

Madera Unified School District
Power Purchase Agreement for Design, Installation,
Operations, and Maintenance of Solar Photovoltaic Systems

REQUEST FOR PROPOSALS ("RFP")

Date RFP Issued: October 13, 2020
Proposers' Pre-Proposal Conference: October 22, 2020
Pre-Proposal Site Walks: Week of November 2, 2020
RFP Response Submittal Deadline: November 23, 2020

Request for Proposals

1. Project Background

Madera Unified School District (MUSD or District) is seeking proposals for the design, installation, operations, and maintenance of ten solar photovoltaic systems located throughout the District. Systems will be shade structures in parking lot areas and fields. MUSD is located in PG&E territory and is a Direct Access customer.

MUSD is interested in maximizing production, while achieving the lowest cost of installation and ongoing maintenance. All Proposers should develop a system design that best balances system cost, production, MUSD requirements, and the Proposer's ability to deliver a high-quality system on-time and on-budget. Proposers shall design systems that meet the production targets and are located in the areas specified in Exhibit G.

The District has also identified additional sites for proposers to consider as an additive alternate. Proposers may offer to utilize any of the following optional alternate(s) as part of their solutions for sites where proposers deem appropriate:

- *Alternate 1 – Additional Sites.* The District has identified (18) additional sites for solar.
- *Alternate 2 – Value Engineering.* Provide and quantify any value engineering, cost reduction and production maximization recommendations resulting from proposed changes to the RFP requirements.

The District is interested in a completing construction of the ten base sites in 2021 and a phased approach to additional sites with a maximum of ten sites being built concurrently during summer construction windows.

MUSD, at this time is considering a 25-year Power Purchase Agreement (PPA) of their solar PV systems. Proposers are required to completely fill out the Proposal Pricing Sheet found in Exhibit F, detailing their PPA offer.

Proposers may also offer energy storage as part of their solution. Storage proposals shall separately indicate the costs, benefits, and additional operations and maintenance requirements of the systems so MUSD may choose between systems with and without storage. Additionally, storage proposals shall explain the basis for any estimated benefits (e.g., demand reduction, energy rate arbitrage) and all assumptions regarding calculating these benefits. MUSD intends to evaluate the economic benefits of each proposal inclusive of the savings associated with storage (as described in more detail in the Instructions to Proposers) to ensure MUSD is maximizing savings opportunities.

Proposers shall assume all design and permit approval risk, including, but not limited to securing all approvals from the Division of the State Architect (DSA), Fire Review, and utility reviews. While MUSD will work collaboratively with its selected Proposer throughout the design and permit approval process, no compensation other than what is included in the proposed

purchase price will be granted for either (1) the effort associated with the approval process or (2) administration, project management, overhead, or any other cost associated with approval delays.

2. Procurement Milestones

Procurement Milestones	Estimated Date
RFP Released	Tuesday, October 13, 2020
Proposers' Pre-Proposal Conference	Thursday, October 22, 2020, 1:30PM PST
Proposers' Pre-Proposal Site Walks	Week of November 2, 2020
Deadline to Submit Clarification Question	Monday, November 9, 2020
RFP Responses Due	Monday, November 23, 2020, No later than 3PM PST
Shortlist Interviews	Thursday, December 10, 2020
Notice of Intent to Award Issued	Tuesday, January 26, 2021

3. Documents Comprising this RFP

Exhibit A - Instructions to Proposers
 Exhibit B - Technical Specifications
 Exhibit C - Operations and Maintenance Requirements
 Exhibit D - Required Contract Submittals
 Exhibit E - Warranty Requirements
 Exhibit F - Proposal Forms
 Exhibit G - Project and Site Details
 Exhibit H - Utility Data
 Exhibit I - Performance Guarantee Requirements
 Exhibit J - Performance and Payment Bond Forms

4. Proposers' Conference and Site Walks

Conference. ***A mandatory Proposers' virtual pre-proposal conference will take place on Thursday, October 22 at 1:30 PM. Proposers shall confirm their attendance with the listed contact Person under Section 5 of this RFP no later than 3:00 PM PST October 20.*** Virtual conference access information, such as a dial-in number and screen sharing link, will be distributed to confirmed attendees.

Voluntary Site Walks. Additionally, the District will schedule voluntary site walks with Proposers. Site walks will be arranged the week of November 2, 2020. **Proposers are required to contact the listed Contact Person under Section 5 of this RFP to schedule their site walks no later than 3:00 PM PST on October 28, 2020. As a result of COVID-19, a maximum of two (2) individuals from each Proposer may attend the site walk(s). The District reserves the right**

to schedule site walks with Proposers concurrently. Proposers will be expected to adhere to the social distancing and personal protective equipment requirements of the District.

At its sole discretion, the District may schedule additional site walks. Additional site walks are not guaranteed, and all efforts should be made to make the scheduled site walk(s). Please contact the person listed in Section 5 if you are unable to make the scheduled site walk(s).

5. Contact Person

Questions regarding the contents of this RFP must be submitted prior to deadline for Clarification Questions in writing (via email) to Kim Courtney (kim@arc-alternatives.com) **Firms are directed to not contact any other person with inquiries regarding this RFP.**

Proposals shall be submitted electronically to Kim Courtney (kim@arc-alternatives.com)

Exhibit A: Instructions to Proposers

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1. Introduction/Background

Madera Unified School District (MUSD) is seeking proposals for a Power Purchase Agreement (PPA) from qualified Proposers to design, engineer, procure, install, interconnect, commission, and operate and maintain solar photovoltaic systems at the sites listed in Exhibit G, to this Request for Proposal (RFP; collectively the "Project").

MUSD reserves the right, before the award of the PPA contract to modify the scope of this RFP; and to request adjusted pricing from any Proposer if any such change in scope occurs. MUSD additionally reserves the right to select no Proposer and reject all proposals.

The selected Proposer must be experienced in executing solar photovoltaic projects similar in scope, scale, and complexity to this Project. Additionally, the selected Proposer must be experienced in operating and maintaining solar photovoltaic projects similar in scope, scale, and complexity to this Project. Proposer must use contractors licensed in the State of California and that possess the qualifications and experience necessary to perform all work. Proposers must present a project plan that meets the goals, timeline, and requirements of this RFP and specifications, as well as the requirements of any associated funding or incentive programs.

Proposers may also offer energy storage as part of their solution. It is incumbent upon a Proposer to demonstrate the advantages of any proposed energy storage solution, as well as Proposer's experience, qualifications, and capabilities to successfully deliver energy storage consistent with the Project schedule and other requirements of this RFP.

This RFP is issued in accordance with Government Code section 4217.10-18 and other applicable laws. However, until and unless MUSD awards the Project to the successful Proposer and such contract or contracts have been approved by the Madera Unified Board of Trustees and signed by MUSD's authorized representative, no agreement exists nor is any binding upon MUSD.

2. Procurement Schedule

The anticipated procurement schedule is as set forth in Section 2 of the RFP, "Procurement Milestones."

3. Project Objectives

MUSD requires the selected Proposer to perform each of the following and to perform all required work in accordance with the Technical Specifications (Exhibit B):

- Design, install, test/commission, and operate/maintain the systems consistent with the requirements in the Technical Specifications.
- Design the photovoltaic systems to provide the most production in the most cost-effective manner, as indicated in Section 1 of the RFP, "Project Background". Proposers should optimize

their designs to achieve the target production at the lowest cost, within the identified areas, as specified in Exhibit G.

- Meet Project submittals and completion deadlines. Effectively manage the schedule and coordinate construction activities around MUSD's schedule of activities.

4. Scope of Work

The scope of work is defined in Section 1 of the RFP and Exhibit B, "Technical Specifications."

The scope of work shall also include, but not be limited to, securing all clearances, permits, and approvals from all authorities having jurisdiction (AHJ), all labor, including but not limited to the payment of prevailing wages, taxes, services, and equipment necessary to produce fully operational solar systems. The scope of work also includes all requirements set forth in all of the RFP documents.

5. Insurance and Legal Requirements

Legal Requirements

Proposer shall also provide a 25-year PPA and Site License Agreement (SLA) with their proposal for District review. Key provisions that must be included in Proposer's agreements are identified below.

Guaranteed Production – Provider shall include a production guarantee of at least 95% of the expected system output in the Agreement, consistent with the Performance Guarantee requirements in Exhibit F to this RFP. The Agreement shall also limit Purchaser's purchase obligations to 110% of expected system output in a given year. However, Purchaser shall retain the option to purchase all or a portion of excess energy, to be exercised solely at Purchaser's option.

Conditions Precedent to Construction – The Agreement shall include, at a minimum, the following conditions precedent to construction. Should these conditions not be met, Purchaser may (in its sole discretion) terminate the Agreement, in which case neither Party shall have any liability to the other except for any such liabilities that may have accrued prior to such termination.

- Final approval of interconnection agreements by PG&E.
- Approval of system design documents by Purchaser and all authorities having jurisdiction.
- Identification of known scope issues arising from the design phase of the project and agreement on any changes to the project schedule or PPA price.
- All required CEQA approvals.

Condition Satisfaction Date – The Agreement shall specify a mutually-agreed upon date by which all conditions precedent to construction must be met. The Agreement shall also

include the following process related to a failure to meet the Condition Satisfaction Date: Should the conditions precedent not be met (or waived) by the date specified, then the parties will attempt in good faith to negotiate new dates for the satisfaction of these conditions. If the parties are unable to negotiate new dates, then the Party that has not failed to meet an obligation may terminate the Agreement without liability for costs or damages or triggering a default under the Agreement.

Change Orders – The PPA must include a well-defined process and procedures for managing changes to the scope of the contract. The District requires such procedures to include a provision requiring the Provider to initiate a request for change within 21 calendar days of becoming aware of the condition that will lead to the change. Additionally, Contractor or Provider shall be required to provide detailed schedule and cost impacts of a potential change to the District within 10 days of such information being requested.

Assignment – The assignment provision must include prior written consent of the Purchaser, which will not be unreasonably withheld.

Technical and Construction Requirements – The agreement must include or incorporate the technical requirements (specifications) from the RFP, as well as any construction-specific protocols or requirements identified by the District.

Prevailing Wage – This project will be subject to the California Prevailing Wage Law and regulations.

The District intends to negotiate the terms of the proposed PPA and reserves the right to not proceed with the Project or select another provider should Proposer and District fail to reach an agreement on all project-related documents.

Insurance

Proposer shall include the following minimum coverage amount in their proposed PPA and/or SLA agreements:

- (i) Statutory Workers' Compensation insurance, and Employer's Liability insurance with a \$1,000,000 limit per accident/per employee;
- (ii) Commercial General Liability, in combination with Excess Liability insurance, with a per occurrence limit of One Million Dollars (\$1,000,000) and a general aggregate of Two Million Dollars (\$2,000,000) for bodily injury, including death, property damage and personal injury, written on an occurrence basis; and
- (iii) Automobile Liability insurance with a \$1,000,000 combined single limit, with coverage extensions for owned, non-owned and hired vehicles.
- (iv) Performance Bond – Is required in accordance with the District's requirements in Exhibit J

6. Format of Responses

Responses to this RFP must be organized, comprehensive and tailored to this RFP using the structure and referenced forms in Attachment 1: *RFP Response Structure and Forms*; to these Instructions to Proposers.

7. Evaluation and Selection Process

MUSD may choose to interview Proposers who respond to this RFP and to ask for additional information, either as part of the interview process, requesting Best and Final Offers, or written clarification. Interviews, if held, will be confirmed after the initial evaluation of proposals. The exact date, time and location will be determined at a later date.

Based on number of proposals received, MUSD may identify a shortlist by establishing a competitive range based on the economics of each proposal prior to conducting a more in-depth review and evaluation of proposals.

