

# Request for Proposal UAV Inspection of BVES Overhead Distribution System

March 18, 2021

Unless the context otherwise requires, the following definitions shall apply to this RFP and subsequent Contract:

**Authorized Representative:** The single point of contact authorized to make project decisions within the scope of the contract.

**Contractor:** Company that is contractually engaged by BVES to perform the Scope of Work.

**Final Design:** Final construction drawings and construction plans from which the Contractor shall execute the Construction Scope of Work.

**Jobsite:** Describes the immediate area in which the Contractor is performing the requested services and work and includes any safety stand-off, barrier, equipment, laydown and other areas used by the Contractor.

**Notice to Proceed:** Formal written notification from BVES to Contractor specifying the date on which the Contractor may commence project Work.

**Scope of Work:** Describes the specific deliverables and services required of the Contractor to be provided for the project to be completed.

**Services or Work:** All or any portion of activities and/or tasks required to be performed by the Contractor to accomplish the Scope of Work.

**Subcontractor:** Company(ies) that are contractually engaged by the Contractor to perform portions of the project Work. Contractor is always fully responsible and liable for its Subcontractor.

**Work Complete:** Project milestone in which all deliverables and services as described in the Scope of Work are complete in accordance with specifications and performance standards of the project. Minor punch list items may remain to be completed with BVES' approval.

The BVES Authorized Representative for this project is the BVES **Wildfire Mitigation and Reliability Engineer**.

BVES intends to proceed with this project using the following schedule, which is subject to change:

<b><u>RFP Event</u></b>	<b><u>Date</u></b>
Issue RFP in PlanetBids	March 18, 2021
Receive Bidder questions	April 2, 2021
Respond to Bidder questions	April 6, 2021
Receive Bids in PlanetBids	April 20, 2021 NLT 3:30 pm
Award Contract subject	April 30, 2021
Execute Contract & Notice to Proceed Issued*	May 14, 2021

\*If BVES and Contractor are unable to execute contract by target date, BVES reserves the right to cease negotiations with Contractor and proceed with negotiating with the next best value Bidder.

## 5. Scope of Work.

5.1. **Notice to Proceed:** Upon award and execution of the contract and BVES's verification of contractor's insurance, BVES shall issue a written Notice to Proceed for Contractor to commence the scope of work.

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5.2. Qualification and Level of Effort: Contractor shall furnish all the necessary project management, supervision, engineering, planning, design services, labor, transportation, materials, equipment and all tools to safely, properly and promptly achieve the required scope of work.

5.2.1. Contractor shall at all times be fully qualified and capable of performing or causing to be performed every phase of the requested services and work. Contractor shall employ sufficient personnel qualified by reason of education, training and experience to discharge the services agreed to be performed by Contractor.

5.2.2. Contractor shall ensure all personnel employed at the jobsite or in support of the work are properly trained, skilled, qualified, certified, and/or licensed as required by applicable laws, codes, and/or regulations to perform assigned tasks.

5.2.3. Contractor shall ensure all employees and subcontractors performing overhead and/or underground transmission and distribution line work are qualified to perform the work per California Code of Regulations, Title 8 Chapter 4, Subchapter 5, Electrical Safety Orders and comply with the requirements of such orders as well as other applicable Title 8 requirements.

5.2.4. Contractor shall ensure that each work crew has a designated foreman with the authority to direct and stop the work as requested. Contractor's foreman shall provide his personal supervision to the scope of work at all times with authority to act for the Contractor. Insofar as practical, the Contractor's foreman shall so act, and follow without delay, instructions of the BVES Authorized Representative in the completion of the requested services and work.

5.2.5. Contractor shall be responsible for providing all required equipment including appropriate test equipment properly calibrated to achieve the scope of work. Contractor shall be responsible for security of its equipment and/or equipment issued to Contractor by BVES.

5.2.6. Contractor shall fully understand and comply with Federal Aviation Administration (FAA) and local government requirements as well as Cal/OSHA requirements for operating drones in the BVES service area and in the vicinity of high voltage power lines.

5.2.7. Contractor's employees shall fully understand and comply with CALTRANS, and local government requirements as well as Cal/OSHA requirements for traffic controls and working alongside and/or in roadways.

5.2.8. Contractor's employees shall be fully trained and qualified to utilize proper personal protective equipment (PPE) as required per Cal/OSHA requirements, equipment manufacturers' instructions and other applicable rules and regulations. Contractor's drone operators shall submit any flight plans, obtain any authorizations, and be licensed in accordance with Federal Aviation Administration (FAA) and other local government requirements applicable to the BVES service area.

