MEMO

Agenda Section Listed Here
Item # 14

Meeting Date: October 14, 2022

To: Board of Directors
From: Director of Engineering and Compliance, Guy R. Petraborg
Approved by: General Manager, Felipe Melchor

Subject: Approve the Award of a Consulting Contract to GHD of Irvine, California for Phase 1 of the Joint Agency Feasibility Study for a Not-To-Exceed Amount of $720,478 and Authorize an Additional $150,000 of Funding to the Feasibility Study's Budget

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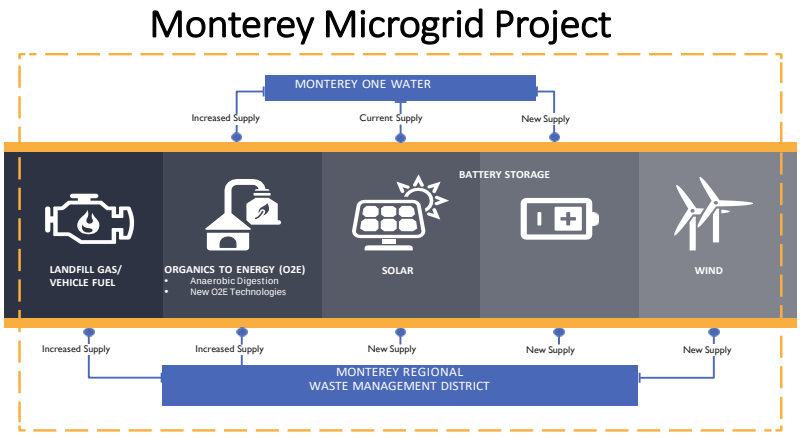
Recommendation

That the Board i) approve the award of a consulting contract to GHD of Irvine, California for Phase 1 of the Joint Agency Feasibility Study for a not-to-exceed Amount of $720,478 and ii) authorize an additional $150,000 of Funding to the Feasibility Study's Budget.

Background

The Joint AdHoc Committee representing Monterey One Water (M1W) and ReGen Monterey (ReGen) met for the first time on November 12, 2021 via a virtual meeting. The intent of the Joint AdHoc Committee is to discuss topics of mutual interest and benefit such as shared site services (common area landscape maintenance, road maintenance, entrance maintenance, security), processing of waste waters by M1W and solid wastes by ReGen, or potential projects such as the conceptual Monterey Microgrid and the various potential projects that are associated with processing organics for beneficial reuse of energy production and/or product development (SB1383 related). The proposed Monterey Microgrid was the main focus of the discussions of this first meeting given its unique, innovative, and mutually beneficial characteristics.



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Let's not waste this.

The Joint AdHoc Committee met for the second time on January 11, 2022 via a virtual meeting. The meeting discussion included an update on the status of three grant applications and mainly focused on the activities and funding needs over the next 18 months to further evolve the details for the conceptual Monterey Microgrid and the potential various organic processing alternatives to be considered in a feasibility study performed by a qualified engineering consultant practicing in the topic areas. At the meeting, Staff presented a proposed 18-month plan and budget. The 18-month plan of activities and estimated funding needs were inclusive of the 6-month plan that was presented at the committee's first (initial) meeting. Subsequently, at the respective January 2022 Board Meetings of each agency, each Board of Directors approved i) $175,000 of Funding in FY2021-22 and ii) $200,000 of Funding for FY2022-23 Preliminary Budget. In summary, each agency approved $375,000 in funding for a total budget of $750,000 for a feasibility study of the conceptual Monterey Microgrid and the various potential projects that are associated with processing organics for beneficial reuse of energy production and/or product development (SB1383 related).

Between January and June 2022, staff was involved in several activities such as i) pursuing grant funding opportunities, ii) pursuing relationships with technical representatives experienced with electrical microgrids, iii) developing a Job Description for a Program Director position and conducting a recruitment for that position, and, most importantly, iv) developing a detailed scope of work (SOW) for the feasibility study of the conceptual Monterey Microgrid and the various potential projects that are associated with processing organics for beneficial reuse of energy production and/or product development (SB1383 related). During that period, Staff accomplished several necessary elements including, but not limited to i) the award of a ~$170,000 grant from EPA to evaluate the conversion of existing anaerobic digesters at M1W's wastewater treatment facility to co-digest food and other 'high solids' organic wastes, ii) the award of limited technical service consultations from the National Renewable Energy Laboratory (NREL) and a fee-for-service agreement with the Schatz Energy Research Center (SERC), iii) completing the Program Director job description and the recruitment of Ken Lewis who started in May 2022, and iv) the completion of the Feasibility Study Request for Qualifications/Proposals (RFQ/RFP) for solicitation of a qualified engineering consultant(s).