8. Evaluation Criteria

MUSD will evaluate the responses from Proposers based on the following criteria, with the relative weighting indicated (out of a total possible 100 points):

- A. Qualifications and Experience – including prime contractor, subcontractors, and specific personnel proposed for the project, as well as client references. MUSD has an interest in supporting local participating in the project and additional consideration will be given to Proposers using local labor or contractors. (30 points)
- B. Approach – the technical solution, equipment and systems proposed, implementation approach, project management approach, and Project plan. (20 points)
- C. Economics – the net benefit to MUSD when accounting for construction costs, system production, and the value of energy savings produced by the system. Points will be assigned to each proposal in proportion to the net economic benefit of their proposal relative to the net economic benefit of the proposal with the greatest benefit, as follows:

$$\text{Proposal Score} = \frac{\text{Proposal Net Benefit}}{\text{Highest Net Benefit}} * \text{Possible Points}$$

For example, if the proposal being scored has a net economic benefit of \$3,000,000 and the proposal with the highest economic benefit has a net benefit of \$5,000,000, then the score would be calculated as follows:

$$\text{Proposal Score} = \frac{\$3,000,000}{\$5,000,000} * 40 = 24 \text{ Points}$$

The net economic benefit of each proposal will be determined by MUSD and will be based on a comprehensive 25-year cash flow. The cash flow analysis will include total lifecycle costs, utility savings, and other Project costs and revenues as MUSD deems appropriate. (40 points)

- D. Financial Strength – financial strength of the Proposer and its ability to uphold all obligations, guarantees, warranties, and promises for the durations of the PPA. (10 points)

9. Questions

Questions regarding this RFP shall be submitted in writing via email to the contact person listed in Section 5 of the RFP before the deadline for submitting questions stated in the Procurement Milestones table in Section 2. Questions and answers will be shared in writing with all Proposers, although the source of questions will remain anonymous.

10. Preparing and Submitting a Response

Each Proposer is solely responsible for the costs incurred in preparing its response to this RFP. MUSD will provide no compensation for any such costs. MUSE reserves the right to reject or accept any and all proposals for any reason, to withhold consideration of incomplete responses, to waive informalities or minor irregularities, or request additional information of Proposers at its discretion. MUSD reserves the right to terminate the solicitation and/or evaluation process, and to cancel the award before the full execution of the agreements with the successful Proposer. MUSD also reserves the right to amend this RFP as necessary.

All proposals and attachments submitted to MUSD in response to this RFP shall remain the property of MUSD.

Proposals will be held in confidence during the evaluation process until MUSD announces its intent to award the contract. Thereafter, all proposals will be treated as documents subject to disclosure under the California Public Records Act (Act). MUSD reserves the right to reject Proposals that are labeled in whole or in part as "Confidential Information" if the application of this label is inconsistent with rules governing public disclosure under the Act.

Any Proposer who has submitted an RFP response shall not, after the RFP Response Deadline on page 1 of this RFP, withdraw or cancel its RFP response for at least 90 days thereafter.

Acceptance of a proposal does not create a contract and does not obligate MUSD to take any further action. MUSD reserves the right to direct the Provider to install systems of different sizes than those proposed by Provider, to reject any or all responses without penalty, and to act in MUSD's best interests as required, in MUSD's sole discretion.

11. Proposals

An electronic copy of the Proposal shall be submitted to the Contact Person at the email address listed in Section 5, "Contact Person" of the RFP, before the "RFP Responses Due" deadline listed in Section 2 Procurement Milestones. Proposers must include a table of contents and clearly label each section of their proposal. Where indicated, populate each template consistent with the format of the template.

Instructions to Proposers

Attachment 1

RFP Response Structure and Forms

Proposals must be organized by the following sections, in the order in which they are listed.

1. Cover Letter

Provide a brief cover letter and highlight any omissions or additions to the package. Include any special notes which may help with the review of Proposer's response.

2. Proposer Qualifications and Experience

- A. Business Description - Provide a brief overall description of Proposer including information on company history, business goals, and expertise. Describe how many years the Proposer has been in business and how many years it has been installing and operating solar systems.
- B. Organization & Resources
 - i. List Proposer's full legal name and, if Proposer is a corporation, the state and date on which Proposer was incorporated. Include California business and Contractor's license information.
 - ii. Provide an organizational chart and key personnel list for this Project, including office locations (include both office and field locations for construction and corrective maintenance). Identify the Project Manager and design lead for the engagement, list their relevant experience, and provide any additional information that demonstrates their suitability for this specific project.
 - iii. Provide resumes for key personnel that will be directly involved in the project.
 - iv. State whether there has been any change within the past five years, or if there are any changes pending or anticipated, in the control of Proposer (e.g., change in owners or management personnel, or acquisition or merger with another entity).
- C. Subcontractors and Suppliers - Provide a complete list of suppliers and subcontractors that will be used to perform project management, design, engineering, procurement, construction, interconnection and commissioning, and system monitoring activities. Provide licensure information and DIR Registration numbers and information for all subcontractors to be performing work on the project.
- D. Related Project Experience – Identify ALL K-14 solar PV projects performed by the Proposer in the past five (5) years either as an architect, an engineer, a designer, a contractor, or a combination of these. Include the following information for each project (or program, as applicable):
 - Name of project and district

- Contracting method (Direct purchase, PPA, etc.)
- Proposer's role
- Installed capacity
- System type(s) (ground mount, carport, shade or roof mount)
- Number of sites that make up the project

This information can be provided in a table, or another format that is concise and well-organized. Include a high level summary of all California K-14 projects completed in the Company's history including total number of customers, installed capacity, and number of sites.

- E. Reference Projects - Provide **at least three k-14 reference** solar photovoltaic projects completed by the Proposer in the last five years that were similar to the Project in this RFP in terms of *installation size, installation type, facility type, and contracting method*. For **at least three** of the reference projects, Proposer must provide the following information:

- Client contact information; name, phone number and email
- Contracting method (Direct purchase, PPA, etc.)
- Proposer's role
- Primary subcontractors used (identify discipline and firm names)
- Installed capacity
- System type(s) (ground mount, carport, shade or roof mount)
- Number of sites that make up the project
- Interconnecting utility

Additional solar photovoltaic projects (beyond the three reference projects) may be provided with Proposer's choice for the level of detail included.

3. Approach

A. Technical Proposal

- I. Scope – Provide confirmation that the Proposer has reviewed and accepted the Scope of Work, and all associated requirements provided in the Technical Specifications. Proposer must identify any and all requests for modification in Section 7 of the proposal. Provide a narrative describing the overall approach to the system design, including the rationale for system sizing and placement, methodology for achieving production targets, and how these factors relate to equipment proposed for the project. Please provide a

narrative that highlights the strategy for utilizing the ITC, including what level ITC will be utilized and the key milestones (i.e. contract execution dates, substantial completion, etc.) that need to be met to satisfy the ITC requirements and maintain the PPA price as proposed.

- II. Layouts and Drawings – For each system, defined as any and all PV arrays behind a specific meter, include a preliminary single line diagram and general arrangement drawings representing the arrays and balance of systems installation locations. Proposed arrays must be consistent with the plans in Exhibit G.
- III. Equipment Specifications and Data Sheets – Provide equipment datasheets, specifications, and manufacturer warranty coverage information of all proposed equipment including photovoltaic modules, inverters, meters, racking/support structures, combiner boxes, disconnect switches, weather stations, and other equipment installed by Proposer.

Provide equipment warranty information consistent with the requirements in Exhibit E and include the associated costs in the Proposal Sheets (Exhibit F).

- IV. Solar Production Modeling – Proposers shall use PVSYST or HelioScope to prepare the design of the system(s) and model the annual production values (kWh/yr). Alternative production modeling tools may be used with prior authorization, which may be granted at MUSD's sole discretion as part of the RFP clarification process. Proposers shall submit hourly production output for one year (8760 hours) in Excel for each proposed system. **Do not submit a printed version of the hourly production output with the proposal.** Modeling summary sheets may be included. For the purposes of production modeling, a system is defined as all generation behind a specific meter.
- V. System and Production Monitoring – Provide information on the proposed system monitoring package, its capabilities, and the specific data available on-line. Indicate what can be downloaded and/or exported for analysis in MS Excel. Confirm the system and production monitoring service and platform will be available for the duration of the PPA.
- VI. Operations and Maintenance – Describe Proposer's capabilities and resources to conduct maintenance activities as needed ensure expected production is achieved for the duration of the PPA term. Describe Proposer's expected response time to resolve critical failures (e.g., inverter outages). Identify any subcontractors or parties other than the proposer who will be performing the work.
- VII. Value Engineering – Provide and quantify any value engineering, cost reduction, and production maximization recommendations resulting from proposed changes to the RFP requirements (e.g., changes to system locations). Proposers are encouraged to optimize their design by balancing installation costs and production gains. Any value engineering

proposal shall be submitted as an alternate and all Proposers are required to submit a compliant Base Proposal.

- VIII. Energy Storage (if applicable)– Describe the proposed energy storage option, including system type, technology, size, and technical capabilities. Also describe how the storage system is expected to benefit MUSD and how financial savings accrue. Provide data, models, calculations and any other information required to justify proposed savings. Specifically, proposer shall provide an hourly data file (8760) in MS Excel format showing the combined effects of solar production plus energy storage charging and discharging. This information can be submitted marked as "Confidential" at Proposer's option.
- IX. Performance Guarantee – Proposer shall include in this section of their proposal their proposed Performance Guarantee. The Guarantee shall comply with the requirements of this RFP and address, at a minimum, the following elements: duration of the Guarantee, true-up period, excluded events, production adjustments (if any), and calculation of the value of shortfalls in energy production (\$/kWh).

B. Implementation Approach

- I. Implementation – Provide a narrative addressing how Proposer will execute the work required to complete the project. The implementation approach shall, at a minimum, address design, permitting, construction, interconnection, management of scope, schedule, cost, quality, human resources and staffing, communications, and anticipated project risks. Provide CPM project schedule and identify the critical path. A PDF copy of the schedule should be included in the proposal document.
- II. Testing – Describe how Proposer will approach this phase of the project and identify the testing and commissioning procedures and coordination efforts to be conducted by Proposer. The testing approach shall meet the requirements indicated in the Technical Specifications. A test plan from a previous similar project executed by Proposer will also be acceptable.
- III. Operations and Maintenance (O&M) – Describe Proposer's approach to providing O&M services and how the requirements of the RFP will be met or exceeded. Provide sample maintenance reports and descriptions and/or samples of any other information that would be available to MUSD throughout the agreement term that enables them to manage asset performance and Proposer's performance of the work.

4. Proposal Pricing

Complete the Proposal Sheets included in Exhibit F and include a minimum 90-day price guarantee. Include any additional line items necessary and include the price for all necessary fees, materials, labor costs, taxes, and tariffs.

5. Financial Strength

Provide information demonstrating the financial strength including three years of audited financial statements of the enterprise and ability to uphold all obligations, guarantees, warranties, and promises for the stated duration of the agreement. This information may be provided as a separate document if it is considered confidential.

6. Power Purchase Agreement and Site Lease Agreement

Proposer shall include a PPA and Site Lease Agreement that it expects the District to execute. The PPA and Site Lease agreements shall comply with the requirements of Section 5 of the Instructions to Proposers or identify which legal and insurance requirements to which Proposer is taking exception as described in Section 7 of this Attachment, below.

7. Exceptions

Review the Instructions to Proposers, Technical Specifications, and all Exhibits and Attachments. Each Proposer must review all procurement documents and contract forms and identify any issues to which it takes exception. By submitting a response to this RFP, Proposer is certifying their intent to meet all project requirements and enter into the PPA consistent with the insurance and legal requirements described in Section 5 of Exhibit A: Instruction to Proposers.

Exhibit B – Technical Specifications

1. Applicable Codes and Standards

The System(s)'s design, engineering, construction, interconnection, startup, and testing shall follow the applicable codes, standards, and publications that are in effect at the time of System(s) initiation, and which are consistent with current local utility standards and requirements. The codes and standards utilized shall be the latest editions in effect at the notice to proceed date. Materials manufactured within the scope of Underwriters Laboratories shall conform to UL standards and have an applied UL listing mark. If no UL compliance is available, material and equipment shall be labeled or listed by a nationally recognized testing laboratory. Where codes do not govern specific features of the equipment or system, Prudent Utility Practice, equipment manufacturer specifications, and standard industry standards shall apply. Where local codes or ordinances will have an impact on the design, Madera Unified School District (District) and Contractor shall jointly address these with the local Authority(ies) Having Jurisdiction (AHJ).

1.1 Permits

Contractor is responsible for obtaining all necessary required permits from the appropriate AHJ for project construction. Contractor shall be responsible for paying for all permits and these costs shall be included in the proposed price.

