



1 **THERESA G. ROJAS**
2 Legal Counsel
3 Guam Waterworks Authority
4 Gloria B. Nelson Public Service Building
5 688 Route 15, Suite 304
6 Mangilao, Guam 96913
7 Telephone No: (671) 300-6848
8 Email: tgrojas@guamwaterworks.org

6 **BEFORE THE GUAM PUBLIC UTILITIES COMMISSION**

8 IN THE MATTER OF:

) **GWA DOCKET NO. 26-08**

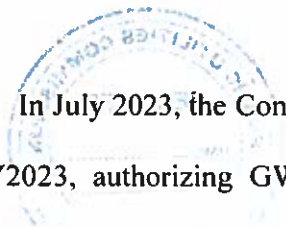
9)
10 **GWA CONSTRUCTION SERVICES**)
11 **FOR WATER AND SEWERLINE**)
12 **REPLACEMENT FOR VARIOUS**)
13 **BRIDGES, PHASE I**)

) **PETITION TO AUTHORIZE GWA'S**
) **PROCUREMENT FOR**
) **CONSTRUCTION SERVICES FOR**
) **WATER AND SEWER LINE**
) **REPLACEMENT FOR VARIOUS**
) **BRIDGES, PHASE I**

14
15 The GUAM WATERWORKS AUTHORITY ("GWA"), by and through its counsel of
16 record, THERESA G. ROJAS, hereby files its Petition seeking the Guam Public Utilities
17 Commission ("PUC") approval to procure construction services relative to GWA's water and
18 sewer line replacement of various bridges, Phase I.

19 **I. BACKGROUND**

20
21 As part of its Capital Improvement Plan, GWA is implementing several critical
22 infrastructure projects to replace aging and deteriorating water and wastewater pipelines
23 throughout the island. These projects include the replacement of old and persistently leaking
24 waterlines, as well as aging sewer lines, of various diameters and length located across Guam.
25 Portions of GWA's existing water and wastewater networks also include pipelines attached to or
26 crossing existing bridges.
27
28



1 In July 2023, the Consolidated Commission on Utilities (CCU) approved Resolution No.
2 34-FY2023, authorizing GWA to enter a contract with GHD, Inc. to provide design and
3 construction management services for the replacement of water and wastewater lines crossing
4 various bridges. GHD completed its system-wide assessment and established an implementation
5 program consisting of three (3) phases prioritizing forty-five (45) water and wastewater lines
6 crossing various bridges broken down into:
7

- 8 1. Phase I: consisting of ten (10) leaking and/or severely corroded pipes at various
9 bridges;
- 10 2. Phase II: consisting of fifteen (15) water and sewer line pipes in moderate condition
11 at various bridges; and
- 12 3. Phase III: consisting of twenty (20) water and sewer line pipes in fair and/or good
13 condition at various bridges.
14

15 Under Phase I, GHD has prepared cost estimates to repair the ten (10) leaking and/or
16 severely corroded water and sewer line crossings over various Guam bridges. The estimated
17 construction cost for this work is Four Million Five Hundred Sixty-Three Thousand Six Hundred
18 Forty-Three Dollars (\$4,563,643.00).
19

20 In accordance with PUC Contact Review Protocol, GWA must obtain approval prior to
21 advertising its procurements for any project with an anticipated contract value of one million
22 dollars or more.
23

24 **II. REQUEST FOR APPROVAL**

25 Pursuant to its Contract Review Protocol, GWA hereby seeks the PUC's approval to issue
26 a competitive procurement to solicit bids from experienced and qualified construction companies
27 for Phase I of its water and sewer line replacements at various bridges.
28

1 The proposed Phase I improvements are reasonable, prudent, and necessary to mitigate
2 the elevated risk of service interruptions and potential environmental impacts associated with the
3 ten (10) identified leaking and severely corroded pipes and will ensure the continued and reliable
4 delivery of essential water and wastewater services at these junctures.