On June 21, 2022, staff issued the Feasibility Study RFQ/RFP with the general objective to i) evaluate the highest and best use of wastes and waste by-products that the agencies handle in their respective treatment facilities (be it as a renewable energy or heat source, renewable natural gas product, other beneficial reuse products (e.g., fertilizer, biochar, feedstock to composting, etc.), or in combination), ii) study the 'sizing' of an electrical microgrid with 'islanding' functionality to secure the level of energy resilience that our critical, 24/7 public service operations require, and iii) assess the integration of renewable energy sources such as solar, wind, and battery storage.

Discussion

Following issuance of the Feasibility Study RFQ/RFP in June 2022 and initial collaborations with interested consultants in early July 2022, staff undertook a notable revision to the RFQ/RFP to

divide and organize the Feasibility Study SOW into three (3) phases: a first phase to evaluate conceptual microgrid sizing and the various organics processing opportunities (Phase 1), a second phase to advance the technical definition and understanding of the top-2 microgrid concepts, the costs, and project delivery alternatives (Phase 2), and a third phase to develop a preliminary design of a selected microgrid concept to the 30% Design Level (Phase 3). With the revisions to the RFQ/RFP to incorporate this 'phasing plan' for the Feasibility Study SOW, the deadline for submittal of qualifications and proposals was extended to August 29,2022.

The Feasibility Study RFQ/RFP followed the schedule below:

Milestones	**Dates**
Advertise Request for Qualifications/Proposals	June 21, 2022
Mandatory Pre-Proposal Meeting (Virtual)	July 7, 2022, at 11 AM
Site Visit (Not mandatory)	July 18, 2022, at 9:00 AM and 11:00 AM
Final Date for Written Clarification Questions	July 20, 2022, at 3:30 PM
RFQ/RFP Deadline – Due date/time	August 29, 2022
Internal Staff Rankings	September 8, 2022
Negotiations with Top Ranked Firm	September 8 - 26
Ad Hoc Board Meeting Presentation/Recommendation	October 6, 2022
Anticipated Contract Award(s) – M1W and Re-Gen Monterey Board Approvals	Oct 28 and Oct 31, 2022
Contract(s) Commencement	TBD Nov 2022
Anticipated Phase 1 Completion	June 30, 2023

A qualification submittal and a separate proposal package was received from each of the following ten (10) companies (listed in alphabetical order):

1. AECOM
2. Arup
3. Black & Veatch
4. ENGIE
5. GE Power Conversion
6. GHD
7. S&C Electric Company
8. Sage Energy Consulting
9. Tetra Tech
10. Wisewood Energy

The consultant selection process defined in the Feasibility Study RFQ/RFP was a 'qualification based' selection whereby each of the ten (10) qualification submittals were reviewed and ranked by the Joint Selection Committee (JSC) based only on firm's qualifications and their proposed approach to the feasibility study. The JSC consisted of six (6) members; namely the General Managers Paul Sciuto and Felipe Melchor, the senior managers Tamsen McNarie and Guy Petraborg, the Joint Director Ken Lewis, and management consultant Gary Darling of Darling H2o. The JSC members individually reviewed and ranked the qualification submittals. The JSC met on September 8, 2022, to discuss their findings of the qualification submittals and to disclose their 'top-5' rankings. It was agreed at that meeting that GHD was the top ranked firm as reflective of being ranked first by four of six JSC members and in the 'top-3' by the other two JSC members. GHD's proposal stood out from the others because it was obvious that they had the best understanding of both the SOW and goals of the Feasibility Study RFQ/RFP. GHD demonstrated that they had a solid understanding of current conditions at each facility, and they also presented a solid project management approach that aligns well with the Feasibility Study SOW. The staff that GHD proposed are highly qualified in the areas of organics management, renewable energy potential from organics, microgrid design and economics; and they routinely perform similar scopes of work for the topic areas, and related topic areas, of the Feasibility Study SOW.