1.2 Utility Interconnection

Contractor is responsible for managing and obtaining interconnection approval from the Site(s) local utility company. Contractor is responsible for understanding and incorporating all knowable and impactful local utility interconnection rules and requirements.

2. Project Management

Contractor shall provide comprehensive project management services for the duration of the project, commencing at contract execution. Contractor shall be responsible for assigning a single project manager who will act as the lead for the design and construction phases of the project. Contractor shall be responsible for conducting weekly project management meetings, producing agendas and minutes for the weekly meetings, and keeping an up-to-date issues/actions log. Contractor shall implement and maintain an internal records management and document control system to support the project.

Additionally, Contractor shall be responsible for developing a CPM schedule, which shall be updated and submitted weekly, showing the project's critical path as well as all activities required to complete the work (including the design, construction, testing, and

close-out phases of the project) in sufficient detail to manage the complete scope of the project. The project schedule shall include all activities necessary to coordinate the work with other parties (e.g. District, consultants, inspectors, etc.) and will explicitly show the dependencies between all tasks. At MUSD's option, Contractor shall submit the schedule in either MS Project or Primavera format if requested. In addition, schedules must also be submitted in Adobe Acrobat format.

3. Design and Engineering

Contractor shall design and engineer the System(s) in accordance with Prudent Utility Practices, with the professional standards, skill, expertise, and diligence of design and construction of professionals regularly involved in utility-grade, grid-connected solar PV power projects in the United States. The design must conform to the requirements and conditions of all applicable permits and laws, be in compliance with the operating guidelines, and meet MUSD specifications. Contractor is responsible for all engineering for the System(s). A professional engineer-of-record registered in the State of California shall sign all design drawings, specifications, and calculations. Contractor is required to submit to the MUSD complete design drawings, data, and documents for review and comment. These engineered design drawings, data, and documents must be submitted to the MUSD for review and approval before submitting to the appropriate AHJ and in accordance with Exhibit D – Submittals. Contractor is responsible for ensuring that all components are installed above the 100-year flood plain (inverter stations, substation, supervisory control and data acquisition (DAS), control building, PV modules, switchgear, transformers, combiner boxes, etc.).

3.1 Site Audits

Contractor shall conduct detailed site audits that thoroughly document and verify the existing conditions that will inform the system design and construction. Site Audits will be used to verify impacts to site the Site(s) as part of the construction project and shall be conducted within 21 days of Contract execution. It is the responsibility of the Contractor to document all existing conditions and demonstrate that the post-construction site conditions are equivalent to pre-construction conditions.

3.2 Geotechnical Report

A geotechnical analysis shall be provided by Contractor and performed by a qualified geotechnical engineering firm. The results of the analysis shall be used when designing the foundations for the structures on the site(s) and made available to the MUSD. The geotechnical report and analysis shall comply with the requirements set forth in Section

1803 of the California Building Code. Contractor is responsible for removing all spoils from the site(s) related to the geotechnical analysis.

3.3 Engineering Design Package

Based on the review of the System(s), Site(s), and infrastructure, Contractor shall design (or have designed by consulting engineers) a System(s) (including all layout, civil, electrical, and structural components) that will produce the required electricity and that is capable of being operated in a safe, normal, reliable, and continuous manner as required by the contract documents at all operating conditions and modes specified in these specifications. The system design shall comply with all applicable laws and regulations and applicable permits. MUSD may utilize a third-party or independent engineering consultant to perform technical reviews. Studies prepared by the Contractor or any third-party consultants to the Contractor shall be provided to MUSD for review.

Design review shall consist of three phases of submittals: Schematic Design, Design Development, and Construction Documents. For Schematic Design specifically, the Engineering Design Package shall not be submitted until all of the following work is complete:

- Site Audits
- Geotechnical Studies
- Site Surveys and obtaining Title Reports
- Fire Department review and approval of layouts

The intent of the Schematic Design Engineering Design Package is to determine and finalize site layouts, equipment locations, and system sizing. All site related work that may impact these factors, including location of easements, must be complete prior to submitting the Schematic Design Engineering Design Package. It is expected that Contractor submit drafts and informal schematics in order to communicate progress and site-related issues to MUSD, as well as to facilitate review with the Fire Department. However, MUSD will not conduct a formal review of the Schematic Engineering Design Package until Contractor certifies that all site-related information impacting the layout of the system(s) has been collected, verified, and incorporated into the design.

Contractor may not order materials and equipment (e.g., modules, inverters, racking) until MUSD has reviewed and approved the Schematic Engineering Design Package, thereby documenting final system sizes and locations.

Contractor shall submit each Engineering Design Package to MUSD for review and approval. MUSD review time shall not be more than ten business days per phase. Each Engineering Design Package must be approved by MUSD prior to submittal of a

subsequent package. Required design submittals are further detailed in Exhibit D, "Required Contract Submittals."

Subsequent Engineering Design Packages (Design Development and Construction Documents) shall include:

- Other studies related to the project, such as photometric/lighting studies and assessment of required ADA upgrades.
- Design calculations
- All drawings including mechanical, electrical, structural, civil, and construction drawings (site plans, schematic single lines, and detail drawings)
- Product description information
- Bill of Materials
- Equipment details, descriptions, and specifications, and cut-sheets
- Other documentation related to system monitoring, operations, maintenance and training

3.4 Structural Engineering

Contractor shall design the PV arrays' mounting systems, foundations, and piers, as well as any equipment pads and buildings on the site(s). The designs shall be based on the requirements of applicable codes, standards, and permits, and the information/specifications provided by the module, inverter, transformer, switchgear, racking structures, and all other vendors.

3.5 Civil Engineering

Contractor shall design all systems in accordance with applicable codes and standards. Contractor shall perform required site(s) preparation, to include earthworks, SWPPP, WQMP, and erosion control. Contractor shall attempt to minimize earthwork and vegetation disruption for the installation of the System(s) to the extent it is compliant with the use permits; however, vegetation should be controlled to minimize fire danger and provide the ability to operate and maintain the System(s). Dust control shall be maintained in accordance with state and MUSD requirements until Final Acceptance is achieved. Contractor shall design any necessary roads, permanent or temporary, improvements to meet State of California transportation and local codes, standards, conditional use permit stipulations and conditions, and requirements presented by construction equipment, delivery vehicles, and operation and maintenance traffic. If required, Contractor shall import engineered fill to slope the site(s) and prevent accumulation of standing water. All imported fill must have proof of environmental testing/clearance for use. Contractor shall provide other site(s) maintenance as needed during construction on any MUSD

infrastructure affected by construction activities. Contractor shall coordinate interaction between MUSD and any permitting authorities (e.g. local AHJ) regarding the Work.

3.6 Electrical Engineering

Contractor shall provide all electrical engineering design services, meeting applicable codes and standards and the requirements of the interconnecting utility. The electrical engineering and design shall include the appropriate sizing and cabling (above and below ground) that will connect all applicable equipment to the point of interconnection. The Contractor is responsible for determining if the AHJ will allow 1,000-volt direct current (VDC) systems and to design accordingly. All protection equipment used throughout the system shall be sized and specified to reduce damage to all components to the utility interconnection point and owner's gear and infrastructure in the event of electrical failure. The aboveground portion of the electrical systems shall be neatly routed to facilitate access, troubleshooting, maintenance, etc. The electrical design shall include the design of equipment grounding. Contractor shall design and specify all communications hardware and software required for system protection and remote monitoring. All monitoring and communication supplemental equipment and cabling shall be designed and specified by Contractor, subject to MUSD's review. The power delivered to the grid must at all times meet the interconnect requirements for power factor.

3.7 Lighting System

Contractor shall provide a lighting system for all non-roof mounted systems in parking lots and under shade structures and in areas where existing lighting must be removed to accommodate the arrays. Lighting systems shall comply with California Title 24 requirements. All lights shall be LED and bi-level with photocells and time clocks.

Lighting systems shall comply with California Title 24 requirements. All lights shall be LED and bi-level motion sensing with photocells and time clocks.

Lighting systems for shade-structure systems shall be included on the underside of the shade structure and illuminate the area under the array to an average of 0.5 foot-candles, with a minimum of 0.2 foot-candles and a maximum of 2.0 foot-candles. Lighting systems for shade-structure systems shall meet or exceed existing lighting levels of all areas impacted by the removal of the existing Lighting system, under the array or otherwise.

4. Equipment and Materials

Contractor shall purchase and furnish to the site(s) all material required to complete the System(s), including the following material:

- Miscellaneous steel

- Support steel posts
- Components (nuts, bolts, clamps, etc.)
- PV modules
- Fixed tilt racking equipment and components
- DC cabling and combiner boxes
- DC junction boxes
- AC cabling
- Power centers, including inverters
- Electrical switchgear
- Transformers
- Meteorological station
- Remotely accessible data acquisition system
- All materials related to drainage required by the civil engineering plan
- All electrical conduit and junction boxes
- Concrete equipment pads
- Fencing, gates, lighting,
- Generation meters

Each item of equipment to be supplied by Contractor shall be subject to inspection and testing during and upon completion of its fabrication and installation. Installed equipment and materials shall be new, of good quality and suitable grade for the intended purpose, and not a lower grade or quality than specified in the design and engineering plans or in manufacturers' recommendations. Where applicable, utility-grade equipment shall be used. Contractor shall provide a list of all major equipment to be purchased, constructed, and installed as part of the System(s). The list shall identify both the items and quantities.

4.1 Modules

The PV module selected for this System(s) shall:

- A. Meet IEC 61215 (crystalline silicon PV modules) or IEC 61646 (thin film PV modules) standards for the model selected for this System(s).
- B. Be UL listed for the voltage specified for this System(s) (e.g., 600 V_{DC}).
- C. Include all known and future duties, tariffs, export tariffs, customs, demurrage, and shipping costs.
- D. Be from an equipment manufacturer regarded as a Tier 1 Supplier.
- E. Demonstrate a 25-year rated lifetime via long-term outdoor testing and/or accelerated lifetime laboratory testing. Testing such as Thresher testing or Technischer Überwachungsverein (TÜV) long-term sequential testing of the

specific model of the PV module selected is an acceptable demonstration of a 25-year module rating.

- F. Shall be on the California Energy Commission's approved list of solar modules available at http://www.gosolarcalifornia.ca.gov/equipment/pv_modules.php

MUSD, at its sole discretion, may randomly select up to 10% of PV modules used in the PV System(s) for delivery to a third party for quality verification testing. The costs of such verification testing will be the responsibility of MUSD. Contractor shall provide the manufacturer's flash test data for all modules to MUSD upon procurement of modules.

4.2 Inverters

The inverter units shall be utilized for inverting the DC input from the System(s) to AC output. These shall be calibrated and set so that the AC output, after inverter clipping and losses between the inverter to the meter, shall not exceed the System(s) AC capacity at the meter. Contractor shall supply and install inverters and wiring/cabling to this equipment in accordance with National Electrical Code (NEC) standards.

Inverters selected for this project shall:

- A. Be UL listed to 1741 (Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources).
- B. Comply with IEEE 1547, including testing to IEEE 1547.1 and IEEE C62.45. Regulatory standards compliance shall also include IEEE C62.41.2 and CSA107.1-01.1.
- C. Be from an equipment manufacturer regarded as a Tier 1 Supplier.
- D. Be designed for a 10-year lifetime, assuming regular maintenance.
- E. Have a maximum harmonic distortion less than 3 percent of total harmonic distortion at rated power output.
- F. Have an efficiency of greater than 97.5 percent without medium-voltage step-up transformer.
- G. Be capable of rated output at 50°C or higher.

Incorporate a means of non-load break disconnection for all non-grounded circuit poles on the DC side for maintenance personnel safety. Inverters located outdoors shall be enclosed in lockable enclosures with a minimum rating of National Electrical Manufacturers Association (NEMA) 3R. Any sensitive electronic equipment associated with, or part of, the inverter shall be installed in a NEMA 3R rated enclosure. Inverters, integrated disconnects, and associated conduits must be installed as high as possible on

structure, not accessible by unauthorized individuals. Conduits shall not protrude from inverters or disconnects in a manner that creates a climbing hazard. Enclosure must have a door interlock system to prohibit the door(s) from being opened while energized. Inverter output shall be protected by a circuit breaker. Inverters shall employ a maximum power point tracking scheme to optimize inverter efficiency over the entire range of PV panel output for the given Site(s) design conditions. Inverters shall be equipped with all hardware for data collection and communication to the data acquisition system. Inverter shall be equipped for direct external communication and control to MUSD System(s) design for inverters rated to 1000 V_{DC} shall comply with NEC Articles 690 and 490, and all other requirements applicable to installations rated over 1000 volts (V).

