AECOM

Guam Waterworks Authority (GWA)
Construction Management Services Fee Proposal Manhour & Expense Distribution Summary
Dungca Beach Sewer Line Relocation - Phase 1
GWA Project No. S20-001-EPA
01/05/2024 (Amendment 03)

Full Time Equivalent (FTE) Manhours / Month	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Jul-24	Estimated Manhours
160	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Procurement Phase (Pre-Bid)	3 Months														
Pre-Contruction Phase				2 Months											
Construction Phase						8 Months									
Closeout Phase														1 Month	
LABOR:															
Project Principal (A. Cross)	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	0.0%	0.0%	48.00
Project Manager/Lead CM (B. Ryley)	50.0%	25.0%	50.0%	75.0%	75.0%	100.0%	100.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	100.0%	1,640.00
Project Engineering Support (P. Diaz)				20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	144.00
Resident Inspector (TBD - AECOM)				75.0%	75.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1,680.00
Technical Admin/Document Control (D. Pangelinan)				50.0%	50.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	100.0%	1,280.00
QA Cost Estimating (D. Baggett)						0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
CM Safety (K. Robertson)	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	112.00
SUB-CONSULTANTS:															
Special Inspector (TBD - KHLG)				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-
Scheduling (Matson)			5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	96.00
EXPENSES:															
Vehicle	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	25.00
Mobile Phone	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	25.00
Weather Station **(descoped)**															0.00
Internet	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	14.00
ALLOWANCES:															
Geo-Engineering	1.00														1.00
Surveying	1.00														1.00
ProCore Software	1.00														1.00

	$54,502.89			$125,533.05		$550,380.65								$80,321.29	
LABOR:	Procurement Phase (Pre-Bid)			PreConstruction		Construction Phase								Close-out	
Project Principal (A. Cross)	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ 1,043	$ -	$ -	$ 12,511.01
Project Manager/Lead CM (B. Ryley)	$19,002	$ 9,501	$19,002	$28,504	$28,504	$ 38,005	$ 38,005	$ 28,504	$ 28,504	$ 28,504	$ 28,504	$ 28,504	$ 28,504	$ 38,004.91	$ 389,550.31
Project Engineering Support (P. Diaz)	$ -	$ -	$ -	$ 7,395	$ 7,395	$ 7,395	$ 7,395	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,697.49	$ 33,277.41
Resident Inspector (TBD - AECOM)	$ -	$ -	$ -	$17,613	$17,613	$ 23,484	$ 23,484	$ 23,484	$ 23,484	$ 23,484	$ 23,484	$ 23,484	$ 23,484	$ 23,484.00	$ 246,582.00
Technical Admin/Document Control (D. Pangelinan)	$ -	$ -	$ -	$ 6,923	$ 6,923	$ 10,384	$ 10,384	$ 10,384	$ 10,384	$ 10,384	$ 10,384	$ 10,384	$ 10,384	$ 13,845.23	$ 110,761.82
QA Cost Estimating (D. Baggett)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CM Safety (K. Robertson)	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,290	$ 1,289.67	$ 18,055.33
SUB-CONSULTANTS:															
Special Inspector (TBD - KHLG)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Scheduling (Matson)	$ -	$ -	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,360	$ 1,359.60	$ 16,315.20
Management Fee 10%	$ -	$ -	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 136	$ 135.96	$ 1,631.52
EXPENSES:															
Vehicle	$ 1,000	$ 1,000	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000.00	$ 25,000.00
Mobile Phone	$ 55	$ 55	$ 55	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110	$ 110.00	$ 1,375.00
Weather Station (descoped)						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Internet	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 82	$ 81.60	$ 1,142.40
ALLOWANCES:															
Geo-Engineering	$ -	$ -	$ -	$ -	$ -	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ -	$ 20,000.00
Surveying	$ -	$ -	$ -	$ -	$ -	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ -	$ 10,000.00
ProCore Software		$ 5,000		$ -											$ 5,000.00
GRT (5.262%)	$ 1,182	$ 946	$ 1,261	$ 3,497	$ 3,497	$ 4,685	$ 4,685	$ 3,796	$ 3,796	$ 3,796	$ 3,796	$ 3,796	$ 3,741	$ 4,421	$ 46,895.05
Estimated Monthly Invoicing Amount	$23,654	$18,916	$25,228	$69,950	$69,950	$ 93,722	$ 93,722	$ 75,937	$ 75,937	$ 75,937	$ 75,937	$ 75,937	$ 74,840	$ 88,428.98	$ 938,097.04
Fee By Phase			$67,797.41		$139,900.96								$641,969.70	$88,428.98	$938,097.04

Exhibit C

This is **EXHIBIT K**, consisting of 2 pages, referred to in and part of the **Agreement between Owner and Engineer for Professional Services – Task Order Edition** dated June 26, 2024.

Amendment No. 1 To Task Order No. 1- Dungca Beach Sewer Line Relocation – Phase 1

1. Background Data:

a.	Effective Date of Task Order:	June 26, 2024
b.	Owner:	Guam Waterworks Authority
c.	Engineer:	AECOM Technical Services Inc.
d.	Specific Project title:	Indefinite Delivery/Indefinite Quantity (IDIQ) for Professional Project/Construction Management Services for Island wide Sewer Collection/ Transmission System Repair, Rehabilitation, and Replacement.
e.	Specific Project description:	Extension of Construction Management services for the expanded scope of work, to include 1) Access gravel road stabilization, 2) Replace force main from Bayside Pump Station, 3) Install new telecommunication conduits from the Bayside Pump Station, 4) Rehabilitate sewer manhole located behind the Bayside Pump Station, 5) Install new flow metering equipment at the Bayside Pump Station 6) Upsize the existing 8-inch gravity sewer line to a 10-inch line 7) Complete the design for the roadway within the 40-foot-wide easement.

2. Description of Modifications

Task 1 – Pre- Bid Phase

Task 1.a –Constructability Review of Amended Design Documents

AECOM's CM team will conduct a constructability review of the amended design documents to verify that the design is feasible. The review will identify potential construction conflicts or deficiencies that may impact the project's design, schedule, or costs. AECOM to submit redlined markup of the plans and specifications, accompanied by annotated comments. These comments will be reviewed with GWA and the project Designer to address any issues. To account for the additional effort, the amount is shown in the cost summary under Task 1.a

Task 1.b- Permit Management Support Services – AECOM will attend meetings with local and federal permitting agencies as requested to support GWA, coordinate and monitor the permitting process. Anticipated agencies may include the Department of Public Works, the Guam Environmental Protection Agency, the Guam Department of Agriculture, the Land Management, the Guam Department of Parks and Recreation, Guam Coastal Zone Management, the United States Army Corps of Engineers, the United States Fish and Wildlife Service, and National Marine Fisheries Service, USEPA and others.

The services under this task will be provided on a time and materials (T&M) basis at the request of GWA. The initial budget for these services is set at a maximum of $10,000. If the scope of work exceeds this initial budget, GWA will be promptly notified. AECOM will then initiate discussions with GWA to determine how to proceed with a new, mutually agreed-upon budget.

Task 3- Construction Phase Services –AECOM will provide extended construction management services and general construction inspection, monitoring construction activities, managing project coordination, and ensure compliance to specifications and plans for the additional work. *See attachment*. This includes contract administration, preparation and processing of payment estimates, processing construction change request, claims and disputes, phasing plan review, continued review and approval, request for information, review and analysis of the project schedule, construction check surveying services, As-built drawing preparation and general construction inspection. The fee proposal submitted consistent with the outlined in AECOM's fee proposal submitted on January 5, 2024 Scope of Services under Section D: Construction Phase Services**.**

AECOM to oversee the expanded scope of work from two (2) months to three and a half (3.5) months. The anticipated amount of additional effort to provide extended Construction Management services and inspection is shown in the cost summary under Task 3.

An extension to the Task Order completion date is needed to complete the additional work for the following reasons; 1) the design and implement of erosion control measures to stabilize the embankment and stream slope, and ensuring continued access for Guam Waterworks Authority's (GWA) operations during construction activities 2) the replacement of the aging force main from the Bayside Pump Station (BPS) to Route 30 to improve system reliability and reduce the risk of failure 3) the install of new telecommunication conduits from the Bayside Pump Station (BPS) to Route 30 to support future SCADA system installations and enhance communication capabilities 4) the partially rehabilitation of the sewer manhole located behind the Bayside Pump Station (along the beach) to ensure continued functionality and extend its service life 5) the install of new flow metering equipment at the Bayside Pump Station to enhance the monitoring and control of wastewater flows 6) the upsize the existing 8-inch gravity sewer line to a 10-inch line to accommodate future expansion and improve system capacity 7) the complete the design for the roadway within the 40-foot-wide easement, ensuring that it meets project specifications and requirements.

The Schedule for Rendering services under this Amendment modified as follows.

Party	**Action**	**Schedule**
Owner	Request funding approval to USEPA and CCU	October – November 2024
Owner	Approval of Change Order	December 2024
Construction Manager Engineer	Permit Management Support Services	January 2025

Construction Manager	Constructability Review of Amended Design Documents	March 2025
Construction Manager	Construction Contract and NTP	August 2025

Description of Service	Original Amount	Additional Amount	Basis of Compensation
1. Basic Services			
Task 1 – Pre- Bid Phase	$ 62,797.40		Lump Sum
Task 1.a – Constructability Review of Amended Design Documents		$ 33,980.34	Lump Sum
Task 1.b– Permit Management Support Services		$ 10, 526.20	Lump Sum
Task 2 – Pre-Construction Phase	$ 139,900.96		Lump Sum
Task 3 – Construction Phase	$ 611,969.70	$ 265,644.02	Lump Sum
Task 3.a– Sub Consultant Inspection			Lump Sum
Task 3.b – Expenses			Lump Sum
Task 4 – Close Out Phase	$ 88,428.96		Lump Sum
Task 5 – QA and Testing	$ 35,000.00		Lump Sum
TOTAL COMPENSATION (Task 1-5)	$ 938,097.04	$ 310, 150.56	

3. Task Order Summary (Reference only)

a.	Original Task Order amount:	$ 938,097.04
b.	Net change for prior amendments:	$ 0.00
c.	This amendment amount:	$ 310,150.56
d.	Adjusted Task Order amount:	$ 1,248,247.60

The foregoing Task Order Summary is for reference only and does not alter the terms of the Task Order, including those set forth in Exhibit C.

