, significant environmental effects of a project.[6, 7] CEQA's purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. In this respect, an EIR "protects not only the environment but also informed self-government."[8] The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."

F.5

To fulfill this function, the discussion of impacts in an EIR must be detailed, complete, and "reflect a good faith effort at full disclosure."[9] CEQA requires an EIR to disclose all potential direct and indirect, significant environmental impacts of a project.[10] In addition, an adequate EIR must contain the facts and analysis necessary to support its conclusions.[11]

The second purpose of CEQA is to require public agencies to avoid or reduce environmental damage when possible by requiring appropriate mitigation measures and through the consideration of environmentally superior alternatives.[12] The EIR serves to provide agencies and the public with information about the environmental

---

[3] *See, e.g.,* Pub. Res. Code § 21100.
[4] *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.
[5] *Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal. App.4th 98, 109.
[6] 14 Cal. Code Regs. ("**CEQA Guidelines**"), § 15002, subd. (a)(1).
[7] See, e.g., Pub. Resources Code § 21100.
[8] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.
[9] CEQA Guidelines § 15151; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 721-722.
[10] Pub. Resources Code § 21100, subd. (b)(1); CEQA Guidelines § 15126.2, subd. (a).
[11] See *Citizens of Goleta Valley* 52 Cal.3d at 568.
[12] CEQA Guidelines § 15002, subds. (a)(2)-(3); see also, *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1354; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564; *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391, 400.
4106-013acp

impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced." To that end, if an EIR identifies significant impacts, it must then propose and evaluate mitigation measures to minimize these impacts.[13] CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible project alternatives or mitigation measures.[14] Without an adequate analysis and description of feasible mitigation measures, it would be impossible for agencies relying upon the EIR to meet this obligation.

F.5, cont.

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference."[15] As the courts have explained, "a prejudicial abuse of discretion" occurs "if the failure to include relevant information precludes informed decision-making and informed public participation, thereby thwarting the statutory goals of the EIR process."[16]

III. THE DEIR FAILS TO ADEQUATELY DISCLOSE, ANALYZE, AND MITIGATE SIGNIFICANT IMPACTS

An EIR must fully disclose all potentially significant impacts of a project. The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[17] An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and substantial evidence justifying the finding.[18] Finally, the agency cannot approve the project with significant impacts unless it has "eliminated or substantially lessened all significant effects on the environment where feasible."[19] As such, an EIR must identify and describe any feasible measures that can be implemented to reduce or avoid each potentially significant environmental effects of the project.

F.6

[13] Pub. Res. Code §§ 21002.1, subd. (a), 21100, subd. (b)(3).
[14] Pub. Res. Code §§ 21002-21002.1.
[15] *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), *quoting, Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12.
[16] *Berkeley Jets*, 91 Cal.App.4th at 1355; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 946.
[17] CEQA Guidelines § 15064(b).
[18] *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.
[19] CEQA Guidelines § 15092(b)(2)(A).
4106-013acp

The DEIR does not comply with CEQA because it fails to consider all of the Project's significant and foreseeable environmental impacts on biological resources, air quality, public health, and climate change. In some instances, the DEIR's conclusions on the Project's impacts are not supported by substantial evidence. The DEIR also fails to adequately mitigate significant impacts to less than significant. For these reasons, the County must revise the DEIR to remedy these deficiencies and recirculate the revised DEIR for public review and comment.

F.6, cont.

A. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Impacts on Biological Resources

According to the DEIR, the Project area is located within the Sonoran Desert in an area bordered by undeveloped lands, sparse agriculture, and dirt roads.[20] The Project site consists mostly of native, undisturbed habitat.[21] The Sonoran Desert supports a variety of reptile, bird, and mammal species and vegetation in the Project region is influenced by climate, topography, and soils, as well as land uses.[22] Although the DEIR notes this diverse array of vegetation and wildlife, it fails to properly address impacts to these biological resources. As explained below, the DEIR violates CEQA because it: (1) fails to adequately survey the Project site for biological resources and, thus, fails to adequately describe the environmental setting for biological resources; (2) fails to properly disclose and analyze the Project's impacts to numerous biological resources; and (3) fails to adequately mitigate these impacts to a less than significant level.[23] The DEIR must be revised to correct these deficiencies.

F.7

1. The DEIR Fails to Adequately Describe the Environmental Setting for Biological Resources

The existing environmental setting is the starting point from which the lead agency must measure whether a proposed Project may cause a significant environmental impact.[24] Describing the environmental setting accurately and completely for each environmental condition in the vicinity of the Project is critical to an accurate and meaningful evaluation of environmental impacts. The courts are clear that "[b]efore the impacts of a Project can be assessed, and mitigation

F.8

[20] DEIR, p. 3.4-1.
[21] DEIR, p. 2-3.
[22] DEIR, p. 3.4-1.
[23] *See* Smallwood Comments.
[24] *See, e.g., Communities for a Better Env't v. S. Coast Air Quality Mgmt. Dist.* (2010) 48 Cal.4th 310, 316; *Fat v. City of Sacramento* (2002) 97 Cal.App.4th 1270, 1278, *citing* Remy, et al.; Guide to the Calif. Environmental Quality Act (1999) p. 165.
4106-013acp

measures considered, an [EIR] must describe the existing environment. It is only against this baseline that any significant environmental effects can be determined."[25]

F.8, cont.

An EIR must describe the existing environmental setting in sufficient detail to enable a proper analysis of project impacts.[26] The CEQA Guidelines provide that "[k]nowledge of the regional setting is critical to the assessment of environmental impacts."[27] This level of detail is necessary to "permit the significant effects of the project to be considered in the full environmental context."[28] The environmental setting is especially critical to forming the baseline conditions that inform the potential for significant impacts on biological resources.

F.9

One of the primary sources for the DEIR's biological baseline is a "focused non-protocol" survey conducted "by vehicle and on foot with the primary goal of identifying habitat that could be capable of supporting special-status species and to document the presence/absence of special-status biological resources" ("Stantec Survey").[29] The terms "focused" and "non-protocol" are not defined in the DEIR or its appendices for this survey, and it is therefore unclear how the survey was conducted, including when it began, how long it lasted, or what the focus of the survey was.[30] Additionally, no protocol level surveys were performed for the desert tortoise or burrowing owl, in accordance with U.S. Fish and Wildlife Service ("FWS") and California Department of Fish and Wildlife ("CDFW") guidelines, despite known occurrences of these species near the project site.[31] Moreover, of the surveys completed for the site, only preconstruction surveys were conducted, not the detection surveys outlined in FWS and CDFW guidelines.[32]

F.10

In contrast, the DEIR cites to another survey that conducted a protocol-level survey for the flat-tailed horned lizard, a special status species.[33] That survey reported finding an additional special-status species, the loggerhead shrike, which the Stantec Survey and the DEIR fail to report or properly characterize in the

F.11

[25] *City of Amador v. El Dorado City Water Agency* (1999) 76 Cal.App.4th 931, 952.
[26] CEQA Guidelines § 15125; *Galante Vineyards v. Monterey Peninsula Water Mgmt. Dist.* (1997) 60 Cal.App.4th 1109, 1121-22.
[27] CEQA Guidelines § 15125(c).
[28] *Id.*
[29] DEIR Appendix E, p. 2.1.
[30] Smallwood Comments, p. 2.
[31] Smallwood Comments, p. 2.
[32] Smallwood Comments, p. 2.
[33] Smallwood Comments, p. 2.
4106-013acp

DEIR's analysis of the species' likelihood to occur on the site.[34] These deficiencies in the DEIR's analysis call into question its environmental baseline as established for biological resources. F.11, cont.

In his letter, Mr. Smallwood further concludes, following a review of focused surveys from nearby projects, databases, and scientific literature, that "an astonishing 91 special-status species [are found] nearby the project site or whose geographic ranges overlap or nearly overlap the project site" and "[o]f these 91 special-status species, 53% are represented as fatalities during construction or operation of California's solar projects."[35] The DEIR, he notes, addresses the occurrence likelihoods of only 28 of these species.[36] F.12

As outlined in Mr. Smallwood's letter, the DEIR incorrectly analyzes the presence of numerous potentially occurring special-status species by omitting analysis completely, determining these species as absent, or as having a low potential for occurrence on the Project site, concluding therefore that impacts would be less than significant. Mr. Smallwood's review of the Project, supported by substantial evidence in Table 1 below, reveals that these species are actually present in the Project vicinity. As such, the DEIR must adequately identify and analyze impacts to these species. At the very least, detection surveys must be properly conducted to determine the presence of the species highlighted by Mr. Smallwood, as discussed in Section III(A)(3). F.13

Table 1. Potentially occurring species of wildlife on the project area according to EIR and eBird (https://eBird.org) or iNaturalist (https://www.inaturalist.org/observations), where 'nearby' means within a few miles of the project site. F.14

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Brant, *Branta bernicla*	SSC2	Yes		Nearby
American white pelican, *Pelecanus erythrorhynchos*	SSC1	Yes		Nearby
Brown pelican, *Pelacanus occicentalis californicus*	FE, CE, CFP	Yes	None	Nearby
Double-crested cormorant, *Phalacrocorax auritus*	TWL	Yes		Nearby
Least bittern, *Ixobrychus exilis*	BCC, SSC2	Yes		Nearby

[34] Smallwood Comments, p. 2.
[35] Smallwood Comments, p. 7.
[36] Smallwood Comments, p. 7.
4106-013acp

August 14, 2020
Page 9

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Yuma Ridgway rail, *Rallus longirostris yumanensis*	FE, CT	Yes	Low	Nearby
Greater sandhill crane, *Grus canadensis tabida*	CT	Not yet		Nearby
Redhead, *Aythya americana*	SSC3	Yes		Nearby
Western snowy plover, *Charadrius alexandrinus nivosus*	FT, BCC	Yes	Low	Nearby
Mountain plover, *Charadrius montanus*	SSC2	Not yet	Moderate	Nearby
Marbled godwit, *Limosa fedua*	BCC	Not yet		Nearby
Short-billed dowitcher, *Limnodromus griseus*	BCC	Not yet		Nearby
Black skimmer, *Rynchops niger*	BCC, SSC3	Not yet	Low	Nearby
California gull, *Larus californicus*	TWL	Yes	Low	Nearby
Caspian tern, *Hydropogne caspia*	TWL	Not yet	Low	Nearby
Gull-billed tern, *Geochelidon nilotica*	SSC3	Not yet	Low	Nearby
California least tern, *Sterna antillarum browni*	FE, CE	Not yet		Nearby
Osprey, *Pandion haliaetus*	TWL, FGC 3503.5	Yes		Nearby
Golden eagle, *Aquila chrysaetos*	BGEPA, CFP, FGC 3503.5	Not yet		Nearby
Bald eagle, *Haliaeetus leucocephalus*	BGEPA, BCC, CE, FGC 3503.5	Not yet		Nearby
Cooper's hawk, *Accipiter cooperii*	TWL, FGC 3503.5	Yes		Nearby
Sharp-shinned hawk, *Accipiter striatus*	TWL, FGC 3503.5	Not yet		Nearby
Ferruginous hawk, *Buteo regalis*	BLM, TWL, FGC 3503.5	Not yet		Nearby
Red-tailed hawk, *Buteo jamaicensis*	FGC 3503.5	Yes		Nearby
Swainson's hawk, *Buteo swainsoni*	CT, FGC 3503.5	Not yet		Nearby
Red-shouldered hawk, *Buteo lineatus*	FGC 3503.5	Not yet		Nearby
Northern harrier, *Circus cyaneus*	SSC3, FGC 3503.5	Yes		Nearby
White-tailed kite, *Elanus leucurus*	CFP, FGC 3503.5	Not yet		Nearby
American kestrel, *Falco sparverius*	FGC 3503.5	Yes	On site	Nearby
Merlin, *Falco columbarius*	TWL, FGC 3503.5	Not yet	Moderate	Nearby
Prairie falcon, *Falco mexicanus*	BCC, TWL, FGC 3503.5	Yes		Nearby
Peregrine falcon, *Falco peregrinus*	CE, CFP, BCC, FGC 3503.5	Yes		Nearby
Long-billed curlew, *Numenius americanus*	TWS	Yes		Nearby
Whimbrel, *Numenius phaeopus*	BCC	Yes		Nearby
Western yellow-billed cuckoo, *Coccyzus americanus occidnetalis*	FT, BCC, CE	Yes		Nearby
Barn owl, *Tyto alba*	FGC 3503.5	Yes		Nearby
Long-eared owl, *Asio otus*	BLM, SSC3	Yes		Nearby

F.14, cont.

4106-013acp

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Short-eared owl, *Asio flammeus*	SSC3, FGC 3503.5	Yes		Nearby
Great-horned owl, *Bubo virginianus*	FGC 3503.5	Yes		Nearby
Western screech-owl, *Megascops kennicotti*	FGC 3503.5	Not yet		Nearby
Western burrowing owl, *Athene cunicularia*	BCC, SSC2	Yes	High	Nearby
Gila woodpecker, *Melanerpes uropygialis*	CE, BCC	Not yet	Low	Nearby
Ladder-backed woodpecker, *Dryobates scalaris*	BLM, BCC, CE	Yes		Nearby
Vaux's swift, *Chaetura vauxi*	SSC2	Yes		Nearby
Costa's hummingbird, *Calypte costae*	BCC	Yes		Nearby
Olive-sided flycatcher, *Contopus cooperi*	SSC2	Yes		Nearby
Vermilion flycatcher, *Pyrocephalus rubinus*	SSC2	Yes		Nearby
Southwestern willow flycatcher, *Empidonax traillii*	FE, CE	Not yet	Low	Nearby
Cactus wren, *Campylorhynchus brunneicapillus*	BCC	Yes		Nearby
Purple martin, *Progne subis*	SSC2	Not yet		Nearby
Bank swallow, *Riparia*	CT	Yes		Nearby
Crissal thrasher, *Toxostoma crissale*	BLM, BCC, SSC3	Yes	Moderate	Nearby
LeConte's thrasher, *Toxostoma lecontei*	BLM, BCC, SSC1	Not yet	Moderate	Nearby
Bendire's thrasher, *Toxostoma bendirei*	BCC, SSC3	Not yet		Nearby
Loggerhead shrike, *Lanius ludovicianus*	SSC2	Yes	On site[2]	Nearby
California horned lark, *Eremophila alpestris*	TWL	Yes		Nearby
Black-tailed gnatcatcher, *Polioptera nigriceps*	TWL	Yes	Moderate	Nearby
Arizona Bell's vireo, *Vireo bellii arizonae*	CE, BCC	Not yet		Nearby
Yellow-breasted chat, *Icteria virens*	SSC3	Yes	Low	Nearby
Lucy's warbler, *Oreothlypis luciae*	BCC, SSC3	Yes		Nearby
Yellow warbler, *Dendroica petechia sonorana*	BCC, SSC2	Yes	Moderate	Nearby
Bell's sage sparrow, *Amphispiza belli*	TWL	Yes		Nearby
Vesper sparrow, *Pooecetes gramineus affinis*	SSC2	Yes		Nearby
Grasshopper sparrow, *Ammodramus savannarum*	SSC2	Not yet		Nearby
Large-billed savannah sparrow, *Passerculus s. rostratus*	SSC2	Yes		Nearby
Summer tanager, *Piranga rubra*	SSC1	Yes		Nearby
Tricolored blackbird, *Agelaius tricolor*	CT, BCC	Not yet		Nearby
Yellow-headed blackbird, *X. xanthocephalus*	SSC3	Yes		Nearby
Lawrence's goldfinch, *Spinus lawrencei*	BCC	Not yet		Nearby
Sonoran Desert toad, *Incilius alvarius*	SSC	Not yet	Moderate	In range

F.14, cont.

4106-013acp

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Lowland leopard frog, *Lithobates yavapaiensis*	SSC	Not yet	Moderate	Near range
Couch's spadefoot, *Scaphiopus couchii*	BLM, SSC	Not yet	Moderate	Nearby
Desert tortoise, *Gopherus agassizii*	FT, CT	Yes	Moderate	Nearby
Flat-tailed horned lizard, *Phrynosoma mcallii*	SSC	Not yet		Nearby
Hoary bat, *Lasiurus cinereus*	WBWG: M	Not yet		In range
Pallid bat, *Antrozous pallidus*	BLM, SSC, WBWG:H	Yes	Low	Nearby
Western mastiff bat, *Eumops perotis californicus*	BLM, SSC, WBWG:H	Not yet		Nearby
Townsend's big-eared bat, *Corynorhinus t. townsendii*	BLM, SSC, WBWG:H	Yes		In range
Big free-tailed bat, *Tadarida molossa*	SSC, WBWG:MH	Not yet		In range
Pocketed free-tailed bat, *Nyctinomops femorosaccus*	SSC, WBWG:M	Not yet	High	In range
Western yellow bat, *Lasiurus xanthinus*	SSC, WBWG:H	Not yet		In range
Western red bat, *Lasiurus blossivellii*	SSC, WBWG:H	Not yet		In range
Small-footed myotis, *Myotis cililabrum*	BLM, WBWG:M	Yes		In range
Fringed myotis, *Myotis thysanoides*	BLM, WBWG:H	Not yet		In range
Yuma myotis, *Myotis yumanensis*	BLM, WBWG:LM	Yes		In range
California leaf-nosed bat, *Mactotus californicus*	BLM, SSC, WBWG:H	Not yet	Low	Nearby
Round-tailed ground squirrel, *Xerospermophilus tereticaudus chlorus*	SSC	Not yet		Nearby to north
American badger, *Taxidea taxus*	SSC	Not yet	Moderate	Nearby
Desert kit fox, *Vulpes macrotis arsipus*	CFP	Not yet	On site	Nearby
Burro deer, *Odocoileus hemionus eremicus*	SS, PS	Not yet		Nearby
Peninsular bighorn sheep, *Ovis canadensis nelson*	FE, CT	Not yet	None	In range

F.14, cont.

2. The DEIR Fails to Adequately Disclose and Analyze Impacts to Biological Resources from Fatality Rates, Habitat Loss, Wildlife Movement, and Cumulative Impacts

F.15

The DEIR fails to adequately disclose and analyze impacts on several special-status species that leads the County to underestimate significant impacts on biological resources. As such, the DEIR fails to demonstrate with substantial evidence that impacts to these species will be less than significant, as required by CEQA. The DEIR must be revised to correct these deficiencies.