4.3 Medium Voltage Transformers

Transformers shall meet transformer efficiency standards set forth in the most recent version of the Department of Energy "Energy Conservation Program for Commercial Equipment: Distribution Transformers Energy Conservation Standards; Final Rule." Transformers shall be rated for inverter source operation and the environment in which they will operate. The transformer shall be supplied with a no-load tap changer with high-voltage taps capable of operating at 2.5 percent above and below nominal voltage at full rating. The switch/transformer configuration shall be designed for loop feed. Transformers shall be either dry-type biodegradable fluid or less-flammable oil insulating fluid. Enclosure finish shall be a top powder coat that is designed for a 25-year service life. MUSD shall reserve the right to attend factory witness testing of step-up transformers.

4.4 Wire, Cable, Conduit and Connectors

Contractor shall provide information about proposed wire, cable, and connectors, including all underground facilities. Copper is the preferred conductor material; however, aluminum conductors are acceptable where allowed by current building electrical codes. Cable shall be designed and installed for a service life of 30 years. Cable for DC feeders and PV panel interconnect shall be 2-kilovolt 90°C (wet or dry) power cable type USE-2 or RHH/RHW-2 with XLPE jacket and UL 1581, VW-1 rating or approved equal for intended use capable of meeting DC collection system design current requirements. Externally installed cables shall be sunlight and ultraviolet resistant, suitable for direct burial, and conform to NEC 300.5 Underground Installation, Table 300.5 Minimum Cover Requirements, rated to the maximum DC voltage of the System(s). PV panel interconnect connectors shall be: (i) latching, polarized, and non-interchangeable with receptacles in other systems, and (ii) tap branch connectors with multi-contact termination connectors. Grounding member shall be first to make and last to break contact with mating connector and shall be rated for interrupting current without hazard to operator. Cables shall be listed and identified as PV wire as stated in NEC Article 690. If a cable tray is utilized, there

shall be no self-tapping screws, only a clamping mechanism to secure the top. All underground cable shall be identified in the record drawings. Galvanized, rigid metal conduit where [there is a transition from underground to above ground](#) or stubbed up to junctions or poles shall be used except where protected by concrete caissons. The use of EMT conduit is acceptable under canopies overhead but not down columns unless approved by MUSD during design. Rigid metal conduit shall be designed for a 30-year life in the Site(s) soils and conditions. All 90-degree bends shall follow NEC minimal bend requirements. There shall be no direct burial of cables. No underground cable splicing shall be acceptable under any circumstance. All cable splices shall be brought above ground and housed in a suitable enclosure or, if below grade, placed in a suitable vault that is clearly marked.

4.4.1 Existing Conduit

Contractor may utilize existing spare conduit when allowed by MUSD. If existing spare Conduit is to be used by the Contractor, the Contractor is solely responsible for verifying the conduit sizing and location as appropriate for their design. Contractor must note explicitly in their Proposal where spare conduits will be utilized otherwise the assumption will be made that all conduit runs will be newly installed by Contractor.

4.5 Medium Voltage Switchgear

Switchgear shall be located outdoors in a NEMA 3R lockable enclosure. Switchgear shall include an auxiliary compartment containing all instrument transformers associated with the protective relays and the 120/240-V CPT shown in the one-line diagram(s). The CPT shall be fused and disconnectable. The CPT shall be sized, and single-phase breakers shall be included to supply power to a 120-V convenience receptacle and a fluorescent light within the switchgear enclosure, switchgear heaters, and the 240/120-V_{AC} panelboard within the communications shelter (if applicable). Medium-voltage protective device selection and relaying should be based on the use of Schweitzer Electric Laboratories relays or approved other, as required and specified in the Interconnection Agreement. In general, the interconnection design and components should meet the requirements of the interconnecting utility and the interconnection agreement (including the necessity of a grounding transformer if required).

4.6 Combiner Boxes

Combiner boxes shall be rated for maximum system voltage and maximum system continuous and short-circuit currents. All enclosures shall be rated NEMA 4 and shall have integral key lock or provisions for padlocking. DC inputs shall be fused with finger safe fuse holders for both positive and negative conductors and all fuses shall have blown fuse indication. Combiner box output shall be externally disconnectable. If the combiner box

has a lightning protection device, the device should include a visual trip indicator. Combiner boxes and associated conduit shall be installed as high as possible under structures and be installed in a manner that is not accessible by unauthorized individuals and does not create a climbing hazard.

4.7 DAS and Monitoring Equipment

Contractor shall supply and install a MUSD approved Data Acquisition System (DAS) including monitoring hardware and software package. The monitoring system shall provide energy generation data, historical data, solar insolation attributes, and meteorological data.

Points to be monitored by the DAS system shall include, at a minimum:

- Irradiance in plane of array
- Global horizontal irradiation
- AC voltage and current
- DC voltage and current
- Kilowatts (kW) and Kilowatt hours (kWh)

The following shall make up the DAS calculated values list:

- Modeled production based on measured meteorological data
- Day's energy in kWh
- Month's energy in kWh
- Year to date energy in kWh
- Total lifetime energy in kWh
- PEGU provided reporting

The system shall be configured to sample data, 5-minute average intervals, and shall be configured to update the server at least once every 15 minutes. The system shall store the 1 to 15-minute averaged interval data for the life of the System. The system shall be capable of issuing alarms and notices to alert the system manager and operation and maintenance (O&M) Contractor to potential system problems and outages. The metering and monitoring system shall comply with the accuracy requirements and general standards set forth in IEC 61724, with the exception of the irradiance meter, which shall have an accuracy of better than $\pm 5\%$ of the reading. The metering scheme shall be capable of reading the net electrical energy to the grid during daylight hours and the nighttime auxiliary loads when the System(s) is in standby mode. The monitoring system data shall be accessible through an online dashboard, which allows for logging into administrator panel views. The panel view shall display current, daily, monthly and annual data for the System. Raw data shall be downloadable for any time period of stored

historical in an easy fashion. All electronics shall be enclosed in a NEMA 3R enclosure. The data shall be collected at hardwired locations and transmitted wirelessly via a cellular modem, or other means, to be provided and installed by Contractor. Contractor shall test the installed communications system to demonstrate its ability to meet the requirements of its intended use. Testing shall be done when the final system interconnections have been made.

4.8 Revenue Meter

A bi-directional revenue grade meter shall be installed to measure the total System(s) output at the switchgear for accurately metering energy (kWh) generated by the System(s). The revenue grade meter shall be American National Standards Institute (ANSI) C12.20 0.2% Class UL listed, ISO9001 certified and accepted by all authorities requiring revenue grade. The meter must have a display for easy reading of current power generation and lifetime generation and shall be compliant with Western Renewable Energy Generation Information System certification requirements for Renewable Energy Credit sales or trading. The revenue grade meter may be incorporated into a System's DAS if acceptable by the interconnecting utility. In addition to the performance requirements indicated above, all SPDs shall be compliant to the respective domestic or international standards, including Underwriters Laboratories, Inc. (UL) Standard 1449 3rd edition. SPDs for Measurement, Control, Instrumentation, and Communications Circuits

4.9 Mounting and Racking Systems

4.9.1 Fixed Tilt Racking Structure

The fixed tilt racking system (if applicable) shall include the racking structure and all module-mounting hardware. The racking vendor may supply the supports if desired, or a third party may provide the supports. The rack's azimuth and tilt angle shall be specified on the engineering drawings. The racking system shall be designed using the environmental loads and the Occupancy Category appropriate for the installation condition and specified by local codes. The racking structures, support attachments, module mounting brackets, fastening hardware, and supports (if applicable) shall have a 30-year design lifetime. Equipment shall have corrosion protection coatings as included in this specification and utilize appropriate fasteners that are similar metals.

4.9.2 Shade Structure Racking Systems

All wiring shall be run in a neat manner in which there are no wires running below purlin supports. All conduit shall be mounted on the support structure shall be mounted in a manner that inhibits climbing or hanging. Columns and steel beams shall be painted, color to be selected and approved by MUSD. All shade-structure systems shall include fascia

on short sides/ends of array. All columns on all systems must include a minimum 30" height above grade concrete bollard. All Shade-structures shall have a minimum clearance height of ten (10) feet as defined from grade to bottom of beams. All shade structures shall include metal baseplate covers to conceal and protect exposed bolts at column bases. Plastic covers will not be accepted.

4.9.2.1 Shade Structures in Parking Lots

Column locations shall minimize impacts to existing parking and placed to maintain all existing parking spot dimensions. Contractor shall provide concrete wheel stops in parking spots that will have a column in the front of the parking spot. Contractor is responsible for verifying and understanding existing ADA parking, striping, and paths of travel and what code required upgrades will be necessary as a result of the solar project. Contractor is responsible for all required ADA upgrades, striping, and path of travel under arrays and to connecting ADA compliant path of travel including any new curb cuts, truncated dome pads, and other work as necessary to connect to the existing path of travel.

4.9.3 General Racking Requirements

Clearance labels shall be provided on all systems at all exposed sides of the PV structures.

4.10 Interconnection

Contractor is responsible for the cost of designing, procuring equipment for, and installing all interconnection and metering facilities required to deliver the System(s)'s electrical output to the proposed point of connection on the interconnecting utility's electrical system, in accordance with the Agreement and the Interconnection Agreement of the interconnecting utility.

4.11 Materials

Contractor shall submit a steel fabrication package in advance of site design drawings to the appropriate AHJ for approval, if necessary, without additional cost to MUSD.

No equipment shall utilize polychlorinated biphenyls (PCBs). It is the responsibility of Contractor to identify any equipment using SF6 gas. It is the responsibility of Contractor to identify any proposed batteries and provide quantities and associated data sheets. It is the responsibility of Contractor to provide data sheets and quantities on any proposed chemicals used on the System(s).

4.12 Equipment Delivery, Staging, and Storing

Equipment and materials shall arrive at the site(s) so as to not delay System(s) completion by the Guaranteed Final Acceptance Date. Contractor shall be responsible for receiving and storing all freight at the site(s), or in an alternative agreed upon location, in a secure manner.

Prior to the arrival of equipment and materials at the site(s), the Contractor shall install a fenced, secured area and provide security for the storage of such equipment and materials. Contractor shall notify and receive approval in writing from MUSD of the location and layout of intended staging areas, parking areas, storage areas, office areas, workshops, and other temporary facilities.

All laydown and staging areas and plans shall be submitted, reviewed and approved by MUSD prior to commencement of construction. Temporary construction roads and staging areas not converted to permanent roads (if any) shall be restored in accordance with all permit requirements and/or restore to existing condition prior to the start of construction.

5. Other Requirements

5.1 Fit and Finish

Contractor must provide accurate locations and routing of installed underground conduit and utilities completed as part of the project on the final as-built plan sets.

Contractor is responsible for repairing any damage to the existing facilities or grounds that occur as a result of the construction including but not limited to asphalt marking, stains, track marks, cracks, holes, or damage to any vegetation. Contractor is responsible for documenting all existing conditions prior to the start of construction, as well as proposing and executing repair and potential re-routing methods that are to be reviewed and approved by MUSD.

Contractor is responsible for maintaining the existing functionality of equipment and services impacted by the resulting work. Including but not limited to existing irrigation functionality and control, and lighting. Contractor will be responsible for maintaining current functionality of adjacent lighting that will not be replaced as part of the project.

5.2 Demolition and Disposal

Contractor must identify existing shading concerns as verified through a solar shading study and submit a plan that identifies existing objects or trees that are to be removed or trimmed. The plan shall identify the height that trees are to be maintained at moving

forward. The contractor is responsible for tree removal as approved by MUSD. Light poles and concrete bollards under PV canopies are also the responsibility of the contractor to remove as approved by MUSD.

All demolished and removed poles, bollards, and above grade items (e.g. parking islands, etc.) shall be finished by flush cutting with existing grade and patching back with material equal to surrounding area.