With the selection of GHD as the top ranked qualified firm, the next step for the JSC was to open the GHD's cost proposal. GHD's cost proposal for Phase 1 totaled $1,117,733 with 5,098 hours of staff time and $122,000 for subconsultant charges. This exceeds the January 2022 budget of $750,000 that was approved prior to the June 2022 RFQ/RFP SOW. Since the GHD costs exceeded budget and had scope that was more extensive in some areas, staff decided that some work on the Phase 1 study work could be delayed to subsequent phases. The General Managers Felipe Melchor and Paul Sciuto then met with the GHD team on two occasions to negotiate the changes in both the Phase 1 SOW and associated costs for Phase 1 of the Feasibility Study. Based on the reduced SOW, the revised Phase 1 cost totaled $720,478 (consisting of $673,898 for 3,348 hours of GHD staff time, plus $40,000 for subconsultants, and $6,581 for Other Direct Costs). Refer to Attachment A for a presentation of the Phase 1 Study schedule as shown as part of a larger conceptual schedule should one or more projects get approved following completion of the Feasibility Study. Refer to Attachment B for the GHD scope and cost summary for the revised Phase 1 SOW.

The Joint Agency staffs believe that GHD's adjusted Phase 1 scope is appropriate in terms of i) the initial feasibility study goals, ii) initial study deliverables and iii) an appropriately revised budget given the revisions to the June 2022 detailed SOW. The Joint Agency staff recommend proceeding forward with the formal selection of the GHD team for Phase 1 of the Feasibility Study and amending the budget for the Feasibility Study from $750,000 to $1,050,000 by each agency contributing an additional $150,000 in funding. Note that there is an additional ~$170,000 of EPA Grant funding ($1,220,000 adjusted total) for completing a portion of the Feasibility Study and that the combination of funds aligns with staff's predictions of all costs associated with the Feasibility Study activities at $1,220,000.

At its meeting on October 6th the Joint Ad Hoc Committee met with staff to discuss i) the revisions to the Phase 1 scope of the Feasibility Study, ii) the proposed selection of GHD to complete the Phase 1 Feasibility Study technical scope of work, and ii) the need for an additional $150,000 from each agency to fund the Phase 1 Feasibility Study activities. Based on their review, the Joint Ad Hoc Committee recommended that each respective Board award a Consultant Contract to GHD for the Feasibility Study Phase 1 work for an amount not-to-exceed $720,478 and for each Board to approve an additional $150,000 in funding of the Feasibility Study to cover the total costs of the Phase 1 activities.