4106-013acp

a. Fatality Rates for the Burrowing Owl

In his letter, Mr. Smallwood provides detailed predictive analysis of mortality rates for Burrowing Owl with respect to the Project:

> After losing their habitat to solar projects, burrowing owls collide with PV solar panels at a rate of 0.182 (95% CI: 0.150-0.258) fatalities/MW/year. Burrowing owls also collide with perimeter fences at a rate of 0.25 (95% CI: 0.197-0.329) fatalities/km/year and with gen-ties at a rate of 0.034 (95% CI: 0.027-0.043) fatalities/km/year. Applied to the project, these rates would predict 3.64 (95% CI: 3-5.2) burrowing owl fatalities per year at PV arrays, 0.37 (95% CI: 0.29-0.48) fatalities per year along the fence, and 0.03 (95% CI: 0.04-0.06) fatalities per year along the gen-tie, totaling 101 (95% CI: 83-144) over the project's projected life, assuming burrowing owls are not earlier extirpated from Imperial County.[37]

F.16

In other words, the Project is expected to kill approximately 101 burrowing owls over the Project's projected life,

Mr. Smallwood's projection comes in stark contrast to the County's claim in the DEIR, which states that because of the "static and highly visible nature of solar panels and transmission towers, burrowing owls are not expected to collide with the structures during daytime foraging activities when they may be hovering or flying in search of prey. No impacts on burrowing owl are anticipated as a result of collision with facility structures, and no mitigation would be required."[38]

Mr. Smallwood has commented on previous solar projects in Imperial County with similar features and his projections on avian mortality have been proven correct by the facts on the ground.[39] He explains, "[t]he scientific evidence is now overwhelming that solar PV arrays deployed at utility scale pose considerable collision risk to birds."[40] The County cannot cursorily dismiss the potential for burrowing owl mortality at the Project site without disclosing and analyzing the substantial evidence of potentially significant impact provided by Mr. Smallwood.

---

[37] Smallwood Comments, p. 8.
[38] DEIR, p. 3.4-27.
[39] *See* Smallwood Comments, pp. 8–9.
[40] Smallwood Comments, p. 8.
4106-013acp

b. Habitat Loss

The DEIR's primary claim regarding habitat loss for biological resources at the Project site is that any loss would compose a small percentage of available habitat within the geographic range of any given species.[41] However, Mr. Smallwood identifies three errors with this logic: 1) only a portion of the area within a species' geographic range consists of habitat suitable to the species; 2) species of wildlife are well known to be spatially aggregated within contiguous expanses of suitable habitat, typically occupying only 25% of their available habitat at any given time; and 3) the claim examines project-generated habitat loss at a cumulative scope without examining cumulative impacts.[42] Correcting for the DEIR's inaccurate assumption, Mr. Smallwood finds that the project's destruction of habitat would deny the Sonoran Desert of 1,733 birds, while also killing 8,485 birds for a combined toll of 10,218 birds.[43]

F.17

The DEIR provides essentially no evidence supporting its conclusion that habitat loss will not result in a significant environmental impact. The DEIR must be revised to consider the substantial evidence from Mr. Smallwood to support its conclusions.

c. Wildlife Movement

The County's discussion of wildlife movement in the DEIR concludes that, because "the BSA does not occur within any known wildlife movement corridor or habitat linkage" no significant impact is present.[44] However, a significant impact can be found under CEQA with respect to wildlife movement regardless of whether the movement is channeled by a corridor. Mr. Smallwood elaborates:

F.18

> A site such as the proposed project site is critically important for wildlife movement because it composes a diminishing patch of natural cover within a growing expanse of anthropogenic land uses – especially of solar projects, forcing more volant wildlife to use the site as stopover and staging habitat during migration, dispersal, and home range patrol.[45]

---

[41] *See* DEIR, p. 3.4-28.
[42] Smallwood Comments, pp. 9–10.
[43] Smallwood Comments, p. 13.
[44] DEIR, p. 3.4-15
[45] Smallwood Comments, p. 13.
4106-013acp

Additionally, the project would block half of the width of the strip of land between the East Highline Canal and Coachella Canal, which bind a long strip of land from which many small mammals and reptiles likely cannot leave by traveling east or west.[46] These Canals effectively created a forced wildlife movement corridor which would largely be blocked by the Project.[47] This significant evidence, published in publicly available research, was omitted from the DEIR's analysis of the biological impacts from the Project. This omission must be remedied before the EIR can be certified.

F.18, cont.

d. Cumulative Impacts

Mr. Smallwood's research shows that, between collision fatalities and lost breeding capacity due to habitat loss, the cumulative toll of renewable energy projects on birds in the Imperial Valley would remove 472,115 birds over 25 years.[48] The DEIR does not include this type of quantitative analysis in its discussion of cumulative impacts. Instead, it merely acknowledges the mitigation and other regulatory requirements from FWS and CDFW and claims that the Project's compliance, in addition to project compliance at large within Imperial County, with these guidelines and regulations would therefore not contribute substantially to a cumulative biological resources impact.[49] This is an incorrect application of CEQA's guidelines on cumulative impacts.

A project has a significant cumulative impact if the project's potential environmental impacts, although individually limited, are cumulatively considerable.[50] The term "'cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."[51] Thus, by relying on a determinations of less than significant biological impacts for each individual solar project in Imperial County without considering the impacts of all the solar projects *cumulatively*, the DEIR completely fails to conduct a cumulative impacts analysis for the Project.

F.19

No doubt, justification for the Project comes both from the local and state-wide need for energy and the desire to mitigate anthropogenic climate change. But

[46] Smallwood Comments, p. 13.
[47] Smallwood Comments, p. 13.
[48] Smallwood Comments, p. 14.
[49] DEIR, pp. 5-9–5-11.
[50] PRC § 21083(b); 14 CCR §§ 15064(h)(1), 15065(a)(3).
[51] PRC § 21083(b)(2).
4106-013acp

in making this consideration, it cannot be lost that a primary reason for slowing anthropogenic climate change is to reduce its damaging and disruptive effects on wildlife and their habitats, including the many ecosystem services these habitats provide when intact. By continually declaring cumulative impacts to biological resources not significant and not attempting to seek other feasible methods of mitigation, e.g., compensatory mitigation, while allowing the numbers of wildlife fatalities to continue to rise, the DEIR attempts to sidestep one of the pillars of CEQA review and has arrived at a point where the adverse environmental effects are no longer be considered "acceptable."[52] A full quantitative analysis must be completed by the County in order to determine the full extent of cumulative impacts from the Project and similar projects in the County, and additional mitigation should be employed to reduce those impacts before the EIR can be certified.

F.19, cont.

3. The DEIR Fails to Adequately Mitigate Impacts to Biological Resources and does not Include all Feasible Mitigation Measures

Many of the impacts to biological resources discussed above are considered less than significant by the DEIR due to mitigation measures purporting to reduce impacts to biological resources. However, in his letter, Mr. Smallwood identifies multiple mitigation measures that do not adequately mitigate against the extent of impacts to biological resources. Additionally, Mr. Smallwood presents eight feasible mitigation measures not currently adopted by the DEIR that would facilitate further reduction in environmental impacts.

F.20

As previously stated, CEQA imposes an affirmative obligation on agencies to avoid or reduce environmental harm by adopting feasible project alternatives or mitigation measures.[53] Before a project that will cause significant environmental impacts can be approved, a lead agency must find that *all* feasible mitigation measures that would reduce or eliminate a project's impacts have been adopted.[54] The DEIR has failed to do so.

a. Many of the DEIR's Proposed Mitigation Measures are Inadequate

First, Mr. Smallwood indicates that the preconstruction surveys proposed in BIO-1, BIO-4, BIO-6, BIO-7, and BIO-9 are not sufficient to adequately track the

F.21

[52] *See* CEQA Guidelines Section 15093(a).
[53] Pub. Res. Code §§ 21002-21002.1.
[54] *See* CEQA Guidelines §§ 15092(b), 15043.
4106-013acp

biological resources on the Project site. He finds that what "are missing from [the DEIR], and what are in greater need than preconstruction surveys, are detection surveys consistent with guidelines and protocols that wildlife ecologists have uniquely developed for use with each special-status species."[55] Moreover, it is highly unlikely that preconstruction surveys would detect all of the existing nest sites of special-status species of birds on the project site.[56] Thus, the proposed preconstruction survey measures are insufficient to mitigate against their intended impacts.

F.21, cont.

Second, Mr. Smallwood reiterates the issues raised above regarding avian impacts on PV facilities and habitat loss with respect to BIO-2, BIO-3, and BIO-5. Although all of the suggested measures in BIO-2, BIO-3, and BIO-5 are appropriate and necessary, "none of the listed measures would minimize collision fatalities with project infrastructure, and none would minimize or mitigate in any way the impacts of habitat loss."[57] Thus, neither avian fatality rates nor habitat loss are sufficiently analyzed or mitigated in the DEIR. A recirculated DEIR must remedy this error.

F.22

Finally, the Bird and Bat Conservation Strategy proposed in BIO-8 is legally insufficient because it defers the development of the strategy until after the project is approved.[58] Under CEQA, an EIR may not defer a mitigation measure beyond its approval without clear performance standards for what the future mitigation must achieve.[59] Mr. Smallwood describes the type of clear performance standards that would satisfy this requirement under CEQA:

> (1) Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys, (2) Assess potential risk to bird and bats based on the proposed activities, and (3) Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species.[60]

The performance standards listed in BIO-8 do not rise to this level of specificity or provide adequate protection as required by CEQA. The mitigation measure must be revised to satisfy the legal requirement.

F.23

[55] Smallwood Comments, p. 15.
[56] Smallwood Comments, p. 16.
[57] Smallwood Comments, p. 18.
[58] Smallwood Comments, p. 18.
[59] *See Sacramento Old City Assoc. v. City Council of Sacramento* (1991) 229 Cal. App. 3d 1011.
[60] Smallwood Comments, p. 18.
4106-013acp

b. The DEIR fails to Consider All Feasible Mitigation Measures

In his letter, Mr. Smallwood identifies eight feasible mitigation measures not included in the DEIR that would contribute to the mitigation of biological impacts from the Project. The County must consider and implement these measures in a revised EIR before the EIR can be certified. F.24

- **Detection Surveys**: County of Imperial should recirculate a revised EIR that is founded on adequate detection surveys for special-status species and nesting birds. An example of detection surveys needed at the project site are those of burrowing owls from CDFW guidelines F.24a
- **Post-construction Monitoring of Project Impacts**: Post-monitoring of the Project site for potential impacts should include on-foot and/or scent-detection dog surveys in addition to carcass detection trials. F.24b
- **Behavior Surveys**: The DEIR should require behavior surveys by qualified behavioral ecologists to begin to understand why birds and bats are colliding with solar facilities and what can be done to reduce the impacts. F.24c
- **Transparent Reporting**: Construction and fatality monitoring through several years of operations should be performed by qualified biologists and reported publicly. F.24d
- **Adequate Fatality Monitoring**: Qualified biologists should be retained to perform fatality monitoring. Monitoring should include a single search interval, no longer than weekly searches. F.24e
- **County-Wide Assessment of Solar Impacts**: The County should require scientifically sound fatality monitoring either at all of its solar projects or at a randomized selection of projects and share the results with the public. F.24f
- **Implement Mitigation Measures with Sound Experimental Designs**: Experimental design principles, e.g., mylar ribbons intended to dissuade birds from flying into PV arrays, marked powerlines, and treatments to fences, must be considered prior to implementation of any mitigation measures intended to reduce collision fatalities. F.24g
- **Compensatory Mitigation**: The DEIR needs to be revised to include measures such as habitat protected in exchange for habitat loss and collision fatalities, and donations to wildlife rehabilitation facilities that will care for injured animals delivered from solar projects and other anthropogenic sources. F.24h

B. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Impacts on Air Quality and Public Health

The DEIR fails to adequately disclose, analyze, and mitigate impacts from the Project's construction and operational emissions. As demonstrated by SWAPE and explained below, the DEIR's analysis is flawed and its finding that impacts from air emissions will be less than significant is not supported by substantial evidence.

First, the DEIR relies on inadequate and unsubstantiated construction and operational emission values. When corrected, an updated analysis shows significant pollutant emissions as a result of the Project's construction. Second, the DEIR improperly concludes that the Project's health risk impacts from construction and operational emissions would be less than significant without conducting a quantified health risk analysis. F.25

The DEIR fails to provide substantial evidence to demonstrate that the Project's construction and operational emissions will result in less than significant impacts. As such, the DEIR does not adequately disclose, analyze, and mitigate impacts on air quality and public health. The DEIR must be revised to address these deficiencies and the revised DEIR must be recirculated for public review and comment.

1. The DEIR does not Adequately Evaluate all Emissions from the Project's Construction and Operation

The Project proposes to install a fiberoptic cable and gen-tie line, along with the solar PV modules and substation facility. However, the DEIR completely omits a quantification of emissions resulting from the construction and operation of the fiberoptic cable and gen-tie line, claiming: F.26

> The installation of the fiberoptic cable would require substantially less construction equipment and shorter duration compared to the construction of the solar energy facility and gen-tie line. Based on this consideration, the installation of the fiberoptic cable would result in GHG emissions below allowable thresholds. This is considered a less than significant impact.[61]

[61] DEIR, p. 3.7-15.

A lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[62] Here, SWAPE notes that "there is a large gap in the DEIR's analysis of the Project's impacts on regional air quality" due to the failure to quantify emissions related to the fiberoptic cable and gen-tie line.[63] As such, the DEIR fails to support both its determination that installation of the fiberoptic cable and gen-tie line will result in a less than significant air quality impact and that the Project's air quality impacts as a whole are less than significant.

F.26, cont.

2. The DEIR's Air Quality Modeling Inputs are Unsubstantiated

The DEIR relies upon emission modeling through the California Emissions Estimator Model ("CalEEMod") to support its findings that the Project would have less than significant air quality impacts.[64] However, SWAPE's review of the air modeling inputs determined that certain inputs were not justified while some inputs were not incorporated at all into the calculation.

F.27

First, the DEIR's output files show that the Project's anticipated operational vehicle fleet mix percentage values were modified.[65] However, the DEIR's stated justification for these modifications were based on a "*construction-related* vehicle fleet mix," when in fact, "these changes impact the Project's *operational* fleet mix."[66] This incorrect categorization likely causes the DEIR's modeling to underestimate operational emissions.

Second, the DEIR fails to input all operational emission values associated with proposed land uses and activities for the Project. As SWAPE points out, the Project proposes to construct 12 blocks of 2,520 3.5-foot by 4.8-foot PV panels, a 300-foot by 175-foot substation, and a fiberoptic cable and gen-tie line.[67] In total, the Project would include 508,032-SF of PV panels and a 52,500-SF substation, as well as a fiber optic cable and gen-tie line.[68] However, the Project's CalEEMod output files for the Project's operation reveal that PV panels and a substation facility are not included in the land use modeling. Because of this, the model necessarily

F.28

[62] CEQA Guidelines § 15064(b).
[63] SWAPE Comments, pp. 11–12.
[64] DEIR, p. 3.3-14.
[65] SWAPE Comments, p. 7.
[66] SWAPE Comments, p. 5.
[67] SWAPE Comments, p. 5.
[68] SWAPE Comments, pp. 5–6.
4106-013acp

underestimates the Project's operational emissions and thus renders the County's analysis incorrect and incomplete.[69] F.28, cont.

Third, the DEIR underestimates and fails to substantiate modeling changes related to operational vehicle trips. SWAPE's review of the CalEEMod output revealed that the modeling underestimated daily operational vehicle trips to the Project site by 10 one-way trips per week and failed to support changes to trip lengths and trip purposes with any justification, against the recommendations of the CalEEMod User's guide.[70] As such, SWAPE could not verify the accuracy of the modeling's vehicle trip emissions, which are likely underestimated. F.29

Fourth, the DEIR's model included changes to the Project's construction and operational paved roads percentages, but these changes were not fully explained and directly contradict the percentages of paved/unpaved roads disclosed in the DEIR.[71] F.30

Finally, the DEIR's modeling shows mitigation measures included for "water exposed area" and "reduce vehicle speed on unpaved roads" were modified, however, these mitigation measures too are not substantiated or explained in the modeling output.[72] Thus, SWAPE was again unable to verify the accuracy of the modeling output. F.31

Unless the DEIR acknowledges and incorporates **all emissions** related to the Project's construction and operational activities and these emissions are adequately supported per the CalEEMod User's Guide, the air model is incomplete, likely results in an underestimation of emissions, and should not be relied upon to determine Project significance. As it is, the DEIR does not have substantial evidence to support its findings of less than significant air quality emissions. The DEIR must be revised to include an accurate and adequate air quality analysis. F.32

3. The DEIR Did Not Evaluate Emissions from Decommissioning Activities

An EIR must describe the project as a whole and the project's "reasonably foreseeable" impacts on the environment.[73] Here, this means analyzing the Project's F.33

[69] SWAPE Comments, p. 6.
[70] SWAPE Comments, p. 7.
[71] SWAPE Comments, pp. 9–10.
[72] SWAPE Comments, pp. 10–11.
[73] Pub. Res. Code § 20165; CEQA Guidelines §§ 15064(d), 15378(a).
4106-013acp

decommissioning impacts as well as its construction and operation impacts. However, the DEIR completely fails to grapple with or provide any quantification of air emissions for the decommissioning of the Project after its 20- to 25-year lifespan, cursorily concluding that "[t]he overall activity would be anticipated to be somewhat less than project construction, and the emissions from off-road and on-road equipment are expected to be much lower than those for the Project construction."[74] This is insufficient, as SWAPE points out, because it is known that the solar panels and associated structures will need to be removed, impacted soils will need to be restored, and debris will need to be hauled off-site.[75] Thus, a quantitative estimation could have been made and emissions from these activities associated with decommissioning should have been evaluated as part of the DEIR's analysis of the Project's impacts to air quality.

F.33, cont.

Until an adequate analysis is conducted that incorporates emissions related to decommissioning activities, the DEIR's analysis results in an underestimation of emissions and should not be relied upon to determine Project significance. As such the DEIR does not have substantial evidence to support its finding of less than significant air quality emissions. The DEIR must be revised to include an accurate and adequate air quality analysis.

F.34

4. When Corrected, the DEIR's Construction Emissions Result in a Significant Impact

After correcting for the errors found in the DEIR's modeling, SWAPE found that the Project's construction-related PM10 emissions increase when compared to the DEIR's model and exceed the 150 pounds per day ("lbs/day") threshold set by the Imperial County Air Pollution Control District (ICAPCD), seen in the table below.[76]

F.35

Model	PM10
DEIR	17.6999
SWAPE	639.7735
% Increase	3515%
ICAPCD Regional Threshold (lbs/day)	**150**

[74] DEIR, p. 3.3-22.
[75] SWAPE Comments, p. 11.
[76] SWAPE Comments, p. 12.
4106-013acp

Threshold Exceeded?	*Yes*

As SWAPE's updated modeling shows, a correct accounting for the Project's construction PM10 emissions shows an increase of 3,515% from the DEIR's estimation, resulting in an exceedance of the ICAPCD's significance threshold. Any significant air quality impacts must be disclosed, analyzed, and mitigated against in an EIR before a project can be approved.[77] The County must do so here before certifying an EIR for the Project.