Owner and Engineer hereby agree to modify the above-referenced Task Order as set forth in this Amendment. All provisions of the Agreement and Task Order not modified by this or previous Amendments remain in effect. The Effective Date of this Amendment is _____.

OWNER:	CONSTRUCTION MANAGER:
By: _____	By: _____
Title :_____	Title: _____
Date Signed: _____	Date Signed: _____
GWA Legal:	GWA Finance:
By: _____	By: _____
Title : _____	Title : _____
Date Signed: _____	Date Signed: _____

AECOM
414 W. Soledad Ave.
Suite 708
Hagåtña, GU 96910
www.aecom.com

671-477-8326/7 tel
671-472-8324 fax

October 09, 2024

Brett Railey, P.E., Acting Assistant General Manager
Guam Waterworks Authority
Engineering Division, Room 202
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao, GU 96913

Attention: Rylma Carino

Subject: Scope of Work and Fee Proposal for Indefinite Delivery/Indefinite Quantity (ID/IQ) Professional Project/Construction Management for Island wide Sewer Collection/Transmission System Repair, Rehabilitation and Replacement, Project No S 22-02 BND; Task Order No. 01 Dungca Beach Sewer Line Relocation – Phase 1
Amendment 01 for Task Order 01 – Additional Construction Management Support Services

Mr. Railey and Ms. Carino,

AECOM Technical Services, Inc. (AECOM) has been requested to provide additional Construction Management (CM) support services for the Dungca Beach Sewer Line Relocation – Phase I project. The additional services will be provided to address the revised design documents for the subject project. It is our understanding that the revised design will include the following elements:

- Access Gravel Road Stabilization - Design and implement erosion control measures to stabilize the embankment and stream slope, ensuring continued access for Guam Waterworks Authority's (GWA) operations during construction activities.
- Force Main Replacement - Replace the aging force main from the Bayside Pump Station (BPS) to Route 30 to improve system reliability and reduce the risk of failure.
- Telecommunication Conduits Installation - Install new telecommunication conduits from the Bayside Pump Station (BPS) to Route 30 to support future SCADA system installations and enhance communication capabilities.
- Sewer Manhole Rehabilitation - Partially rehabilitate the sewer manhole located behind the Bayside Pump Station (along the beach) to ensure continued functionality and extend its service life.
- Flow Meter Installation at Bayside Pump Station - Install new flow metering equipment at the Bayside Pump Station to enhance the monitoring and control of wastewater flows.
- Upsizing of Gravity Sewer Line - Upsize the existing 8-inch gravity sewer line to a 10-inch line to accommodate future expansion and improve system capacity.
- Roadway Design within the Easement - Complete the design for the roadway within the 40-foot-wide easement, ensuring that it meets project specifications and requirements.

Based on discussions with Rylma Carino and George Watson on October 03, 2024, we have amended our extension of construction management and inspection services from two (2) months to three and a half (3.5) months. This extension is necessary to oversee the expanded scope of work, which includes managing extra construction activities associated with the design revisions described above. The extended services will include the following:

AECOM

1. **Constructability Review of Amended Design Documents**
   AECOM's CM team will conduct a constructability review of the amended design documents to verify that the design is feasible. The review will identify potential construction conflicts or deficiencies that may impact the project's design, schedule, or costs. A redlined markup of the plans and specifications, accompanied by annotated comments, will be provided. These comments will be reviewed with GWA and the project Designer to address any issues.

2. **Additional Construction Phase Services**
   AECOM will provide extended construction management and inspection services for three and a half (3.5) months to oversee the additional work described in Rylma Carino's email dated August 26, 2024. This includes general construction inspection, construction monitoring activities, managing project coordination, and ensuring compliance with project specifications.

3. **Permit Management Support Services**
   AECOM will attend meetings with local and federal permitting agencies as requested to support GWA, coordinate, and monitor the permitting process. Anticipated agencies may include the Department of Public Works, Guam Environmental Protection Agency, Guam Department of Agriculture, Guam Department of Parks and Recreation, Guam Coastal Zone Management, United States Army Corps of Engineers, United States Fish and Wildlife Service, Department of Land Management, National Marine Fisheries Service, United States Environmental Protection Agency, and others.

   Our services assume that all required permits for this project will be identified, prepared, and obtained by the Designer, including any necessary permit signatures and approvals. AECOM will provide support and guidance within the capacity of our scope.

   The services under this task will be provided on a time and materials (T&M) basis at the request of GWA. The initial budget for these services is set at a maximum of $10,000. If the scope of work exceeds this initial budget, GWA will be promptly notified. AECOM will then initiate discussions with GWA to determine how to proceed with a new, mutually agreed-upon budget.

4. **Clarifications and Assumptions**
   a. The proposed fee assumes that the tasks and services will remain consistent with those outlined in AECOM's January 5, 2024 (Amendment 03) Scope of Services under Section D: Construction Phase Services.
   b. Construction Quality Assurance (CQA) Testing - No additional budget has been allocated for CQA Testing. The existing SOW and fee include an allowance to be managed on a time-and-materials basis. Any testing that exceeds the allowance shall be considered additional work, and a cost adjustment will be negotiated.
   c. CQA Surveying - No additional budget has been allocated for CQA Surveying. The current SOW and fee include an allowance to be managed on a time-and-materials basis. Any survey services that exceed the allowance shall be considered as additional work, and a cost adjustment will be negotiated.
   d. AECOM's scope does not include preparing permit applications, completing design documentation, or securing final permit approvals. These responsibilities fall solely on the Designer or other relevant parties engaged by GWA.
   e. AECOM is not responsible for conducting any environmental impact assessments, site surveys, or detailed design work unless specifically included in a separate task order.
   f. AECOM is not responsible for delays, penalties, or rejections that may arise from incomplete, incorrect, or missing permit documentation submitted by third parties.

AECOM

g. Any additional meetings or services outside the initially defined scope (e.g., legal consultation or litigation support) will require prior written approval and may necessitate a revised budget and schedule.

5. Fee Schedule

Task Description	Amount	Duration
1. AECOM		
Procurement (Pre-Bid) Phase Services	$32,281.68	1 month
Pre-Construction Phase	$0.00	
Construction Phase Services	$237,633.41	3.5 months
Close-Out Phase	$0.00	
Subtotal	**$269,915.09**	
2. Sub-Consultant Services		
Matson (Scheduling)	$4,996.53	
Management Fee (10%)	$499.65	
Subtotal	**$5,496.18**	
3. Expenses		
Vehicles, Phone, Internet, ODC's	$9,235.00	
Subtotal	**$9,235.00**	
4. Allowances		
Geo-Engineering (Geotech)	$0.00	
Surveying	$0.00	
Support Task Permitting	$10,000.00	
ProCore Software	$0.00	
Subtotal	**$10,000.00**	
Subtotal 1,2,3,4	$294,646.27	
GRT @ 5.262%	$15,504.29	
TOTAL LUMP SUM FEE	**$310,150.56**	

We look forward to continuing our partnership with GWA on this important project. Please feel free to contact us if you require further clarification of this proposal. If you have any questions regarding this amended fee proposal, please call me at (808) 529-7219 or Bryan Ryley at (671) 477-8326.

Sincerely,

Martin Nakasone
Vice President
Area Manager,
Hawaii-Pacific Islands
martin.nakasone@aecom.com

Attached:

Construction Management Services Fee Proposal (10/09/2024 Amendment 01)
CM Services Fee Proposal Manhours & Expenses Distribution Summary (10/09/2024 Amendment 01)

Guam Waterworks Authority (GWA)
Construction Management Services Fee Proposal
Dungca Beach Sewer Line Relocation - Phase 1
GWA Project No. S20-001-EPA
10/09/2024 (Amendment 01)

CLASSIFICATION	MANHOURS	RATE	AMOUNT
DIRECT LABOR:			
Project Principal (B. Wanner)	14.11	$260.65	$3,678.24
Project Manager/Lead CM (B. Ryley)	525.00	$237.53	$124,703.62
Project Engineering Support (P. Diaz)	-	$231.09	$0.00
Resident Inspector (TBD - AECOM)	672.00	$146.78	$98,632.80
Techncial Admin/Document Control (D. Pangelinan)	441.00	$86.53	$38,160.91
QA Cost Estimating (D. Baggett)	-	$143.12	$0.00
CM Safety (K. Robertson)	29.40	$161.21	$4,739.52
		LABOR	**$269,915.09**
SUB-CONSULTANTS:	UNITS	$/UNIT	AMOUNT
Special Inspector (TBD - KHLG)	-	$131.19	$0.00
Scheduling (Matson)	29.40	$169.95	$4,996.53
Management Fee 10%			$499.65
		SUB-CONSULTANTS	**$5,496.18**
REIMBURSABLES:	UNITS	$/UNIT	AMOUNT
Vehicle	7.00	$1,200.00	$8,400.00
Mobile Phone	7.00	$55.00	$385.00
Weather Station (descoped)	0.00	$0.00	$0.00
Internet	4.50	$100.00	$450.00
		REIMBURSEABLES	**$9,235.00**
ALLOWANCES:	UNITS	$/UNIT	AMOUNT
Geotechncial	0.00	$20,000.00	$0.00
Surveying	0.00	$10,000.00	$0.00
Support Task Permitting	1.00	$10,000.00	$10,000.00
ProCore Software	0.00	$5,000.00	$0.00
		ALLOWANCES	**$10,000.00**
	SUBTOTAL LABOR FEE, SUBCONSULTANTS, AND REIMBURSEABLE COSTS		$294,646.27
	5.262%	**Guam GRT**	$15,504.29
			==========
		TOTAL	**$310,150.56**

Notes:
Fee Estimate is based on attached schedule .
OT inspection = >8 Hr/d; > 40 Hr/wk; Sat/Sun/Hol.