5 In support of this Petition, the CCU has approved GWA's request for the approval of
6 procuring construction services for GWA's water and sewer line replacement of various bridges,
7 Phase I, by its adoption of CCU GWA Resolution No. 22-FY2026. This Resolution is attached
8 hereto as **Exhibit A** and is incorporated by reference as if fully set forth herein.
9

10 III. CONCLUSION

11 Based on the foregoing, GWA respectfully requests the PUC's approval to issue a
12 competitive procurement bid for experienced and qualified construction companies to provide the
13 necessary materials and construction services for Phase I of GWA's water and sewer line
14 replacement of various bridges, with a construction cost estimate of Four Million Five Hundred
15 Sixty-Three Thousand Six Hundred Forty-Three Dollars (\$4,563,643.00), as it is reasonable,
16 prudent, and necessary.
17

18 **RESPECTFULLY SUBMITTED** this 5th day of June 2026.

19
20
21 By: _____


THERESA G. ROJAS
GWA Legal Counsel



GWA RESOLUTION NO. 22-FY2026

**RELATIVE TO APPROVAL OF PROCURING CONSTRUCTION SERVICES
RELATIVE TO WATER AND SEWER LINE REPLACEMENT OF VARIOUS
BRIDGES, PHASE I**

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA currently has several critical projects as part of GWA’s Capital Improvement Plan, including the replacement of old and persistently leaking waterlines, as well as old sewer lines, in various diameters, length, and locations island wide; and

WHEREAS, the existing water and sewer networks include pipelines crossing existing bridges; and

WHEREAS, in July 2023, the CCU approved Resolution No. 34-FY2023 (Exhibit A) authorizing GWA to enter a Design and Construction Management Services contract with GHD, Inc. for water and sewer line replacement of various bridges; and

WHEREAS, GHD has completed assessment and prioritization of forty-five (45) water and sewer line bridge crossings, broken down to ten (10) leaking and/or severely corroded pipes (Phase I), fifteen (15) water and sewer line bridge crossings in moderate conditions (Phase II), and twenty (20) water and sewer line bridge crossings in fair or good condition, Phase III); and

1 **WHEREAS**, GHD has completed the design replacement of ten (10) leaking and/or
2 severely corroded water and sewer line bridge crossings (Phase I) with a construction cost estimate
3 of Four Million Five Hundred Sixty-Three Thousand Six Hundred Forty-Three Dollars
4 (\$4,563,643.00); and

5
6 **WHEREAS**, GWA management seeks CCU approval to issue a competitive procurement
7 bid to solicit proposals from experienced and qualified construction companies to provide the
8 necessary materials and construction services, and to award the contract to the lowest responsive
9 responsible bidders; and

10
11 **WHEREAS**, funding in the estimated amount is available through GWA Bonds and grant
12 fund for construction and capital improvement projects; and

13
14 **WHEREAS**, GWA management further seeks CCU approval to petition the PUC for
15 approval to proceed with construction procurement; and

16
17 **WHEREAS**, the Public Utilities Commission (PUC) contract protocol requires GWA to
18 obtain approval prior to advertising procurement for projects with an anticipated value of One
19 Million Dollars (\$1,000,000.00) or greater; and

20
21 **WHEREAS**, the CCU must approve all petitions that will be submitted to the PUC.

22
23 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
24 does hereby approve the following:

- 25 1. The recitals set forth above hereby constitute the findings of the CCU.
26 2. The CCU finds the procurement of materials and construction services for water
27 and sewer line bridge crossings replacement is necessary to ensure system
28 reliability, and to reduce the likelihood of potential water or sewer leaks into
29 waterways which would be a direct violation of Clean Water Act standards that
30 can result in fines and ecological damage.

1 3. The CCU hereby authorizes the management of GWA to fund the water and
2 sewer line bridge crossings replacement through GWA bonds funds and grant
3 funds.

4 4. The CCU hereby authorizes the management of GWA to petition the PUC for
5 approval of the procurement of water and sewer line bridge crossings
6 replacement.

7 **RESOLVED**, that the Chairman certified, and the Board Secretary attests to the adoption
8 of this Resolution.

9
10 //

11 **DULY AND REGULARLY ADOPTED**, this 17th day of April 2026.