F.35, cont.

5. The DEIR Did Not Adequately Analyze the Project's Cancer Risk from Construction and Operational Emissions

One of the primary emissions of concern regarding health effects for land development projects is diesel particulate matter ("DPM"), which can be released during Project construction and operation. DPM consists of fine particles with a diameter less than 2.5 micrometer ("µm") including a subgroup of ultrafine particles (which have a diameter less than 0.1 µm). Diesel exhaust also contains a variety of harmful gases and cancer-causing substances. As the DEIR recognizes, exposure to DPM is a recognized health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems.[78]

F.36

The DEIR concludes that the Project would have a less than significant health risk impact without adequately evaluating adverse health impacts resulting from exposure to toxic air contaminants ("TACs").[79] However, the DEIR fails to include a health risk assessment to disclose the increased cancer risk that will be caused by exposure to TACs, such as DPM, from the Project's construction and operational emissions.[80] By omitting a health risk assessment, the DEIR fails to disclose and mitigate the potentially significant cancer risk posed to nearby residents and children from TACs. Moreover, because the DEIR offers no adequate support for its conclusion that the Project's health risk impacts will be less than significant, the DEIR's conclusion is not supported by substantial evidence.

F.37

[77] Pub. Res. Code §§ 21002.1, subd. (a), 21100, subd. (b)(3).
[78] DEIR, p. 3.3-5.
[79] DEIR, p. 3.3-20.
[80] SWAPE Comments, p. 12.
4106-013acp

CEQA expressly requires that an EIR discuss, inter alia, "health and safety problems caused by the physical changes" resulting from the project.[81] When a project results in exposure to toxic contaminants, this analysis requires a "human health risk assessment."[82] F.38

a. The DEIR's Finding that the Project's Health Risk Impacts Will Be Less-Than-Significant Health Risk Impact Is Not Supported by Substantial Evidence

Although the DEIR acknowledges that the greatest potential for TAC emissions would be related to DPM emissions from heavy-duty equipment during construction, the DEIR simply concludes that the Project's cancer risk from exposure to DPM would be less than significant without any quantitative analysis.[83] Relying on non-quantitative analysis and unsupported assumptions to determine that a health risk assessment is not necessary results in a premature and improper finding that TAC impacts would be less than significant. For the reasons discussed below, the DEIR's finding that the Project's health risk impacts will be less than significant is not supported by substantial evidence. F.39

First, as discussed in Section III(B)(1) and (2), the DEIR's analysis relies upon a flawed air modeling analysis with inputs that have not been justified and emission values that were not incorporated (*e.g.*, emissions from all operational and decommissioning activities). As a result, the DEIR's conclusion that DPM emissions would not exceed the significant cancer threshold is unsupported because the emission inputs relied upon are inaccurate and incomplete. F.40

Second, the nearest sensitive receptors to the Project site are considerably closer than that disclosed by the DEIR.[84] F.41

Third, the DEIR cannot conclude a less than significant finding for health risk impacts of DPM based on the assumption that a health risk assessment is not required. More importantly, a less than significant finding for cancer risk is determined by a numeric threshold, ICAPCD's significance threshold is 10 in one F.42

---

[81] 14 CCR § 15126.2(a).
[82] *Berkeley Jets*, at 1369; *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219–1220 (CEQA requires that there must be some analysis of the correlation between the project's emissions and human health impacts).
[83] SWAPE Comments, p. 12.
[84] SWAPE Comments, p. 13.
4106-013acp

million, and therefore a quantitative analysis is necessary.[85] Without a quantitative analysis of the Project's TACs emissions, the DEIR's less than significant finding lacks substantial evidence. F.42, cont.

Finally, SWAPE points that the omission of a quantified health risk assessment is inconsistent with recent widely-adopted guidance published by the Office of Environmental Health Hazard Assessment ("OEHHA"), which recommends that all short-term projects lasting at least two months be evaluated for cancer risks to nearby sensitive receptors.[86] OEHHA's guidance document also recommends that exposure from projects lasting more than 6 months should be evaluated for the duration of the project, and a 30-year exposure duration should be used to estimate individual cancer risk for the maximally exposed individual resident ("MEIR").[87] Because the Project's construction will last approximately 221 days, and the Project's operational timeline is approximately 20 years, the County is required to conduct an assessment of public health risks, supported by substantial evidence, as recommended by ICAPCD and OEHHA and as required by CEQA. By failing to prepare a health risk assessment, the DEIR's conclusions of less than significant impacts to public health is unsupported. F.43

C. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Impacts on Climate Change from Greenhouse Gas ("GHG") Emissions

CEQA requires agencies to "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project."[88] A lead agency can determine the significance of a project's GHG emissions by (1) quantifying GHG emissions resulting from the project; and/or (2) relying on a qualitative analysis or performance based standards.[89] The "agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes."[90] Finally, as with the analysis of all impact areas, the agency must employ all feasible mitigation measures to reduce or eliminate impacts. F.44

[85] SWAPE Comments, p. 14.
[86] SWAPE Comments, p. 13.
[87] SWAPE Comments, p. 14.
[88] CEQA Guidelines, § 15064.4 (a).
[89] CEQA Guidelines, § 15064.4 (a)(1) and (a)(2)
[90] CEQA Guidelines, § 15064.4 (b).
4106-013acp

Here, the DEIR fails to adequately disclose, analyze, and mitigate GHG impacts on climate change from the Project's construction and operational activities for several reasons. As SWAPE discusses in its technical comments, the DEIR's finding of no significant GHG impacts is incorrect because the DEIR fails to demonstrate with substantial evidence that the Project is consistent with goals, plans, policies or regulations adopted for the purpose of reducing the emissions of GHG. F.45

As such the DEIR improperly concludes that the Project's GHG impacts would be less than significant. The County must make a reasonable effort to conduct a complete and thorough GHG analysis to determine the significant impacts on climate change and propose adequate mitigation measures, based on substantial evidence, that reduces those impacts to less than significant. F.46

1. The DEIR Fails to Provide Substantial Evidence Demonstrating the Project is Consistent with Applicable Plans, Policies or Regulations to Determine that GHG Impacts Are Less-Than-Significant

In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.[91] CEQA Guidelines explicitly mandate, however, that the "analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes."[92] Moreover, California Courts have acknowledged that "over time, consistency with year 2020 goals will become a less definitive guide, especially for long-term projects that will not begin operations for several years [after 2020]."[93] F.47

The DEIR purportedly analyzed impacts from GHG based on "whether the project would be consistent with the State's applicable GHG reduction goals, plans, policies and regulatory requirements."[94] Specifically, the DEIR primarily discusses the Project's consistency with the CARB Scoping Plan ("Scoping Plan"), as neither F.48

[91] CEQA Guidelines, § 15064.4 (b)(3).
[92] 14 CCR §15064.4(b)
[93] *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th at 223.
[94] DEIR, p. 3.7-14.
4106-013acp

the County of Imperial or ICAPCD have any specific plans, policies, nor regulations adopted for reducing the emissions of GHGs.[95] However, the DEIR fails to provide substantial evidence to support this determination as required by CEQA for two reasons. F.48, cont.

First, the Scoping Plan is only intended to provide emission reduction goals through 2020.[96] As previously stated, California Courts have expressed doubt about the continued efficacy of 2020 goals as industrial projects move beyond 2020 in their construction and operation.[97] Indeed, SWAPE notes, "[g]iven that it is already August of 2020, and the Project has not yet been approved, [the Scoping] plan is outdated and does not apply to the proposed Project."[98] F.49

Second, the DEIR merely offers bare conclusions in its determination that the Project is consistent with the Scoping Plan. These conclusory statements do not contain sufficient detail to allow those who did not participate in the EIR's preparation to understand and meaningfully consider the issues raised by the Project.[99] As such, the DEIR lacks substantial evidence to demonstrate that the Project's consistency with these policies results in less-than-significant impacts from GHG emissions. F.50

For the above-stated reasons, the DEIR ultimately fails to adequately disclose, analyze, and mitigate the Project's impacts from GHG emissions. The DEIR must correct these deficiencies in a revised and recirculated EIR. F.51

D. The DEIR Fails to Adequately Disclose, Analyze, and Mitigate Public Health Risk Impacts from the Project F.52

CEQA requires lead agencies to consider whether a project would "create a significant hazard to the public or the environment through the routine transport,

[95] DEIR, p. 3.7-14.
[96] "Climate Change Scoping Plan: A Framework for Change Pursuant to AB 32 The California Global Warming Solutions Act of 2006." California Air Resources Board (CARB), December 2008, available at: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/document/adopted_scoping_plan.pdf, p. 1.
[97] *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th at 223.
[98] SWAPE Comments, p. 15.
[99] E.g. *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 516 ("The ultimate inquiry, as case law and the CEQA guidelines make clear, is whether the EIR includes enough detail 'to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project.'").
4106-013acp

use, or disposal of hazardous materials."[100] Likewise, CEQA requires lead agencies to determine whether projects create "a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment."[101]

F.52, cont.

As SWAPE notes in its letter, the DEIR failed to address potential health risk impacts from hazardous materials at the Project site and from Valley Fever. As such the DEIR is inadequate as an informational document and must be revised to address these issues.

1. The DEIR Fails to Disclose, Analyze, and Mitigate Against Potential Hazards and Hazardous Materials at the Project Site

The DEIR states that there are no significant impacts due to the possible release of hazardous materials at the Project site. However, the only information the DEIR relies upon to make this determination is a regulatory database search of the "Cortese List," which SWAPE notes, "does not suffice for disclosure of impacts."[102] SWAPE notes further that, "consistent with professional due diligence procedures commonly used in CEQA matters, a Phase I ESA, completed by a licensed environmental professional is necessary for inclusion in an MND to identify recognized environmental conditions, if any, at the proposed Project site."[103] Thus, without preparing a Phase I ESA, the DEIR did not provide substantial evidence showing that no significant impact will occur from hazards or hazardous materials as a result of the Project.

F.53

2. The DEIR does not Evaluate Potential Health Risk from Valley Fever

CEQA requires that an EIR be prepared with a "sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences."[104] However, the DEIR provides no discussion of the Project's impacts on public health from Valley

F.54

[100] CEQA Guidelines Appendix G Section IX: Hazards and Hazardous Materials.
[101] CEQA Guidelines Appendix G Section IX: Hazards and Hazardous Materials.
[102] SWAPE Comments, p. 1.
[103] SWAPE Comments, p. 2.
[104] CEQA Guidelines, § 15151.
4106-013acp

Fever and provides no substantial evidence to demonstrate the proposed mitigation measures will result in less than significant impacts.[105]

As discussed in greater detail in SWAPE's comments, Valley Fever, also known as coccidioidomycosis, is an infectious disease caused by inhaling the spores of the soil dwelling fungus, *Coccidioides immitis* (CI).[106] The CI spores become airborne when infected soils are disturbed during construction activities, agricultural operations, dust storms, or during earthquakes.[107] The disease is debilitating and prevents those who have contracted Valley Fever from working.[108] A 2012 study revealed that, between 1990 and 2008, half of the 3,000 people who died from Valley Fever in the United States were in California.[109] In recent years, reported Valley Fever cases in southwestern Unites States have increased dramatically.[110] No known cure exists for the disease and there is no vaccine.[111]

F.54, cont.

Notably, another study documented the impact of Valley Fever on workers constructing large, industrial-scale projects during the period of October 2011 through April 2014 and found 44 California solar construction workers diagnosed with symptom onset.[112] Project construction and operation will generate dust which is one of the primary routes of exposure for contracting Valley Fever.[113] Thus, construction workers are one of the most at-risk populations and exposure is much larger for workers on or adjacent to the project site, according to SWAPE's research.[114] Furthermore, the dust generated from Project construction carries very small spores – 0.002-0.005 millimeters in diameter – into other areas, potentially exposing large segments of the public.[115]

F.55

By completely failing to address this issue, the DEIR fails as an informational document and fails to adequately mitigate against significant health risk impacts. In their comments, SWAPE identifies the following mitigation measures that the County must adopt to mitigate against this impact:

---

[105] SWAPE Comments, p. 2.
[106] SWAPE Comments, p. 3.
[107] SWAPE Comments, p. 3.
[108] SWAPE Comments, p. 3.
[109] SWAPE Comments, p. 3.
[110] SWAPE Comments, p. 3.
[111] SWAPE Comments, p. 3.
[112] SWAPE Comments, p. 3.
[113] SWAPE Comments, p. 3.
[114] SWAPE Comments, p. 3.
[115] SWAPE Comments, p. 4.
4106-013acp

1. Minimize Exposure to Potential Valley Fever–Containing Dust through:
   - Cleaning equipment and vehicles of dust
   - Conducting earth-moving activities downwind of worker when possible
   - Spraying areas to be graded with water
   - Ceasing work if water runs out until a water truck can return
   - Using earth-moving vehicles with closed-cabs and equipped with a HEPA-filtered air systems
   - Training workers about Valley Fever and proving informational handouts.
2. Providing respirators to workers when requested and providing training on the proper use of personal protective equipment.
3. Payment of a monetary fee to Imperial County for implementation of Valley Fever public awareness programs.
4. To require a respiratory protection program that is compliant with California Code of Regulations, Title 8, Section 5144.[116]

F.56

The DEIR must be revised to adequately analyze the Project's impacts of Valley Fever on public health and should fully evaluate and propose a wider range of mitigation measures to reduce those impacts.

E. The DEIR Fails to Implement all Feasible Mitigation Measures for the Project's Air Quality, Health Risk, and GHG Impacts

Finally, SWAPE identifies multiple sets of feasible mitigation measures that the DEIR does not consider as a means of mitigating the air quality, health risk, and GHG impacts outlined above. As stated previously, before a project that will cause significant environmental impacts can be approved, a lead agency must find that *all* feasible mitigation measures that would reduce or eliminate a project's impacts have been adopted.[117] The DEIR has failed to do so here. SWAPE's proposed mitigation measures are reproduced below:

F.57

NEDC's *Diesel Emission Controls in Construction Projects*[118]

[116] SWAPE Comments, p. 4.
[117] *See* CEQA Guidelines §§ 15092(b), 15043.
[118] "Diesel Emission Controls in Construction Projects." Northeast Diesel Collaborative (NEDC), December 2010, *available at:* https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf.

Measures – Diesel Emission Control Technology
a. Diesel Onroad Vehicles All diesel nonroad vehicles on site for more than 10 total days must have either (1) engines that meet EPA onroad emissions standards or (2) emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
b. Diesel Generators All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.
c. Diesel Nonroad Construction Equipment i. All nonroad diesel engines on site must be Tier 2 or higher. Tier 0 and Tier 1 engines are not allowed on site ii. All diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines 50hp and greater and by a minimum of 20% for engines less than 50hp.
d. Upon confirming that the diesel vehicle, construction equipment, or generator has either an engine meeting Tier 4 non road emission standards or emission control technology, as specified above, installed and functioning, the developer will issue a compliance sticker. All diesel vehicles, construction equipment, and generators on site shall display the compliance sticker in a visible, external location as designated by the developer.
e. Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.
f. All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend[119] approved by the original engine manufacturer with sulfur content of 15 ppm or less.
Measures – Idling Requirements
During periods of inactivity, idling of diesel onroad vehicles and nonroad equipment shall be minimized and shall not exceed the time allowed under state and local laws.
Measures – Additional Diesel Requirements
a. Construction shall not proceed until the contractor submits a certified list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following: i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.

F.57, cont.

[119] Biodiesel blends are only to be used in conjunction with the technologies which have been verified for use with biodiesel blends and are subject to the following requirements: http://www.arb.ca.gov/diesel/verdev/reg/biodieselcompliance.pdf.

4106-013acp

ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.
b. If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions and provide information.
c. All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.
d. The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.
Reporting
a. For each onroad diesel vehicle, nonroad construction equipment, or generator, the contractor shall submit to the developer's representative a report prior to bringing said equipment on site that includes: i. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, and engine serial number. ii. The type of emission control technology installed, serial number, make, model, manufacturer, and EPA/CARB verification number/level. iii. The Certification Statement signed and printed on the contractor's letterhead.
b. The contractor shall submit to the developer's representative a monthly report that, for each onroad diesel vehicle, nonroad construction equipment, or generator onsite, includes: i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date. ii. Any problems with the equipment or emission controls. iii. Certified copies of fuel deliveries for the time period that identify: 1. Source of supply 2. Quantity of fuel 3. Quality of fuel, including sulfur content (percent by weight)

F.57, cont.

4106-013acp

SMAQMD's *Basic Construction Emission Control Practices*[120]
The following Basic Construction Emissions Control Practices are considered feasible for controlling fugitive dust from a construction site. The practices also serve as best management practices (BMPs), allowing the use of the non-zero particulate matter significance thresholds. Lead agencies should add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).
Control of fugitive dust is required by District Rule 403 and enforced by District staff.
Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and offroad diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations.
Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

F.57, cont.

[120] "Basic Construction Emission Control Practices (Best Management Practices)." Sacramento Metropolitan Air Quality Management District (SMAQMD), July 2019, *available at:* https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf.

4106-013acp

August 14, 2020
Page 33

Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1].
Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies
Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.
SMAQMD's *Enhanced Exhaust Control Practices*[121]
1. The project representative shall submit to the lead agency and District a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. • The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. • The project representative shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. • This information shall be submitted at least 4 business days prior to the use of subject heavy-duty off-road equipment. • The District's Equipment List Form can be used to submit this information. • The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.
2. The project representative shall provide a plan for approval by the lead agency and District demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project wide fleet-average 20% NOX reduction and 45% particulate reduction compared to the most recent California Air Resources Board (ARB) fleet average. • This plan shall be submitted in conjunction with the equipment inventory. • Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

F.57, cont.

[121] "Enhanced Exhaust Control Practices." Sacramento Metropolitan Air Quality Management District (SMAQMD) October 2013, *available at:* http://www.airquality.org/LandUseTransportation/Documents/Ch3EnhancedExhaustControlFINAL10-2013.pdf.

4106-013acp

• The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.
3. The project representative shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. • Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. • Non-compliant equipment will be documented and a summary provided to the lead agency and District monthly. • A visual survey of all in-operation equipment shall be made at least weekly. • A monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.
4. The District and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other District, state or federal rules or regulations.