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Guam Waterworks Authority (GWA)
Construction Management Services Fee Proposal Manhour & Expense Distribution Summary
Dungca Beach Sewer Line Relocation - Phase 1
GWA Project No. S20-001-EPA
10/09/2024 (Amendment 01)

Full Time Equivalent (FTE) Manhours / Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Month	Estimated Manhours
168	1					1	1	1	0.5						
Procurement Phase (Pre-Bid)	Procurement Phase (Pre-Bid)														
Pre-Contruction Phase				PreConstruction											
Construction Phase						Construction Phase									
Closeout Phase														Close-out	
LABOR:															
Project Principal (B. Wanner)						2.4%	2.4%	2.4%	1.2%						**14.1**
Project Manager/Lead CM (B. Ryley)	50.0%					75.0%	75.0%	75.0%	37.5%						**525.0**
Project Engineering Support (P. Diaz)															**0.0**
Resident Inspector (TBD - AECOM)	50.0%					100.0%	100.0%	100.0%	50.0%						**672.0**
Techncial Admin/Document Control (D. Pangelinan)						75.0%	75.0%	75.0%	37.5%						**441.0**
QA Cost Estimating (D. Baggett)															**0.0**
CM Safety (K. Robertson)						5.0%	5.0%	5.0%	2.5%						**29.4**
SUB-CONSULTANTS:															
Special Inspector (TBD - KHLG)															**0.0**
Scheduling (Matson)						5.0%	5.0%	5.0%	2.5%						**29.4**
EXPENSES:															
Vehicle	0.00					2.00	2.00	2.00	1.00						**7.0**
Mobile Phone	0.00					2.00	2.00	2.00	1.00						**7.0**
Weather Station **(descoped)**															**0.0**
Internet	1.00					1.00	1.00	1.00	0.50						**4.5**
ALLOWANCES:															
Geotechncial	0.00														**0.0**
Surveying	0.00														**0.0**
Support Task Permitting	1.00														**0.0**
ProCore Software	0.00														**0.0**

LABOR:	1 Month					1 Month	1 Month	1 Month	0.5 Month					Close-out	
Project Principal (B. Wanner)	$ -	$ -	$ -	$ -	$ -	$ 1,050.92	$ 1,050.92	$ 1,050.92	$ 525.46	$ -	$ -	$ -	$ -	$ -	**$ 3,678.24**
Project Manager/Lead CM (B. Ryley)	$ 19,952.58	$ -	$ -	$ -	$ -	$ 29,928.87	$ 29,928.87	$ 29,928.87	$ 14,964.43	$ -	$ -	$ -	$ -	$ -	**$ 124,703.62**
Project Engineering Support (P. Diaz)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Resident Inspector (TBD - AECOM)	$ 12,329.10	$ -	$ -	$ -	$ -	$ 24,658.20	$ 24,658.20	$ 24,658.20	$ 12,329.10	$ -	$ -	$ -	$ -	$ -	**$ 98,632.80**
Techncial Admin/Document Control (D. Pangelinan)	$ -	$ -	$ -	$ -	$ -	$ 10,903.12	$ 10,903.12	$ 10,903.12	$ 5,451.56	$ -	$ -	$ -	$ -	$ -	**$ 38,160.91**
QA Cost Estimating (D. Baggett)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
CM Safety (K. Robertson)	$ -	$ -	$ -	$ -	$ -	$ 1,354.15	$ 1,354.15	$ 1,354.15	$ 677.07	$ -	$ -	$ -	$ -	$ -	**$ 4,739.52**
SUB-CONSULTANTS:															
Special Inspector (TBD - KHLG)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Scheduling (Matson)	$ -	$ -	$ -	$ -	$ -	$ 1,427.58	$ 1,427.58	$ 1,427.58	$ 713.79	$ -	$ -	$ -	$ -	$ -	**$ 4,996.53**
Management Fee 10%	$ -	$ -	$ -	$ -	$ -	$ 142.76	$ 142.76	$ 142.76	$ 71.38	$ -	$ -	$ -	$ -	$ -	**$ 499.65**
EXPENSES:															
Vehicle	$ -	$ -	$ -	$ -	$ -	$ 2,400.00	$ 2,400.00	$ 2,400.00	$ 1,200.00	$ -	$ -	$ -	$ -	$ -	**$ 8,400.00**
Mobile Phone	$ -	$ -	$ -	$ -	$ -	$ 110.00	$ 110.00	$ 110.00	$ 55.00	$ -	$ -	$ -	$ -	$ -	**$ 385.00**
Weather Station (descoped)						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Internet	$ 100.00	$ -	$ -	$ -	$ -	$ 100.00	$ 100.00	$ 100.00	$ 50.00	$ -	$ -	$ -	$ -	$ -	**$ 450.00**
ALLOWANCES:															
Geotechncial	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Surveying	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Support Task Permitting	$ 10,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 10,000.00**
ProCore Software	$ -	$ -		$ -											**$ -**
GRT (5.262%)	$ 2,230.12	$ -	$ -	$ -	$ -	$ 3,792.62	$ 3,792.62	$ 3,792.62	$ 1,896.31	$ -	$ -	$ -	$ -	$ -	**$ 15,504.29**
Estimated Monthly Invoicing Amount	$ 44,611.80	$ -	$ -	$ -	$ -	$ 75,868.22	$ 75,868.22	$ 75,868.22	$ 37,934.11	$ -	$ -	$ -	$ -	$ -	**$ 310,150.56**

Exhibit D

THE DISTRICT COURT OF GUAM

UNITED STATES OF AMERICA, Plaintiff, vs. GUAM WATERWORKS AUTHORTIY and the GOVERNMENT OF GUAM, Defendants.	CIVIL CASE NO. 24-00004 **ORDER**

Before the court is Plaintiff United States of America's[1] Consented-To Motion to Enter Proposed Partial Consent Decree Under the Clean Water Act. *See* Mot., ECF No. 5. After a thorough review of the Partial Consent Decree, filed on January 31, 2024, the court hereby finds that the Partial Consent Decree is fair, reasonable, and consistent with the Clean Water Act. *See* Partial Consent Decree, ECF No. 2-1. Accordingly, the court will sign and enter the Partial Consent Decree as an order of this court.[2]

SO ORDERED.

/s/ Frances M. Tydingco-Gatewood
Chief Judge
Dated: Aug 09, 2024

[1] The Plaintiff is acting on behalf of the United States Environmental Protection Agency. *See* Mot. at 2, ECF No. 5.

[2] The court finds that there appear to be the following typographical errors in the Partial Consent Decree: (1) page 30, line 21, the letter "h" after the end of the sentence seems superfluous; (2) page 48, line 10, cites to "2.c"; the citation should be to "12.c"; and (3) page 56, line 5, cites to "Paragraph 476", the citation should be to "Paragraph 46". Partial Consent Decree, ECF No. 2-1. The court notes that the page numbers referenced in this footnote are taken from the document itself and not CM/ECF. If the parties agree that these are typographical errors, the court will allow the parties to come to the clerk's office and make the corrections by interlineation.

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IN THE DISTRICT COURT OF GUAM

UNITED STATES OF AMERICA,

Plaintiff,

v.

GUAM WATERWORKS AUTHORITY and the GOVERNMENT OF GUAM,

Defendants.

Civil Action No. 24-00004

PARTIAL CONSENT DECREE

TABLE OF CONTENTS

Plaintiff United States of America, on behalf of the United States Environmental Protection Agency ("EPA"), has filed a complaint in this action concurrently with the lodging of this Consent Decree (the "Complaint"), alleging that Guam Waterworks Authority ("GWA" or "Defendant") violated the conditions and limitations of GWA's National Pollutant Discharge Elimination System ("NPDES") permits EPA issued to GWA pursuant to Section 402 of the Clean Water Act ("CWA" or "Act"), 33 U.S.C. § 1342.

GWA, a public corporation, owns and operates a publicly owned treatment works ("POTW") that collects, treats, and disposes of sanitary sewage for the Territory of Guam including certain U.S. military installations. The Complaint alleges that GWA is violating the Act by discharging untreated sewage from its Wastewater Collection System in violation of its NPDES permits. The Complaint also alleges that GWA is violating the Act by discharging sewage from its Northern District Wastewater Treatment Plant ("Northern District WWTP") and Agaña/Hagåtña Wastewater Treatment Plant ("Hagåtña WWTP") in violation of its NPDES permits. The Parties acknowledge that in 2022, GWA upgraded its Northern District WWTP to secondary treatment technology to address certain of these alleged violations. The Parties also acknowledge that GWA has initiated several other actions specified herein in Section V (Compliance Requirements).

GWA has alleged certain hardships and provided documentation to the United States, detailing its financial hardship and other limitations on its ability to make infrastructure improvements due to Guam regulatory, labor, and construction-related constraints.

The Government of Guam ("Guam") is joined as a statutory defendant in this action pursuant to CWA Section 309(e), 33 U.S.C. § 1319(e), and shall be liable for payment of any judgment or any expenses incurred as a result of complying with any judgment entered against

GWA, to the extent that Guam's laws and regulations prevent GWA from raising revenues needed to comply with such judgment.

Defendants do not admit any liability to the United States arising out of the transactions or occurrences alleged in the Complaint.

The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation among the Parties regarding certain relief with respect to the claims alleged in the Complaint, and that this Consent Decree is fair, reasonable, and in the public interest.

The Parties agree that certain further relief to address the claims alleged in the Complaint shall be addressed in a future consent decree or by litigation, including but not limited to implementation of the approved Force Main Action Plan, completion of Tier 2, 3, and 4 Pump Station Projects, Gravity Main Replacement or Rehabilitation of at least 35 additional "unique miles," additional wet and dry flow monitoring for the Tumon Basin, and upgrading the Hagåtña WWTP to secondary treatment. The Parties intend to reengage in negotiations regarding the remaining injunctive relief and payment of an appropriate civil penalty no later than seven (7) years following the Effective Date of this Consent Decree.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law except as provided in Section I (Jurisdiction and Venue), and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Section 309(b) and (e) of the Act, 33 U.S.C. § 1319(b) and (e), and over the Parties. Venue lies in this District pursuant to CWA Section 309(b), 33

U.S.C. § 1319(b), and 28 U.S.C. §§ 1391(b) and (c) and 1395(a), because GWA is located in this judicial district, and the violations alleged in the Complaint are alleged to have occurred in this judicial district. For purposes of this Decree, or any action to enforce this Decree, Defendants consent to the Court's jurisdiction over this Decree and any such action and over Defendants and consent to venue in this judicial district.