5.3 Tree Replacement

Contractor shall be responsible for compliance with MUSD tree replacement policy, which requires a new tree to be planted for each tree removed as a result of the project. Replacement trees are required to be of similar type as those removed and planted in a location of MUSD choosing. Contractor shall cover the cost of the tree, site and soil preparation, and planting. New irrigation systems or extensions of existing irrigation systems to provide water to new trees is not included in Contractor's scope.

6. Quality Control and System Testing

6.1 Quality Control Plan

For each performance and installation requirement, the Quality Control Plan (QCP) shall identify: item/system to be tested, exact test(s) to be performed, measured parameters, inspection/testing organization, and the stage of construction development when tests are to be performed. Each inspection/test shall be included in the overall construction schedule. The Contractor is not relieved from required performance tests should these not be included in the plan.

The QCP is intended to document those inspections and tests necessary to assure MUSD that product delivery, quality and performance are as required. An example of these inspections/tests is the final test/inspection for overall performance compliance of the system. Results from tests and inspections shall be submitted within 24 hours of performing the tests and inspections.

At a minimum, the QCP should conform to "IEC 62446 Grid Connected Photovoltaic Systems - Minimum Requirements for System Documentation, Commissioning Tests, and Inspections (2009)".

Performance tests will be conducted at the final commissioning/acceptance testing. Performance tests will include I-V curve traces for all PV strings. For project acceptance, measured performance at maximum power point must be at least 90% of expected

performance, which will be adjusted for concurrently measured cell temperature and plane of array (POA) irradiance. This can be accomplished using a current industry standard I-V curve tracer with capability to compare measured PV string I-V curves with nameplate performance of PV string compensated for concurrent cell temperature and POA irradiance measurements. The Contractor shall supply MUSD with detailed documentation of malfunction or errors and all corrective actions taken.

6.1.1 Submissions

The QCP shall be prepared and submitted within 21 calendar days of the final approval of system designs and prior to any construction on-site. The QCP may be rejected as incomplete and returned for resubmission if there is any performance, condition or operating test that is not covered therein.

6.1.2 Updating

During construction, the contractor shall update QCP if any changes are necessary due to any changes or schedule constraints. MUSD shall be notified immediately of any schedule and/or procedural changes.

6.2 Inspections and Tests

In addition to the required AHJ inspections, Contractor shall perform inspections and tests throughout the construction process including: existing conditions/needs assessments, construction installation placement/qualification measurements and final inspections/tests performance certification. Periodic "quality" inspections shall also be conducted to support progress payments as identified in the contractor's QCP.

6.2.1 MUSD Witness

All inspections and tests, to verify documented contract assumptions, to establish work accomplishment, or to certify performance attainment may be witnessed by MUSD and/or an Agent on their behalf and coordinated through the QCP.

6.2.2 Final Inspections and Tests

To ensure compliance with provisions of the NEC, an inspection by a licensed electrical inspector is mandatory after construction is complete. Unless otherwise identified, manufacturer recommendations shall be followed for all inspection and test procedures. The NEC inspection shall be conducted by an electrical inspector familiar with PV systems. Provide qualifications of the proposed third-party inspector for review and approval prior to conducting the NEC inspections.

Tests shall include a commissioning of the array. Commissioning tests shall conform with the requirements in the QCP. Commissioning shall be performed for the entire PV system. This data shall be used to confirm proper performance of the PV system.

6.2.3 Documentation

Inspections/tests required in the QCP shall result in a written record of data/observations. The Contractor shall provide electronic copies of documents containing all test reports/findings. Test results shall typically include: item/system tested, location, date of test, test parameters/measured data, state of construction completion, operating mode, parties present, test equipment description and measurement technique.

Exhibit C – Operations and Maintenance Requirements

Operations and Maintenance

Contractor is to provide Operations and Maintenance (O&M) for the entire duration of the PPA period.

Operations and Maintenance services to include annual preventative maintenance as well as comprehensive corrective and reactive maintenance. All corrective and reactive maintenance will be performed at no additional cost to MUSD, with the exception of items outside the Contractor's control such as vandalism and Force Majeure, as negotiated in the final PPA.

Below is a summary table of services and frequency of implementation to be included in the PPA.

Service	Frequency
<i>Preventative Maintenance</i>	
Panel Washing	Minimum twice per year, more if required to maintain performance within 5% of design
Vegetation Management	Minimum annually, but more frequently as required
Pest Control (Identify intrusions, eliminate infestations, perform action to prevent future infestations)	Annually
Required manufacturers inspections, testing and routine service	As specified by manufacturers
Visual Inspections	
Identify any new shading concerns	Annually
Ensure penetrations are watertight where applicable	Annually
Ground erosion and corrosion near supports for ground mount systems	Annually
Confirm electrical enclosures are secured with locks and have restricted access	Annually
Check and document any corrosion issues	Annually
Check for loose hanging wires	Annually
Inspect equipment pads for cracking and wear	Annually
Inspect PV modules for defects (burn marks, discoloration, delamination, or cracked glass)	Annually
Inspect racking system for rust, corrosion, sagging, missing or broken clips or bolts	Annually
Inspect conduits for proper support and expansion joints where necessary	Annually
Open combiner boxes and check torque marks on lugs	Annually

Open disconnects and inspect for corrosion or damage	Annually
Inspect all combiner boxes and disconnects for water ingress and debris, seal and clean where necessary	Annually
Inspect inverter interior and exterior for water ingress rodent, pests, dust intrusion, and torque settings	Annually
Verify weather sensor placements and cleanliness	Annually
Testing	
Verify torque settings for major equipment (structures, inverters, modules, BOS)	Annually
Voltage and current testing at inverters and string level	Annually
Sensor calibration	Annually
Corrective and Reactive Maintenance	As Needed
Warranty Administration	As Needed
Includes labor for defective equipment replaced under warranty	As Needed

Contractor shall provide the following documentation as part of their O&M services:

- Written reports detailing all Corrective and Reactive Maintenance issues. Reports shall include the system issue or problem that was addressed, what was done to address it, a list of parts and materials used during the repair, the number and classification of labor hours required, the date and time Contractor was made aware of the problem (either through monitoring, inspection, or notification by other parties), the elapsed time taken to resolve the problem, and the date and time the problem was resolved.
- An Annual Report summarizing system performance and all maintenance performed on the system (Preventative, Corrective and Reactive, Warranty-related, or otherwise). The Annual Report shall consist of the following information (at a minimum):
 - Summary of system operations;
 - Weather and system performance/energy production data;
 - All Preventative Maintenance performed on the system, including panel washing, weed/vegetation abatement, inspections, and other actions;
 - Summary of Additional Services, if any;
 - Reports of any system outages, service interruptions, safety incidents or environmental issues;
 - Maintenance and inspection logs, checklists, and other field documentation (with signatures verifying the work performed); and
 - List of proposed actions to be taken by MUSD, if any.

Documentation that does not demonstrate required maintenance was performed will be considered incomplete.

Exhibit D – Required Contract Submittals

Submittals

The table below identifies each submittal that will be submitted by the Contractor to the MUSD for review and approval. MUSD shall have ten full working days to provide comments and an approval status unless otherwise noted. Contractor is responsible for addressing comments to MUSD's satisfaction. Below is a summary table of required submittals:

Submittal	Description	Submittal Time
Project Schedule	Provide CPM project schedule in MS Project or general MPP format which meets the project completion deadline provided in the Section 1 of the RFP and identifies the critical path.	Weekly
Site Audit Reports	Documents verifying sites existing conditions will be submitted to the client, including, title reports, geotechnical reports and findings and any and all other site audits conducted by the Contractor.	Site Discovery
Schematic Design	A visual representation of the layout of the system including the location of the major pieces of equipment and required boring or trenching paths shown over aerials and/or site plans	Schematic Design Phase
Design Development Plans	A clear and coordinated plan set including all major components of the design consisting of, Architectural, Structural, and Electrical designs, supporting calculation, reports and equipment cut sheets that represents 85% of the intended design.	Design Development Phase
Complete Construction Documents	A complete plan set and ancillary documentation that set forth the detailed requirements for the construction of the system and represent 100% of the intended design including a detailed Bill of Materials (BOM)	Construction Document Design Phase
Monitoring System Design Documentation	Shall include DAS schematic, monitoring system on-line user interface, description of data fields and their availability, and access to a test environment (or other customer implementation) of the system and interface	Construction Document Design Phase

Quality Assurance / Quality Control Plan (QA/QC or QCP)	A detailed QA/QC plan that will be implemented during construction to ensure safety and quality of construction and final product per contract specifications	14-days before construction starts
Health & Safety Plan	A detailed construction phase Health & Safety Plan will outline in detail how health and safety will be managed on site and for the duration of the construction portion of the project.	14-days before construction starts
Testing and Commissioning Plan	Shall include acceptance testing and system start up plans.	14-days before testing and commissioning starts
Testing and Commissioning Results	Results from testing and commissioning in approved plan	After commissioning is complete
Proving Period Report	Shall include system description, test period of 30 calendar days, test results, anomalies identified, any corrective action performed, measured performance, supporting calculations indicating expected performance, measured 15-minute interval data, AC output (kW), production (kWh), AC and DC Voltage, in-plan irradiance, ambient and cell temperature, inverter status, system availability)	35-days after proving period start date (proving period commences after commissioning is finalized)
Training Plan and Training Materials	A detailed training plan and corresponding training materials that will be presented and used during the user training session	14-days before training starts
Operations and Maintenance Manual	Scheduled preventative maintenance, user manuals and data sheets	14-days before training starts
Warranty Documentation and Certifications	Warranty registration, certificates, and required O&M to maintain warranties for each major piece of equipment.	14-days before training starts
As-built Plans	Final drawings, including boring logs, clearly showing any changes or variations from the approved design as well as construction details not captured on approved.	14-days before training starts

Exhibit E – Warranty Requirements

Warranty Requirements

The Provider shall confirm that all manufacturer warranties apply on an "as installed basis," i.e., Provider will confirm the equipment was installed according to the requirements and specifications for installation. Provider shall identify warranty durations and terms for each major system component.

Exhibit F – Proposal Forms

Proposal Forms

Follow this link to the folder, Proposal Forms, for forms that need to be submitted with each proposal:

<https://arcalternatives.box.com/s/fbe07zrxxhw38tmq0f93p0ynnoyf828p>

MUSD

Design, Installation, Operations, and Maintenance of Solar Photovoltaic Systems

Attachment D - Proposal Forms, Pricing

Proposer: Company Name

Instructions: Please fully complete each row in the table below. Input cells are highlighted in light green.

Sites	System Information		Base Pricing	Additive Alternate #1 Pricing	Alternate #2: Value Engineering		
	Size (kWdc)	First Year Production (kWh)	0% Escalation Rate, 25-year Power Purchase Agreement (\$/kWh)	0% Escalation Rate, 25-year Power Purchase Agreement (\$/kWh)	Size (kWdc)	First Year Production (kWh)	0% Escalation Rate, 25-year Power Purchase Agreement (\$/kWh)
Base Proposal Sites							
1 Madera South High School / Furman (NEMA)							
2 Madera High School							
3 Jack G. Desmond / Nishimoto (NEMA)							
4 Transportation / Child Nutrition (NEMA)							
5 Caesar E. Chavez Elementary School							
6 Martin Luther King Jr Middle School							
7 Lincoln Elementary School							
8 Thomas Jefferson Middle School							
9 Virginia Lee Rose Elementary School							
10 John J. Pershing Elementary School							
Additive Alternate #1: Additional Sites							
1 Alpha Elementary School							
2 Berenda Elementary School							
3 District Offices							
4 Dixieland School							
5 Eastin Arcola							
6 George Washington Elementary School							
7 Howard School / Small Fry Pre School							
8 James Madison Elementary School							
9 James Monroe Elementary School							
10 John Adams Elementary School							
11 La Vina School							
12 Madera Technical Exploration Center							
13 Matilda Torres High School							
14 M&O Central Services							
15 Millview Elementary School / Mountain Vista High School							
16 Parkwood Elementary School							
17 Ripperdan Continuation School							
18 Sierra Vista Elementary School							
TOTAL	0.0	-			TOTAL	0.0	-

Add notes here.