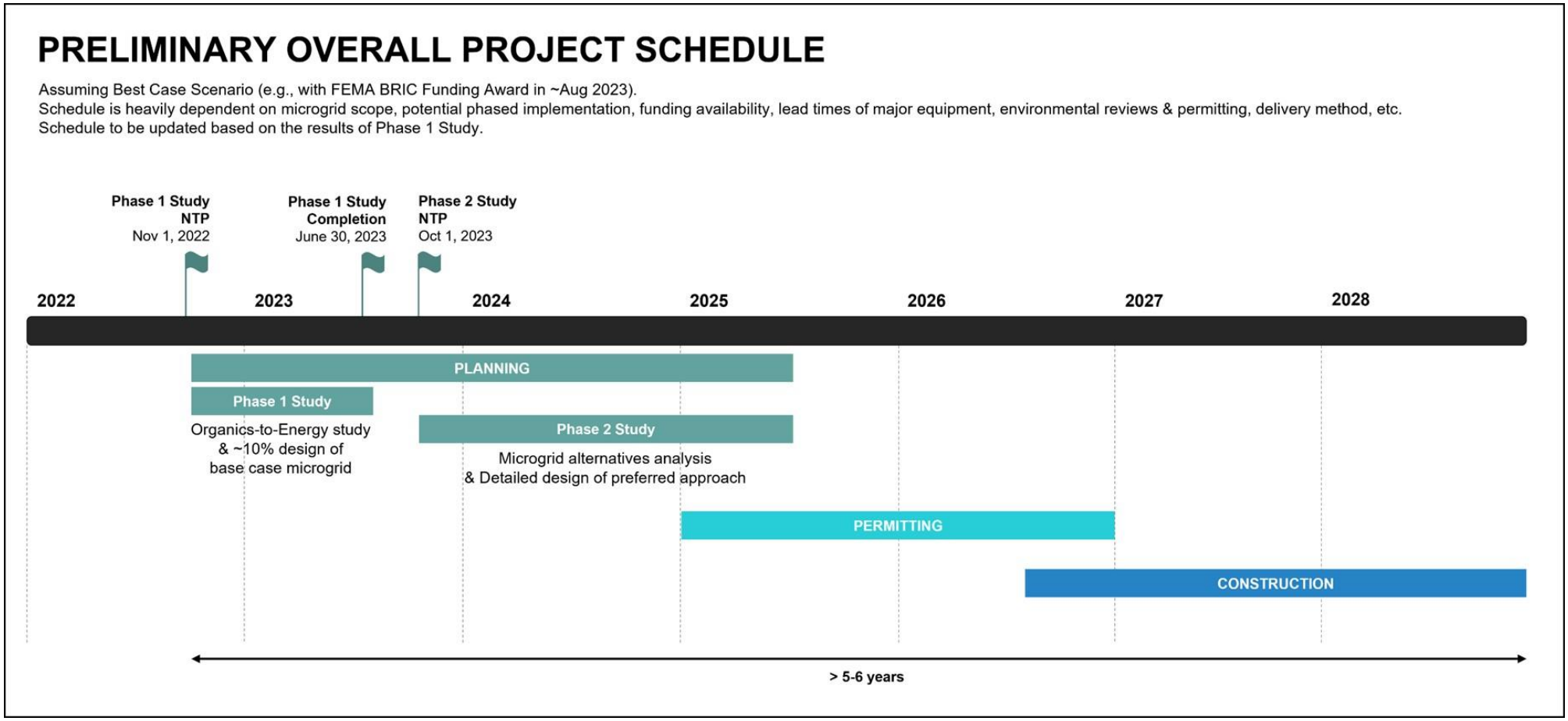
Financial Impact
The financial impact associated with approving the selection of GHD to complete the Feasibility Study Phase 1 SOW is that the Study's existing $750,000 Approved Budget would need to be amended whereby each agency would be required to provide an additional $150,000 each of current fiscal year funding ($300,000 combined total). For M1W, the additional FY 22-23 funds would need to be funded out of its contingency account in its Wastewater Fund. For ReGen, the additional $150,000 of capital infrastructure funds would be obtained from either i) excess cash in FY22-23 or ii) the Capital Infrastructure Reserve or both; assuming that the Approved Capital Infrastructure Budget is fully expended in FY22-23 and that there are no capital project costs savings during the fiscal year. Thus, the $150,000 is reasonably available to support the additional funding for the Phase 1 Feasibility Study in the event that the Board concurs with the Joint AdHoc Committee's and staff's recommendations and decides to approve the recommendations presented herein.

Strategic Plan
The Joint Agency collaboration on a Feasibility Study to conceptually define a microgrid and one or more organics-to-energy projects aligns with our Community, Innovation, and Environment stewardship interests. The potential projects that may identified by the Feasibility Study are unique and innovative in several ways; not only do they represent a collaboration of two public entities, it accrues financial benefits to both agencies and creates a more sustainable operations framework that will yield cost savings to the customers of both agencies and the communities served for years to come. In addition, this joint endeavor has the capability to contribute to the state's goals of electrification and reduction of short-lived pollutants.

Conclusion
The Joint Ad Hoc Committee and staff request that the Board i) approve the award of a consulting contract to GHD of Irvine, California for the Joint Agency Feasibility Study Phase 1 scope of work in an amount not-to-exceed $720,478 and ii) authorize an additional $150,000 of capital funding to the Feasibility Study's Budget.