2. For purposes of this Consent Decree, Defendants agree that the Complaint states claims upon which relief may be granted pursuant to CWA Section 309(b), 33 U.S.C. § 1319(b).

3. EPA has notified the Government of Guam of this action under CWA Section 309(b), 33 U.S.C. § 1319(b).

II. APPLICABILITY

4. The obligations of this Consent Decree apply to and are binding upon the United States and upon GWA, and any successors, assigns, or other entities or persons otherwise bound by law, and upon Guam and its representatives and any successors, assigns, or other entities or persons otherwise bound by law, when liability is incurred pursuant to Section 309(e) of the Act, 33 U.S.C. § 1319(e).

5. No transfer of ownership or operation of GWA's POTW, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve GWA of its obligation to ensure that the terms of the Decree are implemented. At least thirty (30) Days prior to such transfer, GWA shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to EPA and the United States, in accordance with Section XIII (Notices). Any attempt to transfer ownership or operation of the POTW without complying with this Paragraph constitutes a violation of this Decree.

6. GWA shall provide a copy of this Consent Decree to all officers, employees, and

agents whose duties might reasonably include compliance with any provision of this Decree, as well as to any contractor retained to perform work required under this Consent Decree. GWA shall condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

7. In any action to enforce this Consent Decree, GWA shall not raise as a defense the failure by any of their officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

III. OBJECTIVES

8. It is the goal of the Parties to eliminate Sanitary Sewer Overflows and for GWA to achieve compliance with its NPDES Permits. In entering into this Consent Decree, the Parties intend to further the objectives set forth in the Act, to set out measures that GWA will implement to reduce the frequency and impact of Sanitary Sewer Overflows, especially through the reduction of inflow and infiltration, and to take preliminary measures for the construction of secondary treatment upgrades to the Hagåtña WWTP as set forth in this Consent Decree to comply with GWA's NPDES Permit's effluent limitations regulating discharges from that WWTP.

IV. DEFINITIONS

9. Terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Decree. Whenever the terms set forth below are used in this Consent Decree, the following definitions shall apply:

"Act" or "CWA" shall mean the Clean Water Act, 33 U.S.C. §§ 1251-1388.

"Acute Defect" shall mean any NASSCO pipeline assessment certification program Grade 5 rating for Gravity Mains or any failure in an asset that presents an imminent risk of an

SSO.

"Bypass," as defined by 40 C.F.R. § 122.41(m), shall mean the intentional diversion of waste streams from any portion of a Wastewater Treatment Plant.

"Complaint" shall mean the Complaint filed by the United States in this action.

"Consent Decree" or "Decree" shall mean this Decree and all Appendices attached hereto (listed in Section XXIII).

"Consequence of Failure" or "COF" shall mean the outcome of an asset failure if a failure should occur.

"Consequence of Failure Score" or "COF Score" shall mean a numerical value of 1 to 5 assigned to an asset based on an analysis of the consequence of an asset failure. Calculating consequence of failure involves obtaining information about an asset's original design, material, installation, and operating parameters in conjunction with an assessment or estimate of its potential impact to human health, the environment, and economy were the asset to fail. Criteria factors can be given a score ranging from 1 (low impact of failure) to 5 (high impact of failure) and a weight, which allow some factors to be given more importance than others.

"Day" shall mean a calendar day unless expressly stated to be a business day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next business day.

"Defendants" shall mean Guam Waterworks Authority and the Government of Guam.

"Depth to diameter (d/D) ratio" shall mean the depth of height of water within the pipe segment divided by the inner diameter of the pipe segment.

"EPA" shall mean the United States Environmental Protection Agency and any of its

successor departments or agencies.

"Effective Date" shall have the definition provided in Section XIV.

"Facility" shall mean GWA's "treatment works" or "Publicly Owned Treatment Works" or "POTW", as those terms are defined in 33 U.S.C. § 1292(2)(a) and 40 C.F.R. § 403.3(q).

"Flow Model" shall mean the hydrologic and hydraulic model that: (a) takes inputs relating to weather conditions and the Wastewater Collection System's operating parameters; and (b) predicts flows in the Wastewater Collection System and Wastewater Treatment Plants.

"FOG" shall mean fats, oils, and grease, which are animal- and plant-derived substances that may solidify or become viscous due to temperature and other factors.

"Food Service Establishment" or "FSE" shall mean any facility or lessor to a facility preparing and/or serving food for commercial use or sale, including but not limited to, restaurants, coffee shops, public or private school cafeterias, lunchrooms, luncheonettes, lunch-counters, in-plant or employee eating establishments, bars, cafes, taverns, sandwich stands, drink stands, temporary food service establishments, mobile food service establishments, food preparation kitchens, any cafeteria or similar facility and any other eating establishment with food preparation such as organizations, clubs, boardinghouses, guesthouses, or concessions within any public market that gives or sells food or beverages to the public, guests, patrons or employees, as well as kitchens in which food is prepared on the premises for serving elsewhere, including cafeteria functions, home manufacturers and caterers, and home food industries, and food packaging, meat processing, and meat packing facilities.

"Force Main" shall mean any pipe that receives, contains, and conveys, under pressure, wastewater from the discharge side of a pump.

"Gravity Main" shall mean any pipe that receives, contains, and conveys wastewater,

which is not normally under pressure, but is intended to flow unassisted under the influence of gravity.

"Grease Removal Device" or "GRD" shall mean a concrete, fiberglass, or fiberglass-reinforced plastic structure designed to separate and retain grease and oil from the wastewater stream. GRDs are multiple-compartment units with inlet and outlet baffles and/or T-pipes, and inspection ports.

"GWA" shall mean the Guam Waterworks Authority.

"Infiltration" shall mean water other than wastewater that enters a Wastewater Collection System during wet weather conditions from the ground through such means as defective pipes, pipe joints, connections, or manholes.

"Inflow" shall mean water other than wastewater that enters a Wastewater Collection system during wet weather conditions from illicit or unpermitted sources other than Infiltration, such as, but not limited to, roof leaders, foundation drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between sanitary sewers and storm sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

"Inflow and Infiltration" or "I&I" shall mean all water from both Infiltration and Inflow without distinguishing the source.

"Lateral" shall mean that portion of a Gravity Main lateral line that is owned by GWA and located between: (i) the Gravity Main and (ii) either the property line of a residence or business, or the boundary of an established easement.

"Likelihood of Failure" or "LOF" shall mean the statistical probability that defects could cause an asset to fail, inhibiting its ability to effectively convey Municipal Sewage based on the

observed or estimated condition of the asset.

"Likelihood of Failure Score" or "LOF Score" shall mean a numerical value of 1 to 5, assigned to an asset based on the observed or estimated condition of the asset. Calculating likelihood of failure involves obtaining information about an asset's original design, material, installation, and operating parameters in conjunction with an assessment or estimate of its potential current condition. Criteria factors can be given a score ranging from 1 (good) to 5 (poor) and a weight, which allow some factors to be given more importance than others.

"Municipal Sewage" shall mean domestic, commercial, and industrial wastewaters.

"NASSCO" shall mean the National Association of Sewer Service Companies.

"NPDES Permit" or "Permit" as used herein shall mean the National Pollutant Discharge Elimination System Permits issued to GWA for the Facility (Permit Numbers GU0020087, GU0020222, GU0020141, GU0020273), or any successor permit(s).

"Paragraph" shall mean a portion of this Decree identified by an Arabic numeral.

"Parties" shall mean the United States, GWA, and the Government of Guam.

"Power Supply" shall mean an electrical power supply system for a Pump Station in which the sizing, design, and installation of the system complies with National Electric Code requirements; all electrical components, panels and enclosures shall be listed by Underwriter's Laboratory and/or rated by the National Electrical Manufacturer's Association ("NEMA") as appropriate for Pump Stations; all electrical components, panels and enclosures shall be protected from physical damage by the 100 year flood, all electrical control panels shall be enclosed in protective enclosure panels that are NEMA rated for harsh, corrosive environments, and wastewater pumping stations should remain fully operational during the 25 year flood.

"Professional Engineer" shall mean a Professional Engineer registered on Guam pursuant

to the requirements of the National Council of Examiners for Engineers and Surveyors or equivalent international organization standards as approved by EPA in the appropriate discipline (*e.g.*, civil, mechanical, electrical) for the work being undertaken.

"Preferred Operating Region" or "POR" shall mean the range of flows over which a pumped flow is highly controllable and is established by the pump manufacturer in accordance with ANSI/HI 9.6.3 Rotodynamic (Centrifugal and Vertical) Pumps – Guideline for Allowable Operating Region. Within this range, the service life of the pump is not significantly affected by hydraulic loads, vibration, or flow separation.

"Pretreatment Standard" shall mean general Pretreatment Standards in 40 C.F.R. Part 403, categorical Pretreatment Standards, local limits, and State and local law.

"Publicly Owned Treatment Works" or "POTW" shall mean the treatment works, as defined in 33 U.S.C. § 1292(2)(a) and 40 C.F.R. § 403.3(q), that is owned and operated by GWA.

"Pump Station" shall mean facilities comprised of pumps that lift wastewater to a higher hydraulic grade line, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station.

"Rehabilitation" or "Rehabilitate" shall mean:

a. For Gravity Mains: the renewal or reconstruction of a Gravity Main from node to node, including all manholes and Laterals connected to the Gravity Main;

b. For Pump Stations: the renewal or reconstruction of a Pump Station;

c. For Force Mains: the renewal or reconstruction of a Force Main pipe segment;

"Repair" shall mean:

a. For Gravity Mains: the work of fixing a portion of a Gravity Main that does not

result in Rehabilitation of the Gravity Main;

b. For Pump Stations: the work of fixing a portion of a Pump Station that does not result in Rehabilitation of the Pump Station;

c. For Force Mains: the work of fixing a portion of a Force Main that does not result in Rehabilitation of the Force Main;

"Replace" or "Replacement" shall mean:

a. For Gravity Mains: the work of demolishing a Gravity Main and installation of a new Gravity Main in its place, including all manholes and Laterals connected to the Gravity Main;

b. For Pump Stations: the work of demolishing an entire Pump Station, including the wet well, and installation of a new Pump Station in its place;

c. For Force Mains: the work of demolishing a Force Main and installation of a new Force Main in its place;

"Sanitary Sewer Overflow" or "SSO" shall mean an overflow, spill, diversion, or release of wastewater from or caused by GWA's Wastewater Collection System, except that the term "SSO" does not include wastewater backups into buildings caused solely by a blockage or other malfunction in a building lateral that is privately owned.