12
13 Certified by:

14 

15
16 **FRANCIS E. SANTOS**

17 Chairperson

13 Attested by:

14 

15
16 **MELVIN F. DUENAS**

17 Secretary

18
19
20 **SECRETARY'S CERTIFICATE**

21
22 I. **MELVIN F. DUENAS**, Board Secretary of the Consolidated Commission on
23 Utilities as evidenced by my signature above do hereby certify as follows:

24 The foregoing is a full, true and accurate copy of the resolution duly adopted at a
25 regular meeting by the members of the Guam Consolidated Commission on Utilities, duly
26 and legally held at a place properly noticed and advertised at which meeting a quorum was
27 present and the members who were present voted as follows:

28
29 AYES:

5

30 NAYS:

0

31 ABSENT:

0



1
2
3
4
5
6
7
8
9
10

ABSTAIN:

0

///

///

///



CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 34-FY2023

**RELATIVE TO CONTRACT APPROVAL FOR THE DESIGN AND CONSTRUCTION
MANAGEMENT SERVICES FOR WATER AND SEWER LINE REPLACEMENT OF
VARIOUS BRIDGES**

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA currently has a number of critical projects as part of GWA’s Capital Improvement Plan, including the replacement of old and persistently leaking waterlines, as well as old sewer lines, in various diameter, length, and locations island wide; and

WHEREAS, the existing water and sewer networks include pipelines crossing existing bridges; and

WHEREAS, exposed waterlines crossing bridges constitute a vulnerable portion of the distribution network often subjected to additional environmental forces including atmospheric and weather conditions; and

WHEREAS, exposed sewer lines crossing bridges constitute a potential environmental risk if the lines are damaged and leaks occur; and

WHEREAS, GWA has advertised the Request For Proposals (RFP-03-ENG-2023) soliciting statement of qualifications from experienced and qualified engineering firms for the preparation of design plans and specifications for utility line replacement at bridges; and

//

1 **WHEREAS**, the Water and Sewer Line Replacement of Various Bridges project includes
2 site investigations and condition assessment, basis of design report, topographic surveys,
3 preparation of plans, specifications, and estimate to construct recommended bridge pipeline
4 repair or replacement, and construction management services; and

5
6 **WHEREAS**, RFP packages were downloaded by seventeen (17) interested parties, from
7 which GWA received proposal submittals from six (6) firms before the RFP submittal deadline;
8 and

9
10 **WHEREAS**, the GWA A-E Selection committee reviewed and evaluated the six (6)
11 proposals (see EXHIBIT A – Evaluation Score) and generated a short list of the top three (3)
12 firms with a recommendation to award a contract to the firm GHD, Incorporated (see EXHIBIT
13 B – Evaluation Summary and GM Determination); and

14
15 **WHEREAS**, GHD, Incorporated and GWA negotiated the price for the services to be
16 provided in the amount of One Million Two Hundred Thirty-Two Thousand Nine Hundred Nine
17 Dollars (\$1,232,909.00) (see EXHIBIT C – Fee Proposal); and

18
19 **WHEREAS**, GWA management seeks approval of the fee proposal amount of One
20 Million Two Hundred Thirty-Two Thousand Nine Hundred Nine Dollars (\$1,232,909.00), plus a
21 ten percent (10%) contingency of One Hundred Twenty-Three Thousand Two Hundred Ninety
22 Dollars and Ninety Cents (\$123,290.90) to bring the total authorized funding amount to a
23 maximum of One Million Three Hundred Fifty-Six Thousand One Hundred Ninety-Nine dollars
24 and Ninety Cents (\$1,356,199.90); and

25
26 **WHEREAS**, GWA Management further seeks CCU approval to petition the Public
27 Utilities Commission approval of the contract given this project meets the Contract Review
28 Protocol requirements for GWA projects for which the use of Bond funds is intended; and

29
30 //

1 **WHEREAS**, the funding sources for the construction project will be from Bond funds;
2 and

3
4 **WHEREAS**, GWA management recommends that a contract be entered into with GHD,
5 Incorporated in the aforementioned amount.
6

7 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
8 does hereby approve the following:

- 9 1. The recitals set forth above hereby constitute the findings of the CCU.
- 10 2. The CCU finds that the terms of the fee proposal submitted by GHD,
11 Incorporated is fair and reasonable (Exhibit C).
- 12 3. The CCU finds that the standard contract terms and conditions set by GWA
13 relative to execution of the project are fair and reasonable and serve as a
14 measure of Quality Assurance/Quality Control (QA/QC).
- 15 4. The CCU hereby authorizes the management of GWA to enter into a contract
16 with GHD, Incorporated, in the amount of One Million Two Hundred Thirty-
17 Two Thousand Nine Hundred Nine Dollars (\$1,232,909.00).
- 18 5. The CCU hereby further approves the total funding amount for this project of
19 One Million Two Hundred Thirty-Two Thousand Nine Hundred Nine Dollars
20 (\$1,232,909.00), plus a ten percent (10%) contingency of One Hundred
21 Twenty-Three Thousand Two Hundred Ninety Dollars and Ninety Cents
22 (\$123,290.90) to bring the total authorized funding amount to a maximum of
23 One Million Three Hundred Fifty-Six Thousand One Hundred Ninety-Nine
24 Dollars and Ninety Cents (\$1,356,199.90).
- 25 6. The CCU hereby further approves funding for this project from Bond Funds
26 under the line items CIP MP-PW-Pipe-12.
27


28 **RESOLVED**, that the Chairman certified, and the Board Secretary attests to the adoption
29 of this Resolution.

30 //

31
32 //

1 **DULY AND REGULARLY ADOPTED, this 25th day of July, 2023.**

2
3 Certified by:

4 
5 _____

6 **JOSEPH T. DUENAS**

7 Chairperson

8
9 Attested by:

10 
11 _____

12 **PEDRO ROY MARTINEZ**

13 Secretary

14
15 **SECRETARY'S CERTIFICATE**

16 I, Pedro Roy Martinez, Board Secretary of the Consolidated Commission on
17 Utilities as evidenced by my signature above do hereby certify as follows:

18 The foregoing is a full, true and accurate copy of the resolution duly adopted at a
19 regular meeting by the members of the Guam Consolidated Commission on Utilities,
20 duly and legally held at a place properly noticed and advertised at which meeting a
21 quorum was present and the members who were present voted as follows:

22 AYES:

23 5

24 NAYS:

25 0

26 ABSENT:

27 0

28 ABSTAIN:

29 0

30 ///

31 ///

///

///

///





GUAM WATERWORKS AUTHORITY

Gloria B. Nelson Public Service Building 688 Route 15 Mangilao, Guam 96913

January 19, 2023

To: Mauryn Q. McDonald, P.E.
Acting Assistant General Manager - Engineering

From: Ryan Diaz
Chairperson, Consultant Selection Board

Subject: RFP-03-ENG-2023
Design and CM Services for Waterline Replacement of Various Bridges
GWA Project No. W22-08-BND

The following information is intended to document the evaluation process undertaken for the referenced solicitation:

EVALUATION COMMITTEE MEMBERS	
Name	Title
Garrett Yeoh	Senior Engineer, P.E.
George J. Watson	Senior Engineer
Vince Pangelinan	Operations & Maintenance Manager
Ryan Diaz	Associate Engineer

Offerors	Evaluation Score				Total	Rank
GHD, Inc.	84	89	86	87	346	1
AECOM Technical Services, Inc.	82	87	89	85	343	2
Duenas, Camacho, and Associates, Inc.	81	85	86	82	334	3
TG Engineers, P.C.	75	82	85	76	318	4
SSFM, International, Inc.	75	81	82	76	314	5
EMPSCO Engineering Consultants	75	77	78	79	309	6

Scores were evaluated based on the sum of individual scores. The recommendation of the Evaluation Committee is shown in the ranking above.

For your review and approval. Notification letters will be issued thereafter.

Approved by:

Mauryn Q. McDonald, P.E.



GUAM WATERWORKS AUTHORITY

Gloria B. Nelson Public Service Building 688 Route 15 Mangilao, Guam 96913

MEMORANDUM

To: Miguel C. Bordallo, P.E.
General Manager

From: Mauryn Q. McDonald, P.E. *MMQ*
Acting Assistant General Manager – Engineering

Subject: RFP-03-ENG-2023
Design and CM Services for Waterline Replacement of Various Bridges
GWA Project No. W22-08-BND

Date: January 19, 2023

The Selection Committee has completed all necessary actions for selecting the most qualified consultants for the referenced solicitation. All proposals were reviewed and scored according to the conditions established in the solicitation. The Evaluation Summary is attached for your information.