5.2.9. Contractor's field crews shall be dressed in clean, unaltered uniforms with suitable company identification or appropriate professional looking attire. No portion of the uniform may be removed while working. All shirts, jackets or safety vests shall be clearly marked with company identification. Contractor's employees shall appear neat and well-groomed at all times. Contractor's employees shall wear brightly colored safety vests while working within five hundred feet of moving traffic or such other distance required by any applicable laws.

5.2.10. Contractor's employees shall have photo identification at all times while on the jobsite.

5.2.11. BVES shall have the authority to order removal of any Contractor employees who refuse or neglect to obey reasonable instructions, or who is deemed incompetent, unfaithful, abusive, threatening, or disorderly in conduct. Any such person shall not again be employed for the duration of this contract.

5.3. Project Management. Contractor shall designate an individual as the Project Manager for the project. Contractor's Project Manager shall be Contractor's the single point of contact for the project

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capable of making project decisions. The BVES Authorized Representative shall be BVES's single point of contact for the project. Contractor's Project Manager shall at a minimum:

5.3.1. Provide at least weekly progress reports of the services to BVES when the UAV inspections are in progress. The progress report should be conducted by in-person meeting or remote meeting (tele-conference and/or web based meeting application) and in all cases include a written report that includes the latest project schedule, any changes to the schedule, and a brief summary of the project progress including any issues of concern that may affect the deliverables and/or schedule. An initial progress report should be provided one week prior to the UAV inspection. Progress reports may be extended to bi-weekly during the analysis and report compilation period.

5.3.2. Maintain the project schedule up to date and inform BVES when specific milestones on the schedule are completed. The schedule shall be updated and forwarded to BVES with the periodic progress report.

5.3.3. Obtain BVES Authorized Representative's permission to adjust project milestone due dates.

5.3.4. Propose Contract Change Orders as needed in writing to the BVES Authorized Representative. Change Orders must be approved in writing before starting the new work.

5.3.5. Notify BVES immediately of any of the following events (Contractor shall follow-up with written notification, such as email, within 24 hours):

- Job related accidents, injuries, incidents, damage to property (>\$5,000) or other near misses.
- All safety violations noted by Contractor, external agencies, or others.
- All environmental violations noted by Contractor, external agencies, or others.
- Any citations or formal violations such as "Notice of Violation" issued by federal, state, or local government and/or agencies.
- Any FAA regulations violations, citations, or warnings.
- Work stoppage events.
- Any other notable events that may receive local media or local government interest.

5.4. Subcontractors: Contractor shall inform BVES Authorized Representative of any Subcontractors engaged to accomplish the requested services and work. The intent to utilize subcontractors should be part of the Contractor's bid proposal.

5.4.1. Contractor shall select Subcontractors as applicable of good capability and reputation that are properly skilled, trained, qualified, certified and/or licensed.

5.4.2. Contractor is always responsible and liable for the Subcontractors it engages for the Work.

5.4.3. Subcontractors shall obligate to the terms & conditions of the contract between Contractor and BVES.

5.4.4. BVES at its sole discretion, reserves the right to bar a subcontractor from working on the project if BVES evaluates the subcontractor is not suitable for the Work.

5.5. Project Objectives: The principal objectives of the project are:

- To conduct a UAV inspection of BVES' overhead sub-transmission (34.5 kilovolt) and distribution (4 kilovolt) lines and facilities in order to locate, identify, and document: (1) violations or potential of GO 95 requirements for overhead facilities, (2) vegetation clearance violations, (3) Safety Hazards (Level 1 violations as described in GO 95), (4) any

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other Level 2 discrepancies per GO 95 (risk of at least moderate potential impact to safety or reliability), and (5) any other Level 3 discrepancies per GO 95 (risk of low potential impact to safety or reliability).

- To specifically locate, identify, and document any line clearance violations or potential line clearance issues that may occur within the current vegetation management cycle, which is 3 years.
- To evaluate the effectiveness of BVES's asset operations and maintenance programs.
- To evaluate the effectiveness of vegetation line clearance efforts.