Exhibit G – Site Details

Site Details

Site level details can be found using the following link:

<https://arcalternatives.box.com/s/fbe07zrxxhw38tmq0f93p0ynnoyf828p>

Exhibit G MUSD - Site Details

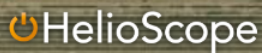
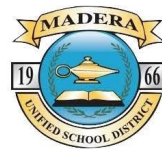
Site Name	Address	Production Target (All Site Meters)
<i>Base Sites</i>		
Madera South High School / Furman (NEMA)	705 W Pecan Ave, Madera, CA 93637	2,401,000
Madera High School	200 S L St, Madera, CA 93637	1,292,000
Jack G. Desmond / Nishimoto (NEMA)	26490 Martin St, Madera, CA 93638	999,000
Transportation / Child Nutrition (NEMA)	1200 Gill Ave, Madera, CA 93637	834,000
Caesar E. Chavez Elementary School	2600 E Pecan Ave, Madera, CA 93637	454,000
Martin Luther King Jr Middle School	601 Lilly St, Madera, CA 93638	587,000
Lincoln Elementary School	650 Liberty Ln, Madera, CA 93637	441,000
Thomas Jefferson Middle School	1407 Sunset Ave, Madera, CA 93637	401,000
Virginia Lee Rose Elementary School	1001 Lilly St, Madera, CA 93638	365,000
John J. Pershing Elementary School	1505 Ellis St, Madera, CA 93638	324,000
<i>Additive Alternate #1: Additional Sites</i>		
Alpha Elementary School	900 Stadium Rd, Madera, CA 93637	286,000
Berenda Elementary School	26820 Club Dr, Madera, CA 93638	308,000
District Offices	1902 Howard Rd, Madera, CA 93637	230,000
Dixieland School	18440 Rd 19, Madera, CA 93637	130,000
Eastin Arcola	29551 Ave 8, Madera, CA 93637	152,000
George Washington Elementary School	509 E South St, Madera, CA 93638	235,000
Howard School / Small Fry Pre School (NEMA)	13878 Rd 21 1/2, Madera, CA 93637	218,000
James Madison Elementary School	109 Stadium Rd, Madera, CA 93637	208,000
James Monroe Elementary School	1819 N Lake St, Madera, CA 93638	216,000
John Adams Elementary School	1822 National Ave, Madera, CA 93637	200,000
La Vina School	8594 Rd 23, Madera, CA 93637	131,000
Madera Technical Exploration Center	Sunrise Ave. Road 28 (S of Virginia Lee Rose)	342,000
Matilda Torres High School	SE Corner of Martin St and Road 26	1,668,000
M&O Central Services	1205 S Madera Ave, Madera, CA 93637	150,000
Millview Elementary School	1609 Clinton St, Madera, CA 93638	245,000
Parkwood Elementary School	1150 E Pecan Ave, Madera, CA 93637	312,000
Ripperdan Continuation School	26133 Ave 7, Madera, CA 93637	78,000
Sierra Vista Elementary School	917 E Olive Ave, Madera, CA 93638	238,000

Individual site data folders can be found here:

<https://arcalternatives.box.com/s/1bplbda8krioku1klrsp22s54y6w9vim>

Data folder for each site may include meter location map, meter images, utility service equipment images.

Madera South High School / Furman (NEMA)
705 W Pecan Ave, Madera, CA 93637



Desired Array Location

Total Production Target (kWh) **2,401,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Madera South High School	932127756	1010084341	2,292,000	
Furman High School	1421631279	1010267427	109,000	



Desired Array Location

Total Production Target (kWh) **1,292,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Madera High School	2780143054	1008846843	15,000	
Madera High School	2780143006	1008846841	98,000	
Madera High School	5406934665	1010422961	1,136,000	
Madera High School	6780234046	1010114008	40,000	
Madera High School	5400856242	1010502850	3,000	

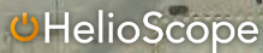


Desired Array Location

Total Production Target (kWh)

999,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Jack G. Desmond Middle School	9895839305	1010001813	644,000	
Nishimoto Elementary School	9895839029	1010083550	355,000	



Desired Array Location

Total Production Target (kWh)

834,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Child Nutrition	932127391	1008844661	502,000	
Transportaion	8497076753	1009502382	53,000	
Transportaion	2673111616	1009502381	186,000	
Bus Chargers	New Bus Charger Meter	NA	93,000	Currently being added. Target is an estimate and will need verification prior to final system installation



Desired Array Location

Total Production Target (kWh)

454,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Caesar E. Chavez Elementary School	2780143777	1010185132	346,000	
Caesar E. Chavez Elementary School	2781759025	1009917196	108,000	

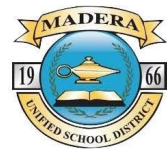


Desired Array Location

Total Production Target (kWh)

587,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Martin Luther King Jr Middle School	1262165221	1008846842	79,000	
Martin Luther King Jr Middle School	1262165325	1010084311	508,000	



Desired Array Location

Total Production Target (kWh) **441,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Lincoln Elementary School	2345811817	1005722292	99,000	
Lincoln Elementary School	2343337039	1009486478	342,000	



Desired Array Location

Total Production Target (kWh)

401,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Thomas Jefferson Middle School	3831781005	1003741684	2,000	
Thomas Jefferson Middle School	1421677053	1009479814	1,000	
Thomas Jefferson Middle School	1425941190	1010185038	334,000	
Thomas Jefferson Middle School	2954349155	1007280660	4,000	
Thomas Jefferson Middle School	1425822865	1005521180	60,000	



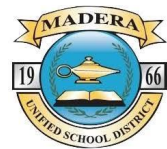
Desired Array Location

Total Production Target (kWh)

365,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Virginia Lee Rose Elementary School	4218859216	1010113686	365,000	

John J. Pershing Elementary School
1505 Ellis St, Madera, CA 93638

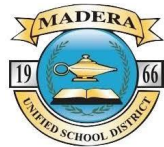


Desired Array Location

Total Production Target (kWh) **324,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
John J. Pershing Elementary School	2782855037	1010185030	324,000	

Additive Alternate #1: Additional Sites

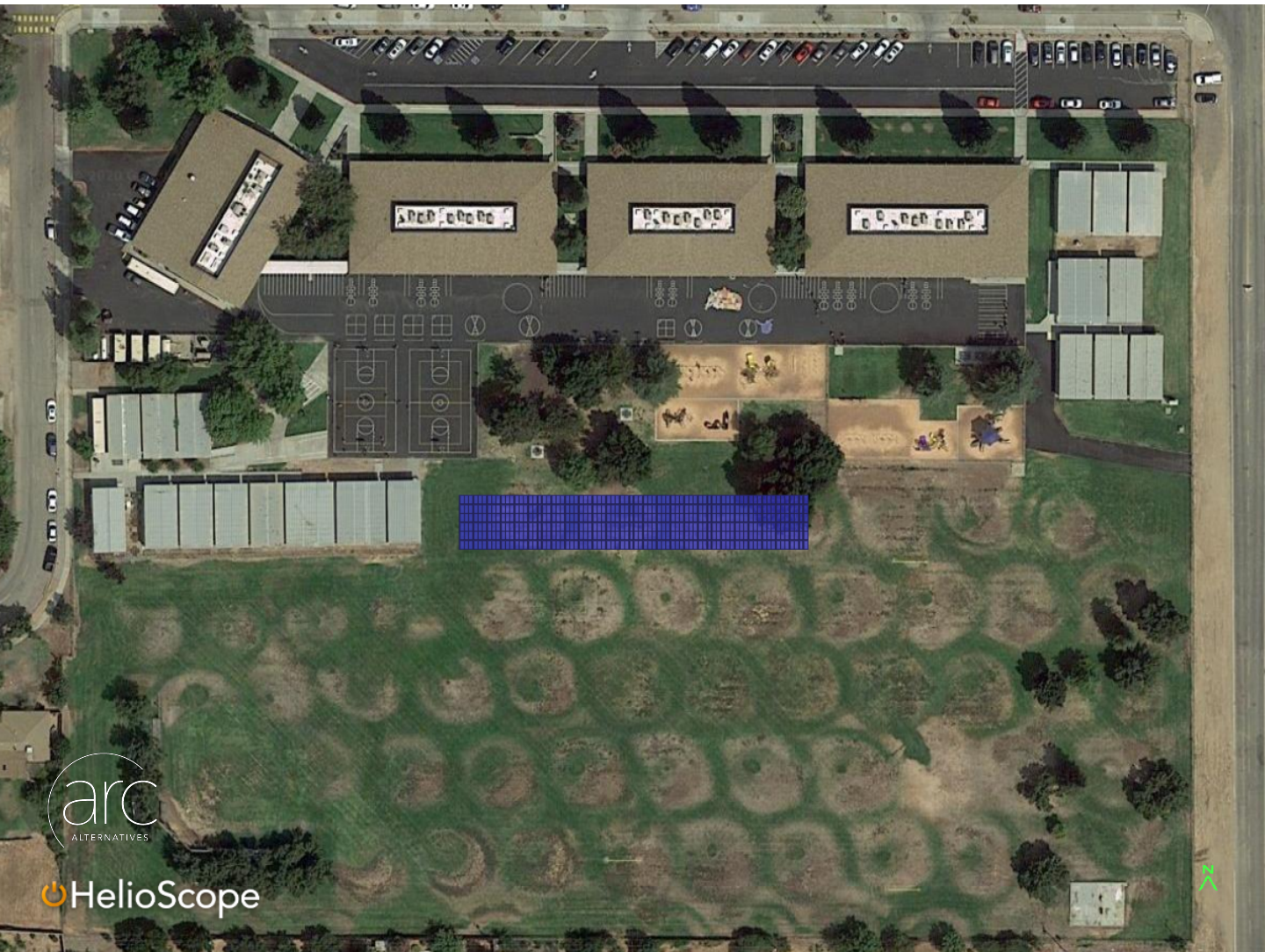
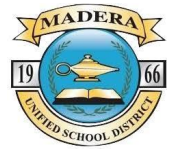


Desired Array Location

Total Production Target (kWh) 286,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Alpha Elementary School	1421677141	1010185955	286,000	

Berenda Elementary School
26820 Club Dr, Madera, CA 93638

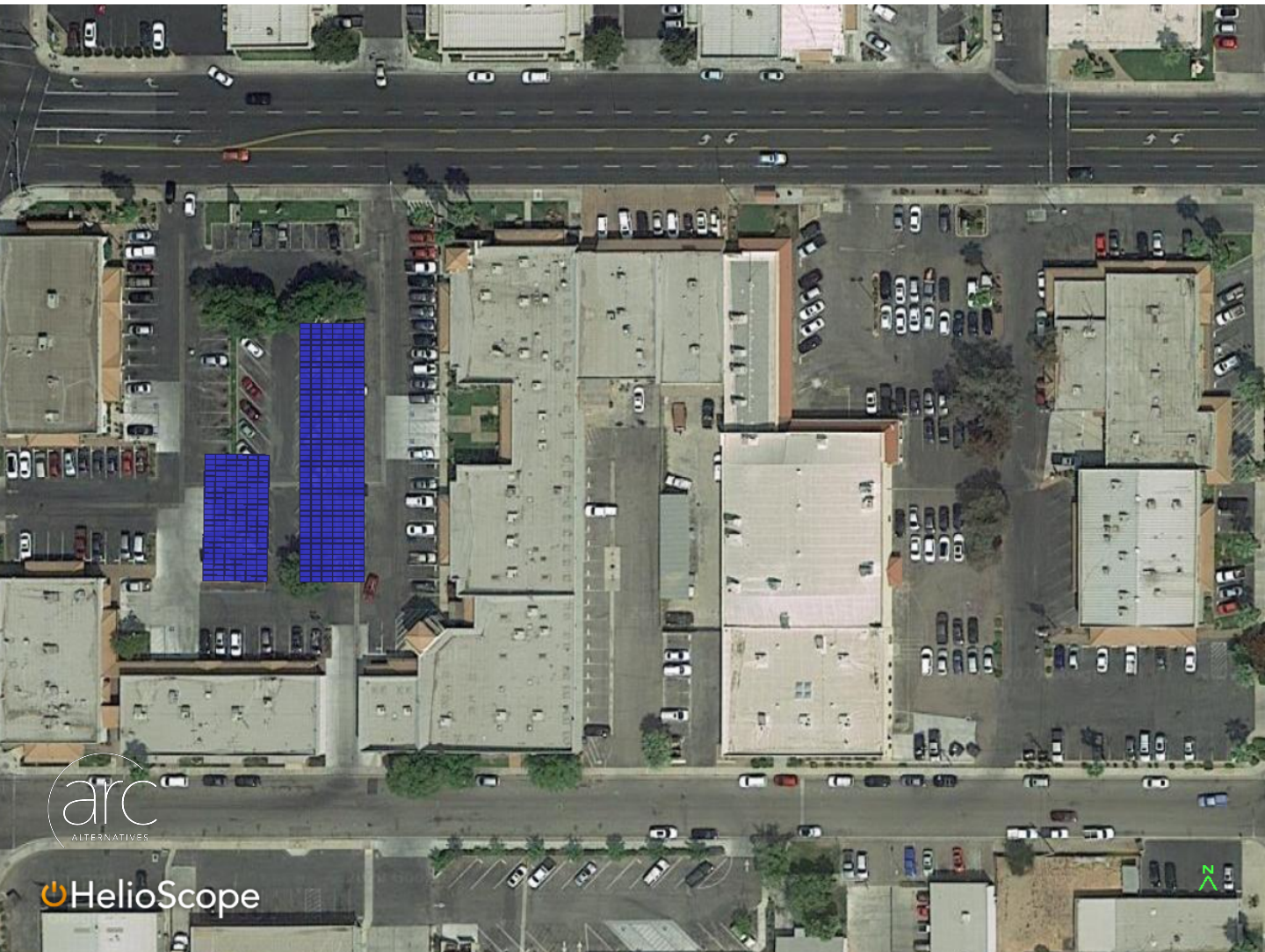
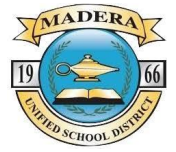