The committee recommends the following top three (3) firms in order of preference for the project:

1. GHD, Inc.
2. AECOM International, Inc.
3. Duenas, Camacho, and Associates, Inc.

Concurred:

Vincent Guerrero

 Vincent E. Guerrero
 Supply Management Administrator

1-19-2023

 Date

GENERAL MANAGER'S DETERMINATION

Consultant Firm Selected:

GHD Inc.

Remarks:

Miguel C. Bordallo

 Miguel C. Bordallo, P.E.
 General Manager

2023. 1. 20

 Date



GWA Design and CM Services for Waterline Replacement of Various Bridges Scope of Work and Fee Proposal

1. General

GHD will provide design and construction management services for the Waterline Replacement of Various Bridges Project. The water and sewer line conditions found under various bridges has been determined to have severe corrosion. The design services consist of site investigations and condition assessment, Basis of Design report, topographic surveys, preparation of plans, specifications, and estimates to construct the recommended bridge pipeline renovations or replacements. The packages will be prepared for bid following the conventional design-bid-build process. Services will include construction bid support and construction management. Design, construction bid support and construction management tasks are described in detail below.

The preliminary list of bridges that are part of the project are included in Table 1. The list may change based on a bridge list to be provided by the Department of Public Works and confirmation that pipelines belong to GWA.

Table 1 Bridge List and Preliminary Assessment of Pipelines

Bridge	Water/ Sewer	Replace (RPL)/ Repair (rpr)	Bridge	Water/ Sewer	Replace (RPL)/ Repair (rpr)	Bridge	Water/ Sewer	Replace (RPL)/ Repair (rpr)
1. Agana 1	Yes	WL rpr SL rpr	11. Lygog 1	Yes	WL rpr	20. Santa Rita	Yes	WL RPL SL RPL
2. Agfayan	Yes	WL rpr	12. Lygog 2	Yes	WL RPL	21. Sumay (Namo)	Yes (Navy?)	WL rpr SL rpr
3. Asan Inland 2	Yes	WL rpr	13. Lygog 3	Yes	WL RPL	22. Talifak	Yes	WL rpr SL RPL
4. Asan Inland 3	Yes	WL rpr	14. Maina	Yes	WL rpr	23. Talofofo	Yes	WL RPL
5. As-Linget	Yes	WL RPL SL rpr	15. Masso	Yes	WL rpr	24. Togcha	Yes	WL RPL
6. Bile	Yes	WL rpr	16. Merizo Inland	Yes	WL RPL	25. Toguan	Yes	WL RPL
7. Chaot	Yes	WL RPL SL rpr	17. Minondo	Yes	WL RPL SL RPL	26. Umatac	Yes	WL RPL
8. Geus	Yes	WL rpr	18. Pauliloc	Yes	WL RPL SL RPL	27. Ylig	Yes	WL rpr SL rpr
9. Inarajan	Yes	WL RPL	19. Pigua	Yes	WL rpr	28. Maina Upper	Yes	WL RPL
10. Inarajan South	Yes	WL RPL				29. As-Linget North	Yes	WL RPL

Note: The repair or replacement assessment are preliminary assumptions for scoping and fee. The recommendation may change after a more thorough investigation and discussion with GWA engineering and operations.

2. Design Services

2.1 Condition Assessment and Priority List

The design services will begin with site investigations and condition assessments of the water and sewer lines to develop recommendations for rehabilitation or replacement. GHD will create a priority list with GWA engineering and operations input. Bridges will be prioritized based on established criteria, such as condition, age, material, breakage/leak rates, service area, costs, and other relevant factors. GWA will select sites from the priority list to proceed with a complete design and bid package.

Based on our preliminary assessment of bridge pipelines we estimate 16 waterlines require replacement, 13 waterlines require repairs/maintenance, 4 sewer lines require replacement, 5 sewer lines require repairs/maintenance, and 7 pipelines require structural support repairs or replacement (As-Linget, Inarajan N, Inarajan S, Lygog 3, Pauliloc, Santa Rita, and Talofofo). Structural support repairs or replacement involve design of new or rehabilitated utility supports. No bridge structural repairs are included.