F.57, cont.

IV. CONCLUSION

The DEIR fails as an informational document and lacks substantial evidence to support its analysis and conclusions in violation of CEQA. The DEIR failed to properly establish the environmental setting for biological resources, adequately disclose and analyze the Project's impacts on biological resources, air quality, public health, and climate change, and adequately mitigate those impacts.

F.58

The County must revise the DEIR to cure these deficiencies and must circulate the revised DEIR for public review and comment. We respectfully urge the County to do so prior to any further consideration of the Project.

Sincerely,

Aaron M. Messing
Attorney

Attachments

AMM:acp

4106-013acp

EXHIBIT A

Shawn Smallwood, PhD
3108 Finch Street
Davis, CA 95616

Aaron Messing
Associate Attorney
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

11 August 2020

RE: Wister Solar Energy Facility EIR

Dear Mr. Messing,

I write to comment on the Environmental Impact Report (EIR) that was prepared for the proposed Wister Solar Energy Facility, which I understand would consist of 20 MW of photo-voltaic (PV) panels and infrastructure covering 100 acres of the Sonoran Desert (County of Imperial 2020). (Note that page 3.4-1 of the EIR identifies the project size as 122.5 acres, and elsewhere it identifies the size as 115 acres.) The PV array itself would cover 89 acres, and the rest of the project site would include a substation, control room, parking area, and 2,070 m of 20-foot wide, all-weather surfaced access roads (3.1 acres). The PV arrays would be surrounded by "earthen channels" and 1.46 km of 6-foot tall chain-link fence topped by barbed wire, and connected by a 762 m long gen-tie and 3.2 km of fiberoptic cable. A new groundwater well would be constructed to provide the project 0.81 acre-feet per year of water for washing PV panels. I write to comment on the impacts of these facilities on wildlife, which was also addressed by Stantec (2020).

My qualifications for providing an expert review includes the following. I earned a Ph.D. degree in Ecology from the University of California at Davis in 1990, where I also performed four years of post-graduate research. My research is on animal density and distribution, habitat selection, conservation of rare and endangered species, and interactions between wildlife and human infrastructure and activities. I've authored many peer-reviewed papers, reports and book chapters. I served as Chair of the Conservation Affairs Committee for The Wildlife Society – Western Section. I am a member of The Wildlife Society and the Raptor Research Foundation, and I've lectured part-time at California State University, Sacramento. I served as Associate Editor of Journal of Wildlife Management and Biological Conservation, I guest-edited a special issue of Wildlife Society Bulletin, and I served on the Editorial Board of Environmental Management.

As part of research and consulting, I have performed wildlife surveys in California for 35 years, including for many special-status species potentially occurring on the project site -- burrowing owl, golden eagle, Swainson's hawk, American badger, and many others. I have researched bird and bat interactions with renewable energy for 21 years, including diurnal and nocturnal behavior surveys, GPS/GSM telemetry of golden eagles, fatality rate estimation, and efficacy of mitigation measures. I served on the Alameda County Scientific Review Committee that was charged with overseeing the fatality monitoring

F.59

and mitigation measures in the Altamont Pass Wind Resource Area, and I prepared many comment letters on proposed renewable energy projects, including many solar projects. I am in the process of completing a scientific review of California's solar energy impacts on wildlife. I collaborate with colleagues worldwide on the underlying science and policy issues related to renewable energy impacts on wildlife and I also served as a party to multiple California Energy Commission Proceedings on policy related to renewable energy goals and development, including the 33% Renewable Portfolio Standard, the Planning Reserve Margin, and Tehachapi Transmission Line Project. My CV is attached.

F.59, cont.

BIOLOGICAL IMPACTS ASSESSMENT

Stantec (2020) visited the site on a single day on 30 January 2019 to perform "*focused non-protocol surveys for special-status plant and wildlife species*." It is unclear what Stantec meant by focused non-protocol surveys. What did Stantec focus on? Anyhow, Stantec did not report when the surveys began or how long they lasted. So far that I can determine, Stantec's survey effort appears to have been grossly deficient for detecting more than a fraction of the wildlife species that use the project site.

In contrast to whatever it was that Stantec did on the project site, Barrett's Biological Surveys actually followed a survey protocol for a special-status species -- the flat-tailed horned lizards (*Phrynosoma mcallii*; California species of special concern). Following the survey recommendations of Foreman (2003), Barrett's Biological Surveys visited the site on 31 August 2018. They did not detect the species of their focus, but they did report detecting another special-status species – loggerhead shrike (*Lanius ludovicianus*, California species of special concern, priority level 2). And yet this detection was not reported by Stantec (2020) nor County of Imperial (2020), both of whom assigned only a moderate potential for loggerhead shrikes to occur on the site. How many other special-status species were similarly mischaracterized in their potential to occur on the site?

F.60

No protocol-level surveys were performed for desert tortoise or burrowing owl, despite known occurrences of these species near the project site. The EIR needs to be revised so that it is founded on the results of detection surveys that are consistent with US Fish and Wildlife Service (2017) for desert tortoise and with CDFW (2012) for burrowing owl. Until these surveys are completed, the EIR's reports of either these species having not been present during Stantec's survey remain uninformative and even misleading. Burrowing owls are known to be difficult to detect during winter, which is when Stantec visited the site. I must add that preconstruction surveys, which are what County of Imperial (2020) proposes for these species, are not detection surveys. Preconstruction surveys perform a different function than does detection surveys. Detection surveys are needed to inform readers of the EIR -- decision-makers and the public – as well as those who later perform preconstruction surveys.

After reviewing eBird and iNaturalist, I must conclude that Stantec (2020) and County of Imperial (2020) neglect the occurrence likelihoods of many special-status species of wildlife (Table 1). It also appears that County of Imperial (2020) considers occurrence

Table 1. Potentially occurring species of wildlife on the project area according to EIR and eBird (https://eBird.org) or iNaturalist (https://www.inaturalist.org/observations)., where 'nearby' means within a few miles of the project site.

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Brant, *Branta bernicla*	SSC2	Yes		Nearby
American white pelican, *Pelecanus erythrorhynchos*	SSC1	Yes		Nearby
Brown pelican, *Pelacanus occicentalis californicus*	FE, CE, CFP	Yes	None	Nearby
Double-crested cormorant, *Phalacrocorax auritus*	TWL	Yes		Nearby
Least bittern, *Ixobrychus exilis*	BCC, SSC2	Yes		Nearby
Yuma Ridgway rail, *Rallus longirostris yumanensis*	FE, CT	Yes	Low	Nearby
Greater sandhill crane, *Grus canadensis tabida*	CT	Not yet		Nearby
Redhead, *Aythya americana*	SSC3	Yes		Nearby
Western snowy plover, *Charadrius alexandrinus nivosus*	FT, BCC	Yes	Low	Nearby
Mountain plover, *Charadrius montanus*	SSC2	Not yet	Moderate	Nearby
Marbled godwit, *Limosa fedua*	BCC	Not yet		Nearby
Short-billed dowitcher, *Limnodromus griseus*	BCC	Not yet		Nearby
Black skimmer, *Rynchops niger*	BCC, SSC3	Not yet	Low	Nearby
California gull, *Larus californicus*	TWL	Yes	Low	Nearby
Caspian tern, *Hydropogne caspia*	TWL	Not yet	Low	Nearby
Gull-billed tern, *Geochelidon nilotica*	SSC3	Not yet	Low	Nearby
California least tern, *Sterna antillarum browni*	FE, CE	Not yet		Nearby
Osprey, *Pandion haliaetus*	TWL, FGC 3503.5	Yes		Nearby
Golden eagle, *Aquila chrysaetos*	BGEPA, CFP, FGC 3503.5	Not yet		Nearby
Bald eagle, *Haliaeetus leucocephalus*	BGEPA, BCC, CE, FGC 3503.5	Not yet		Nearby
Cooper's hawk, *Accipiter cooperii*	TWL, FGC 3503.5	Yes		Nearby
Sharp-shinned hawk, *Accipiter striatus*	TWL, FGC 3503.5	Not yet		Nearby
Ferruginous hawk, *Buteo regalis*	BLM, TWL, FGC 3503.5	Not yet		Nearby
Red-tailed hawk, *Buteo jamaicensis*	FGC 3503.5	Yes		Nearby
Swainson's hawk, *Buteo swainsoni*	CT, FGC 3503.5	Not yet		Nearby
Red-shouldered hawk, *Buteo lineatus*	FGC 3503.5	Not yet		Nearby

F.61

3

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Northern harrier, *Circus cyaneus*	SSC3, FGC 3503.5	Yes		Nearby
White-tailed kite, *Elanus leucurus*	CFP, FGC 3503.5	Not yet		Nearby
American kestrel, *Falco sparverius*	FGC 3503.5	Yes	On site	Nearby
Merlin, *Falco columbarius*	TWL, FGC 3503.5	Not yet	Moderate	Nearby
Prairie falcon, *Falco mexicanus*	BCC, TWL, FGC 3503.5	Yes		Nearby
Peregrine falcon, *Falco peregrinus*	CE, CFP, BCC, FGC 3503.5	Yes		Nearby
Long-billed curlew, *Numenius americanus*	TWS	Yes		Nearby
Whimbrel, *Numenius phaeopus*	BCC	Yes		Nearby
Western yellow-billed cuckoo, *Coccyzus americanus occidnetalis*	FT, BCC, CE	Yes		Nearby
Barn owl, *Tyto alba*	FGC 3503.5	Yes		Nearby
Long-eared owl, *Asio otus*	BLM, SSC3	Yes		Nearby
Short-eared owl, *Asio flammeus*	SSC3, FGC 3503.5	Yes		Nearby
Great-horned owl, *Bubo virginianus*	FGC 3503.5	Yes		Nearby
Western screech-owl, *Megascops kennicotti*	FGC 3503.5	Not yet		Nearby
Western burrowing owl, *Athene cunicularia*	BCC, SSC2	Yes	High	Nearby
Gila woodpecker, *Melanerpes uropygialis*	CE, BCC	Not yet	Low	Nearby
Ladder-backed woodpecker, *Dryobates scalaris*	BLM, BCC, CE	Yes		Nearby
Vaux's swift, *Chaetura vauxi*	SSC2	Yes		Nearby
Costa's hummingbird, *Calypte costae*	BCC	Yes		Nearby
Olive-sided flycatcher, *Contopus cooperi*	SSC2	Yes		Nearby
Vermilion flycatcher, *Pyrocephalus rubinus*	SSC2	Yes		Nearby
Southwestern willow flycatcher, *Empidonax traillii*	FE, CE	Not yet	Low	Nearby
Cactus wren, *Campylorhynchus brunneicapillus*	BCC	Yes		Nearby
Purple martin, *Progne subis*	SSC2	Not yet		Nearby
Bank swallow, *Riparia riparia*	CT	Yes		Nearby
Crissal thrasher, *Toxostoma crissale*	BLM, BCC, SSC3	Yes	Moderate	Nearby
LeConte's thrasher, *Toxostoma lecontei*	BLM, BCC, SSC1	Not yet	Moderate	Nearby
Bendire's thrasher, *Toxostoma bendirei*	BCC, SSC3	Not yet		Nearby

F.61, cont.

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Loggerhead shrike, *Lanius ludovicianus*	SSC2	Yes	On site[2]	Nearby
California horned lark, *Eremophila alpestris*	TWL	Yes		Nearby
Black-tailed gnatcatcher, *Polioptera nigriceps*	TWL	Yes	Moderate	Nearby
Arizona Bell's vireo, *Vireo bellii arizonae*	CE, BCC	Not yet		Nearby
Yellow-breasted chat, *Icteria virens*	SSC3	Yes	Low	Nearby
Lucy's warbler, *Oreothlypis luciae*	BCC, SSC3	Yes		Nearby
Yellow warbler, *Dendroica petechia sonorana*	BCC, SSC2	Yes	Moderate	Nearby
Bell's sage sparrow, *Amphispiza belli*	TWL	Yes		Nearby
Vesper sparrow, *Pooecetes gramineus affinis*	SSC2	Yes		Nearby
Grasshopper sparrow, *Ammodramus savannarum*	SSC2	Not yet		Nearby
Large-billed savannah sparrow, *Passerculus s. rostratus*	SSC2	Yes		Nearby
Summer tanager, *Piranga rubra*	SSC1	Yes		Nearby
Tricolored blackbird, *Agelaius tricolor*	CT, BCC	Not yet		Nearby
Yellow-headed blackbird, *X. xanthocephalus*	SSC3	Yes		Nearby
Lawrence's goldfinch, *Spinus lawrencei*	BCC	Not yet		Nearby
Sonoran Desert toad, *Incilius alvarius*	SSC	Not yet	Moderate	In range
Lowland leopard frog, *Lithobates yavapaiensis*	SSC	Not yet	Moderate	Near range
Couch's spadefoot, *Scaphiopus couchii*	BLM, SSC	Not yet	Moderate	Nearby
Desert tortoise, *Gopherus agassizii*	FT, CT	Yes	Moderate	Nearby
Flat-tailed horned lizard, *Phrynosoma mcallii*	SSC	Not yet		Nearby
Hoary bat, *Lasiurus cinereus*	WBWG: M	Not yet		In range
Pallid bat, *Antrozous pallidus*	BLM, SSC, WBWG:H	Yes	Low	Nearby
Western mastiff bat, *Eumops perotis californicus*	BLM, SSC, WBWG:H	Not yet		Nearby
Townsend's big-eared bat, *Corynorhinus t. townsendii*	BLM, SSC, WBWG:H	Yes		In range
Big free-tailed bat, *Tadarida molossa*	SSC, WBWG:MH	Not yet		In range
Pocketed free-tailed bat, *Nyctinomops femorosaccus*	SSC, WBWG:M	Not yet	High	In range
Western yellow bat, *Lasiurus xanthinus*	SSC, WBWG:H	Not yet		In range
Western red bat, *Lasiurus blossivellii*	SSC, WBWG:H	Not yet		In range
Small-footed myotis, *Myotis cililabrum*	BLM, WBWG:M	Yes		In range

F.61, cont.

5

Species	Status[1]	Known fatalities at solar energy	Occurrence likelihood	
			EIR	eBird / iNaturalist
Fringed myotis, *Myotis thysanoides*	BLM, WBWG:H	Not yet		In range
Yuma myotis, *Myotis yumanensis*	BLM, WBWG:LM	Yes		In range
California leaf-nosed bat, *Mactotus californicus*	BLM, SSC, WBWG:H	Not yet	Low	Nearby
Round-tailed ground squirrel, Xero*spermophilus tereticaudus chlorus*	SSC	Not yet		Nearby to north
American badger, *Taxidea taxus*	SSC	Not yet	Moderate	Nearby
Desert kit fox, *Vulpes macrotis arsipus*	CFP	Not yet	On site	Nearby
Burro deer, *Odocoileus hemionus eremicus*	SS, PS	Not yet		Nearby
Peninsular bighorn sheep, *Ovis canadensis nelson*	FE, CT	Not yet	None	In range

[1] Listed as FE and FT = federal endangered and threatened, BCC = U.S. Fish and Wildlife Service Bird Species of Conservation Concern, CE and CT = California endangered and threatened, CFP = California Fully Protected (FGC Code 3511), FGC 3503.5 = California Fish and Game Code 3503.5 (Birds of prey), SSC = California species of special concern (not threatened with extinction, but rare, very restricted in range, declining throughout range, peripheral portion of species' range, associated with habitat that is declining in extent), and SSC1, SSC2 and SSC3 = priorities 1, 2 and 3, respectively (Shuford and Gardali 2008), TWL = Taxa to Watch List (Shuford and Gardali 2008), WBWG = Western Bat Working Group listing as moderate or high priority.

[2] The EIR assigned the site moderate potential for supporting loggerhead shrike, but Barrett's Biological Surveys (2018) reported detecting the species on site.

F.61, cont.

potential only in the contexts of natural habitat affiliations, but not in the context of birds fooled into perceiving PV arrays as bodies of water. The Lake Effect associated with PV solar projects has been discussed for a decade, so it is nothing new. Birds not normally seen on desert scrub, such as California brown pelicans, brant, and double-crested cormorants, have been found dead where they attempted to land on solar panels in the false belief they were landing on water. There may be additional effects of the PV arrays that attract birds or bats to locations they normally would not visit. The evidence of these effects is in the fatality monitoring reports of about 25% of California's installed capacity of solar energy projects where monitoring has been implemented and their results came into my possession.

My review of records of species occurrences reveals an astonishing 91 special-status species nearby the project site or whose geographic ranges overlap or nearly overlap the project site. The site of the proposed project is rich in special-status species, and therefore is vulnerable to significant impacts multiple times over. Of these 91 special-status species, 53% are represented as fatalities during construction or operation of California's solar projects. County of Imperial (2020) addressed the occurrence likelihoods of only 28 (30%) of these species. The EIR needs to be revised to make much greater use of species occurrence data that are available to the County, including from eBird and iNaturalist, and from fatality monitoring reports from 1,488.5 MW of solar projects within Imperial County as of 2019 (according to the California Energy Commission).

F.62

Based on my review of the available fatality monitoring reports (Althouse and Meade 2012, 2014; Chambers Group 2016; Doering and Santistevan 2013; Dudek 2018; Heritage Environmental Consultants 2014, 2015a,b, 2016, 2017a,b,c; H.T. Harvey & Associates 2013, 2015a,b;Martinson et al. 2018a,b; Shoener and Barrett's Biological Surveys 2018; UltraSystems. 2014a – e; Western EcoSystems Technology 2016, 2017a,b,c, 2018a,b, 2019), 190 species of birds and 8 species of bats have been documented as collision fatalities at California solar projects. Many of these species are special-status species, and some are listed as threatened or endangered (Table 1). Of 81 volant, special-status species in Table 1, 47 (58%) have already been recorded as solar project fatalities. The rest are likely to be also eventually identified as solar project fatalities.

Because the fatality monitoring efforts varied widely in methods that affect estimation of fatality rates, and because some reports reported on the fatalities found but did not report fatality estimates, I applied a uniform suite of adjustment factors to the data collected at each study to improve comparability (Smallwood unpublished data). I relied on on-site carcass detection trials to the degree that was reasonable (e.g., I did not use searcher detection rates of Christmas tree ornaments placed in one study to represent birds in Imperial County), but I also scaled some of the results to variation in detection rates linked to body mass of the species found as fatalities. Both bird and bat fatalities found at solar projects tend to be smaller-bodied species than those found at wind projects, and the tended to be smaller than the species used in carcass detection trials.