5.6. Inspection Requirements and Specifications: Contractor shall provide UAV inspection services at BVES's direction as follows:

5.6.1. Conduct a "UAV inspection" on the entire BVES overhead sub-transmission (34.5 kilovolt) and distribution (4 kilovolt) lines and facilities (approximately 211 linear circuit miles) using high resolution and thermal imaging aerial cameras to identify safety hazards, potential safety issues, and facility and equipment degradations that may lead to equipment or system failures. Specifically, the inspections should identify: hot spots; poor connections; damaged components before they lead to equipment failure; damage and wear on the top of poles, cross arms, insulators, conductor ties, arresters, disconnects, and transformers; vegetation encroachment inside of minimum clearance standards, and damage to other equipment. Contractor should ensure discrepancies are identified per CPUC GO 95 Rule 18 and Appendix I. Contractor's UAV inspection shall also be specifically focused on detecting and documenting violations of BVES's minimum vegetation clearance requirements and potential near-term violations of the radial distance of vegetation from bare conductor power lines due to future growth of vegetation. Near-term is defined as within 3 years.

5.6.2. Conduct analysis of the UAV inspection results and prepare a written report in an electronic (PDF and CSV) format report. Contractor shall also input inspection results into BVES supplied Laptop with its Partners applications or provide BVES inspection results in a GIS file format (shape file) that BVES is able to upload to its GIS system. BVES operates an ESRI ArcGIS with Milsoft Utility Solutions WindMilMap and Partners Inspection applications.

5.6.3. Immediately alert the BVES Authorized Representative of any Level 1 potential violation of GO 95 or a Safety Hazard per Rule 18 of CPUC General Order (GO) 95 (May 2018). Per GO 95 Rule 18, Level 1 potential violations of GO 95 or Safety Hazards are those that pose an immediate risk of high potential impact to safety or reliability. GO 95 Appendix I, Examples of Rule 18 Priority Levels and Safety Hazards, provides guidance on what constitutes a Level 1 potential violation of GO 95 or a Safety Hazard.

5.6.4. Update on a weekly basis the BVES Authorized Representative with a list of Level 2 potential violations of GO 95 or Safety Hazards per Rule 18 of CPUC General Order (GO) 95 (May 2018). Per GO 95 Rule 18, Level 2 potential violations of GO 95 or Safety Hazards are any other risk of at least moderate potential impact to safety or reliability. GO 95 Appendix I, Examples of Rule 18 Priority Levels and Safety Hazards, provides guidance on what constitutes a Level 2 potential violation of GO 95 or a Safety Hazard.

5.6.5. Identify any vegetation clearance violations. All vegetation clearance specifications are per GO 95, Rules for Overhead Electric Line Construction, Rule 35 Vegetation management, and Appendix E Guidelines to Rule 35. Additionally, BVES has unique local conditions that require it to go beyond the regulated vegetation clearance standards. These specifications include:

- A minimum radial clearance of 72 inches between bare conductors and vegetation.
- No vertical coverage allowed above BVES sub-transmission lines (34.5 kilovolt).

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- All vegetation within the drip line of primary conductors that has the potential of growing into the secondary system or within 12 feet of the energized primary conductors within the 3-year vegetation management program cycle will be removed.
- Exceptions for tree trunks or major limbs that meet the following criteria: at the primary conductor level, mature tree trunks that are greater than 18 inches in diameter and major limbs that are greater than 10 inches in diameter with sufficient strength and rigidity may encroach within the minimum safe distance (72-inches) but not within 18 inches of the bare line conductors. The rigidity of the tree trunk or major limb must be such that it would be impossible for it to encroach within 12 inches of the bare conductor at any time during high wind, heavy icing and snow, or other conditions.

5.6.6. Identify any vegetation clearance potential violations that may pose a problem before the next vegetation cycle (within 3 years) due to future vegetation growth. Therefore, Contractor shall also identify any instances where the Contractor evaluates that vegetation will encroach the 72-inch radial clearance between bare conductors and vegetation within 3 years.

5.7. **Inspection Process:** The UAV inspection requires close coordination between Contractor and BVES. Therefore, the following process shall be followed:

5.7.1. **Preliminary Meeting.** Once Notice to Proceed is issued, Contractor shall meet with key BVES staff technical experts to discuss Contractor's UAV inspection plan and schedule and to identify contacts, roles, and responsibilities for the project. This meeting may be conducted in person or remotely by tele-conference/web base meeting application.

5.7.2. **Overall Plan.** BVES intends to conduct one UAV inspection per year for the next 3 years according to the following schedule:

Year	Complete Inspection By
2021	August
2022	May
2023	May
2024	May
2025	May

Contractor shall only perform UAV inspections when and as specifically directed by the BVES Authorized Representative. BVES may elect to not perform the intended surveys at its sole discretion.