Desired Array Location

Total Production Target (kWh) **308,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Berenda Elementary School	9969787184	1005521607	17,000	
Berenda Elementary School	9969263179	1010084309	291,000	

District Offices
1902 Howard Rd, Madera, CA 93637



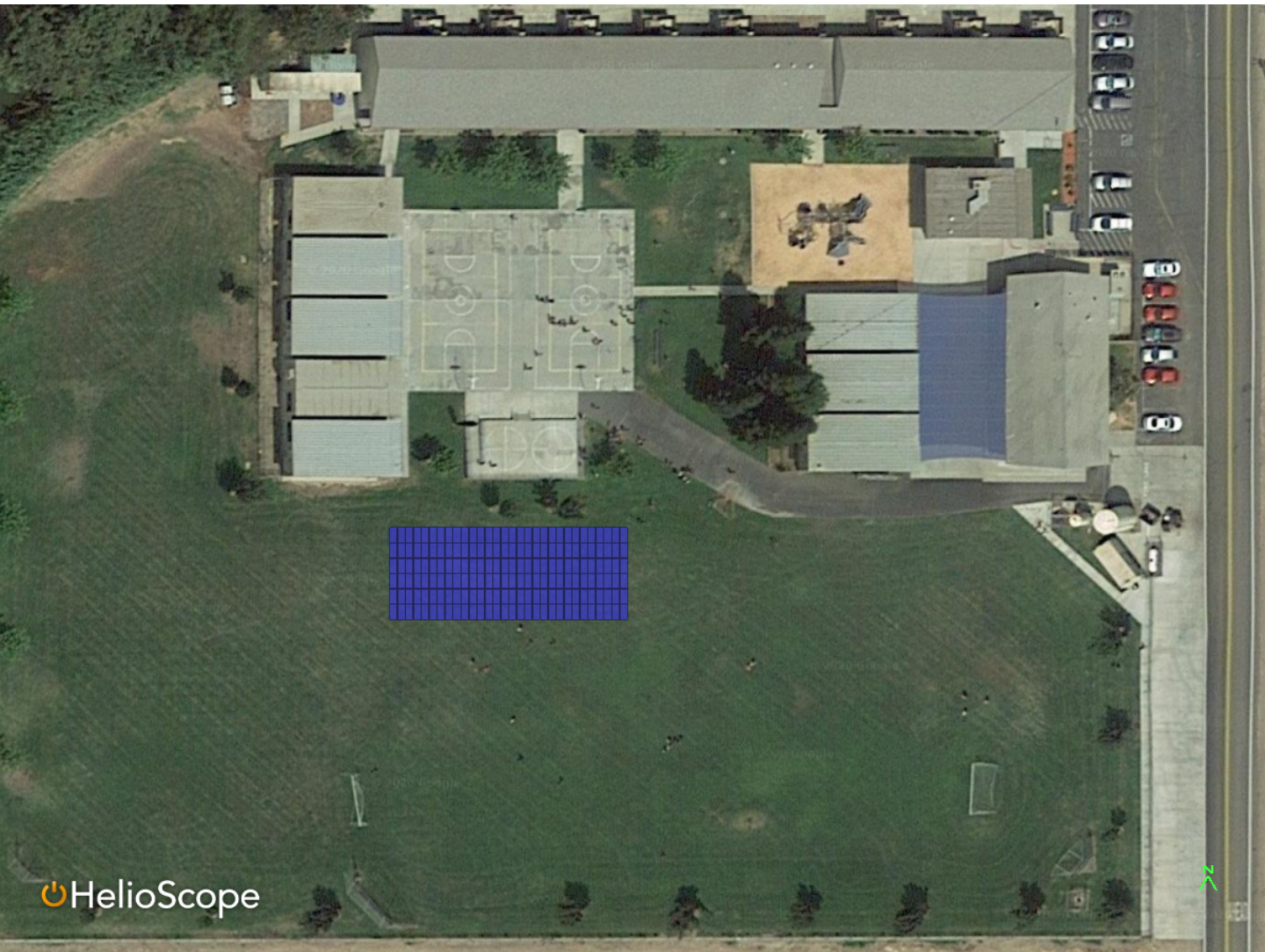
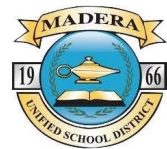
Desired Array Location

Total Production Target (kWh)

230,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
District Offices	931895145	1008845285	44,000	
District Offices	933898187	1010393647	61,000	
District Offices	935547452	1007075008	97,000	
District Offices	930359205	1004463939	28,000	

Dixieland School
18440 Rd 19, Madera, CA 93637

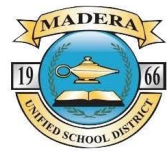


Desired Array Location

Total Production Target (kWh) **130,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Dixieland School	2808081851	1005720847	109,000	
Dixieland School	2809663827	1005513081	21,000	

Eastin Arcola
29551 Ave 8, Madera, CA 93637



Desired Array Location

Total Production Target (kWh) **152,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Eastin Arcola	1256308309	1006876754	0	
Eastin Arcola	1257765254	1005721637	141,000	
Eastin Arcola	1254495336	1008846518	11,000	



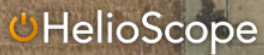
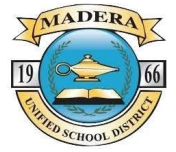
Desired Array Location

Total Production Target (kWh)

235,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
George Washington Elementary School	9662952537	1005720563	34,000	
George Washington Elementary School	9665670288	1005521605	25,000	
George Washington Elementary School	9668207547	1006707328	49,000	
George Washington Elementary School	9665752204	1005521604	24,000	
George Washington Elementary School	9667752256	1010026829	103,000	

Howard School / Small Fry Pre School (NEMA)
13878 Rd 21 1/2, Madera, CA 93637



Desired Array Location

Total Production Target (kWh)

218,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Howard School	1158873737	1005722290	43,000	
Howard School	1152010835	1010087171	105,000	
Small Fry Pre School	1151267590	1010544334	5,000	
Small Fry Pre School	1155276358	1005722291	65,000	



Desired Array Location

Total Production Target (kWh) **208,000**

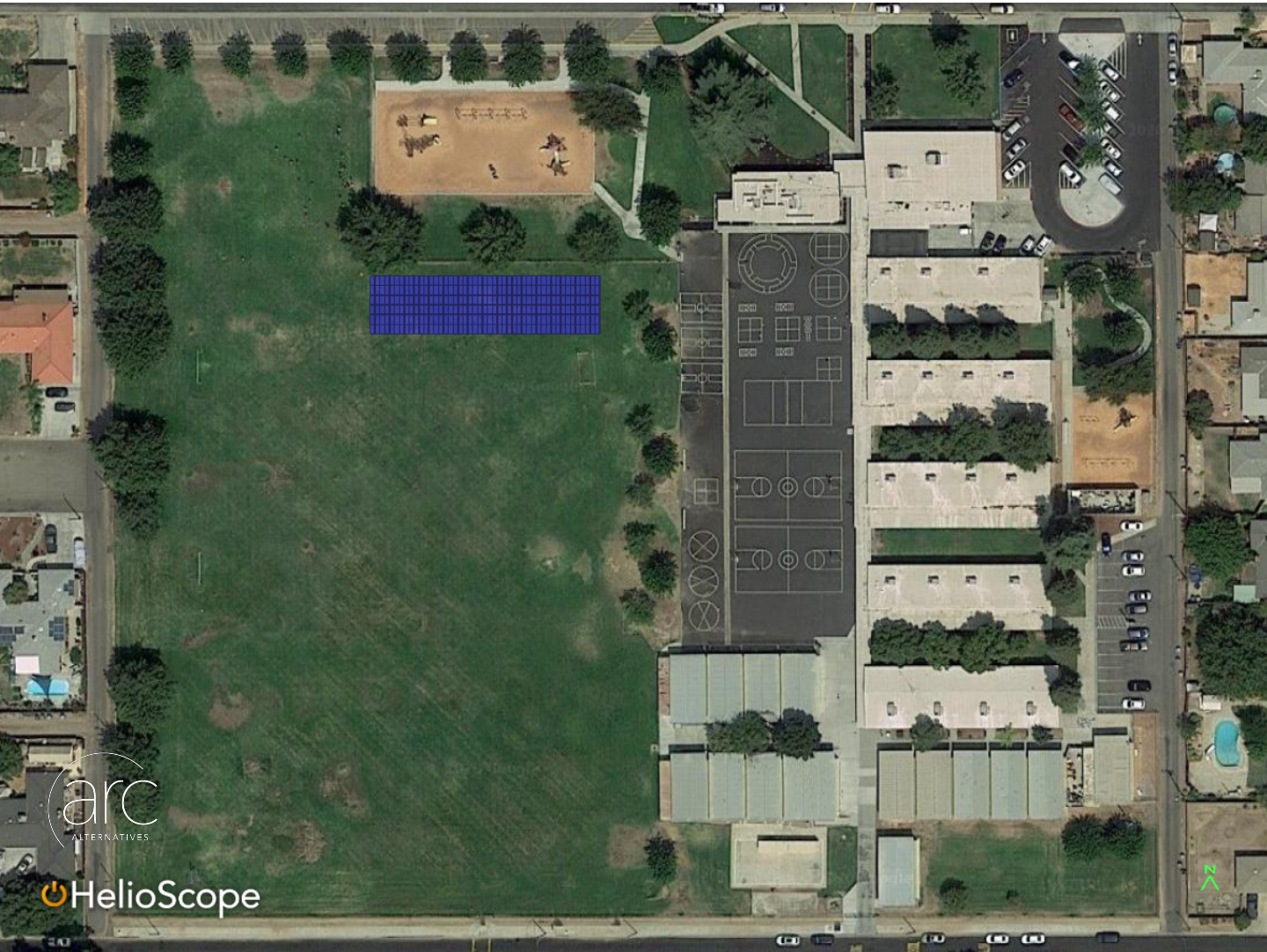
Individual Site	SAID	Meter Number	Meter Target Production	Notes
James Madison Elementary School	2780143478	1008846844	127,000	
James Madison Elementary School	2780143539	1008845793	47,000	
James Madison Elementary School	2780156553	1005521603	23,000	
James Madison Elementary School	2789541491	1010287521	11,000	



Desired Array Location

Total Production Target (kWh) **216,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
James Monroe Elementary School	5406934198	1005521176	16,000	
James Monroe Elementary School	5405455836	1009511076	31,000	
James Monroe Elementary School	5406787900	1005521736	34,000	
James Monroe Elementary School	5404261821	1005719733	135,000	