Attachments:
A – Phase 1 Study (GHD's Contract Work) Overlaid on a Preliminary Overall Project Schedule – (Conceptual October 2022)
B – Phase 1 Summary Scope of Work (GHD dated 9-21-2022)

Attachment A: Phase 1 Study (GHD's Contract Work) Overlaid on a Preliminary Overall Project Schedule (Conceptual)



ATTACHMENT B – PHASE 1 SUMMARY SCOPE OF WORK – 10/21/2022 BOARD MEETING

Feasibility Analysis of the Monterey Microgrid and Renewable Energy Project

Revised Scope & Fee Estimate

Monterey One Water and ReGen

21 September 2022

→ **The Power of Commitment**

1. Proposed Revised Technical Scope

Phase 1 Timeline: November 1, 2022 – June 30, 2023
(8-month period given end-of-year holidays and shutdown)

TASK 1: PROJECT MANAGEMENT

- **Overall Project Kickoff**
  - Virtual project kickoff meeting with Agencies and five key staff
  - Internal project kickoff meetings with PM Team and SMEs

- **Progress and Coordination Meetings**
  - Monthly virtual meetings with Agencies and five key staff (Dec, Jan, Feb, Mar, Apr, May, Jun), 7 meetings total
  - Biweekly internal meetings with five key staff for 6 months, 12 meetings total

- **Contracting, Internal set-up & Invoicing**

TASK 2: ORGANICS-TO-ENERGY STUDY

- **Project Commencement**
  - Task 2 Kickoff
  - RFI / Data collection

- **Quantify and Characterize Food Waste**
  - Waste quantities: Desktop study only using current waste quantities managed by ReGen (focused on food waste) and agreed-upon assumptions to estimate future potential (e.g., population growth; diversion rate; etc). Maximum 3 scenarios (low, medium, high estimates). Estimate of additional commercial organic feedstock based on SIC codes within ~50 miles of the Agencies.
  - Waste characteristics (e.g., contamination rates, BMP): Desktop study only, estimated based on existing databases for various waste generators.
  - Pre-treatment requirements: Describe main food waste pre-processing alternatives for up to 3 alternatives.
  - Draft / Final Memo

- **Existing Infrastructure and Process Assessment**
  - Include one (1) general site visit for one (1) person
  - Condition Assessment: Will be limited to desktop review of existing as-builts and other equipment information; determination will be made based on installed date and anticipated useful life based on industry standards and experience; no visual assessment will be conducted. M1W and ReGen to provide list of assets and installation dates for each asset; work limited to process mechanical equipment only for select unit operations (e.g., anaerobic digesters, dewatering system, biogas conditioning, and cogeneration facilities).
  - Current and Projected Energy Demand: M1W and ReGen to provide necessary data (e.g., Master Plan; Operations data).

- Location and footprint of major equipment: Existing site plan will be used; site plan to be provided by Agencies in electronic format.
- Evaluate biosolids plan to identify impacts from increased digestion and co-digestion: Will identify high-level impacts based on experience (e.g., % VS destruction based on food waste characteristics and resulting estimate of byproduct solids requiring management – dewatering, side-stream treatment, etc).
- Methane and solids production from existing anaerobic digestion: Will be based on available performance data, including annual quantity sent to landfill as well as flare and cogen records; where data are limited, estimates will be made based on experience and current practice.
- Draft / Final Memo

- **Digester Improvements for Food Waste**
  - Pre-processing: High-level determination of suitable suite of pre-processing technologies for wet digestion based on assumed waste contamination level.
  - Digester modifications: Identification of required modifications (e.g., mixers) and cost estimates for Co-Digestion vs. Dedicated food waste digestion. Estimates for co-digestion will be based on the CalRecycle grant application.
  - Digester capacity: Evaluation to maximize digester capacity will focus on thermal hydrolysis and recuperative thickening
  - Methane and solids production with food waste digestion: Estimated based on experience (e.g., food waste VS content, % VS destruction)
  - Draft / Final Memo

- **Evaluate Alternative or Hybrid Solutions**
  - Phase 1 will focus on low hanging fruit: commercial & industrial food waste digested or co-digested in existing digester at M1W. Study will include high-level evaluation of alternatives to comply with EPA grant requirements. Alternatives reviewed limited to plug flow anaerobic digestion and dry (batch) anaerobic digestion for the combined green and food waste from residential sources.
  - Draft / Final Memo

- **Biogas Utilization and Optimization**
  - Evaluate existing biogas uses and main infrastructure & equipment.
  - Identify technologies and system upgrades for key alternatives, mainly combined heat and power and CNG for vehicle fuel.
  - Draft / Final Memo

- **Biosolids Management Non-Disposal Alternatives**
  - Estimate expected concentration of PFAS and other constituents of concerns in the biosolids after addition of food waste. Subconsultant input: Dr. Linda Lee
  - Identify beneficial use alternatives and potential “off-takers” and “end users” of any biosolids derived products such as fertilizers or char. Subconsultant input: RAA
  - Draft / Final Memo