2.2 Project Planning and Management

Management of the project shall consist of the following:

- Prepare monthly progress reports to GWA in digital format.
- Conduct bi-weekly design meetings with team members and GWA to discuss design issues, progress of work, and coordination. GHD shall prepare meeting minutes for all design progress meetings. The meeting minutes shall include action items from week to week.
- Coordination meetings as needed with proper local and/or federal government agencies including, but not limited to:
 - DPW
 - GEPA
 - SHPO
 - USCG
 - USACE
- Conduct project design review meetings at BOD, 60%, 90%, and 100% levels with GWA.
- Update record drawings based on new information, if necessary
- Maintain an electronic project record which will include all project correspondence, reports, meeting minutes, deliverables, and other items required to document the project.

2.3 Basis of Design (BOD)

The design shall conform to the Safe Water Drinking Act, all relevant codes, standards, environmental regulations, and all other applicable local and federal laws that will be incorporated in the design.

The BOD Report shall address the following at the minimum:

- Recommended bridge priority list of waterline rehabilitation and replacement.
- Bridge pipeline condition assessment report.
- Includes the condition assessment of GWA water and sewer lines under or on various bridges.
- Recommended GWA water and sewer line replacement/maintenance/repair schedule for new and existing pipeline condition.
- Perform lifecycle analysis and cost effectiveness on different pipe material for pipe replacement.
- Methodology for water and sewer line replacement.
- Include geotechnical and soil report if historical reports are available. New geotechnical investigations are assumed not to be needed.
- Define the type of bridge structural repair as needed where removal and replacement of pipe section is proposed. The structural engineer shall be a registered licensed P.E. with Guam PEALS and will reside on island.
- Design standard specification requirements for GWA water and sewer line replacement of bridges. Include any necessary isolation valves and/or bypass line before and after the bridge to assist with site operation and construction.
- Summarize all local and/or federal permitting requirements necessary for project execution and construction completion.
- Preliminary construction schedule showing minor and major work items.
- Develop design recommendations and alternatives for each water and sewer line replacement or repair.

2.4 Design

GHD will prepare construction drawings, specifications, cost estimates, supporting design calculations, construction schedule, a list of all required permits, and other documents necessary for project construction.

The drawings will include necessary piping, valving, fittings, and appurtenances for the bridge pipeline and to connect to the existing water system as indicated in the BOD. The plan will also include necessary erosion control measures such as erosion control seeding, silt fencing, protection of stockpiled materials, and other necessary measures to mitigate the impact of erosion and sedimentation.

Field Surveys: GHD shall conduct surveying services for the purposes of a topographic survey and right-of-way locating for the proposed GWA water and sewer line replacement. The survey must indicate easements, property lines, existing utilities, existing water meters, edges of pavement, driveways, existing buildings, structures, trees, etc. within the vicinity of the project.

GHD will prepare and submit the following:

1. Multidiscipline plans to the 60%, 90%, and 100% completion levels.
2. Specifications at 60%, 90%, and 100% completion levels, which will include technical specifications applicable to the indicated completion levels. GHD will review GWA' front end documents and may propose changes for GWA's legal counsel to review if a possible conflict with the division 1 or technical specifications is determined.
3. A basis of estimate trend log.
4. Construction cost estimate at 60% completion level. This estimate will be a Class 3 estimate in accordance with the AACE International Cost Estimate Classification System. All costs will be in current dollars and escalated to the estimated midpoint of construction.
5. Construction cost estimate update at 90% completion level. This estimate will be a Class 2 estimate in accordance with the AACE International Cost Estimate Classification System. All costs will be in current dollars and escalated to the estimated midpoint of construction.
6. Final construction cost estimate based on midpoint of construction and quantity take-offs and the requirements of the 100% design plans and specifications. This estimate will be a Class 1 estimate in accordance with the AACE International Cost Estimate Classification System. All costs will be in current dollars and escalated to the estimated midpoint of construction.

GHD shall coordinate with relevant agencies such as Guam Environmental Protection Agency, Department of Public Works, and other relevant agencies at the BOD, 60%, 90% and 100% submittals. This includes submitting design documents (11x17 plans and specifications at each phase) and maintaining communication throughout the duration of the project and incorporating any relevant regulation requirements in the design.