"Section" shall mean a portion of this Decree identified by a Roman numeral.

"State," as defined in 33 U.S.C. § 1362(3), shall mean the Territory of Guam.

"Ten States Standards" shall mean the *Recommended Standards for Wastewater Facilities, Policies for the Design, Review, and Approval of Plans and Specifications for Wastewater Collection and Treatment Facilities, 2014 Edition* or any revisions thereof.

"United States" shall mean the United States of America, acting on behalf of EPA.

"Wastewater Collection System" shall mean all parts of the wastewater collection system owned or operated by GWA that are intended to convey Municipal Sewage to GWA's Wastewater Treatment Plants, including, without limitation, sewers, pipes, Gravity Mains, Pump Stations, lift stations, manholes, Force Mains, and appurtenances associated with each of the above.

"Wastewater Treatment Plant" or "WWTP" shall mean that portion of GWA's POTW that is designed to provide treatment (including recycling and reclamation) of Municipal Sewage and industrial waste.

V. COMPLIANCE REQUIREMENTS

10. Implementation of Compliance Requirements. GWA shall implement the compliance requirements in this Section in accordance with Section III (Objectives) of this Decree and by the deadlines set forth herein.

A. WASTEWATER COLLECTION SYSTEM

11. Gravity Main Condition Assessment. GWA shall complete a closed-circuit television ("CCTV") inspection and submit a Gravity Main Condition Assessment Report regarding all of its Gravity Mains in accordance with the following schedule:

a. Within 210 days of the Effective Date, as an interim milestone, GWA shall complete CCTV inspection of all Gravity Mains in GWA's Wastewater Collection System, except for pipe segments that are inaccessible for CCTV inspection, which are identified in Appendix A. For pipe segments identified in Appendix A, GWA shall conduct pipe inspections utilizing acoustic-based sewer pipe assessment technology. GWA shall not use CCTV recordings completed before January 1, 2013. If any of the pipe segments identified in Appendix A become accessible for CCTV inspection, GWA shall complete CCTV inspection of those pipe segments within 30 Days and report on that inspection in the next semi-annual report.

b. Within nine (9) months of the Effective Date, GWA shall complete and document an assessment of each CCTV inspection for all Gravity Mains in GWA's Wastewater Collection System in accordance with NASSCO standards. For the pipe segments identified in Appendix A, GWA shall complete and document an assessment of each acoustic-based pipe segment inspection and compare the results with the assessment based on CCTV inspection of the Wastewater Collection System in accordance with good engineering practices.

c. Within eighteen (18) months of the Effective Date, as an interim milestone, GWA shall submit to EPA for review and approval a Gravity Main Condition Assessment Report that evaluates, at a minimum, NASSCO rating, failure mode, Likelihood of Failure, Consequence of Failure, criticality analysis, and remaining useful life of all Gravity Mains in GWA's Wastewater Collection System, and recommends Gravity Main Repair, Rehabilitation, and Replacement based upon those evaluations and good engineering practices.

12. Gravity Main Repair, Rehabilitation, and Replacement Program. GWA shall implement a Gravity Main Repair, Rehabilitation, and Replacement program in accordance with this Paragraph.

a. Acute Defects. As a compliance milestone, GWA shall Repair, Rehabilitate, or Replace Gravity Main segments or assets with Acute Defects as soon as possible, but no later than 18 month(s) after GWA identifies the Acute Defect for GWA in-house Repair, Rehabilitation, or Replacement, and no later than 24 months after GWA identifies the Acute Defect for a Repair, Rehabilitation, or Replacement to be performed by external contractors.

b. Rehabilitation or Replacement. As a compliance milestone, GWA shall Rehabilitate or Replace a total of thirty "unique miles" of Gravity Mains within ten (10) years of the Effective Date. Rehabilitation or Replacement Work completed up to one (1) year prior to

lodging of this Consent Decree may be credited toward the mileage milestones. As interim milestones, GWA shall Rehabilitate or Replace:

i. at least ten "unique miles" by September 1, 2027;

ii. at least twenty "unique miles" by September 1, 2030;

c. Work Plan. Within the earlier of three (3) months of the EPA's approval of the Gravity Main Condition Assessment Report or twenty-four (24) months of the Effective Date, as an interim milestone, GWA shall submit a Gravity Main Work Plan to EPA, for review and approval, that organizes all necessary Gravity Main Repair, Rehabilitation, and Replacement work recommended in its Gravity Main Condition Assessment Report into an appropriate prioritization list that prioritizes work with the goal of preventing SSOs and limiting I&I: Acute Defect, short-term, or long-term. GWA shall include in the Gravity Main Work Plan a schedule for all Acute Defect and Short-Term Gravity Main Repair, Rehabilitation and Replacement work for the next five years based on its prioritization list. GWA shall schedule all Acute Defect work in accordance with Paragraph 12.a.

d. Annual Evaluation. GWA shall evaluate its Gravity Main Work Plan prioritization list and work schedule as needed, but not less than annually. The annual evaluation shall be submitted to EPA for its information and shall be completed by September 30 of each calendar year. Any modifications to the work schedules are subject to EPA review and approval.

13. a. Long-Term Gravity Main Plan. Within nine (9) years of the Effective Date, as a compliance milestone, GWA shall submit to EPA for review and approval a Long-Term Gravity Main Plan that: (i) sets out a schedule for the design and construction of all necessary Long-Term Gravity Main Rehabilitation and Replacement work in its Gravity Main Work Plan prioritization list; (ii) meets the capacity criterion established in the Storm Technical

Memorandum dated January 4, 2023 (the "Storm Technical Memorandum"); and (iii) proposes an annual commitment of Gravity Main mileage of at least three (3) miles per year for Rehabilitation or Replacement. GWA's Long-Term schedule and work shall take into account the Capacity Assurance Program and GWA's Capacity Evaluation Report and Flow Model in Paragraph 14.b, below. GWA shall provide the associated cost estimates for all work under the Plan with as much specificity as possible.

b. Capacity Assurance Program. GWA's POTW shall not exceed the POTW's design capacity. All pipe segments in GWA's Gravity Mains shall meet the capacity criterion established in the Storm Technical Memorandum. Based on the Flow Model results and the Capacity Evaluation Report results, GWA shall develop and submit as part of its Long-Term Gravity Main Plan a Capacity Assurance Program ("CAP"). The CAP shall include a plan and schedule, for EPA review and approval, for work necessary to ensure that GWA's Wastewater Collection System and POTW will have adequate capacity.

14. Capacity Evaluation Report. Within eighteen (18) months of the Effective Date, as an interim milestone, GWA shall complete a Capacity Evaluation Report that identifies current or potential future flow bottlenecks within the Wastewater Collection System. The Capacity Evaluation Report shall:

a. Include a hydraulic assessment;

b. Include a Flow Model for GWA's POTW, including both the Wastewater Collection System and WWTPs, that is calibrated according to the Chartered Institution of Water and Environmental Management (CIWEM) Code of Practice for the Hydraulic Modelling of Urban Drainage Systems Version 01 and is consistent with the Storm Technical Memorandum. The Flow Model calibration shall incorporate: (i) new data gathered through December 31, 2022;

(ii) physical changes to the Wastewater Collection System and changes to capacity at the POTW through December 31, 2022; (iii) additional wet and dry flow monitoring for the Central Basin; and (iv) Flow Model verification. As part of the Capacity Evaluation Report, GWA shall provide a detailed Flow Model calibration description that: (i) details how the Flow Model was calibrated in accordance with CIWEM best practices; (ii) summarizes the data used to calibrate the Flow Model; and (iii) describes the confidence of the Flow Model;

c. Identify, at a minimum, the hydraulic capacities of the POTW, and compare those capacities to existing and future projected average and peak flows in dry and wet weather; and

d. Identify those portions of the POTW that are expected to cause or contribute to SSOs or prohibited Bypasses at the WWTPs under existing and future projected average and peak flows in dry and wet weather, and prioritize those portions, under current or projected future conditions, to meet the capacity criterion in the Storm Technical Memorandum.

15. Capacity Assurance Projects. Within seven (7) years of the Effective Date, as a compliance milestone, GWA shall complete necessary Rehabilitation, Replacement or sewer pipe upsizing to assure adequate capacity for peak wet weather flows at the Wastewater Collection System locations identified in subparagraphs 15.a-e of this Paragraph and any other critical capacity-limited segments in the Wastewater Collection System identified in GWA's Capacity Evaluation Report submitted to EPA pursuant to Paragraph 14 (collectively, "Capacity Assurance Projects"). GWA shall ensure each Capacity Assurance Project assures adequate pipe capacity, meaning that pipe segments have a depth to diameter (d/D) ratio meeting the capacity criterion established in the Storm Technical Memorandum.

a. Route 12 at Route 2;

b. Marine Corps Drive between Route 4 and Highway 6;

c. Barrigada Pump Station;

d. Route 1 (Dededo). GWA shall complete the Northern District Capacity Replacement – Phase 1 project along the highlighted pipe segments in Appendix B, and submit a proposed schedule for the remaining Route 1 projects for EPA review and approval;

e. Route 4 (between Pump Station 18 and Pump Station 14).

16. Capacity Assurance Report. After completing all of the Capacity Assurance Projects listed above in Paragraph 15, GWA shall incorporate those Capacity Assurance Projects into GWA's Flow Model and shall recalibrate the Flow Model using best industry practices. Within six (6) months of completion of the projects in Paragraph 15, as an interim milestone, GWA shall submit a Capacity Assurance Report to EPA to evaluate whether the capacity projects remedied the capacity issues at each of the locations listed in Paragraph 15.a-e, and to identify any other capacity bottlenecks within the Wastewater Collection System, particularly those locations in need of Rehabilitation, Replacement, or sewer pipe upsizing to assure capacity. The Capacity Assurance Report shall include a proposed schedule, which shall be subject to EPA's review and approval, to implement Rehabilitation, Replacement, and improvement projects to address any identified capacity issues.

