

May 6, 2019

Mr. John Allchin
Wastewater Systems Supervisor
CAMBRIA COMMUNITY SERVICES DISTRICT
5500 Heath Lane
Cambria CA 93428

RE: Investment Grade Audit Proposal – CCSD Waste Water Treatment Plant

John:

First, thank you for all of the time and work invested by the members of the Cambria Community Services District (CCSD) team. This collective input has been instrumental in the successful completion of our efforts to date. It has been a pleasure working with each of the team members on this exciting opportunity.

On behalf of PG&E, I am pleased to provide the following proposal for the next step in our Sustainable Solutions Turnkey (SST) Program – the **Investment Grade Audit (IGA)**. As we have previously discussed, the IGA is a detailed validation of the Energy Conservation Measures (ECMs) outlined in our Preliminary Energy Assessment, including the following highlights:

- **Technical validation** of the ECMs including 30% design and specification documents
- **Collaborative engagement** with District staff on solution development, design & equipment selection
- **Financial analysis** to confirm savings, funding sources and available grants or incentives
- **Firm fixed-cost implementation proposal** of the mutually developed ECMs

Please review the information provided below. Do not hesitate to reach out if you have any questions or needs for additional information.

Thank you again for the opportunity to be of service to CCSD. We look forward to working with the extended team to deliver a successful project.

Respectfully submitted,

PACIFIC GAS AND ELECTRIC COMPANY

Brent

Brent R. Patera
Senior Business Development Manager
Turnkey Energy Solutions

May 6, 2019

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Cambria Community Services District

5500 Heath Lane
 Cambria CA 93428
 Attn: John Allchin

The SST Program has been developed to assist customers in completing comprehensive energy and infrastructure projects which enhance facility performance while reducing the associated operating cost and environmental footprint – delivered through a single end-to-end turnkey process. This means that customers can complete significant facility improvement projects with a minimum of impact on their internal resources.

The program offers the Cambria Community Services District all of the services required to complete a successful project that would otherwise have to be procured by the District on a piecemeal basis:

- Integrated development, engineering and installation services
- Project, construction and safety management
- Equipment, material and contractor procurement
- Commissioning, start-up testing, documentation and operator training
- Funding procurement, including available grants and low-interest financing

As the next step in the process, the PG&E Sustainable Solutions Turnkey (SST) Program is pleased to provide the following proposal for the Investment Grade Audit (IGA).

Proposal for Investment Grade Audit

This proposal includes all costs for professional consulting and engineering services required to complete the Scope of Work defined below.

ENERGY CONSERVATION MEASURES (ECMs)

PG&E and the SST team will evaluate the twelve (12) Energy Conservation Measures (ECMs) shown in Table 1 below. These ECMs are described in the 100% Preliminary Energy Assessment (PEA) Report titled: “Preliminary Energy Assessment Report for Cambria Community Services District” submitted on February 20, 2019 and revised on May 6, 2019.

Table 1: Recommended ECMs

ID	ECM Description	Site	Process Area
1	Influent Flow Equalization	WWTP	Equalization Basins (New)
2	Influent Lift Station Modifications	WWTP	Influent Lift Station
3	Modified Ludzak-Ettinger Process Upgrade	WWTP	Aeration Basins
4	Blower System Improvements	WWTP	Blower Room and Aeration Basins

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5	RAS and WAS Pumping Improvements	WWTP	Aeration Basins
6	Sludge Thickening	WWTP	Solids Processing Area
7	Electrical Upgrades	WWTP	Control and Generator Building
8	Backup Power	WWTP	Control and Generator Building
9	SCADA System	WWTP	Communications Systems
10	Secondary Water System (3W) Improvements	WWTP	3W Station
11	Effluent Pump Station Improvements	WWTP	Effluent
12	Sewer Lift Stations	Collection	Lift Stations

IGA ACTIVITIES AND DELIVERABLES (GENERAL)

The Investment Grade Audit will consist of the following activities that are integral to all Energy Conservation Measures (ECMs):