HelioScope

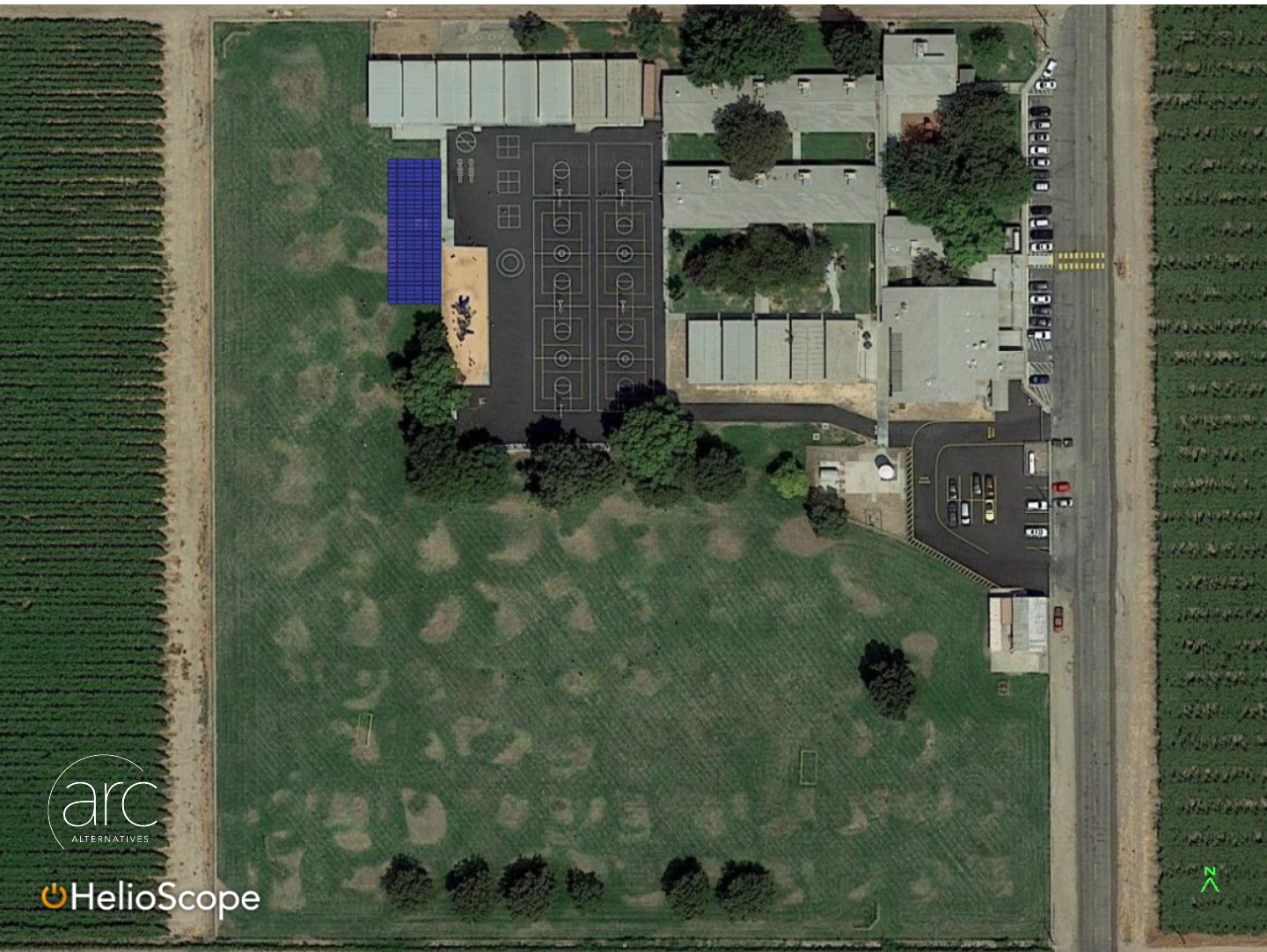


Desired Array Location

Total Production Target (kWh)

200,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
John Adams Elementary School	930642831	1006733214	103,000	
John Adams Elementary School	930580850	1005719734	32,000	
John Adams Elementary School	930977763	1006736883	7,000	
John Adams Elementary School	932363531	1005719737	58,000	

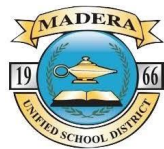


Desired Array Location

Total Production Target (kWh) **131,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
La Vina School	1151705445	1009503005	18,000	
La Vina School	1159114335	1010076298	113,000	

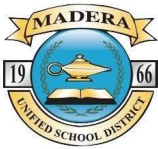
Madera Technical Exploration Center
Sunrise Ave. & Road 28 (S of Virginia Lee Rose)



Desired Array Location

Total Production Target (kWh)		342,000		
Individual Site	SAID	Meter Number	Meter Target Production	Notes
Madera Technical Exploration Center	New MadTech Meter	NA	342,000	Facility currently under construction. System size will need to be verified prior to installation.

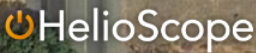
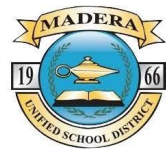
Matilda Torres High School
SE Corner of Martin St and Road 26



Desired Array Location

Total Production Target (kWh) **1,668,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Matilda Torres High School	New MTHS Meter	NA	1,668,000	Facility currently under construction. System size will need to be verified prior to installation.



 Desired Array Location

Total Production Target (kWh) 150,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
M&O Central Services	2951964572	1008845794	150,000	



Desired Array Location

Total Production Target (kWh) 245,000

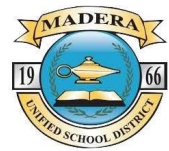
Individual Site	SAID	Meter Number	Meter Target Production	Notes
Millview Elementary School	9767234110	1005723144	58,000	
Millview Elementary School	7591009633	1009481386	187,000	



Desired Array Location

Total Production Target (kWh) **312,000**

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Parkwood Elementary School	3437395168	1010185270	312,000	



Desired Array Location

Total Production Target (kWh) 312,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Parkwood Elementary School	3437395168	1010185270	312,000	



Desired Array Location

Total Production Target (kWh)

238,000

Individual Site	SAID	Meter Number	Meter Target Production	Notes
Sierra Vista Elementary School	930235537	1010026831	123,000	
Sierra Vista Elementary School	933808868	1005521231	24,000	
Sierra Vista Elementary School	931785103	1006733242	63,000	
Sierra Vista Elementary School	938818595	1007070704	28,000	

Exhibit H – Utility Data

Utility Data

Follow this link to the folder Utility Data for all provided utility data related to this project:

<https://arcalternatives.box.com/s/fbe07zrxxhw38tmq0f93p0ynnoyf828p>

Exhibit I – Performance Guarantee Requirements

Performance Guarantee Requirements

Contractor must guarantee that during the period of the PPA, the system will produce 95% of the mutually agreed expected kilowatt-hours (kWh). The Performance Guarantee can be structured in one of the following two ways:

1. The true-up period shall be every five years at which point actual system output is compared to the guaranteed amount, without any adjustments for weather.
2. The true-up period shall be annual, with the guaranteed output adjusted for variations in weather.

Under either option, if the cumulative system output is less than the guaranteed amount the Contractor shall compensate MUSD for the difference between actual production and expected production in an amount equal to the difference between the energy price (PPA rate) in effect at the time and the current bundled electricity rate (accounting for utility and direct access costs). Under no circumstances will the Contractor be permitted to receive credits for overproduction relative to the guaranteed amount and or carry these credits forward from one true-up period to another.

Exhibit J - Performance and Payment Bonds

DOCUMENT 00600

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the Madera Unified School District (hereinafter referred to as "District") has awarded to _____, (hereinafter referred to as the "Contractor") _____ an agreement for _____ (hereinafter referred to as the "Project").

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as "Contract Documents"), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, _____, the undersigned Contractor and _____ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the District in the sum of _____ DOLLARS, (\$ _____), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one-year guarantee of all materials and workmanship; and shall indemnify and save harmless the District, its officers and agents, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees including reasonable attorney's fees, incurred by District in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by District, during which time if Contractor shall fail to make full, complete, and satisfactory repair and replacements and totally protect the District from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of

PERFORMANCE BOND

Contractor remains. Nothing herein shall limit the District's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure section 337.15.

Whenever Contractor shall be, and is declared by the District to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the District's option:

- (1) Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- (2) Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible bidder, arrange for a Contract between such bidder, the Surety and the District, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the District under the Contract and any modification thereto, less any amount previously paid by the District to the Contractor and any other set offs pursuant to the Contract Documents.
- (3) Permit the District to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the contract price, including other costs and damages for which Surety may be liable. The term "balance of the contract price" as used in this paragraph shall mean the total amount payable to Contractor by the District under the Contract and any modification thereto, less any amount previously paid by the District to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the District may reject any contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the District, when declaring the Contractor in default, notifies Surety of the District's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project.

[Remainder of Page Left Intentionally Blank.]

PERFORMANCE BOND

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

CONTRACTOR/PRINCIPAL

Name

By _____

SURETY:

By: _____

Attorney-In-Fact

The rate of premium on this bond is _____ per thousand. The total amount of premium charges, \$ _____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety)

(Name and Address of Agent or Representative for service of process in California, if different from above)

(Telephone number of Surety and Agent or Representative for service of process in California)

PERFORMANCE BOND

Notary Acknowledgment

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 _____

On _____, 20____, before me, _____, Notary Public, 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 of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- ☐ Individual
☐ Corporate Officer

Title(s)
☐ Partner(s) ☐ Limited
 ☐ General

- ☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

Title or Type of Document

Number of Pages

Date of Document

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

PERFORMANCE BOND

Notary Acknowledgment

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 _____

On _____, 20____, before me, _____, Notary Public, 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 of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- ☐ Individual
☐ Corporate Officer

Title(s)

- ☐ Partner(s) ☐ Limited
 ☐ General

- ☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

Title or Type of Document

Number of Pages

Date of Document

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

PERFORMANCE BOND

DOCUMENT 00610

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that

WHEREAS, the Madera Unified School District (hereinafter designated as the "District"), by action taken or a resolution passed _____, 20____ has awarded to _____ hereinafter designated as the "Principal," a contract for the work described as follows:

(the "Project"); and

WHEREAS, said Principal is required to furnish a bond in connection with said contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the District in the penal sum of _____ Dollars (\$_____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Section 9100 of the Civil Code, fail to pay for any materials, provisions or other supplies, used in, upon, for or about the performance of the work contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the contractor and his subcontractors pursuant to Section 18663 of the Revenue and Taxation Code, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by the District in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

This bond shall inure to the benefit of any of the persons named in Section 9100 of the Civil Code so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance, addition, alteration or modification in, to, or of any contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement herein above described, nor by any rescission or attempted rescission or attempted rescission of the contract, agreement or bond, nor by any

PAYMENT BOND

conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of contract between the owner or District and original contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Section 9100 of the Civil Code, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned.

IN WITNESS WHEREOF, two (2) identical counterparts of this instrument, each of which shall for all purposes be deemed unoriginal thereof, have been duly executed by the Principal and Surety above named, on the _____ day of _____ 20____ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed b its undersigned representative pursuant to authority of its governing body.

(Corporate Seal of Principal,
if corporation)

Principal (Property Name of Contractor)

By _____
(Signature of Contractor)

(Seal of Surety)

Surety

By _____
Attorney in Fact

(Attached Attorney-In-Fact
Certificate and Required
Acknowledgements)

*Note: Appropriate Notarial Acknowledgments of Execution by Contractor and surety and a power of Attorney MUST BE ATTACHED.

PAYMENT BOND

THIS IS A REQUIRED FORM

Notary Acknowledgment

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 _____

On _____, 20____, before me, _____, Notary Public, 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 of Notary Public

OPTIONAL

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☐ Corporate Officer

Title(s)

- ☐ Partner(s) ☐ Limited
 ☐ General

- ☐ Attorney-In-Fact
☐ Trustee(s)
☐ Guardian/Conservator
☐ Other:

Signer is representing:
Name Of Person(s) Or Entity(ies)

Title or Type of Document

Number of Pages

Date of Document

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

PAYMENT BOND

Notary Acknowledgment

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STATE OF CALIFORNIA
COUNTY OF _____

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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.

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PAYMENT BOND