17. Force Main Inventory. Within 60 days of the Effective Date, as an interim milestone, GWA shall submit to EPA a list of all Force Main segments in its entire Wastewater Collection System that identifies each segment's location, properties (flow rate, pipe material, diameter, length, installation date, etc.), known condition, last inspection date, and type of inspection conducted. Together with this list, GWA shall submit to EPA a GIS map that includes the locations of all Force Mains.

18. Force Main Condition Assessment. Within three (3) years of the Effective Date, as an interim milestone, GWA shall complete a Force Main condition assessment for the Force Mains identified in Table A, below. As part of the Force Main condition assessment, GWA shall ensure that the condition assessment steps detailed below are performed for all Table A Force Mains, valves, air relief valves, drains, connections, fittings and appurtenances associated with the Force Main, and is conducted, stamped, and certified by a Professional Engineer. At a minimum, GWA shall:

a. Inspect and determine functionality;

b. Identify defects such as inoperable valves, exposed corrosion, leaks, cracks, or other conditions that could contribute to the failure of the Force Main;

c. Evaluate all metallic (cast iron, ductile iron, steel, etc.) and concrete Force Mains, fittings, and appurtenances to determine whether corrosion protective measures are necessary. Appropriate corrosion protective measures include:

i. Targeted pipeline/component replacement;

ii. Adding protective coatings;

iii. Installing an internal pipe lining; and

iv. Adding targeted cathodic protection.

d. Conduct an external pipe inspection of the exterior of each Force Main at each location where the pipe segment is exposed to assess structural damage and the integrity of protective coatings using visual inspection and technology suitable to the particular pipe to identify possible defects such as leaks, cracks, corrosion, erosion, pinholes, coating damage, delamination or any other conditions that could contribute to the failure of the Force Main. For purposes of this Paragraph, suitable technology shall be no less than ultrasonic testing, magnetic

flux leakage, or broadband electromagnetic testing, or a technology that EPA and GWA agree is equivalent to those technologies in terms of its ability to meet the stated objectives of inspection and assessment. The requirements of subparagraph d of this Paragraph do not apply to Force Mains that are, as of the Effective Date, in the engineering design phase of a construction project;

e. Conduct pressure testing evaluations on all segments of Table A Force Mains that have a LOF greater than 3.4, using accepted engineering methods suitable for each pipe to identify possible defects or any other conditions that could contribute to the failure of the Force Main. The purpose of the pressure testing evaluation is to determine if the design, construction, and materials are sufficient to withstand the maximum predicted transient pressures that may be expected to occur under normal, peak flow, and emergency (shut-down and start-up) conditions. This evaluation shall include, but not necessarily be limited to, (i) a review of available pressure data, and (ii) an evaluation using actual pressure measurements of the transient pressures that occur during the range of anticipated operating conditions. Any actual pressure measurements shall be limited to the range of operating conditions that is both prudent and practicable. GWA shall follow up on observed conditions that are likely to be a source of leakage. The methodologies employed will be appropriate to the type of condition and location of the suspected leakage. The requirements of subparagraph e of this Paragraph do not apply to Force Mains that are, as of the Effective Date, in the engineering design phase of a construction project;

f. Identify the extent to which defects affect the performance of the Force Main, through performance indicators such as unusual noise, vibrations, pipe and pipe joint leakage and displacement, valve arrangement and leakage, lift station operation and

performance, discharge pump rates and pump speed, and pump suction and discharge pressures;

g. Review operating data, such as operating pressures, pump run times, and flow rates, as well as reports of physical inspections, which can reveal reduced Force Main capacity and other performance issues to determine if there is an actual or potential significant reduction in capacity; and

h. Determine the Force Main's probable time of failure for the following four failure modes based on the information gathered in subparagraphs a-f of this Paragraph: condition or structural failure, end of useful life, capacity, and not meeting an established level of service.

19. Force Main Assessment Report. Within three-and-a-half (3.5) years of the Effective Date, as an interim milestone, for each Force Main that was assessed pursuant to Paragraph 18, GWA shall submit to EPA, for review and approval, a Force Main Assessment Report that:

a. Describes the method and extent of each assessment conducted under Paragraph 18, including valve, exposed fitting, and exposed appurtenance inspections; corrosion protection evaluations; external pipe inspections; pressure testing evaluations; and leak detection tests. The report must provide a narrative of approach and methodology for inspections, inspection locations and, in an appendix to the report, provide the field data collected pursuant to Paragraph 18.

b. Describes the results of each assessment for each Force Main conducted pursuant to inspections referenced in Paragraph 18, including valve, exposed fitting, and exposed appurtenance inspections; corrosion evaluations; external pipe inspections, pressure testing evaluations, and leak detection tests;

c. Identifies, and quantifies, where practicable, observed or measured conditions such as leaks, cracks, corrosion, erosion, pinholes, coating delamination, joint deflections, pipe deformation, wall-thinning, or any other conditions that could contribute to the failure of the Force Main;

d. Includes an inventory of all pipe segments with observed conditions and photo documentation of Force Main defects whenever possible;

e. Includes a summary of defects that affect the performance of the Force Main, through performance indicators such as unusual noise, vibrations, pipe and pipe joint leakage and displacement, valve arrangement and leakage, lift station operation and performance, discharge pump rates and pump speed, and pump suction and discharge pressures;

f. Includes a description of each Force Main's failure modes, and the probable time of failure, based on the information gathered through the assessments conducted pursuant to Paragraph 18; and

g. Based on Force Main condition assessments, identifies pipe segments that leak or are cracked, broken, or ruptured (or have the potential to leak, crack, break, or rupture within the next ten (10) years), or are experiencing (or have the potential to experience) a significant reduction in capacity or other conditions that could lead to Force Main failure. GWA shall identify Force Main capacity issues and other performance issues that result in an actual or potential significant reduction in capacity.

Table A: Force Mains for Condition Assessment

Force Main Lift Station	Basin	Diameter (inches)	Length (feet)	Material	Installation Year	LOF Score (1 to 5)	COF Score (1 to 5)
Hagåtña Main	Hagåtña	24	2,724	Reinforced concrete	1965	Known poor condition	4.9
Asan	Hagåtña	12	2,993	Cast iron	1971	Known poor	2.8

						condition	
Bayside	Hagåtña	6	646	ACP	1966	5	3.6
Pago Double Shaft	Hagåtña	8	2,474	ACP	1973	4.9	3.2
Mamajanao	Hagåtña	14	1,186	Unknown	1971	3.2	4.4
Barrigada	Hagåtña	14	6,078	ACP	1978	3.9	3.1
Mangilao	Hagåtña	10	2,739	ACP	1974	4.5	2.8
Piti	Hagåtña	9.1	4,336	ACP	1971	4.5	2.6
Tai Mangilao	Hagåtña	8	1,618	ACP	Unknown	3.4	2.7
Pump Station No. 17	Umatac-Merizo	6	2,840	Ductile iron	1980	3.9	2.3
Paseo De Oro	Hagåtña	6	686	ACP	1967	5	1.8
Dairy Road	Hagåtña	6	3,616	Ductile iron	1983	3.1	2.5
Pump Station No. 16	Umatac-Merizo	6	1,095	Ductile Iron	1980	3.1	2.5
Maite	Hagåtña	4	393	Unknown	1971	3.2	1.7
Harmon	Hagåtña	6	2,260	Unknown	1972	3.2	1.5
Fujita	Tumon	18	7,154	Ductile iron	1992	3	3.7
Route 16	Northern District	30	5,741	Unknown	1989	2.1	5
Yigo	Northern District	16	3,077	Polyethylene	1973	2.8	3.5
Chaligan	Agat-Santa Rita	16	6,352	Ductile iron	1995	2.6	3.1
Ypao	Hagåtña	7.3	1,741	PVC	Unknown	1.7	3.9
Inarajan Main	Inarajan	8	3,893	Unknown	1984	2.7	2.9
Southern Link	Northern District	36	4,311	Ductile iron	1992	2.6	2.9
New Chaot	Hagåtña	20	2,319	PVC	1989	1.7	2.9
Gaan	Agat-Santa Rita	16	10,125	PVC	1995	1.7	2.9
Alupang Cove	Hagåtña	6	905	PVC	1991	1.7	2.8

20. Force Main Action Plan. Within six (6) months of EPA approval of the Force Main Assessment Report, as an interim milestone, GWA shall submit to EPA, for review and approval, a Force Main Action Plan consistent with the Force Main Condition Assessment that:

a. Prioritizes necessary Force Main upgrades;

b. Includes a schedule for design and implementation of interim Force Main improvement projects where asset failure is likely to occur before Repair, Rehabilitation, or Replacement is complete;

c. Includes a schedule for design and implementation of Repair, Rehabilitation, Replacement, and improvement projects employing methodologies appropriate to the condition and location of the Force Main;

d. Requires the installation of corrosion protective measures for metallic (cast iron, ductile iron, steel, etc.) and concrete Force Mains, fittings, and appurtenances that lack adequate corrosion protection or could be subject to corrosion; and includes a schedule for future Force Main condition assessments with an explanation of GWA's Force Main prioritization and scheduling decisions.

21. Implementation of the Force Main Action Plan. As a compliance milestone, GWA shall complete construction addressing at least 25% of the linear feet of Force Mains addressed in the approved Force Main Action Plan within nine (9) years of the Effective Date. GWA will be allowed to include Force Main projects completed after the Effective Date for Force Mains listed in Table A. The Force Main Action Plan shall be consistent with the Force Main Condition Assessment in that it will prioritize work at Force Mains that are failing or are most likely to fail.