Predicted Fatality Rates

After losing their habitat to solar projects, burrowing owls collide with PV solar panels at a rate of 0.182 (95% CI: 0.150-0.258) fatalities/MW/year. Burrowing owls also collide with perimeter fences at a rate of 0.25 (95% CI: 0.197-0.329) fatalities/km/year and with gen-ties at a rate of 0.034 (95% CI: 0.027-0.043) fatalities/km/year. Applied to the project, these rates would predict 3.64 (95% CI: 3-5.2) burrowing owl fatalities per year at PV arrays, 0.37 (95% CI: 0.29-0.48) fatalities per year along the fence, and 0.03 (95% CI: 0.04-0.06) fatalities per year along the gen-tie, totaling 101 (95% CI: 83-144) over the project's projected life, assuming burrowing owls are not earlier extirpated from Imperial County.

To estimate County-wide burrowing owl collision fatalities at existing solar projects plus the proposed project, I relied on mean burrowing owl fatalities among whole projects (PV arrays, fences, gen-ties all together as causal factors). With the project, the available data support a cumulative County-wide toll of 275 (95% CI: 226-389) burrowing owl collision deaths/MW/year. Assuming burrowing owls persist long enough, the 25-year toll would be 6,875 (95% CI: 1,875-3,250) collision fatalities in the County based on the 2019 installed capacity plus the proposed project.

All birds together collide with PV solar panels or associated infrastructure at a rate of 11.605 deaths/MW/year (95% CI: 8.570-16.626 deaths/MW/year). Birds also collide with perimeter fences at a rate of 14.435 (95% CI: 10.88-20.339) fatalities/km/year and with gen-ties at a rate of 113.162 (95% CI: 71.78-198.424) fatalities/km/year. Applied to the project, these rates would predict 232.1 (95% CI: 171.4-332.5) bird fatalities per year at PV arrays, 21.1 (95% CI: 15.88-29.69) fatalities per year along the fence, and 86.2 (95% CI: 54.70-151.20) fatalities per year along the gen-tie, totaling, or 8,485 (95% CI: 6,050-12,835) over the project's projected life. F.63

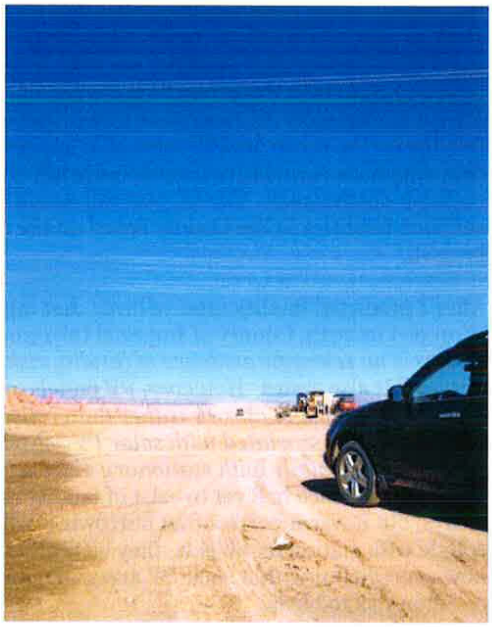
Relying on the mean fatality rates of whole projects including this project, the available data support a cumulative County-wide toll of 17,506 (95% CI: 12,929-25,080) bird collision deaths/year. The 25-year toll would be 437,650 (95% CI: 32,323-627,000) bird collision fatalities in the County based on the 2019 installed capacity plus the proposed project.

After I predicted fatality rates of birds that might be caused by the Imperial Valley Solar II project in 2013, County of Imperial (2013:682-683) responded to my comments, "*There is no scientific evidence of fatality risks to birds associated with solar PV arrays.*" It also states "*However, PV panels are dark black rather than reflective, as they are designed to absorb rather than reflect sunlight, and there is no firm evidence of bird strikes associated with solar PV.*" And, "*Burrowing owls, like all raptors, are not known to collide with stationary objects.*" The County was correct at the time that scientific evidence had yet to exist of fatality risks to birds associated with solar PV arrays, but it was incorrect that burrowing owls and other raptors were not known to collide with stationary objects; they were (Figures 1 and 2). The scientific evidence is now overwhelming that solar PV arrays deployed at utility scale pose considerable collision risk to birds.

Figure 1. *Photo of burrowing owl fatality at the Imperial Solar Energy Facility West (photo source: 18 June 2015 memo from Michael Robinson to Carrie Simmons (BLM), Magdalena Rodriguez (CDFW), Jody Fraser (USFWS) and David Black (Imperial County)).*

Photo 1: BUOW carcass, ventral view (as found) 6-18-15

Figure 2. *Photo of burrowing owl carcass under generation tie-in lines at the Imperial Solar Energy Facility West (photo source: 18 June 2015 memo from Michael Robinson to Carrie Simmons (BLM), Magdalena Rodriguez (CDFW), Jody Fraser (USFWS) and David Black (Imperial County)).*



9

F.63, cont.

In my comments on the Imperial Valley Solar II project in 2013, I relied on what information I had available at the time -- as well as a couple of assumptions -- to predict 324 (80% CI: 107 to 540) bird fatalities/year, or 10.8 (3.57 to 18) bird fatalities/MW/year. My predicted fatality rate turned out to be very close to the measured mean fatality rate at PV arrays among California solar PV projects -- 11.605 (95% CI: 8.570-16.626) bird fatalities/MW/year. The mean fatality rate ended up only 7% higher than my prediction, and the confidence range was narrower (also note that I used an 80% CI in 2013, but a 95% CI in 2020). Even in 2013, prediction science was sufficiently advanced to accurately predict bird collision impacts of solar PV. Today's impact predictions should be taken even more seriously.

Unfortunately, County of Imperial (2020:3.4-27) expresses the same false risk assessment for burrowing owls that it did in 2013: *"Given the static and highly visible nature of solar panels and transmission towers, burrowing owls are not expected to collide with the structures during daytime foraging activities when they may be hovering or flying in search of prey. No impacts on burrowing owl are anticipated as a result of collision with facility structures, and no mitigation would be required."* Just as it did in 2013, County of Imperial presents a false description of burrowing owl foraging behavior. Having spent 995 hours on a thermal-imaging camera to watch burrowing owl foraging behavior at night, and having spent 25 years studying burrowing owls during daylight hours, I can state with confidence that the majority of burrowing owl foraging flights are made at night. I have also seen a burrowing owl collide with a static structure. Furthermore, I have quantified a large number of burrowing owls killed after colliding with static structures (Smallwood and Bell 2020). Finally, the fatality monitoring reports from solar PV projects, including those in Imperial County, prove the County wrong in its risk assessment. The burrowing owl is one of the species of birds that most often collides with PV panels and associated infrastructure. After removing habitat of burrowing owls, PV solar projects become ecological sinks for burrowing owls residing in surrounding areas.

F.64

County of Imperial (2020) concludes that collision fatalities of birds with the project's solar panels and associated infrastructure would qualify as significant impacts. It then says these impacts would be mitigated to less than significant levels with the implementation of BIO-5 and BIO-8. I comment on these measures under MITIGATION.

HABITAT LOSS

County of Imperial (2020) argues that the habitat loss would compose small percentages of available habitat within each species' geographic range. LeConte's thrasher is used as an example, in which the County points out that the habitat area of the project composes only 0.0003% of the area of the species' range. This argument, however, is fallacious for multiple reasons. First, only a portion of the area within a species' geographic range consists of habitat suitable to the species. For example, burrowing owls disproportionately reside on valley bottoms and the lower portions of southwest-facing slopes.

F.65

Second, species of wildlife are well known to be spatially aggregated within contiguous expanses of suitable habitat, typically occupying only 25% of their available habitat at any given time (Taylor and Taylor 1979, den Boer 1981, Hanski 1994, Smallwood 1995, 1997, 2001; Smallwood et al. 2013, Smallwood and Morrison 2018). In the burrowing owl example, only 25% of the valley floors and 25% of the southwest-facing slopes are typically occupied at any given time (Smallwood et al. 2013).

The third fallacy of the argument made by County of Imperial is that it examines project-generated habitat loss at a cumulative scope without examining cumulative impacts. The County's premise is that, cumulatively, there remains ample habitat available to LeConte's thrasher and other species, but it neglects to point out the rapid habitat loss caused by solar projects and other projects permitted by the County and by other jurisdictions. Within only a few years, County of Imperial has permitted the conversion of enough open space to have installed 1,488.5 MW of solar PV (as of 2019). Based on my review of the fatality monitoring reports, PV projects typically require 6.604 acres per MW. Therefore, the County has permitted the conversion of about 9,830 acres to solar PV, and likely is in the process of allowing much more habitat destruction for utility-scale solar projects.

F.65, cont.

County of Imperial's argument, made repeatedly by themselves and by too many others, is the main reason that overall bird abundance has declined 29% across North America over the past 48 years (Rosenberg et al. 2019). Using radar data, and using BBS data in the manner these data were intended to be used, Rosenberg et al. (2019) revealed a loss of 3 billion birds from North America – a loss with profound ecological and economic impacts yet to be quantified or understood. The long-term economic loss might vastly exceed the short-term economic gain from utility-scale PV. For example, my review of California's fatality monitoring reports reveals an average fatality rate of 1.482 mourning doves per MW per year, or 20,996 mourning doves/year. Thus, solar projects are taking 2% to 3% of the annual hunter harvest of a California population that already decline 67% between 2003 and 2017 (Seamans 2018). If the population's decline is accelerated by utility-scale solar, then California will suffer an economic loss in terms of its mourning dove harvest.

Even greater economic harm looms in the case of the burrowing owl as an example of costs associated with attempting to conserve special-status species that are rapidly declining. Thirteen years ago, 71% of California's entire burrowing owl population resided within the Imperial Valley, after the species had declined throughout the rest of its range in California (DeSante et al. 2007, Shuford and Gardali 2008). It is difficult to say what percentage of the population now resides in Imperial Valley, because much of the Valley has been converted to utility-scale solar projects. In the meantime, I measured a substantial decline at Naval Air Station Lemoore, in the Altamont Pass, and in Yolo County (Smallwood, unpublished data). Burrowing owls have also delinked in the San Francisco Bay Region and throughout the Great Central Valley. Attempts to reverse the trend are expensive drains on the economy, including for inventory and monitoring surveys, vegetation management, installations of nest boxes, capture and relocations, and artificial breeding.

When commenting on the Desert Renewable Energy Conservation Plan (DRECP), I reviewed reports of burrowing surveys in the Imperial Valley (Table 2). The average density was 8.47 pairs per km². This average density applied to the area of the project site would predict about 4 breeding pairs of burrowing owls. The DRECP targeted 71,000 acres (287.3 km²) of solar projects in Imperial Valley. Based on mean density of burrowing owls in the Valley, the targeted acreage would result in the loss of 2,433 pairs of burrowing owls, or 43% of the 2007 Imperial Valley population. The proposed project appears to be independent of the DRECP, given that County of Imperial (2020) never explains whether or how this project would participate with the DRECP. If this and other projects are added to the acreage targeted by the DRECP, then the cumulative impacts to burrowing owls will be even greater.

Table 2. *Nesting densities of burrowing owls at proposed project sites within Imperial County.*

Source	Site	Ha	Pairs	Nest density, pairs/km²
Cornett 2012	Imperial Valley Solar Company 2	64	4	6.25
Ecology and Environment 2012	Hudson Ranch Power II Geothermal Project	99	13	13.13
Ecology and Environment 2012	McDonald Road portion of Hudson Ranch	78	13	16.67
HDR 2011	Mt. Signal	1,711	72	4.21
BLM 2012	Ocotillo Sol	46	5	8.58
Imperial County 2012	Solar Gen II	813	56	5.61
Heritage Environmental Consultants, LLC. 2012a	Campo Verde	1,338	65	4.86
Average				8.47

F.66

Franzeb (1978) provided a basis for applying the average density approach to estimating breeding bird capacity. Franzeb's (1978) study was nearby the project site, at the Algodones Dunes, and included 2 types of vegetation cover that resembled that of the project site; it was likely inhabited by a similar suite of bird species. Franzeb (1978) estimated 0.366 breeding birds/ha on the 2 similar cover types. Projected to the areas of the project site, this density would predict 42 breeding birds, or 21 nests that would be wiped out upon construction grading. Assuming 25 years of operational impacts, and assuming an average fledging of 2.9 birds/nest/year (Young 1948) and a generation time of 5 years, the lost capacity of both breeders and annual chick production would total 1,733 birds ((nests/year × chicks/nest × number of years) + (2 adults/nest × nests/year × (number of years ÷ years/generation))). The project would deny the Sonoran Desert another 1,733 birds during the 25-year lifespan of the project. The project would have a very large impact on the breeding capacity of birds.

As I noted earlier, the impacts of habitat loss would be compounded by solar projects acting as ecological sinks. Over the project's life, the project's destruction of habitat would deny the Sonoran Desert of 1,733 birds, while also killing 8,485 birds for a combined toll of 10,218 birds. A cost of 511 bird fatalities per MW would be a high cost. F.66, cont.

WILDLIFE MOVEMENT

The premise of County of Imperial's (2020) analysis of potential impacts on wildlife movement in the region is that a wildlife movement corridor must be known to exist, and that it is the corridor to which the project must interfere for an impact to be significant. This premise is false, however. County of Imperial's consultant characterized wildlife movement more accurately. Stantec's (2020) characterization was consistent with my own experience with monitoring the movement patterns of wildlife, and that is that most animals do not follow linear elements of the landscape most of the time. If animals did follow streams or ridgelines, as examples, their movement patterns would become too predictable to avoid predation, and alternatively prey species would too easily predict where predators would be waiting. This double-sided logical problem is why animals move across all feasible route alternatives.

The primary phrase of the CEQA standard goes to wildlife movement regardless of whether the movement is channeled by a corridor. A site such as the proposed project site is critically important for wildlife movement because it composes a diminishing patch of natural cover within a growing expanse of anthropogenic land uses – especially of solar projects, forcing more volant wildlife to use the site as stopover and staging habitat during migration, dispersal, and home range patrol (Warnock 2010, Taylor et al. 2011, Runge et al. 2014). The EIR needs to be revised to seriously address the project's potential impacts on wildlife movement in the region. F.67

Non-volant species of wildlife might be particularly vulnerable to the project's interference with their ability to move through the region. The project would block half of the width of the strip of land between the East Highline Canal and Coachella Canal. These Canals bound a long strip of land from which many small mammals and reptiles likely cannot leave by traveling east or west. These Canals effectively created a forced wildlife movement corridor (Smallwood 2015). The project would largely block movement along that corridor.

Figure 5-1 of the EIR depicts a much more dire interference with wildlife movement in the region as a consequence of cumulative effects of existing and possible future projects. The eventual buildout of renewable energy would completely block wildlife movement along the strip of land between the East Highline and Coachella Canals. Even worse, it would entirely block wildlife movement between the Coachella Canal and Salton Sea. The EIR needs to be revised to seriously address this issue.

Would the project Interfere with an adopted HCP?

The project does not appear to be participating with the DRECP; County of Imperial (2020) only lists the DRECP in its definitions of terms, but never explains the project's

relationship to the DRECP. I raised serious concerns with the DRECP when its EIR was circulated for public review. That said, a great deal of work went into the DRECP, so I find it troubling that the proposed project appears to have ignored it. The project, if approved, would take the place of another project that I assume would have participated with the DRECP. The impacts analyses and mitigation plan of the DRECP would not apply to this project, which would generate impacts above and beyond those anticipated in the DRECP. F.67, cont.

CUMULATIVE IMPACTS

Figure 5-1 of the EIR identifies 1,336.6 MW of renewable energy capacity on >5,203 acres. County of Imperial (2020) claims that impacts at other projects would be reduced to less than significant levels through mitigation formulated by CDFW and USFWS, which is an indirect way of claiming the DRECP was formulated to mitigate impacts at those projects. However, the fatality monitoring reports reveal what has been happening despite any implementation of mitigation measures. The fatality rates are occurring at the levels I summarized earlier – they are substantial and highly significant in their impacts.

County of Imperial (2020) claims that because each project mitigates its impacts, and because Wister Solar would also mitigate its impacts, there will be no significant cumulative impacts. In other words, County of Imperial claims that cumulative impacts are residual impacts of unsuccessful mitigation. If this were true, CEQA would define cumulative effects simply as the effects of unmitigated impacts. If CEQA did define cumulative effects this way, then cumulative effects analysis would be the analysis of mitigation efficacy. But this is not how CEQA defines cumulative effects. F.68

County of Imperial relies on the list method of cumulative effects analysis, even though, assuming the County receives reports from the solar projects in the County, it has the means to more directly estimate ongoing cumulative impacts and to predict future cumulative impacts. As I commented earlier, the fatality monitoring reports available to me support an estimated mean 11.605 bird fatalities/MW/year (95% CI: 8.570-16.626). This rate applied to the County's cumulative total 1,336.6 MW in the Imperial Valley, combined with the 20 MW of the proposed project, would predict a cumulative annual toll of 15,743 (95% CI: 11,626-22,555) bird collision fatalities//year. The 25-year toll would be 393,575 (95% CI: 290,650-563,875) bird collision fatalities within the geographic scope defined by the County for its cumulative impacts analysis. And of course, a more comprehensive cumulative effects analysis would also estimate the number of failed nests resulting from solar project collision victims never returning to the nest, and it would estimate additional incremental and interactive effects. It would be indefensible to refer to thousands of bird fatalities as less-than-significant cumulative impacts, for they are indeed residual impacts after mitigation was implemented (or not, as the case may be). Having worked for 20 years in the Altamont Pass Wind Resource Area (APWRA), where the annual toll on birds was estimated to have been half of the toll predicted for the Imperial Valley (Smallwood and Karas 2009), I can assure County of Imperial that the cumulative impacts of renewable energy on wildlife will be significant. Millions of dollars have been spent, thousands of hours used, and legal

actions brought to address the APWRA's impacts to wildlife, and the ecological and economic costs continue to pile up 40 years after the first wind turbines were installed.

County of Imperial can also do more than the list method to estimate the cumulative impacts from habitat loss. As I commented earlier, Franzeb (1978) estimated 0.366 breeding birds/ha on the least productive vegetation cover types at Algodones Dunes. Projecting that density to the acres of project development in the County's list, and assuming bird density on agricultural land would equal the densities of the least productive vegetation covers at Algodones Dunes, Franzeb's bird density would predict >1,904 breeding birds, or 952 nests that have been or would be wiped out upon construction grading. Assuming 25 years of operational impacts, and assuming an average fledging of 2.9 birds/nest/year (Young 1948) and a generation time of 5 years, the lost capacity of both breeders and annual chick production would total 78,540 birds ((nests/year × chicks/nest × number of years) + (2 adults/nest × nests/year × (number of years ÷ years/generation))). The list of projects in County of Imperial's cumulative effects analysis would deny Imperial Valley another 78,540 birds over the next 25 years. Cumulative impacts from habitat loss would be highly significant on the breeding capacity of birds. F.68, cont.