- **Permitting and Program Financials**
  - Focus on upgrades to WWTP anaerobic digester and cogen system

- Identify permitting needs for preferred alternative (permit, agency, timeline and cost estimate).
- Estimate preliminary capital costs, operating costs and revenues for the preferred alternative.
- Identify potential funding sources and incentives
- Draft / Final Memo

- **Dry Organics to Energy Analysis**
  - Not included in USEPA grant scope.
  - High-level analysis of options based on dry organic waste currently received + estimate of potential additional woody biomass from UC Davis database.

- **O2E Feasibility Study Reports and Presentation**
  - Draft / Final O2E report summarizing key findings. Memos from previous tasks will be included as appendices.

TASK 3: MICROGRID PRE-DESIGN

- **Existing conditions assessment**
  - Approach/Protocol for existing equipment condition and relation to microgrid (agree on methodology, level of assessment, etc.)
  - Includes 1 site visit for three (3) people
  - In-person meeting with operations & maintenance teams
  - Summarize existing generation/uses/demand
  - Assess existing equipment age & conditions (generation/transmission/switch gear)
  - Recommend equipment upgrades or replacements

- **Define M1W & ReGen priority microgrid needs**
  - Two in-person meetings (one with each Agency) to define priority microgrid needs (island mode, black start, etc.) combined into 1 trip
  - Define microgrid functionalities based on Agencies' needs & grid interconnection options

- **Base-case microgrid study**
  - Situational planning (define potential scenarios: grid blackout, CHP down, etc)
  - Load shed study (prioritize loads by major process groups)
  - Model variability analysis to confirm all resources will work together. Model energy and microgrid loads for all scenarios with all resources at best and highest value.
  - Identify required microgrid equipment, footprint and connections
  - Identify phased development (time and expenditure)
  - Identify permitting requirements and limitations (e.g., air permit)
  - Estimate Capex/Opex, savings, revenues (e.g., potential financial benefits of emergency load reduction response)

- **Microgrid Pre-Design report**
  - Base-case microgrid study output
  - Assess BESS and backup power requirements and prioritization based on the scenarios identified by the base-case microgrid study
  - Develop Pre-Feed (~10% Design) of selected microgrid concept
  - Identify challenges of integrating the two facilities

- Draft / Final report

TASK 4: PG&E INTERCONNECTION STRATEGY

- **PG&E Community Microgrid Enablement Program (CMEP)**
  - Complete CMEP application by end of 2022
  - Meet and provide information to PG&E to evaluate level of effort to possibly add recloser, address future potential needs, options for community microgrid

TASK 5: ECONOMIC JUSTIFICATION

- Develop high-level cost and benefit (reduced utility costs, revenue etc.) estimates for proposed O2E and microgrid options.
- Economic (cost-benefit analysis) and strategic (alignment to M1W & ReGen corporate drivers, evolving policy and regulation) analysis of options to rank and prioritize proposed options (e.g., mono vs. co-digestion; biogas uses) against the base case (business as usual).
- Complete description of economic justification for preferred alternative to support funding applications and Board decision.
- Draft / Final Memo

TASK 6: PROJECT DELIVERY METHOD

- Identify potential/suitable project delivery methods for the preferred O2E and Microgrid option
- Discuss Pros/Cons of different project delivery method with input from VICO on current market conditions and experience in recent delivery of similar projects to identify options that reduce risk and provide the highest probably to success.
- Draft / Final Memo (Summary table of the 4 options with characteristics, timeline, pros/cons)

TASK 7: OVERALL PROJECT SUMMARY AND PRESENTATION TO THE BOARD

- Project summary integrating the O2E and Microgrid reports
- Power Point summary of the overall project for presentation to the board

2. Fee Proposal Assumptions

- Kickoff and monthly progress meetings will be virtual.

- Requested information and data will be provided by the Agencies in electronic usable format (e.g., Excel spreadsheet for operations data, CAD or PDF of available plans, etc.), including at least – but not limited to:
    - Operations data
    - Process drawings for both agencies
    - Electrical drawings for all systems for both agencies
    - Current site plans

- Assume past landfill gas quantity and quality data will be provided, as well as future projections.