22. Force Main Spill Contingency Plan. Within six (6) months of the Effective Date,

as an interim milestone, GWA shall submit to EPA, for review and approval a Force Main Spill Contingency Plan for all Force Mains that establishes measures and procedures to respond to a Force Main spill event in order to minimize discharges to surface waters, prevent public exposure to the spilled wastewater, and return the Force Main to full service as rapidly as possible. The Force Main Spill Contingency Plan shall include the following sections:

a. Force Main Information. The Force Main information section shall contain salient information about the Force Mains including location, diameter, length, material, elevations, design flows and pressures, fittings, parallel force mains, location of waterways, and a vicinity map of the Force Main, including nearby Gravity Mains and Pump Stations that may be used for diversion of flows in the event the Force Main is damaged.

b. Spill Response Procedures. The spill response procedures section shall include a list of the actions that GWA anticipates taking in the event of a Force Main spill, including tankering and diversion of flows within the system. This section shall describe the resources GWA will have available to deploy in the event of a Force Main spill, the staff notification procedures, and anticipated response times, with the goal being to restore service to the customer as soon as possible.

c. Equipment, Parts, and Supplies. The equipment, parts, and supplies section shall include a list of the equipment, parts, and supplies needed to implement the Plan, including response and repair equipment, spare parts, and supplies that can be used in the event of a Force Main failure. The response equipment shall include portable pumps, hose or piping, sand bags (or equivalent barrier/diversion devices), and pipe plugs. The supplies shall include replacement pipe, valves, and repair kits. The list shall identify the location of all such equipment, parts, and supplies.

23. Force Main Operation and Maintenance Program. Within two (2) years of the Effective Date, as an interim milestone, GWA shall submit to EPA, for review and approval a Force Main Operations and Maintenance ("O&M") Program that establishes written preventive operations and maintenance schedules and procedures for all Force Mains. The Force Main O&M Program shall be integrated into the GWA Asset Management Program, and Computerized Maintenance Management System (CMMS) and shall include:

a. Preventative maintenance schedules for the inspection, periodic service, and calibration of force main instrumentation, such as flow meters, liquid level sensors, alarm systems, elapsed time meters, remote monitoring equipment, and air release valves;

b. Inspection and maintenance of sulfide and corrosion protection systems; and

c. An annual systematic method of reviewing Force Main operational data, which at a minimum includes pump run times, discharge pump rates and pump speed, pump suction and discharge pressures, flow rates, and performance indicators (including excessive noise, vibrations, and leakage), all of which can reveal reduced Force Main performance issues.

24. Pump Stations: Scope of Work. GWA shall complete all improvement work, which may include Repair, Rehabilitation, Replacement, and relocation, for each of its Pump Stations necessary to ensure reliability, functionality, and adequate capacity and satisfy each of the acceptance criteria set forth in Paragraph 31.

25. Pump Station priority projects. Within the number of years from the Effective Date specified after each pump station below, as compliance milestones, GWA shall complete all necessary improvements to the three Pump Stations in the most critical need of work: the Ypao (three (3) years), Hagåtña Main (two (2) years), and Mamajanao (three (3) years) Pump Stations

(the "Pump Station Priority Projects"). All work, including any start-up activities and any related O&M training for field personnel, shall be completed by these deadlines.

26. Sewage Pump Stations: Tiers. Except for the Pump Station Priority Projects identified in Paragraph 25, GWA's entire inventory of Pump Stations has been organized into four tiers: Tiers 1, 2, 3 and 4 set forth in Table B below.

Table B: Pump Station Tiers[1]

Tier 1	Tier 2	Tier 3	Tier 4
1. Alupang Cove (C) 2. Astumbo #1 (N) 3. Astumbo #2 (N) 4. Bayside (N) 5. Dairy Road (C) 6. Ejector Station No. 2 (S) 7. Fujita (N) 8. Harmon (N) 9. Inarajan Main (S) 10. Inarajan Lift Station (S) 11. Machanao (N) 12. Mongmong Toto (C) 13. Pago Double Shaft (C) 14. Piti (C) 15. Pump Station No. 13 (S) 16. Pump Station No. 16 (S) 17. Pump Station No. 17 (S) 18. Pump Station No. 19 (S) 19. Pump Station No. 20 (S) 20. Route 16 (N) 21. Southern Link (N) (22) Talafofo (S) (23) Yigo (N)	1. Asan (C) 2. Barrigada (C) 3. Commercial Port (C) 4. Ejector Station No. 3 (S) 5. Ejector Station No. 6 (S) 6. Latte Heights Double Trouble (N) 7. Latte Heights Submarine (N) 8. Latte Plantation (N) 9. Latte Sun Rise (N) 10. Maite (C) 11. Mangilao (C) 12. Namo Yona (C) 13. New Chaot (C) 14. Pagachao (S) 15. Paseo De Oro (N) 16. Pump Station No. 11 (S) 17. Reyes (S) 18. Tai Mangilao (C) 19. Toto Garden (C)	1. Agat Chaligan Taleyfac (Chaligan) (S) 2. Cabras Island (C) 3. Casamiro (C) 4. Chalan Pago Pump Station 3 (C) 5. Chalan Pago Pump Station 5 6. Dero Road (C) 7. Ejector Station No. 4 (S) 8. Ejector Station No. 5 (S) 9. Ejector Station No. 7 (S) 10. Leyang (C) 11. Main Trunk Line (S) 12. Ordot (C) 13. Pacific Latte (N) 14. PGD (N) 15. Pump Station No. 12 (S) 16. Pump Station No. 14 (S) 17. Pump Station No. 15 (S) 18. Pump Station No. 18 (S) 19. Sinajana (C) 20. Zero Down PS (N)	All Pump Stations not included as Pump Station priority projects or Tiers 1, 2, and 3.

27. Sewage Pump Stations: Preliminary Work Plans. For each tier and beginning with Tier 1, as an interim milestone, GWA shall develop and submit to EPA for review and

[1] The district for each Pump Station is noted in parentheses: Northern (N), Central (C), and Southern (S).

approval a preliminary design schedule that prioritizes Pump Station improvements based on current known conditions of each Pump Station within that tier ("Pump Station Preliminary Work Plans"). GWA shall submit the Pump Station Preliminary Work Plans in accordance with the following schedule:

a. Tier 1 Pump Station Preliminary Work Plan within one year of the Effective Date;

b. Tier 2 Pump Station Preliminary Work Plan within five (5) years of the Effective Date;

c. Tier 3 and Tier 4 Pump Station Preliminary Work Plan within ten (10) years of the Effective Date.

28. GWA shall include in each Pump Station Preliminary Work Plan:

a. an estimated scope of work for each Pump Station based on the known condition and a corresponding conceptual design in accordance with the acceptance criteria set forth in Paragraph 31;

b. a schedule for a Pump Station condition assessment performed in accordance with Paragraph 29; and

c. a proposed schedule of key implementation dates for each Pump Station within the tier, to include, at a minimum, execute design contract, complete condition assessment, issue a notice to proceed with design, execute construction contract, issue a notice to proceed with construction, complete construction, all in accordance with Paragraph 30.

d. GWA may propose, based on worsening conditions at any Pump Station from those that existed as of the Effective Date of this Consent Decree or for which land acquisition is required, a change in Tier designation or substitution of Pump Station between

Tiers, for EPA review and approval with the Preliminary Work Plan provided that (i) if GWA proposes a tier change, GWA may only propose changing a Pump Station from a higher priority tier to a lower priority tier by one tier (*e.g.*, GWA may not propose changing a Pump Station from Tier 1 to Tier 3); and (ii) if GWA's Pump Station change proposal is based on GWA's acquisition of land, GWA must include in its request to EPA a commitment to resolve the land acquisition issue within a specific time period.

29. Sewage Pump Stations: Condition Assessments. GWA shall assess the condition of each Pump Station through observation, direct inspection, investigation, and monitoring. GWA shall use the data and information from the condition assessment to identify structural and operational issues, evaluate the overall performance of the system, update its Pump Station asset condition profiles, and assess the rate of deterioration of Pump Station assets. As interim milestones, GWA shall complete and submit Pump Station condition assessments to EPA for review and comment, in accordance with the schedules established within each Pump Station Preliminary Work Plan tier. GWA shall ensure that each condition assessment is conducted, stamped, and certified by a Professional Engineer, and include the following:

a. Review of existing condition assessment information and prior studies;

b. Review of existing operations plans, operational data, and asset management data;

c. Interviews with operations, maintenance, and engineering staff;

d. Review of available engineering drawings;

e. Pump Station inspections that include structural, mechanical, electrical, and civil assessments, and utilize up-to-date industry standard technologies, tools, and practices; and

f. For each pump: designed horsepower, power demands, designed flows, installation date, and Preferred Operating Region;

g. For each Pump Station: average flows, overall power demand, and overall wet well capacity.

For any associated Pump Station, the Force Main Condition Assessment completed under Paragraph 18 can be utilized as part of the Pump Station condition assessment to the extent that the information therein remains accurate and valid.

30. Completion of Tier 1 and 2 Projects. Based on the Pump Station condition assessments, GWA shall complete all improvement work set forth in the Pump Station Preliminary Work Plan for Tier 1 and 50% of the improvement work set forth in the Pump Station Preliminary Work Plan for Tier 2, each as a compliance milestone, including any start-up activities and any related O&M training for field personnel, in accordance with the following schedule:

a. Tier 1 Projects within seven (7) years of the Effective Date; and

b. 50% completion of Tier 2 Projects within ten (10) years of the Effective Date.