Between collision fatalities and lost breeding capacity due to habitat loss, the cumulative toll of renewable energy projects on birds in the Imperial Valley would remove 472,115 birds over 25 years. As mentioned earlier, cumulative impacts do not stop with these numbers, but also include abandoned nests, disrupted social bonds, demographic imbalances and other ecological consequences that are difficult to quantify. Cumulative impacts will also extend to the actions and funds that will be expended to deal with declines in special-status species and game species. The EIR should be revised to more seriously analyze cumulative impacts.

MITIGATION

BIO-1, BIO-4, BIO-6, BIO-7 and BIO-9 – Preconstruction Surveys

Preconstruction surveys should be performed for special-status species of plants, nesting birds, desert tortoise, burrowing owl, and American badger. However, preconstruction surveys are more effective when preceded and informed by detection surveys. Detection surveys are needed to inform preconstruction surveys by mapping out where biologists performing preconstruction surveys are most likely to find animals before the tractor blade finds them. Detection surveys are also needed to assess impacts, because preconstruction surveys are not designed for assessing impacts. Furthermore, detection surveys are needed to inform the formulation of appropriate mitigation measures, because preconstruction surveys are not intended for this role either. What are missing from County of Imperial (2020), and what are in greater need than preconstruction surveys, are detection surveys consistent with guidelines and protocols that wildlife ecologists have uniquely developed for use with each special-status species. For example, County of Imperial needs to implement the CDFW (2012) detection survey guidelines for burrowing owls. F.69

Based on my experience and review of the scientific literature, bird nests are easily missed in preconstruction surveys, because birds are skilled at concealing nests within dense clusters of branches or dense foliage, or even on open ground, e.g., killdeer nests include eggs colored to blend with the local pebbles and are laid in a cupped depression with no vegetation. Very difficult to find are nests of Allen's hummingbirds and cavity-nesters. Loggerhead shrikes nest in various plant structures, but typically in the densest portions of shrubs or trees which are further concealed by the adults' skill at misleading human observers into concluding the nest site might be somewhere else. In short, it is highly unlikely that preconstruction surveys would detect all of the existing nest sites of special-status species of birds on the project site.

Preconstruction surveys, which are also referred to as take-avoidance surveys, are really salvage operations for the individual plants or animals that are readily detectable right before construction grading begins, will not prevent substantial harm such as construction- and operations-caused fatalities and habitat loss. Preconstruction surveys do not avoid reduce, rectify or compensate for impacts. At best, preconstruction surveys only minimize impacts by granting salvaged individuals a second chance. But even for the rare "salvaged" individuals, their displacement often results in their deaths or the deaths of others in the areas receiving translocated plants or animals (Griffith et al. 1989, Dodd and Seigel 1991, Schulz 1997). Conspecifics outside the project area can be injured or killed or starved as a result of competition with desperate animals that are translocated from the project. In one study of relocated burrowing owls, for example, many of the translocated owls collided with windows and automobiles soon after release (Schulz 1997). The process of translocation appears to be traumatic for the translocated individuals, as it probably also is for the conspecifics having to deal with the translocated animals released into their territories. Below I summarize mitigation guidelines with which I concur. I recommend that the EIR be revised to accommodate these guidelines.

F.69, cont.

The California Native Plant Society (CNPS) prepared mitigation guidelines for projects posing threats to special-status species of plants (CNPS 1998). Here I summarize the CNPS guidelines as well as CDFW's (1997) expectations for mitigation.

CNPS (1998) advocates only for mitigation involving avoidance of impacts. To avoid impacts, CNPS recommends pre-project planning and design, reconfiguring an existing project, or adopting the no-project alternative, in addition to site protection such as fencing and transfer of development rights in easements or fee title.

When lead agencies decide to minimize, rectify, reduce or compensate impacts, CNPS (1998) recommends certain standards. For example, mitigation measures should be developed on a site-specific basis, and should involve consultation with the appropriate regulatory agencies. Additional research should be conducted to determine which mitigation measures are appropriate for the specific life history and ecological relationships of rare plant species occurring at a particular site. CNPS (1998) regards habitat restoration and off-site introduction or translocation as unproven and usually

unsuccessful. Genetic contamination of an otherwise unaffected population is intolerable.

When lead agencies allow reduction of impacts, CNPS's (1998) guidelines maintain that the project size should be reduced, the project sited in the least environmentally sensitive area and surrounded by buffer zones permanently protected in conservation easements. CNPS also insists that efforts be made to salvage portions of the population that will be lost.

When restoration is pursued, CNPS (1998) recommends that it be directed to mitigate impacts of projects approved prior to environmental regulations. It must be tailored to the project site based on the assembly of local species and habitats. The goals of the restoration project and the courses of action intended to achieve those goals need to precede implementation. Pre-impact site conditions should be determined, and the restoration plan should consider land contours, soil types, erosion patterns, and pre-impact hydrologic conditions. Study of the targeted species should be thorough so as to identify their total distribution, habitat descriptions of occupied site and symbiotic relationships with other species. The plan should consider propagation techniques, re-introduction strategy, invasive species controls, site protection, public access and other factors. Finally, a monitoring program should be sufficiently rigorous to assess restoration success, and to augment the knowledge base relevant to related restoration efforts.

F.69, cont.

When lead agencies authorize reductions of impacts over time, the CNPS (1998) recommends limiting public access to protected habitat areas through fencing or other means, and that the species and habitat conditions are monitored to detect intrusion and subsequent impacts caused by construction and operation activities. Public education should be implemented regarding the values of these areas.

When off-site compensation is pursued, off-site populations should be protected permanently through conservation easement or mitigation banking. The area of a conservation easement must be sufficiently large to support a biologically secure, reproducing population within a buffer zone in perpetuity. The surrounding land uses must be considered, as well as expected future land uses. The design of the site boundary and management plan must be scientifically based, utilizing information from baseline studies and natural history data for each species. The contract should specify the rights of the grantee, the grantors rights and uses, and restrictions of undesirable activities, and it should include language that binds the terms and conditions of the contract in perpetuity, regardless of fee title transfers. The contract should protect the site from land use change, introduction of exotic species and public access, and it should protect the right of the grantee to enforce compliance with the terms of the easement.

Also, the mitigation exchange ratio should exceed 1:1 for most species, thereby accounting for an inevitable net loss of individuals and habitat area. Where needed, off-site compensation areas should be enhanced by reducing impacts caused by on-going activities such as over-grazing by livestock or dumping of hazardous materials or trash. Translocations should be preceded by detailed inventories of species occurring at the

receiving site, accompanied by a feasibility assessment regarding persistence and avoidance of genetic contamination. These should also occur at the appropriate time of year, following proper handling and propagation methods in consultation with the regulatory agencies. Furthermore, all translocations should be completed and shown to be successful prior to the initiation of project activities.

CNPS (1998) and CDFW (1997) insist that the mitigation design, implementation measures, and reporting methods be clearly documented, along with whom or which agencies are responsible for achieving clearly defined success criteria. Assurances must be provided in writing that certain performance criteria of the mitigation plan will be realized, and guaranteed by a negotiable performance security large enough to complete the mitigation and to pursue alternative mitigation measures should the implementation be incomplete or the objectives fail to be achieved. Five years of monitoring the success of the mitigation should be the minimum time period before returning the performance security.

F.69, cont.

BIO-2 –Impact Avoidance and Minimization Measures

I concur with the implementation of all the measures listed per this measure. These measures can help minimize electrocutions of birds, bird-automobile collisions, non-target poisonings from use of anti-coagulant poisons, and so on. They should be implemented. However, none of the listed measures would minimize collision fatalities with project infrastructure, and none would minimize or mitigate in any way the impacts of habitat loss.

F.70

BIO-3 and BIO-5 – Worker Environmental Awareness Plan and Worker Education Plan

I concur that the measures listed for environmental awareness and education should be implemented. They have merit. However, none of them would minimize collision fatalities with project infrastructure, and none would minimize or mitigate in any way the impacts of habitat loss.

F.71

BIO-8 – Bird and Bat Conservation Strategy

For a utility-scale solar project, this measure is of high importance. Unfortunately, the formulation of this measure is deferred to an unspecified later date, but neither I nor the public will see the Bird and Bat Conservation Strategy (BBCS) prior to certification of the EIR. Elements of the BBCS should have contributed directly to the Environmental Setting, Impacts Analysis and Mitigation portions of the EIR. Those elements include (1) Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys, (2) Assess potential risk to bird and bats based on the proposed activities, and (3) Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species. Decision-makers and the public need to see these portions of the BBCS detailed in the EIR.

F.72

This measure includes the later formulation of an adaptive management plan. However, adaptive management, by definition, requires participation of all stakeholders from the outset, who also identify and agree upon the objectives along with hypotheses to be tested, the monitoring plan to generate data needed for hypothesis-testing, and threshold fatality rates that would trigger management actions or alternative management prescriptions (see Holling 1978 or Walters 1986 for descriptions of the adaptive management process). Measures decided exclusively by two agencies would not be products of adaptive management.

I was a member of Alameda County Scientific Review Committee (SRC) which oversaw the implementation of an adaptive management plan in the Altamont Pass Wind Resource Area (APWRA) – the only such plan I am aware of having been implemented at a renewable energy resource area. Our plan began with a year of meetings of the Altamont Working Group, which included all stakeholders, including wind companies and their consultants, members of County, State, and Federal agencies, staff of politicians, scientists and environmentalists. The Altamont Working Group identified and agreed upon a suite of mitigation measures, but acknowledged those measures that would require greater technical scrutiny. The Alameda County Board of Supervisors passed a Resolution that emplaced the Alameda County SRC to further develop and oversee the adaptive management plan, along with open meetings to facilitate meaningful public participation, a use and fatality monitoring program to inform the SRC of the efficacy of mitigation measures and progress towards a raptor fatality reduction target. Alternative prescriptions were included. The plan set forward in the APWRA was true adaptive management, at least as written and initially implemented. Not all parties remained faithful to the plan, however, so progress was delayed and ultimately the plan proved ineffective (see Smallwood 2008 for an early assessment).

F.72, cont.

It is not enough for the EIR to say adaptive management will be implemented. It is not enough for the reasons given in the preceding paragraph, but also for not identifying candidate measures that would be implemented as part of adaptive management. Of all the candidate measures the SRC deliberated or implemented in the APWRA over 10 years, only two of the measures generated measurable results. Mitigation measures implemented at solar projects have been unable to generate any measurable results, largely due to poor experimental design. Unless viable candidate measures can be identified to reduce fatalities, and unless scientifically sound experimental designs can be proposed, The EIR's promise of adaptive management will be empty.

RECOMMENDED MEASURES

Detection Surveys

County of Imperial should recirculate a revised EIR that is founded on adequate detection surveys for special-status species and nesting birds. Detection surveys need to be implemented according to available protocols and guidelines. An example of detection surveys needed at the project site are those of burrowing owls (CDFW 2012).

F.73

Post-construction Monitoring of Project Impacts

Of the fatality monitoring efforts at California's utility-scale solar projects, those in Imperial County were among those in need of greatest improvement. Monitors in Imperial County opted to search for fatalities by car, which would not have detected nearly as many fatalities as searching by foot or using scent-detection dogs. Some monitors in Imperial County opted to not implement carcass detection trials, which left the monitoring efforts incomplete. Some reports of fatality monitoring in Imperial County failed to identify exactly where the project was located, and some provided only meager descriptions of the project or the environment in which the project occurs. Reporting of fatality monitoring could also improve in Imperial County.

Behavior Surveys

Given the large magnitude of ongoing bird and bat fatalities at solar energy projects, Imperial County needs to require behavior surveys by qualified behavioral ecologists to begin to understand why birds and bats are colliding with solar facilities and what can be done to reduce the impacts. As an example, scientists argued for years over what factors contributed to bird and bat fatalities at wind turbines. Their arguments amounted to frustrating defenses of speculated relationships between volant animals and wind turbines. It was not until behavior surveys were implemented when causal factors were better clarified and more effective solutions implemented. My review of fatality monitoring at solar projects revealed no efforts to survey for avian or bat behaviors around solar PV arrays, fences and gen-ties. Behavior ecologists need to spend some time observing birds and bats at solar PV, and that means both day and night surveys using appropriate equipment.

F.73, cont.

Transparent Reporting

The public needs to know, and scientists working to develop solutions need to know, of project impacts from construction through operations. Construction monitoring should be meticulously reported and shared with the public. Fatality monitoring through several years of operations should be performed by qualified biologists and reported publicly. Impacts to public trust resources such as to wildlife need to be reported publicly.

Adequate Fatality Monitoring

Qualified biologists should be retained to perform fatality monitoring. Monitoring should include a single search interval, no longer than weekly searches (Smallwood 2013, 2020). Searches should be made by biologists walking, not riding in cars, or better yet, by qualified dog handlers using scent-detection dogs (Smallwood et al. 2020). Searchers need to be tested for their detection rates of avian and bat carcasses, and trial carcasses need to be appropriate to the species killed at the projects and integrated into routine fatality monitoring rather than placed in separate trials for searcher detection and carcass persistence (Smallwood et al. 2018). Detection trials should not make use

of colorful Christmas ornaments to represent birds, or use birds to represent bats. County of Imperial needs to take scientific standards in fatality monitoring seriously.

County-Wide Assessment of Solar Impacts

County of Imperial needs to initiate scientifically sound fatality monitoring either at all of its solar projects or at a randomized selection of projects, and it needs to share the results with the public. The public needs to understand the impacts associated with utility-scale solar energy generation so that it can weight the merits of new projects against distributed generation. Distributed generation requires no additional habitat loss, no perimeter fences, and no additional transmission lines, and to date it has not been associated with a single bird or bat death.

Implement Mitigation Measures with Sound Experimental Designs

As I commented earlier, measures have been implemented to reduce fatalities at multiple solar projects, including mylar ribbons intended to dissuade birds from flying into PV arrays, marked powerlines, and treatments to fences, among other measures. However, none of these measures were implemented according to experimental designs that would facilitate measurement of treatment effects. Experimental design principles must be considered prior to implementation of any mitigation measures intended to reduce collision fatalities (Sinclair and DeGeorge 2016).

F.73, cont.

Compensatory Mitigation

Wildlife fatality rates estimated at solar projects represent the number of animals per MW per year that are not mitigated in any way. This must stop. Compensatory measures are needed to offset the large numbers of birds and bats killed at solar projects, as well as for habitat loss. The EIR needs to be revised to include measures such as habitat protected in exchange for habitat loss and collision fatalities, and donations to wildlife rehabilitation facilities that will care for injured animals delivered from solar projects and other anthropogenic sources. The project needs to compensate for its impacts.

Thank you for your attention,

Shawn Smallwood

Shawn Smallwood, Ph.D.

REFERENCES CITED

Althouse and Meade, Inc. 2012. Topaz Solar Farm avian and bat protection plan and bird monitoring and avoidance plan fourth quarterly/first annual report for 2012. No location reported.

Althouse and Meade, Inc. 2014. Topaz Solar Farms 2013 Fourth quarter/second annual report for avian and bat protection plan and bird monitoring and avoidance plan. Report to Topaz Solar Farms LLC, Santa Margarita, California.

Barrett's Biological Surveys. 2018. Wister Solar 640 Acre Project Flat-Tailed Horned Lizard Survey. Report to Ormat, Reno, Nevada.

BLM (Bureau of Land Management). 2012. El Centro Office Draft Environmental Impact Statement / Draft CDCA Plan Amendment Ocotillo Sol Project. U.S. Department of the Interior, BLM/CA/ES-2012-009+1793, DES 20-12, DOI-BLM-CA-D000-2012-0005-EIS. El Centro, California.

CDFW (California Department of Fish and Wildlife). 1997. Guidelines for assessing the effects of proposed developments on rare, threatened, and endangered plants and plant communities. California Department of Fish and Game, Sacramento.

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. Sacramento, California.

California Native Plant Society (CNPS). 1998. Mitigation guidelines regarding impacts to rare, threatened, and endangered plants. http://www.cnps.org/cnps/archive/mitigation.pdf

Chambers Group, INC. 2016. Centinela Solar Project bird and bat conservation strategy post-construction monitoring: annual report for the period of October 2014 – December 2015. Report to San Diego Gas & Electric Company, San Diego, California.

Cornett, J. W. 2012. Biological Resources Assessment, Imperial Valley Solar Company 2, LLC, located within Section 34, Range 14 East, Township 10 South, Parcels 003-240-009 and 003-240-029, Imperial County, California. Unpublished report to MSA Consulting, Inc., Rancho Mirage, California.

County of Imperial. 2020. Draft Environmental Impact Report: Wister Solar Energy Facility Project SCH No. 2019110140, Imperial County, California. El Centro, California.

den Boer, P.J. 1981. On the survival of populations in a heterogeneous and variable environment. Oecologia 50:39-53.

DeSante, D. F., E. D.Ruhlen, and R. Scalf. 2007. The distribution and relative abundance of burrowing owls in California during 1991-1993: Evidence for a declining population and thoughts on its conservation. In Barclay, J. H., K. W. Hunting; J. L. Lincer, J. Linthicum, and T. A. Roberts, Eds.; Proceedings of the California Burrowing Owl Symposium, November 2003. Bird Populations Monographs No. 1. The Institute for Bird Populations and Albion Environmental, Inc.: Point Reyes Station, CA, USA.

Dodd, C. K. and R. A. Seigel. 1991. Relocation, repatriation and translocation of amphibians and reptiles: Are they conservation strategies that work? Herpetologica 47:336-350.

Doering, B. and Santistevan, V. (Power Engineers, Inc.). 2013. Blythe Mesa Solar Project bird and bat conservation strategy. Report to Renewable Resources Group, LLC and Solar Star Blythe Mesa 1, LLC.

Dudek. 2018. Bird and bat conservation strategy (BBCS) annual report: June 2017 through May 2018, Stateline Solar Farm, San Bernardino County, California. Report to Southern Power Company, Atlanta, Georgia.

Ecology and Environment, Inc. 2012. Hudson Ranch Power II CUP #G10-0002/Simbol II CUP #12-0005 Draft Environmental Impact Report, Volume I. County of Imperial, Department of Planning and Development Services, El Centro, CA.