2.5 Deliverables

Deliverables to GWA will be provided in accordance with the following:

1. BOD
 - a. 2 hard copies – if requested
 - b. Digital copy
2. 60% phase
 - a. 2 hard copies of the 60% design documents (plan submittal shall consist of 2 sets of 11"x17" sized drawings if requested)
 - b. Digital copy of the 60% design documents
3. 90% phase
 - a. 2 hard copies of the 90% design documents (plan submittal shall consist of 2 sets of 11"x17" sized drawings if requested)

- b. Digital copy of the 90% design documents
- 4. 100% phase
 - a. 2 hard copies of the 100% design documents (plan submittal shall consist of 2 sets of 11"x17" sized drawings)
 - b. Digital copy of the final design documents

3. Construction Management Services

GHD will assume a budget for time and material construction management services for the Waterline Replacement of Various Bridges Project. The budget assumes a full-time construction manager for the first construction package of priority bridges. If the assumed budget is depleted and additional construction management services are required, then GHD will negotiate a change order to the contract with GWA.

3.1 Bid Support Services

GHD will provide the following services during the bid period:

- Assist with responding to bid questions during the bidding phase.
- Assist with conducting the Pre-Bid Conference and respond to technical questions involving design and specifications that prospective bidders may have during the Pre-Bid Conference.
- Prepare Pre-Bid Conference meeting minutes and provide official formal responses to technical questions.
- Assist with the preparation of bid addenda.
- Assist with reviewing construction proposals received. This shall include a bid analysis, review of bid proposals prices, and conformance with contract requirements and the Guam Procurement Code. A letter of recommendation of award shall be prepared.
- Prepare Pre-Bid Conference meeting agenda and prospective bidder sign-in sheets.
- Record Pre-Bid Conference.
- Prepare Final (100%) "Issued for Construction" conformed plans and specifications incorporating addenda and changes during the bid phase.

3.2 Pre-Construction

Pre-construction phase occurs from the time of issuance of the Contractor Notice to Proceed (NTP) (NTP for pre-construction activities prior to the issuance of the DPW permit), GHD shall perform the following:

- Prepare agenda for and conduct a pre-construction conference.
- Conduct weekly meetings.
- Review Contractor's submittals and construction schedule for conformance with plans and specifications.
- Review Contractor's master submittal log.
- Review Contractor's safety and traffic control plans.
- Review the Storm Water Pollution Prevention Plan.
- Verify that Contractor has applied for all required permits to begin the project.
- Setup and maintain construction management software (ProCore).
- Evaluate substitution requests to determine acceptability of substitute materials and/or equipment proposed by the Contractor and provide recommendations to GWA.

3.3 Construction

Construction phase occurs once the DPW permit has been issued. GHD shall perform the following construction management services during the construction stage of the project.

- Implementation and maintenance of project controls.
- Monitor and inspect daily construction activities in compliance with the contract, plans and specifications, and applicable codes and regulations.
- Witness all quality control testing by the Contractor.
- Maintain Construction Management Software (ProCore). All submittals shall be submitted through the management software.
- Conduct quality assurance testing and surveying as required by the plans and specifications.
- Prepare correspondences as requested by GWA.
- Conduct Davis-Bacon interviews if the construction project is grant funded (excluded).
- Review progress payment requests for accuracy and proper reflection of actual work performed and make recommendations to GWA regarding appropriateness and approval.
- Review contractor submitted payroll records for each payment request according to contract requirements.
- Issue directives and corrective action notices dealing with quality of workmanship, non-compliance, safety, and performance.
- At GWA's request, prepare field orders to change specific scope of work requirements.
- Coordinate inspection of contractor's surveys and material testing.
- Review updated contractor's progress schedule and recommend approval or rejection to GWA.
- Verify Contractor's material supply list with regard to delivery timetable, progress schedule, and justification for payment.
- Analyze and participate in negotiating claims and contract change requests; recommend action deemed appropriate.
- Prepare for GWA approval, change orders to modify the terms of the contract (change in cost, performance time, or technical provisions). Make changes to the design documents as necessary.
- Provide daily construction reports which includes pictures of construction highlighting deficient work, safety violations, examples of acceptable work, and other critical items. Reports shall be in ProCore.
- Maintain a set of as-built drawings recording all installed facilities, deviations from the original plans, details of installation, encountered subsurface features and utilities, and critical dimensions. This set of As-Built drawings is to be separate from the Contractor's As-Built drawing set. The purpose of this task is to ensure that the CM has their own set to check against the Contractor's set of drawings.
- Conduct weekly (or specified meeting interval) progress meetings with the contractor and GWA to discuss work progress and any concerns relating to the construction. Prepare meeting minutes for the progress meetings.
- Witness field tests performed by the construction contractor or his representative for compliance with the contract drawings and specifications.
- Inspect construction, installation, and assemblage of work agreed to with GWA. Verify conformance to the contract provisions and check for acceptable workmanship. Report acceptable and unacceptable work to GWA.