- Conduct IGA Kickoff Meeting with CCSD to discuss project goals, scopes, process, access requirements, communication protocol, Utility Tariffs and schedule.
- Acquire updated utility information for Electric, Water and Natural Gas for Utility Analysis.
- Acquire additional, detailed, ECM-specific information from the District as listed by ECM below.
- Conduct additional staff interviews and site audits, including energy metering, to enhance and verify information collected in the Preliminary Energy Assessment (PEA) and to establish utility baselines for each measure.
- Perform all necessary work to develop firm fixed implementation pricing for each ECM including:
 - Scopes of Work (SOW)
 - 30% mechanical, electrical, structural, & instrumental / controls design
 - Contractor packages, site walks and selection
 - Detailed analysis of utility and other operational cost savings, installation cost, and constructability
 - Specific work required at the ECM level is detailed in the respective sections below
- Conduct Workshop Meetings with District staff to discuss the findings and recommendations developed during the IGA. The meetings will be organized as follows:
 - Kick-Off Meeting

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- Utility Baseline Review
- Energy Conservation Measures
 - 50% Development Review
 - 90% Development Review
- Construction/Financing Workshop

- Upon conclusion of the IGA, a **Final Report** will be issued which will include:
 - Executive Summary
 - Detailed Utility Analysis
 - Detailed Development of Recommended Energy Conservation Measures
 - Firm Fixed Implementation Proposal
 - All supporting design information including basis of design documentation, design drawings, subcontractor & material quotes.
 - 30% Design Completion and preliminary Construction Schedule
 - PG&E Electric Service Upgrade Plan
 - Financial Analysis that includes Cost Benefit Analysis and Firm-Fixed Project Cost Estimates
 - Funding Options and Recommendations, Including Applicable Grants, Low-Interest Loans, Rebates and Incentives

IGA ACTIVITIES AND DELIVERABLES (ECM-SPECIFIC)

1. ECM-1 Influent Flow Equalization

- Assess condition of existing welded equalization tank
- Review plant flow records and confirm size of equalization tank(s)
- Develop hydraulic profile from lift station through new screen, grit removal, and proposed equalization tanks
- Develop cost comparison of rehabilitating existing welded tank with new liner or new coating; constructing two new concrete tanks; and constructing two new glass-coated bolted steel tanks
- Develop preliminary size and description of major equipment items, including blowers and enclosure, transfer pumps, coarse bubble diffusers, valves, process instrumentation, and piping

2. ECM-2 Influent Lift Station Modifications

- Review plant flow records and confirm design criteria for new pumps
- Develop system curve for influent lift station
- Evaluate potential wet well improvements including baffling to improve flow distribution
- Review and confirm options for pump type with District staff
- Confirm number and flow range of pumps over a range of motor speeds
- Develop preliminary size and description of major equipment items, including new pumps, process instrumentation including flow meter(s), and piping

3. ECM-3 Modified Ludzak-Ettinger Process Upgrade

- Review plant flow and water quality records and confirm design criteria
- Confirm proposed anoxic and aerobic basin size and configuration from prior studies
- Determine recirculation and waste activated sludge flows and aeration requirements under a range of operating conditions
- Develop preliminary piping and mechanical plan for review by District staff

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- Develop preliminary size and description of major equipment items, including new anoxic mixer(s), diffusers, valves, process instrumentation, and piping

4. **ECM 4 – Blower System Improvements**

- Determine range of air requirements under various influent loading conditions based on analysis in ECM 3
- Develop description of process instrumentation (including air flow meters and dissolved oxygen probes)
- Evaluate options for upgrading / retrofitting blower system
- Develop scopes of work and preliminary design for recommended upgrades/retrofit
- Develop new sequences of operation to optimize system operation

5. **ECM-5 RAS and WAS Pumping Improvements**

- Perform assessment of visible surfaces within scum pit and RAS wet well
- Develop description of RAS pumps, WAS control valve, flow meters, process instrumentation, piping, valves, scum troughs, and scum pumps