5.7.3. **Inspection Kick-off Meeting.** Prior to each UAV inspection Contractor shall meet with BVES Authorized Representative prior to commencing the services in order to:

- Coordinate how the work will be conducted.
- Exchange contact information.
- Coordinate how often, when and where Contractor and BVES Authorized Representative will meet.
- Provide Contractor with letters of authorization for the Contractor to access BVES systems (lines) and easements.
- Provide Contractor with circuit maps.

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- Provide Contractor specific instructions on entering inspection results on BVES provided device.
- Provide Contractor magnetic signs stating "Contractor for BVES."
- Answer questions that Contractor may have in performing the work.

5.7.4. **Post Inspection Analysis and Report.** Within 1 month of completing the UAV inspection, Contractor shall provide BVES its full UAV inspection report of results.

5.8. **Safety.** *Contractor shall make public and employee safety its top priority* and ensure full compliance with all Cal/OHSA and other applicable safety rules, regulations, laws, ordinances and other requirements such as from manufacturer instruction manuals for equipment. Specific requirements include but are not limited to:

5.8.1. Contractor shall be solely responsible for the safety of all persons and property in connection with the performance of the work.

5.8.2. Contractor shall assume full responsibility for the observance of all applicable safety and occupational health rules and regulations.

5.8.3. Contractor shall put up and maintain as many barriers as shall effectively prevent accidents. Contractor shall provide safety and warning signs and barriers to ensure the jobsite is adequately marked and segregated and access is restricted to only those authorized to perform and/or inspect the work.

5.8.4. Job site activities shall at all times be conducted in accordance with applicable federal, state and local requirements to include but not limited to the Federal Aviation Administration (FAA), National Electric Safety Code (NESC), Cal/OSHA, and CALTRANS requirements.

5.8.5. Contractor shall conduct and document daily job briefings and tail boards. Documentation shall be provided to the BVES Authorized Representative as requested.

5.8.6. Contractor shall have a safety plan and document that employees have been trained on said plan.

5.8.7. Due to the remote location of some overhead facilities, steep slopes and challenging vehicle access terrain, Contractor shall carefully consider how to safely and efficiently access these areas to conduct patrols.

5.8.8. Contractor shall furnish or cause employees to have all required personal protective equipment (PPE) as required per Cal/OSHA requirements, equipment manufacturers' instructions and other applicable rules and regulations. Such equipment shall be fully utilized when required.

5.8.9. Safety practices shall include, but are not limited to, the following requirements:

- California Occupational Safety and Health Regulations (Cal/OHSA).
- Occupational Safety and Health Act.
- Accident Prevention Manual for Industrial Operations, National Safety Council.
- Applicable state and local safety operating procedures.
- ANSI/NFPA 70E, Electrical Safety Requirements for Employee Workplaces.

5.8.10. Contractor shall maintain any required safety training records and certification for personnel working on the project and make those records available to BVES upon request.

5.8.11. In the event of any emergency endangering life or property or any work related injury, Contractor may take such action as may be reasonable to prevent, avoid, or mitigate injury, damage, or

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loss. Contractor shall immediately notify BVES Authorized Representative verbally and follow up on such oral notice with written notice within 24 hours.

5.8.12. Contractor shall have a designated safety representative assigned to the project to supervise operations with respect to safety. Contractor shall immediately notify BVES Authorized Representative of any accidents, incidents, near misses and unsafe conditions including but not limited to fatalities, injuries, electrocutions, underground service alert (USA Dig Alert) violations or problems, fires and other noteworthy safety issues or procedural violations.

5.8.13. Violations of the above safety requirements or other safety requirements of this contract or applicable federal, state and local requirements to include but not limited to the Federal Aviation Administration (FAA), National Electric Safety Code (NESC), Cal/OSHA, CALTRANS and equipment manufacturer requirements shall be considered a serious safety violation and breach of Contract that may result in Contract termination.

5.9. Customer Relations: BVES values “Excellence in Customer Service” and expects its Contractors to carry that high standard in the course of their services on behalf of BVES. Specific requirements:

5.9.1. Contractor shall maintain with each crew a copy of BVES letter of authorization for the Contractor to access BVES systems (lines) and easements.

5.9.2. Contractor shall display “Contractor for BVES” magnetic signs (or similar signs) on its vehicles engaged in work for BVES. BVES shall provide the signs.

5.9.3. Contractor’s employees must at all times present themselves in a professional manner and ensure that any interaction with customers is professional and courteous.