Foreman, L. D., Ed. (Flat-tailed Horned Lizard Working Group of Interagency Coordinating Committee). 2003. Flat-tailed horned lizard rangewide management strategy: 2003 revision. Unpublished report.

Franzeb, K. E. 1978. Breeding bird densities, species composition, and bird species diversity of the Algodones Dunes. Western Birds 9:9-20.

Griffith, B., J.M. Scott, J.W. Carpenter, and C. Reed. 1989. Translocation as a Species Conservation Tool: Status and Strategy. *Science* 245:477-480

Hanski, I. 1994. Spatial scale, patchiness and population dynamics on land. Philosophical Transactions of the Royal Society of London B 343:19-25.

HDR (Engineering, Inc.) 2011. Draft Environmental Impact Report Mount Signal and Calexico Solar Farm Projects, Imperial County, California. County of Imperial, El Centro, California.

Heritage Environmental Consultants, LLC. 2014. Post-construction avian mortality monitoring report for the Campo Verde Solar Project: Third quarter 2014 (July, August, September) and year 1 annual report (October 2013 – September 2014). No location reported.

Heritage Environmental Consultants, LLC. 2015a. Post-construction avian mortality monitoring report for the Campo Verde Solar Project: Year 2 annual report (October 2014 – September 2015). No location reported.

Heritage Environmental Consultants, LLC. 2015b. Post-construction avian mortality monitoring report Centinela Solar Energy Project: Fourth quarterly report (May – July 2015) and annual summary report. No location reported.

Heritage Environmental Consultants, LLC. 2016. Post-construction avian mortality monitoring report for the Campo Verde Solar Project: Year 3 annual report (October 2015 – September 2016). No location reported.

Heritage Environmental Consultants, LLC. 2017a. Post-construction avian mortality monitoring report Calipatria Solar Project: Year 1 semi-annual report (June 2016 – October 2016). No location reported.

Heritage Environmental Consultants, LLC. 2017b. Post-construction avian mortality monitoring report Calipatria Solar Project: Year 1 semi-annual report #2 (November 2016 – May 2017). No location reported.

Heritage Environmental Consultants, LLC. 2017c. Post-construction avian mortality monitoring report Calipatria Solar Project: Year 2 semi-annual report #3 (June 2017 – Oct 2017). No location reported.

Holling, C.S. (ed.). 1978. Adaptive environmental assessment and management. John Wiley & Sons, New York.

H.T. Harvey & Associates. 2013. California Valley Solar Ranch Project avian fatality during construction first annual report September 2011 – September 2012. Report for HPR III, LLC, Carlsbad, California.

H.T. Harvey & Associates. 2015a. California Valley Solar Ranch Project avian and bat protection plan final postconstruction fatality report. Report to HPR II, LLC, Santa Margarita, California.

H.T. Harvey & Associates. 2015b. Ivanpah Solar Electric Generating System avian & bat monitoring plan 2013-2014 annual report (revised) (29 October 2013 – 20 October 2014). Report to Solar Partners I, II, and VIII, Nipton, California.

Imperial County. 2012. Draft Environmental Impact Report: Solar Gen 2 Solar Array Power Project. Imperial County Planning & Development Services Department, El Centro, California.

Martinson, L., Gerringer, M., Lombardi, J. (Western EcoSystems Technology, Inc.). 2018a. Post-construction monitoring at the Blythe Solar Power Project Riverside County, California. Report to Blythe Solar Energy Center, LLC, Juno Beach, Florida.

Martinson, L., Gerringer, M., Lombardi, J. (Western EcoSystems Technology, Inc.). 2018b. Post-construction monitoring at the McCoy Solar Energy Project Riverside County, California first annual report draft 2016 – 2017. Report to McCoy Solar, LLC, Juno Beach, Florida.

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi , L. Helft , M. Parr, and P. P. Marra. 2019. Decline of the North American avifauna. Science 10.1126/science.aaw1313 (2019).

Runge, C. A., T. G. Martin, H. P. Possingham, S. G. Willis, and R. A. Fuller. 2014. Conserving mobile species. Frontiers in Ecology and Environment 12(7): 395–402, doi:10.1890/130237.

Schulz, T. A. 1997. Observations, resightings, and encounters of rehabilitated, orphaned, and relocated burrowing owls. Journal of Raptor Research Reports 9:128-131.

Seamans, M. E. 2018. Mourning dove population status, 2018. U.S. Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Washington, D.C.

Shoener and Barrett's Biological Surveys. 2018. 2018 Spring/summer bat and bird carcass monitoring survey report Midway Solar Farm II. No location reported.

Shuford, W. D., and T. Gardali, [eds.]. 2008. California bird species of special concern: a ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California.

Sinclair, K. and E. DeGeorge. 2016. Framework for Testing the Effectiveness of Bat and Eagle Impact-Reduction Strategies at Wind Energy Projects. S. Smallwood, M. Schirmacher, and M. Morrison, eds., Technical Report NREL/TP-5000-65624, National Renewable Energy Laboratory, Golden, Colorado.

Smallwood, K.S. 1995. Scaling Swainson's hawk population density for assessing habitat-use across an agricultural landscape. J. Raptor Research 29:172-178.

Smallwood, K. S. 1997. Interpreting puma (*Puma concolor*) density estimates for theory and management. Environmental Conservation 24(3):283-289.

Smallwood, K. S. 2001. Linking habitat restoration to meaningful units of animal demography. Restoration Ecology 9:253-261.

Smallwood, K. S. 2008. Wind power company compliance with mitigation plans in the Altamont Pass Wind Resource Area. Environmental & Energy Law Policy Journal 2(2):229-285.

Smallwood, K.S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37:19-33. + Online Supplemental Material.

Smallwood, K. S. 2015. Habitat fragmentation and corridors. Pages 84-101 in M. L. Morrison and H. A. Mathewson, Eds., Wildlife habitat conservation: concepts, challenges, and solutions. John Hopkins University Press, Baltimore, Maryland, USA.

Smallwood, K. S. 2017. Long search intervals under-estimate bird and bat fatalities caused by wind turbines. Wildlife Society Bulletin 41:224-230.

Smallwood, K. S. 2020. USA wind energy-caused bat fatalities increase with shorter fatality search intervals. Diversity 12(98); doi:10.3390/d12030098.

Smallwood, K. S., and D. A. Bell. 2020. Effects of wind turbine curtailment on bird and bat fatalities. Journal of Wildlife Management 84:684-696. DOI: 10.1002/jwmg.21844

Smallwood, K. S. and M. L. Morrison. 2018. Nest-site selection in a high-density colony of burrowing owls. Journal of Raptor Research 52:454-470.

Smallwood, K. S., D. A. Bell, and S. Standish. 2020. Dogs detect larger wind energy impacts on bats and birds. Journal of Wildlife Management 84:852-864. DOI: 10.1002/jwmg.21863.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. Wildlife Society Bulletin: 37:787-795.

Smallwood, K. S., D. A. Bell, E. L. Walther, E. Leyvas, S. Standish, J. Mount, B. Karas. 2018. Estimating wind turbine fatalities using integrated detection trials. Journal of Wildlife Management 82:1169-1184.

Stantec. 2020. Wister Solar Project Imperial County, California: Biological Resources Technical Report. Report to Orni 33 LLC, no location reported.

Taylor, P. D., S. A. Mackenzie, B. G. Thurber, A. M. Calvert, A. M. Mills, L. P. McGuire, and C. G. Guglielmo. 2011. Landscape movements of migratory birds and bats reveal an expanded scale of stopover. PlosOne 6(11): e27054. doi:10.1371/journal.pone.0027054.

Taylor, R. A. J., and L. R. Taylor. 1979. A behavioral model for the evolution of spatial dynamics. Pp. 1-28 in R. M. Anderson, B. D. Turner, and L. R. Taylor (editors). Population dynamics. Blackwell Scientific Publications, Oxford.

UltraSystems. 2014a. Imperial Solar Energy Center South post-construction avian monitoring biological monitoring report November 2013. Report to Csolar IV South, LLC. No location reported.

UltraSystems. 2014b. Imperial Solar Energy Center South post-construction avian monitoring biological monitoring report December 2013. Report to Csolar IV South, LLC. No location reported.

UltraSystems. 2014c. Imperial Solar Energy Center South post-construction avian monitoring biological monitoring January 2014. Report to Csolar IV South, LLC. No location reported.

UltraSystems. 2014d. Imperial Solar Energy Center South post-construction avian monitoring biological monitoring February 2014. Report to Csolar IV South, LLC. No location reported.

UltraSystems. 2014e. Imperial Solar Energy Center South post-construction avian monitoring biological monitoring March 2014. Report to Csolar IV South, LLC. No location reported.

U.S. Fish and Wildlife Service. 2017. Preparing for any action that may occur within the range of the Mojave Desert Tortoise (*Gopherus agassizii*).

Walters, C.J. 1986. Adaptive management of renewable resources. McGraw-Hill, New York.

Warnock, N. 2010. Stopping vs. staging: the difference between a hop and a jump. Journal of Avian Biology 41:621-626.

Western EcoSystems Technology, Inc. 2016. Post-construction monitoring at the Genesis Solar Energy Project Riverside County, California, 2015 – 2016 First Annual Report. Report to Genesis Solar LLC, Juno Beach, Florida.

Western EcoSystems Technology, Inc. 2017a. Post-construction monitoring at the Desert Sunlight Solar Farm Project Riverside County, California, 2015 – 2016 first annual report. Report to Desert Sunlight 250, LLC and Desert Sunlight 300, LLC, Juno Beach, Florida.

Western EcoSystems Technology, Inc. 2017b. Ivanpah Solar Electric Generating System avian & bat monitoring plan 2015 – 2016 annual report. Report to Solar Partners I, II, and VIII, Nipton, California.

Western EcoSystems Technology, Inc. 2017c. Post-construction monitoring at the Genesis Solar Energy Project Riverside County, California, second annual report 2016 – 2017. Report to Genesis Solar LLC, Juno Beach, Florida.

Western EcoSystems Technology, Inc. 2018a. Post-construction monitoring at the Desert Sunlight Solar Farm Project Riverside County, California, second annual report 2016 – 2017. Report to Desert Sunlight 250, LLC and Desert Sunlight 300, LLC, Juno Beach, Florida.

Western EcoSystems Technology, Inc. 2018b. Ivanpah Solar Electric Generating System avian & bat monitoring plan 2016 – 2017 annual report. Report to Solar Partners I, II, and VIII, Nipton, California.

Western EcoSystems Technology, Inc. 2019. Ivanpah Solar Electric Generating System avian & bat monitoring plan 2017 – 2018 annual report. Report to Solar Partners I, II, and VIII, Nipton, California.

Young, H. 1948. A comparative study of nesting birds in a five-acre park. The Wilson Bulletin 61:36-47.

Kenneth Shawn Smallwood
Curriculum Vitae

3108 Finch Street
Davis, CA 95616
Phone (530) 756-4598
Cell (530) 601-6857
puma@dcn.org

Born May 3, 1963 in
Sacramento, California.
Married, father of two.

Ecologist

Expertise

- Finding solutions to controversial problems related to wildlife interactions with human industry, infrastructure, and activities;
- Wildlife monitoring and field study using GPS, thermal imaging, behavior surveys;
- Using systems analysis and experimental design principles to identify meaningful ecological patterns that inform management decisions.

Education

Ph.D. Ecology, University of California, Davis. September 1990.
M.S. Ecology, University of California, Davis. June 1987.
B.S. Anthropology, University of California, Davis. June 1985.
Corcoran High School, Corcoran, California. June 1981.

Experience

- 480 professional publications, including:
- 83 peer reviewed publications
- 24 in non-reviewed proceedings
- 371 reports, declarations, posters and book reviews
- 8 in mass media outlets
- 87 public presentations of research results

Editing for scientific journals: Guest Editor, *Wildlife Society Bulletin*, 2012-2013, of invited papers representing international views on the impacts of wind energy on wildlife and how to mitigate the impacts. Associate Editor, *Journal of Wildlife Management*, March 2004 to 30 June 2007. Editorial Board Member, *Environmental Management*, 10/1999 to 8/2004. Associate Editor, *Biological Conservation*, 9/1994 to 9/1995.

Member, Alameda County Scientific Review Committee (SRC), August 2006 to April 2011. The five-member committee investigated causes of bird and bat collisions in the Altamont Pass Wind Resource Area, and recommended mitigation and monitoring measures. The SRC

reviewed the science underlying the Alameda County Avian Protection Program, and advised the County on how to reduce wildlife fatalities.

Consulting Ecologist, 2004-2007, California Energy Commission (CEC). Provided consulting services as needed to the CEC on renewable energy impacts, monitoring and research, and produced several reports. Also collaborated with Lawrence-Livermore National Lab on research to understand and reduce wind turbine impacts on wildlife.

Consulting Ecologist, 1999-2013, U.S. Navy. Performed endangered species surveys, hazardous waste site monitoring, and habitat restoration for the endangered San Joaquin kangaroo rat, California tiger salamander, California red-legged frog, California clapper rail, western burrowing owl, salt marsh harvest mouse, and other species at Naval Air Station Lemoore; Naval Weapons Station, Seal Beach, Detachment Concord; Naval Security Group Activity, Skaggs Island; National Radio Transmitter Facility, Dixon; and, Naval Outlying Landing Field Imperial Beach.

Part-time Lecturer, 1998-2005, California State University, Sacramento. Instructed Mammalogy, Behavioral Ecology, and Ornithology Lab, Contemporary Environmental Issues, Natural Resources Conservation.

Senior Ecologist, 1999-2005, BioResource Consultants. Designed and implemented research and monitoring studies related to avian fatalities at wind turbines, avian electrocutions on electric distribution poles across California, and avian fatalities at transmission lines.

Chairman, Conservation Affairs Committee, The Wildlife Society--Western Section, 1999-2001. Prepared position statements and led efforts directed toward conservation issues, including travel to Washington, D.C. to lobby Congress for more wildlife conservation funding.

Systems Ecologist, 1995-2000, Institute for Sustainable Development. Headed ISD's program on integrated resources management. Developed indicators of ecological integrity for large areas, using remotely sensed data, local community involvement and GIS.

Associate, 1997-1998, Department of Agronomy and Range Science, University of California, Davis. Worked with Shu Geng and Mingua Zhang on several studies related to wildlife interactions with agriculture and patterns of fertilizer and pesticide residues in groundwater across a large landscape.

Lead Scientist, 1996-1999, National Endangered Species Network. Informed academic scientists and environmental activists about emerging issues regarding the Endangered Species Act and other environmental laws. Testified at public hearings on endangered species issues.

Ecologist, 1997-1998, Western Foundation of Vertebrate Zoology. Conducted field research to determine the impact of past mercury mining on the status of California red-legged frogs in Santa Clara County, California.

Senior Systems Ecologist, 1994-1995, EIP Associates, Sacramento, California. Provided consulting services in environmental planning, and quantitative assessment of land units for their

conservation and restoration opportunities basedon ecological resource requirements of 29 special-status species. Developed ecological indicators for prioritizing areas within Yolo County to receive mitigation funds for habitat easements and restoration.

Post-Graduate Researcher, 1990-1994, Department of Agronomy and Range Science, *U.C. Davis*. Under Dr. Shu Geng's mentorship, studied landscape and management effects on temporal and spatial patterns of abundance among pocket gophers and species of Falconiformes and Carnivora in the Sacramento Valley. Managed and analyzed a data base of energy use in California agriculture. Assisted with landscape (GIS) study of groundwater contamination across Tulare County, California.

Work experience in graduate school: Co-taught Conservation Biology with Dr. Christine Schonewald, 1991 & 1993, UC Davis Graduate Group in Ecology; Reader for Dr. Richard Coss's course on Psychobiology in 1990, UC Davis Department of Psychology; Research Assistant to Dr. Walter E. Howard, 1988-1990, UC Davis Department of Wildlife and Fisheries Biology, testing durable baits for pocket gopher management in forest clearcuts; Research Assistant to Dr. Terrell P. Salmon, 1987-1988, UC Wildlife Extension, Department of Wildlife and Fisheries Biology, developing empirical models of mammal and bird invasions in North America, and a rating system for priority research and control of exotic species based on economic, environmental and human health hazards in California. Student Assistant to Dr. E. Lee Fitzhugh, 1985-1987, UC Cooperative Extension, Department of Wildlife and Fisheries Biology, developing and implementing statewide mountain lion track count for long-term monitoring.

Fulbright Research Fellow, Indonesia, 1988. Tested use of new sampling methods for numerical monitoring of Sumatran tiger and six other species of endemic felids, and evaluated methods used by other researchers.

Projects

Repowering wind energy projects through careful siting of new wind turbines using map-based collision hazard models to minimize impacts to volant wildlife. Funded by wind companies (principally NextEra Renewable Energy, Inc.), California Energy Commission and East Bay Regional Park District, I have collaborated with a GIS analyst and managed a crew of five field biologists performing golden eagle behavior surveys and nocturnal surveys on bats and owls. The goal is to quantify flight patterns for development of predictive models to more carefully site new wind turbines in repowering projects. Focused behavior surveys began May 2012 and continue. Collision hazard models have been prepared for seven wind projects, three of which were built. Planning for additional repowering projects is underway.

Test avian safety of new mixer-ejector wind turbine (MEWT). Designed and implemented a before-after, control-impact experimental design to test the avian safety of a new, shrouded wind turbine developed by Ogin Inc. (formerly known as FloDesign Wind Turbine Corporation). Supported by a $718,000 grant from the California Energy Commission's Public Interest Energy Research program and a 20% match share contribution from Ogin, I managed a crew of seven field biologists who performed periodic fatality searches and behavior surveys, carcass detection trials, nocturnal behavior surveys using a thermal camera, and spatial analyses with the collaboration of a GIS

analyst. Field work began 1 April 2012 and ended 30 March 2015 without Ogin installing its MEWTs, but we still achieved multiple important scientific advances.

Reduce avian mortality due to wind turbines at Altamont Pass. Studied wildlife impacts caused by 5,400 wind turbines at the world's most notorious wind resource area. Studied how impacts are perceived by monitoring and how they are affected by terrain, wind patterns, food resources, range management practices, wind turbine operations, seasonal patterns, population cycles, infrastructure management such as electric distribution, animal behavior and social interactions.

Reduce avian mortality on electric distribution poles. Directed research toward reducing bird electrocutions on electric distribution poles, 2000-2007. Oversaw 5 founds of fatality searches at 10,000 poles from Orange County to Glenn County, California, and produced two large reports.