6. **ECM-6 Sludge Thickening Improvements**

- Review plant sludge quality and flow records
- Assess capacity, condition and improvement options for existing thickener and screw press
- Confirm size of proposed glass-coated bolted steel sludge storage tank(s)
- Develop preliminary layout of biosolids handling area
- Develop preliminary layout of roll-off area
- Prepare lifecycle cost comparison of (1) onsite sludge storage and (2) roll-off storage with more frequent disposal
- Review and confirm preferred alternative with District staff

7. **ECM-7, -8 Electrical Upgrades and Backup Power**

- Evaluate and develop retrofit solution for power requirements (hp and voltage) for new motors and loads in proposed ECMs
- Size and specify replacement solution for standby generator and transfer switch

8. **ECM-9 SCADA System**

- Develop preliminary process and instrumentation diagrams for coordination with SCADA design
- Develop scope of work for all necessary SCADA upgrades

9. **ECM-10 Secondary Water System (3W) Improvements**

- Review condition of existing wet well, pumps, and exposed piping
- Determine design criteria (flow and pressure) for 3W system
- Evaluate cost/benefits of variable frequency drives compared to hydro pneumatic storage
- Review and confirm solution with District staff
- Recommend improvements to existing system or replacement with new pumps and valves
- Develop scopes of work for new pumps, valves, and appurtenances

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10. ECM-11 Effluent Pump Station Improvements

- Field review effluent pipeline alignment, air release valves, and other appurtenances
- Confirm design criteria (flow and head requirements) for effluent pumps
- Determine if constant speed or variable speed pumping should be implemented
- Perform preliminary surge analysis on effluent pump and force main system
- Develop recommendations for cleaning pipeline, including provisions for a “pigging” station
- Determine repair and rehabilitation recommendations for existing coatings and equipment
- Develop scopes of work for new pumps, valves, instrumentation, and appurtenances

11. ECM-12 Sewer Lift Stations (B1 and B4)

- Develop design flows for each lift station based on available plant records, review of upstream land uses, and estimated peaking factors
- Confirm design criteria (flow and head requirements) for submersible pumps at each station
- Confirm size (depth and operating ranges) for wet well
- Evaluate dimensions and visible condition of existing wet well to determine if it can be used or a new wet well should be constructed
- Develop preliminary layout of B1 and B4 for review by District staff
- Develop description of new pumps, valves, access hatches, instrumentation, and appurtenances

COST AND PAYMENT TERMS

The total cost for the work described herein is **\$542,000.00**. Mobilization in the amount of \$160,000 is due at the time of contract execution. The balance of the cost shall be due and payable under the following options:

- 1) In the event the District elects to proceed with completion of the project, the remaining balance of the IGA cost will be carried into the construction contract.
- 2) In the event the District elects NOT to proceed with completion of the project, the remaining balance will be due and payable upon receipt of the Final IGA Report or no later than 270 days after IGA contract execution.

ASSUMPTIONS AND CLARIFICATIONS

The following assumptions and clarifications apply to the scope and costs presented in this proposal.

- PG&E assumes that specified facility data/information will be made available in a timely fashion including utility bills, facility construction drawings, equipment data, and operations and maintenance data.
- PG&E will require close coordination with the District facility staff and other District personnel in order to successfully complete the IGA.
- The District will arrange and provide access for PG&E and consulting personnel to all facility areas and equipment as needed to complete the work.
- PG&E assumes that appropriate personnel will be available during the site visits and meetings, and will also be available by email and telephone for follow-up consultations.

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- Any additional work requested by the District will be priced based on the agreed to SOW.
- District will provide available data and conduct additional analyses (including flow monitoring, pressure monitoring/recording, laboratory analyses, and other tests) if required for development and/or design. PG&E to provide testing protocols for use in collecting this data.
- PG&E has the right to rely on record drawings provided by the District in developing preliminary plans under the IGA
- PG&E has the right to rely on prior studies provided by the District in determining design criteria and developing preliminary plans

SCHEDULE

PG&E is prepared to begin work on the IGA immediately upon being provided a Notice to Proceed (NTP) from the District. Upon receipt of the NTP we will provide a schedule for the IGA work and arrange the kick-off meeting. Excluding review and/or administrative time required by the District, the estimated duration of the IGA is eight (8) months from the date of NTP.

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