5.9.4. Contractor shall refer any customer concerns or disputes without delay to the BVES Authorized Representative for resolution. It is best that Contractor not engage directly with customers over disputes but rather refer the matter to the BVES Authorized Representative. It is understood that the Contractor does not represent BVES and has no authority to obligate BVES for any payment or benefit of any kind to any person.

5.10. Quality Control: Contractor shall have a Quality Assurance/Quality Control (QA/QC) program for the review of all field collected data, and the assessment results of its employees or subcontractors. Contractor’s work shall be subject to inspection and acceptance by BVES. BVES Authorized Representative shall assign a Quality Inspector to work closely with Contractor throughout the project.

5.11. Change Orders: If a modification is determined to be necessary to the agreed upon project scope of work, Contractor shall promptly evaluate the modification, determine if additional cost shall be incurred to accommodate the modification as well as impact on project schedule, and propose a Change Order per this section.

5.11.1. Contractor shall not commence any work outside the existing scope of work until formally approved by written Change Order by both BVES and Contractor. BVES shall not be liable to reimburse Contractor for any work not approved in writing by the approved contract or approved Change Order.

5.11.2. The Contractor Project Manager and the BVES Authorized Representative shall be responsible for drafting the scope of the Change Order and obtaining appropriate respective internal approval on the Change Order.

5.11.3. Change Order price shall be determined on a Time and Material basis per the Contractor’s rates submitted with its bid proposal. Contractor shall provide in the Change Order a “not to exceed” value. Alternatively, Contractor may propose a fixed price with BVES Authorized Representative’s agreement.

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5.11.4. Contractor or BVES may determine in its sole discretion not to undertake the Change Order, in which case no Change Order shall be issued. If Contractor decides to not undertake the Change Order, BVES may perform the Change Order work itself or hire another Contractor to perform the Change Order work. BVES will make best effort to not impede or interfere with the Contractor's activities in performing the project work.

5.12. Deliverables: Contractor shall be responsible for providing the following deliverables to BVES per the project schedule:

5.12.1. Completing the UAV inspections as described in this Section and directed by BVES Authorized Representative.

5.12.2. Providing report on the results of the UAV inspections in the form of an electronic (PDF and CSV) and written report. The report shall identify (1) any potential violations of GO 95 or Safety Hazards (Level 1), (2) any other risk of at least moderate potential impact to safety or reliability, (3) any risk of low potential impact to safety or reliability. The guidance provided in GO 95 Rule 18 and Appendix I shall be utilized to categorize the Level of priority to be assigned to the potential violation of GO 95, Safety Hazard, or other risk impact to safety or reliability. Each item shall be documented with the location, priority level, and description. Vegetation clearance violations shall be noted per the specifications described in this section. Similarly, Contractor shall identify the specific location and the extent of any potential vegetation violations as described in this section.

5.12.3. Entering inspection results into BVES supplied Laptop with its Partners applications or provide BVES inspection results in a GIS file format that BVES is able to upload to its GIS system. BVES operates an ESRI ArcGIS with Milsoft Utility Solutions WindMilMap and Partners Distribution Inspection and Vegetation Management applications as applicable.

5.12.4. Immediately alerting the BVES Authorized Representative of any Level 1 potential violation of GO 95 or a Safety Hazard per Rule 18 of CPUC General Order (GO) 95 (May 2018). Per GO 95 Rule 18, Level 1 potential violations of GO 95 or Safety Hazards are those that pose an immediate risk of high potential impact to safety or reliability. GO 95 Appendix I, Examples of Rule 18 Priority Levels and Safety Hazards, provides guidance on what constitutes a Level 1 potential violation of GO 95 or a Safety Hazard.

5.12.5. Providing the BVES Authorized Representative weekly with a list of Level 2 potential violations of GO 95 or Safety Hazards per Rule 18 of CPUC General Order (GO) 95 (May 2018). Per GO 95 Rule 18, Level 2 potential violations of GO 95 or Safety Hazards or any other risk of at least moderate potential impact to safety or reliability. GO 95 Appendix I, Examples of Rule 18 Priority Levels and Safety Hazards, provides guidance on what constitutes a Level 2 potential violation of GO 95 or a Safety Hazard.

5.12.6.

**6. Bid Format.** In order to evaluate the bids consistently, BVES requests that bid proposals be prepared using the following content outline and organization:

6.1. Identification of Respondent. In this section, respondents should include:

- Firm name and address.
- Primary point of contact name, phone number and email address.
- Description of firm.
- Discussion on why respondent considers itself qualified to perform the requested scope of work.
- Examples (at least three) of respondent's experience in performing this type of project work.
- Project references (names, phone numbers, email addresses).