- Assumed base-case microgrid will consist of behind the meter interconnection of existing main service equipment through further extension of the electrical distribution system from Regen to M1W

- Offsite systems will not be investigated as part of this study.

- One set of consolidated comments from the Agencies is assumed for each key deliverable.

- Requests for information and document review will be completed and responded to by Agencies within a one-week period.

- Assumptions for ODCs
    - Existing conditions assessment: Assume 1 site visit for Jordan King (2 days onsite), Mary Martis (1 day onsite), Mike Tocher (2 days) and Chris Richards (2 days)
    - Meetings to define microgrid functionalities: Assume 2 days onsite for Jordan King and Mike Tocher (separate discussions with ReGen and M1W)

3. Summary of Key Revisions from Original Proposal dated August 29, 2022

TASK 1: PROJECT KICKOFF & PRELIMINARY INVESTIGATIONS

- Modified Task 1 to Project Management task only
- Modified overall project kickoff meetings to 1 virtual kickoff with Agencies with PD, PM, Task Leads, and 1 internal virtual kickoff with PD, PM, Task Leads and SMEs
- Reduced the number of field investigations and moved to respective technical tasks.

TASK 2: ORGANICS-TO-ENERGY STUDY

- Reduced workshopping effort to streamline with smaller group of stakeholders
- Reduced subconsultants involvement at this stage
    - Cascadia – desktop study only, no "ground truthing" onsite
    - Removed advisory support from Tim Raibley (HDR)
    - Removed support from Dr. Ruihong Zhang regarding waste characterization, including access to largest feedstock characteristics database. Will rely on GHD experience instead (especially from Canada)
    - Removed cost estimating support from David Ewing
- Rebalanced hours between Senior and Intermediate-level personnel.
- Removed BioWin modeling of M1W plant
- Reduced effort on "Alternative Solutions Evaluation" (plug flow AD, dry AD) to focus on most likely option at this stage (wet AD).
- Reduced effort on "Digester Improvements" as there are synergies with the recent CalRecycle grant award.

TASK 3: MICROGRID PRE-DESIGN

- Postponed HOMER modeling to a later phase and simplified preliminary modelling approach.
- Rebalanced hours between Senior and Intermediate-level personnel.
- Reduced level of effort for each task to match agency objectives and budget

TASK 4: PG&E INTERCONNECTION STRATEGY

- Added to Phase 1 to leverage PG&E CMEP program which closes at the end of 2022.

TASK 5: ECONOMIC JUSTIFICATION

- Postponed development of a Techno-Economic Model to a later phase
- Reduced modelling scope in this task to a high-level cost-benefit analysis (with limited sensitivity analysis) to consider the O2E and Microgrid options

TASK 8: PROJECT MANAGEMENT SCHEDULE AND BUDGET

- Removed and consolidated Project Management activities into Task 1

TASK 9: OVERALL MASTER PLAN PREFERRED PROJECT

- Removed and consolidated with Task 7

FEE ESTIMATE SUMMARY

Date Prepared:	9/16/2022
Project Number:	12581710
Project Name:	Monterey Energy Project
Client Name:	M1W and ReGen
Project Manager:	Jordan King
Project Director:	Kim Domptail
Business Group Leader:	Guy Graening
Fee Type:	**FAR With Profit Added**

PHASE 1		**Estimated Fee**	**Estimated Hours**
TASK 1	PROJECT MANAGEMENT	$45,225	206
TASK 2	ORGANICS TO ENERGY STUDY	$254,261	1,248
TASK 3	MICROGRID PRE-DESIGN	$260,788	1,402
TASK 4	PG&E INTERCONNECTION STRATEGY	$9,208	48
TASK 5	ECONOMIC JUSTIFICATION	$68,209	278
TASK 6	PROJECT DELIVERY METHOD	$10,611	46
TASK 7	OVERALL PROJECT SUMMARY & PRESENTATION TO THE BOA	$25,595	120
PHASE 1 TOTAL LABOR		**$673,898**	**3,348**

GHD LABOR TOTAL	**$673,898**	**3,348**
GHD ODC'S TOTAL	**$6,581**	**Avg Hrly Rate**
SUB'S LABOR AND ODC'S TOTAL	**$40,000**	**$201.28**

TOTAL ESTIMATE **$720,478.41**