3.4 Engineering Services During Construction

GHD shall provide the following engineering services during the construction stage of the project.

- Review submittals, shop drawings, design calculations, samples, test results, RFI's, schedule updates, and other data required to be submitted by the Contractor for conformance with the contract documents.

- Maintenance of project records and document management.
- Provide special inspections as required.
- Address GEPA's and/or any government agency concerns and requirements with GWA input. Oversee and prepare meeting minutes of any meeting.

3.5 Post-Construction

GHD shall provide the following post-construction services during the project.

- Punch list development
- Punch list Inspections
- Review closeout submittals
- Procure records (electronic)
- Final CM report after written acceptance of the work by GWA. The final report shall include a narrative documentation of all significant design and construction events and issues and shall become a historical record for the project. The Final Report shall include:
 - All communication documentation
 - All design documentation
 - All construction documentation
 - Warranty information
 - Operation and maintenance information
 - Asset management registry

4. CLARIFICATIONS AND ASSUMPTIONS

1. The fee assumes that funding for the project or construction is not through a federal grant.
2. The fees are based on assumed replacement or repairs from initial site investigations. The repair or replacement assessment are preliminary assumptions for scoping and fee. The recommendation may change after a more thorough investigation.
3. Design of sewer siphons and separate utility bridge structures is excluded.
4. It is assumed Project Planning and Management will last for two years (104 weeks). If the project must extend past that duration, GHD will negotiate a contract adjustment with GWA.
5. A budget for construction management has been assumed. The budget amount was provided by GWA. The budget will be invoiced on a time-and-materials basis. It will be used for the high priority bridges selected by GWA.
6. The fee assumes that the waterline and sewer line bridge repairs and replacements will be divided up to three construction bid packages.
7. The topographic survey fees are estimated at 2 days in the field per bridge. It consists of an as-built survey of the bridge pipeline and the current water level. Channel cross-sections, vegetation clearing, and a full topography survey of the bridge are excluded.
8. Property investigation, appraisals, boundary surveys, and preparation of plats and legal descriptions for additional right-of-way or utility easements are excluded and are assumed not required.
9. Archaeological surveys and reviews, environmental permitting and biological surveys are excluded and are assumed not required due to funding. Additionally, the excavation is expected to be in existing trench boundaries and no SHPO review will be required.

10. Geotechnical investigations and reports are excluded and are assumed not required. If a need for these services is identified during the project, GHD will notify GWA.
11. Ground penetrating radar is excluded and assumed not required. If a need for this service is identified during the project, GHD will notify GWA.
12. It is assumed that the Contractor will prepare the construction permit applications, route the permit applications through the required government agencies, and pay permit fees.
13. GHD will create three (3) separate bid packages.
14. Budget are not included for GHD to revise or update bid packages that have expired due to a delay in bid advertisement. GWA agrees to negotiate with GHD for change orders for additional work that may include such services as restamping plans and specifications, verifying design based on a change in the adopted building code or design standards, and pre-printing of the bid packages.
15. GWA agrees to negotiate with GHD for change orders for additional design phase services due to additional work, delays or any other reason not due to errors/omissions or issues beyond GHD's control.
16. GHD has included a budget for pressure logging and flow metering equipment procurement, which will be used upon GWA's approval.

5. Fee Schedule

See Attached.

