MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Brown, Carlson, Mital, Simpson and Helgeson

FROM: Rod Price, Chief Engineering & Operations Officer, Tyler Nice, Systems Engineering Supervisor and Matt Ibaraki, Engineer

DATE: February 28, 2018

SUBJECT: Supplemental Information: Worley Parsons Procurement Request - Grid Edge "Microgrid" Project – Quick Facts

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Purpose

To provide a quick basis of understanding behind the Grid Edge Microgrid Project details to be installed at Howard Elementary.

Background

This project is supporting two of EWEB's strategic objectives – increasing emergency preparedness & disaster recovery, and providing research and development to make informed electric resource decisions in the future. This initial microgrid installation is the kickoff to a program of projects to install these systems at five schools in five years. Deployments of these backup power systems are coordinated with the Water Engineering Department's emergency water initiative such that water treatment and pumping equipment will be retrofitted on the site, or coordination will result in a full installation simultaneously. This initial project will be to install backup electrical equipment only integrated with Howard Elementary School.

The Grid Edge Microgrid Project will have immediate resiliency benefits by providing backup electric power to Howard Elementary during a grid level outage, and will supply data which will provide modeling capability to determine future uses of dispatched power on EWEB's distribution system.

In late 2015 EWEB applied for and was awarded a grant which partially funds this project. Goals of the project are to supply the national laboratories with operational data to be used for several use cases, with a minimum installation capacity of 1,000 kWh. Execution of this contract and installation will result in EWEB satisfying these requirements, in addition to progressing EWEB's strategic objectives as discussed above.

Project Information

EWEB Scope

- Howard Elementary School (located at 700 Howard Ave). Site currently has installed

approximately 50 kW of solar generation (owned by 4j) which will be integrated with this system and will be used for charging the battery system during a long term islanding event.

- A total of 500 kW/ 1,000 kWh battery capacity to be installed.
- Grant requirements for microgrid minimum functions, Sandia National Lab (primary grant funder) access to microgrid system data.

Schedule

- To be commissioned by end of Labor Day 2018 (9/3).

Budget

- ~$1.2M including $295k in reimbursable grants (net EWEB cost ~$900,000)

Contract Information

Details

- RFP solicitation
- Resulted in one proposer that would meet the scope and schedule requirements. Future prices are expected to fall, and future deployments should be less expensive due to further development of the technology. Based on what EWEB has learned during this procurement, more competitive interest will be garnered for future sites.
- Type – Design-build, turnkey commissioning
- Cost – $990,000 (~$990/kWh).
- Duration – Contract approval to October 2018

Subcontractors

- NEC – Battery provider, AEROS controller. US location Westborough, MA.
- Advanced Energy Systems (AES) – Construction. Located in Eugene, OR.

Microgrid Usage Information

- Resiliency – Unit is sized for and positioned to back up the entire building. At full output (500kW), 2 hours of runtime. For 10HP (7.46kW) pump motor for well functionality, 134 hours of runtime. With the approximately 50 kW of site solar, these numbers can stretch further, especially if just running the pump motor during a mildly sunny day.
- Research & Development - EWEB will use the controls of this system interfaced with the main SCADA control center and dispatch to offset peak load or assist with ramping.

EWEB Board Consent Calendar Request

For Contract Awards, Renewals, and Increases

The Board is being asked to approve a Design-Build Contract with WorleyParsons for a Battery Energy Storage System**.**

Board Meeting Date: March 6, 2018

Project Name/Contract#: Design-Build Services for Battery Energy Storage System/065-2017

Primary Contact: Rod Price Ext.7122

Purchasing Contact: Sandra Hahn Ext.7163

Contract Amount:

Original Contract Amount: $990,000

Additional $ Previously Approved: $

Invoices over last approval: $

Percentage over last approval: %

Amount this Request: $990,000

Resulting Cumulative Total: $990,000

Contracting Method:

Method of Solicitation: RFP #065-2017

If applicable, basis for exemption:

Term of Agreement: March 6, 2018 to October 5, 2018

Option to Renew? No

Approval for purchases *"as needed"* for the life of the contract No

Proposals/Bids Received (Range): One bid for $1,360,000

Selection Basis: RFP Evaluation

Narrative:

The Board is being asked to approve a new contract with **WorleyParsons** of Chattanooga, TN for the purchase of a battery energy storage system (sometimes referred to as a "microgrid system".)

EWEB requires a battery energy storage system for use in its community resiliency initiative. Deployment of a microgrid system is a 2018 electric division goal in line with the strategic objective of increasing resiliency and emergency preparedness. In preparation for future disasters like the Cascadia Earthquake, EWEB is working to ensure that water, one of the necessities for survival, is readily available to the public by building new wells powered by battery energy storage systems. Community sites such as schools with well availability have been targeted for this program. These systems will allow public access to water for an extended duration of time in the event of a wide-spread power outage. The battery energy storage system, combined with on-site renewables like solar energy, are expected to have capabilities of powering the well pumps for several months into an outage. This contract is to install a 1000kWh battery storage system at Howard Elementary School. This project is coordinated with the Water Department such that it is planned that a well will be installed at this site in 2019 to create a backup power and water distribution station which is operational without main grid power.

At the March 2017 Board meeting, staff requested approval to pursue an alternative procurement process and subsequently issued a Request for Proposals (RFP) for the purchase of design-build services for battery energy storage systems. The solicitation was issued in December 2017 and reviewed

by seventeen companies. One (1) response was received. (A survey was taken of prospective contractors that had attended the pre-bid meeting and it was determined that most did not submit a proposal due to the smaller size of the project or because they anticipated that they would not be able to meet the required timeline.) Based on input from Sandia National Labs and external references, staff have determined the cost of this project on a per kWh basis is competitive considering the desired timeline, scope and relative capacity of the system. WorleyParsons was determined to be a responsive and responsible proposer. After value engineering the scope of work, the price was negotiated to $990,000 over the contract period.

ACTION REQUESTED:

Management requests the Board approve a contract with **WorleyParsons** for **the purchase of a battery energy storage system**. Funds for this purchase were budgeted for 2018; total department budget for 2018 is $33.4 million.

SIGNATURES:

Project Manager: _____

Supervisor: _____

Purchasing Supervisor: _____

Executive Officer: _____

Board Approval Date: _____