Cook *et al.* v. Rockwell International *et al.*, No. 90-K-181 (D. Colorado). Provided expert testimony on the role of burrowing animals in affecting the fate of buried and surface-deposited radioactive and hazardous chemical wastes at the Rocky Flats Plant, Colorado. Provided expert reports based on four site visits and an extensive document review of burrowing animals. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals. I testified in federal court in November 2005, and my clients were subsequently awarded a $553,000,000 judgment by a jury. After appeals the award was increased to two billion dollars.

Hanford Nuclear Reservation Litigation. Provided expert testimony on the role of burrowing animals in affecting the fate of buried radioactive wastes at the Hanford Nuclear Reservation, Washington. Provided three expert reports based on three site visits and extensive document review. Predicted and verified a certain population density of pocket gophers on buried waste structures, as well as incidence of radionuclide contamination in body tissue. Conducted transect surveys for evidence of burrowing animals and other wildlife on and around waste facilities. Discovered substantial intrusion of waste structures by burrowing animals.

Expert testimony and declarations on proposed residential and commercial developments, gas-fired power plants, wind, solar and geothermal projects, water transfers and water transfer delivery systems, endangered species recovery plans, Habitat Conservation Plans and Natural Communities Conservation Programs. Testified before multiple government agencies, Tribunals, Boards of Supervisors and City Councils, and participated with press conferences and depositions. Prepared expert witness reports and court declarations, which are summarized under Reports (below).

Protocol-level surveys for special-status species. Used California Department of Fish and Wildlife and US Fish and Wildlife Service protocols to search for California red-legged frog, California tiger salamander, arroyo southwestern toad, blunt-nosed leopard lizard, western pond turtle, giant kangaroo rat, San Joaquin kangaroo rat, San Joaquin kit fox, western burrowing owl, Swainson's hawk, Valley elderberry longhorn beetle and other special-status species.

Conservation of San Joaquin kangaroo rat. Performed research to identify factors responsible for the decline of this endangered species at Lemoore Naval Air Station, 2000-2013, and implemented habitat enhancements designed to reverse the trend and expand the population.

Impact of West Nile Virus on yellow-billed magpies. Funded by Sacramento-Yolo Mosquito and Vector Control District, 2005-2008, compared survey results pre- and post-West Nile Virus epidemic for multiple bird species in the Sacramento Valley, particularly on yellow-billed magpie and American crow due to susceptibility to WNV.

Workshops on HCPs. Assisted Dr. Michael Morrison with organizing and conducting a 2-day workshop on Habitat Conservation Plans, sponsored by Southern California Edison, and another 1-day workshop sponsored by PG&E. These Workshops were attended by academics, attorneys, and consultants with HCP experience. We guest-edited a Proceedings published in Environmental Management.

Mapping of biological resources along Highways 101, 46 and 41. Used GPS and GIS to delineate vegetation complexes and locations of special-status species along 26 miles of highway in San Luis Obispo County, 14 miles of highway and roadway in Monterey County, and in a large area north of Fresno, including within reclaimed gravel mining pits.

GPS mapping and monitoring at restoration sites and at Caltrans mitigation sites. Monitored the success of elderberry shrubs at one location, the success of willows at another location, and the response of wildlife to the succession of vegetation at both sites. Also used GPS to monitor the response of fossorial animals to yellow star-thistle eradication and natural grassland restoration efforts at Bear Valley in Colusa County and at the decommissioned Mather Air Force Base in Sacramento County.

Mercury effects on Red-legged Frog. Assisted Dr. Michael Morrison and US Fish and Wildlife Service in assessing the possible impacts of historical mercury mining on the federally listed California red-legged frog in Santa Clara County. Also measured habitat variables in streams.

Opposition to proposed No Surprises rule. Wrote a white paper and summary letter explaining scientific grounds for opposing the incidental take permit (ITP) rules providing ITP applicants and holders with general assurances they will be free of compliance with the Endangered Species Act once they adhere to the terms of a "properly functioning HCP." Submitted 188 signatures of scientists and environmental professionals concerned about No Surprises rule US Fish and Wildlife Service, National Marine Fisheries Service, all US Senators.

Natomas Basin Habitat Conservation Plan alternative. Designed narrow channel marsh to increase the likelihood of survival and recovery in the wild of giant garter snake, Swainson's hawk and Valley Elderberry Longhorn Beetle. The design included replication and interspersion of treatments for experimental testing of critical habitat elements. I provided a report to Northern Territories, Inc.

Assessments of agricultural production system and environmental technology transfer to China. Twice visited China and interviewed scientists, industrialists, agriculturalists, and the Directors of the Chinese Environmental Protection Agency and the Department of Agriculture to assess the need and possible pathways for environmental clean-up technologies and trade opportunities between the US and China.

Yolo County Habitat Conservation Plan. Conducted landscape ecology study of Yolo County to spatially prioritize allocation of mitigation efforts to improve ecosystem functionality within the

County from the perspective of 29 special-status species of wildlife and plants. Used a hierarchically structured indicators approach to apply principles of landscape and ecosystem ecology, conservation biology, and local values in rating land units. Derived GIS maps to help guide the conservation area design, and then developed implementation strategies.

Mountain lion track count. Developed and conducted a carnivore monitoring program throughout California since 1985. Species counted include mountain lion, bobcat, black bear, coyote, red and gray fox, raccoon, striped skunk, badger, and black-tailed deer. Vegetation and land use are also monitored. Track survey transect was established on dusty, dirt roads within randomly selected quadrats.

Sumatran tiger and other felids. Upon award of Fulbright Research Fellowship, I designed and initiated track counts for seven species of wild cats in Sumatra, including Sumatran tiger, fishing cat, and golden cat. Spent four months on Sumatra and Java in 1988, and learned Bahasa Indonesia, the official Indonesian language.

Wildlife in agriculture. Beginning as post-graduate research, I studied pocket gophers and other wildlife in 40 alfalfa fields throughout the Sacramento Valley, and I surveyed for wildlife along a 200 mile road transect since 1989 with a hiatus of 1996-2004. The data are analyzed using GIS and methods from landscape ecology, and the results published and presented orally to farming groups in California and elsewhere. I also conducted the first study of wildlife in cover crops used on vineyards and orchards.

Agricultural energy use and Tulare County groundwater study. Developed and analyzed a data base of energy use in California agriculture, and collaborated on a landscape (GIS) study of groundwater contamination across Tulare County, California.

Pocket gopher damage in forest clear-cuts. Developed gopher sampling methods and tested various poison baits and baiting regimes in the largest-ever field study of pocket gopher management in forest plantations, involving 68 research plots in 55 clear-cuts among 6 National Forests in northern California.

Risk assessment of exotic species in North America. Developed empirical models of mammal and bird species invasions in North America, as well as a rating system for assigning priority research and control to exotic species in California, based on economic, environmental, and human health hazards.

Peer Reviewed Publications

Smallwood, K. S. and M. L. Morrison. 2018. Nest-site selection in a high-density colony of burrowing owls. Journal of Raptor Research 52:454-470.

Smallwood, K. S., D. A. Bell, E. L. Walther, E. Leyvas, S. Standish, J. Mount, B. Karas. 2018. Estimating wind turbine fatalities using integrated detection trials. Journal of Wildlife Management 82:1169-1184.

Smallwood, K. S. 2017. Long search intervals under-estimate bird and bat fatalities caused by

wind turbines. Wildlife Society Bulletin 41:224-230.

Smallwood, K. S. 2017. The challenges of addressing wildlife impacts when repowering wind energy projects. Pages 175-187 in Köppel, J., Editor, Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference. Springer. Cham, Switzerland.

May, R., Gill, A. B., Köppel, J. Langston, R. H.W., Reichenbach, M., Scheidat, M., Smallwood, S., Voigt, C. C., Hüppop, O., and Portman, M. 2017. Future research directions to reconcile wind turbine–wildlife interactions. Pages 255-276 in Köppel, J., Editor, Wind Energy and Wildlife Impacts: Proceedings from the CWW2015 Conference. Springer. Cham, Switzerland.

Smallwood, K. S. 2017. Monitoring birds. M. Perrow, Ed., Wildlife and Wind Farms - Conflicts and Solutions, Volume 2. Pelagic Publishing, Exeter, United Kingdom. www.bit.ly/2v3cR9Q

Smallwood, K. S., L. Neher, and D. A. Bell. 2017. Siting to Minimize Raptor Collisions: an example from the Repowering Altamont Pass Wind Resource Area. M. Perrow, Ed., Wildlife and Wind Farms - Conflicts and Solutions, Volume 2. Pelagic Publishing, Exeter, United Kingdom. www.bit.ly/2v3cR9Q

Johnson, D. H., S. R. Loss, K. S. Smallwood, W. P. Erickson. 2016. Avian fatalities at wind energy facilities in North America: A comparison of recent approaches. Human–Wildlife Interactions 10(1):7-18.

Sadar, M. J., D. S.-M. Guzman, A. Mete, J. Foley, N. Stephenson, K. H. Rogers, C. Grosset, K. S. Smallwood, J. Shipman, A. Wells, S. D. White, D. A. Bell, and M. G. Hawkins. 2015. Mange Caused by a novel Micnemidocoptes mite in a Golden Eagle (*Aquila chrysaetos*). Journal of Avian Medicine and Surgery 29(3):231-237.

Smallwood, K. S. 2015. Habitat fragmentation and corridors. Pages 84-101 in M. L. Morrison and H. A. Mathewson, Eds., Wildlife habitat conservation: concepts, challenges, and solutions. John Hopkins University Press, Baltimore, Maryland, USA.

Mete, A., N. Stephenson, K. Rogers, M. G. Hawkins, M. Sadar, D. Guzman, D. A. Bell, J. Shipman, A. Wells, K. S. Smallwood, and J. Foley. 2014. Emergence of Knemidocoptic mange in wild Golden Eagles (Aquila chrysaetos) in California. Emerging Infectious Diseases 20(10):1716-1718.

Smallwood, K. S. 2013. Introduction: Wind-energy development and wildlife conservation. Wildlife Society Bulletin 37: 3-4.

Smallwood, K. S. 2013. Comparing bird and bat fatality-rate estimates among North American wind-energy projects. Wildlife Society Bulletin 37:19-33. + Online Supplemental Material.

Smallwood, K. S., L. Neher, J. Mount, and R. C. E. Culver. 2013. Nesting Burrowing Owl Abundance in the Altamont Pass Wind Resource Area, California. Wildlife Society Bulletin: 37:787-795.

Smallwood, K. S., D. A. Bell, B. Karas, and S. A. Snyder. 2013. Response to Huso and Erickson Comments on Novel Scavenger Removal Trials. Journal of Wildlife Management 77: 216-225.

Bell, D. A., and K. S. Smallwood. 2010. Birds of prey remain at risk. Science 330:913.

Smallwood, K. S., D. A. Bell, S. A. Snyder, and J. E. DiDonato. 2010. Novel scavenger removal trials increase estimates of wind turbine-caused avian fatality rates. Journal of Wildlife Management 74: 1089-1097 + Online Supplemental Material.

Smallwood, K. S., L. Neher, and D. A. Bell. 2009. Map-based repowering and reorganization of a wind resource area to minimize burrowing owl and other bird fatalities. Energies 2009(2):915-943. http://www.mdpi.com/1996-1073/2/4/915

Smallwood, K. S. and B. Nakamoto. 2009. Impacts of West Nile Virus Epizootic on Yellow-Billed Magpie, American Crow, and other Birds in the Sacramento Valley, California. The Condor 111:247-254.

Smallwood, K. S., L. Rugge, and M. L. Morrison. 2009. Influence of Behavior on Bird Mortality in Wind Energy Developments: The Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 73:1082-1098.

Smallwood, K. S. and B. Karas. 2009. Avian and Bat Fatality Rates at Old-Generation and Repowered Wind Turbines in California. Journal of Wildlife Management 73:1062-1071.

Smallwood, K. S. 2008. Wind power company compliance with mitigation plans in the Altamont Pass Wind Resource Area. Environmental & Energy Law Policy Journal 2(2):229-285.

Smallwood, K. S., C. G. Thelander. 2008. Bird Mortality in the Altamont Pass Wind Resource Area, California. Journal of Wildlife Management 72:215-223.

Smallwood, K. S. 2007. Estimating wind turbine-caused bird mortality. Journal of Wildlife Management 71:2781-2791.

Smallwood, K. S., C. G. Thelander, M. L. Morrison, and L. M. Rugge. 2007. Burrowing owl mortality in the Altamont Pass Wind Resource Area. Journal of Wildlife Management 71:1513-1524.

Cain, J. W. III, K. S. Smallwood, M. L. Morrison, and H. L. Loffland. 2005. Influence of mammal activity on nesting success of Passerines. J. Wildlife Management 70:522-531.

Smallwood, K.S. 2002. Habitat models based on numerical comparisons. Pages 83-95 *in* Predicting species occurrences: Issues of scale and accuracy, J. M. Scott, P. J. Heglund, M. Morrison, M. Raphael, J. Haufler, and B. Wall, editors. Island Press, Covello, California.

Morrison, M. L., K. S. Smallwood, and L. S. Hall. 2002. Creating habitat through plant relocation: Lessons from Valley elderberry longhorn beetle mitigation. Ecological Restoration 21: 95-100.

Zhang, M., K. S. Smallwood, and E. Anderson. 2002. Relating indicators of ecological health and integrity to assess risks to sustainable agriculture and native biota. Pages 757-768 *in* D.J. Rapport, W.L. Lasley, D.E. Rolston, N.O. Nielsen, C.O. Qualset, and A.B. Damania (eds.), Managing for Healthy Ecosystems, Lewis Publishers, Boca Raton, Florida USA.

Wilcox, B. A., K. S. Smallwood, and J. A. Kahn. 2002. Toward a forest Capital Index. Pages 285-298 *in* D.J. Rapport, W.L. Lasley, D.E. Rolston, N.O. Nielsen, C.O. Qualset, and A.B. Damania (eds.), Managing for Healthy Ecosystems, Lewis Publishers, Boca Raton, Florida USA.

Smallwood, K.S. 2001. The allometry of density within the space used by populations of Mammalian Carnivores. Canadian Journal of Zoology 79:1634-1640.

Smallwood, K.S., and T.R. Smith. 2001. Study design and interpretation of Sorex density estimates. Annales Zoologi Fennici 38:141-161.

Smallwood, K.S., A. Gonzales, T. Smith, E. West, C. Hawkins, E. Stitt, C. Keckler, C. Bailey, and K. Brown. 2001. Suggested standards for science applied to conservation issues. Transactions of the Western Section of the Wildlife Society 36:40-49.

Geng, S., Yixing Zhou, Minghua Zhang, and K. Shawn Smallwood. 2001. A Sustainable Agro-ecological Solution to Water Shortage in North China Plain (Huabei Plain). Environmental Planning and Management 44:345-355.

Smallwood, K. Shawn, Lourdes Rugge, Stacia Hoover, Michael L. Morrison, Carl Thelander. 2001. Intra- and inter-turbine string comparison of fatalities to animal burrow densities at Altamont Pass. Pages 23-37 in S. S. Schwartz, ed., Proceedings of the National Avian-Wind Power Planning Meeting IV. RESOLVE, Inc., Washington, D.C.

Smallwood, K.S., S. Geng, and M. Zhang. 2001. Comparing pocket gopher (*Thomomys bottae*) density in alfalfa stands to assess management and conservation goals in northern California. Agriculture, Ecosystems & Environment 87: 93-109.

Smallwood, K. S. 2001. Linking habitat restoration to meaningful units of animal demography. Restoration Ecology 9:253-261.

Smallwood, K. S. 2000. A crosswalk from the Endangered Species Act to the HCP Handbook and real HCPs. Environmental Management 26, Supplement 1:23-35.

Smallwood, K. S., J. Beyea and M. Morrison. 1999. Using the best scientific data for endangered species conservation. Environmental Management 24:421-435.

Smallwood, K. S. 1999. Scale domains of abundance among species of Mammalian Carnivora. Environmental Conservation 26:102-111.

Smallwood, K.S. 1999. Suggested study attributes for making useful population density estimates. Transactions of the Western Section of the Wildlife Society 35: 76-82.

Smallwood, K. S. and M. L. Morrison. 1999. Estimating burrow volume and excavation rate of pocket gophers (Geomyidae). Southwestern Naturalist 44:173-183.

Smallwood, K. S. and M. L. Morrison. 1999. Spatial scaling of pocket gopher (*Geomyidae*) density. Southwestern Naturalist 44:73-82.

Smallwood, K. S. 1999. Abating pocket gophers (*Thomomys* spp.) to regenerate forests in clearcuts. Environmental Conservation 26:59-65.

Smallwood, K. S. 1998. Patterns of black bear abundance. Transactions of the Western Section of the Wildlife Society 34:32-38.

Smallwood, K. S. 1998. On the evidence needed for listing northern goshawks (*Accipter gentilis*) under the Endangered Species Act: a reply to Kennedy. J. Raptor Research 32:323-329.

Smallwood, K. S., B. Wilcox, R. Leidy, and K. Yarris. 1998. Indicators assessment for Habitat Conservation Plan of Yolo County, California, USA. Environmental Management 22: 947-958.

Smallwood, K. S., M. L. Morrison, and J. Beyea. 1998. Animal burrowing attributes affecting hazardous waste management. Environmental Management 22: 831-847.

Smallwood, K. S, and C. M. Schonewald. 1998. Study design and interpretation for mammalian carnivore density estimates. Oecologia 113:474-491.

Zhang, M., S. Geng, and K. S. Smallwood. 1998. Nitrate contamination in groundwater of Tulare County, California. Ambio 27(3):170-174.

Smallwood, K. S. and M. L. Morrison. 1997. Animal burrowing in the waste management zone of Hanford Nuclear Reservation. Proceedings of the Western Section of the Wildlife Society Meeting 33:88-97.

Morrison, M. L., K. S. Smallwood, and J. Beyea. 1997. Monitoring the dispersal of contaminants by wildlife at nuclear weapons production and waste storage facilities. The Environmentalist 17:289-295.

Smallwood, K. S. 1997. Interpreting puma (*Puma concolor*) density estimates for theory and management. Environmental Conservation 24(3):283-289.

Smallwood, K. S. 1997. Managing vertebrates in cover crops: a first study. American Journal of Alternative Agriculture 11:155-160.

Smallwood, K. S. and S. Geng. 1997. Multi-scale influences of gophers on alfalfa yield and quality. Field Crops Research 49:159-168.

Smallwood, K. S. and C. Schonewald. 1996. Scaling population density and spatial pattern for terrestrial, mammalian carnivores. Oecologia 105:329-335.