31. Sewage Pump Station Acceptance Criteria. For GWA to designate Pump Station projects complete under Paragraph 30, the Pump Station project must satisfy each criterion listed in this Paragraph and be designed and constructed to conform with good engineering practice and the Ten States Standards, including practices to improve climate change resiliency of the Pump Stations. As applicable, resilience considerations should be consistent with EPA's Creating Resilient Water Utilities initiative, such as the Resilient Strategies Guide for Water Utilities. When GWA determines that a Pump Station project has satisfied all of the acceptance criteria and standards in this Paragraph, GWA shall certify in a semi-annual report submitted

pursuant to Paragraph 48 that the Pump Station project is complete according to Paragraph 30:

a. Emergency Operations. GWA shall install, and operate as necessary, at all Pump Stations a continuous standby power supply in the form of a fuel-operated standby generator system. GWA shall design this standby generator system as part of all Pump Stations to supply the same amount of electrical power to the Pump Station (including all pumps, controls, alarms, and support systems) as supplied by the utility company. Such emergency operation systems shall comply with the Ten States Standards, including Chapter 47.

b. Screening baskets, comminutors, or grit removal devices. GWA shall install and operate screening baskets, comminutors, or grit removal devices to remove and/or comminute grit and large solids contained in the wastewater before it is pumped.

c. Proper site security and safety measures. GWA shall take all reasonable measures to maintain safe Pump Station sites, ensure that site perimeter fencing is intact, and prevent site access for trespassers, especially access to confined spaces.

d. Emergency action sheets. GWA shall update and post emergency action sheets at each Pump Station that provide a set of standard operating procedures outlining the steps an operator would take under a given scenario. GWA shall establish emergency action sheets for the following Pump Station scenarios: power failure; backup power failure; emergency response to an SSO; high-level alarm; and pre- and post-storm response. Each emergency action sheet shall contain standard operating procedures that include: response time, response personnel, chain of notification, response equipment, response procedures with order of operations, safety precautions, and close-out procedures.

e. Backflow prevention devices. GWA shall install backflow prevention devices to protect potable water sources from cross-contamination from wastewater backflow.

f. Alarms and SCADA systems. GWA shall install and maintain alarms, controls, and supervisory control and data acquisition (SCADA) systems and integrate all alarms and controls to the SCADA system to provide remote status monitoring of its pumping operations from an off-site location, and to the extent practicable, remote control of its pumping operations from an off-site location. GWA shall ensure that the SCADA system continuously monitors, reports, and transmits the following information:

i. Daily operating hours for each sewage pump;

ii. Number of pump starts for each sewage pump;

iii. Wet well level with high- and low-level alarm set points;

iv. Flow (instantaneous and average);

v. Discharge pressure with high- and low-level alarm set points; and

vi. Minimum digital inputs, including high-water level alarm in wet well, drywell flooding, intrusion alarm, Alternating Current Pump Station power failure, Direct Current low battery, and remote signal failure alarm.

g. Adequate pumping capacity and redundancy. GWA shall ensure that there is pump redundancy at each Pump Station. The minimum number of pumps per station shall be two. GWA shall ensure pumping capacity and redundancy complies with the Ten States Standards, Chapter 42.31. MWS

h. Adequate wet-well capacity. GWA shall ensure that newly-constructed, Replacement, or Rehabilitated Pump Station wet-well volume is sufficient for anticipated wet-weather peak hourly flow conditions and coordinated with pump sizing for the station. GWA shall ensure each newly-constructed, Replacement, or Rehabilitated Pump Station wet-well complies with the Ten States Standards, Chapter 42.6.

i. Corrosion protection. GWA shall Replace all Pump Station equipment, including wet-well and valve equipment, rendered inoperable from corrosion, and provide Pump Station equipment with adequate corrosion protection. GWA shall ensure corrosion protection complies with the Ten States Standards, Chapter 42.25.

j. Adequate electrical panels, lighting, and Power Supply. GWA shall ensure that each Pump Station has adequate electrical panels, lighting, and Power Supply.

k. Force Mains. GWA shall ensure Force Mains leaving the Pump Station are in proper working condition and comply with the Ten States Standards, Chapter 49. For any associated Pump Station, work completed pursuant to the Force Main Action Plan can be utilized as part of the Pump Station Rehabilitation process to the extent that the information therein remains accurate and valid.

l. Pumps. GWA shall ensure each pump is installed and operates within the Preferred Operating Region under normal operating conditions and normal daily flow conditions. GWA shall consider whether each Rehabilitated pump needs a variable frequency drive based on a cost-benefit analysis. GWA shall ensure each type of pump within its system has a complete repair kit and the necessary spare parts to resume pump service. GWA shall ensure each pump complies with the Ten States Standards, Chapter 42.3.

m. Valves. GWA shall ensure all Pump Station valves are installed and in good working condition. Each wastewater pump shall have isolation valves to permit the removal or maintenance of the pumps and check valves without affecting the operation of remaining pumps. Each Pump Station shall have sufficient valves to permit the proper operation and maintenance of the Pump Station during normal, peak, and bypass conditions. Each valve shall be rated for use with raw, unscreened wastewater, and shall be designed for its function and

installation location, as well as the normal and maximum operating pressures expected at the Pump Station. GWA shall ensure valves comply with the Ten States Standards, Chapter 42.5.

n. Computerized Maintenance Management System ("CMMS"). GWA shall enter all equipment assets, spare parts, preventative maintenance procedures, and a recurring maintenance schedule for all Pump Station assets into GWA's CMMS in accordance with GWA's asset management program. The manufacturer's documented operation and maintenance procedure shall be incorporated into the specific preventative maintenance for each asset.

o. Operational testing and performance period. GWA shall ensure that each Pump Station completes the operational testing and performance period successfully.

p. Operational Testing. For operational testing, GWA shall operate and monitor the Pump Station for five (5) consecutive Days. During operational testing, GWA shall demonstrate Pump Station operation on automatic control without equipment or control failure and with sewage tie-in. The Pump Station mechanical equipment, electrical/control systems, and emergency power equipment shall operate without failure during the operational testing.

q. Performance Period. For a Pump Station to be considered operational and successfully complete the performance period, all Pump Station equipment and operational systems, including all control, alarm, and SCADA systems, shall operate without failure for six (6) months and shall not result in any SSOs caused by a Pump Station failure within that time period.

B. HAGÅTÑA WWTP

32. Hagåtña WWTP Secondary Treatment Feasibility Study. Within seven (7) years of the Effective Date, as a compliance milestone, GWA shall submit to EPA for review and

approval a feasibility study for secondary treatment upgrades to the Hagåtña WWTP that will include analyses of design options, alternative locations, climate change and sea level rise, and planning level construction cost estimates and construction timelines. The feasibility study must conform with good engineering practice and the Ten States Standards, including practices to improve climate change resiliency of the secondary treatment upgrades to the Hagåtña WWTP. As applicable, resilience considerations should be consistent with EPA's Creating Resilient Water Utilities initiative, such as the Resilient Strategies Guide for Water Utilities.

33. Hagåtña WWTP Interim Effluent Limits and Monitoring Requirements. Until GWA achieves and demonstrates compliance with secondary treatment standards of the Clean Water Act, as defined by 40 C.F.R. Part 133, and any effluent limitations for TSS and BOD set forth in GWA's applicable NPDES Permit for the Hagåtña WWTP, GWA shall achieve compliance with interim effluent limits and monitoring requirements for wastewater discharges from the Hagåtña WWTP set forth below in Table C. This Consent Decree shall not affect the force or effect of any other effluent limitations, or monitoring and reporting requirements, or any other terms and conditions of the applicable NPDES Permit(s).

Table C: Hagåtña WWTP Interim Effluent Limits

Interim Discharge Limitations					Monitoring Requirements	
Discharge Parameter	Average Monthly	Average Weekly	Maximum Daily	Units	Frequency	Sample Type
Biochemical Oxygen Demand (5-day)	97	140	--	mg/L	Weekly	24-hour composite
	4,911	7,055	--	lbs/day		
	Average monthly percent removal shall not be less than 33%			%		
Total Suspended Solids	64	125	--	mg/L	Weekly	24-hour composite
	2,827	5,500	--	lbs/day		
	Average monthly percent removal shall not be less than 50%			%		

C. OPERATION & MAINTENANCE REQUIREMENTS

34. Cleaning. Beginning on the Effective Date, as an interim milestone, GWA shall clean 60 "unique miles" of Gravity Mains in each year, which is approximately 20 percent of GWA's Gravity Mains. In calculating the number of "unique miles" each year, GWA shall count each individual pipe segment cleaned in that year, but shall not count an individual pipe segment multiple times even if that pipe segment was subject to repeated cleaning in that year. GWA shall clean its entire Gravity Main system every 5 years. This obligation shall terminate upon Termination of the Consent Decree.

35. Hot Spot Cleaning. As an interim milestone, GWA shall implement a Hot Spot Cleaning Program, as conditionally approved by EPA on July 11, 2019, with the focus on repeated, routine cleaning of sewer locations that have a history of blockages, FOG and grit build-up, and SSOs.

36. SSO Response Plan. GWA shall implement an SSO Response Plan as approved by EPA on September 9, 2020. The SSO Response Plan shall include, but not be limited to, standard operating procedures for timely response to SSOs, spill containment, site security, site cleanup, a standard method for the estimation of spill volumes, public notification, and reporting requirements. For any repeat SSO or SSO greater than 1,000 gallons from a Gravity Main, the SSO Response Plan shall require GWA to conduct a CCTV inspection downstream of the SSO location for purposes of determining the cause of the SSO.

37. SSO and Bypass Reporting Requirements. Within thirty (30) Days after the end of each calendar-year quarter (i.e., by January 30, April 30, July 30, and October 30) after the Effective Date, until termination of the Consent Decree, GWA shall submit to EPA and Guam EPA a summary of all SSOs and Bypasses that occurred during the quarter.

a. For each SSO, the reports shall provide: (a) a map showing the locations

of all SSOs occurring in the previous quarter in relation to the locations of drinking water wells and Pump Stations; (b) the start and end date and time of each SSO; (c) the location of each SSO including address, village, and manhole numbers; (d) the structure(s) from which each SSO emerged (e.g., manhole, broken pipe, wet well, indoor plumbing, Lateral cleanout, etc.); (e) the pipe size, length, and material; (f) the estimated volume of each SSO including gross volume, amount recovered, and amount not recovered; (g) the cause of each SSO; (h) whether each SSO entered a particular water of the United States, and if so, the name of the water body and whether it entered via storm drains or other man-made conveyances; (i) the results and analysis of any post-SSO CCTV results; and (j) the actions GWA took to control the SSO and prevent future SSOs at the same location.

b. For each Bypass, the reports shall provide: (a) the name of the treatment facility and the part(s) of the facility bypassed; (b) the start and end date and time of the Bypass; (c) a detailed explanation of the cause(s), and all available photographs, videos, and maps that would aid in explaining its cause(s); (d) if a Bypass was in response to a storm event, local rain gauge data for that event; (e) the following flows: Bypass; facility influent; and facility effluent; and a description of how they were determined, including any calculations; (f) the results of any samples taken of the Bypass or receiving water, or an explanation of why sampling was not conducted; (g) the dates that GWA provided verbal and written notifications of the Bypass to EPA and Guam EPA; and (h) the actions GWA took to control the Bypass and prevent future Bypasses.

38. Asset Management. Within six (6) months of the Effective Date, as an interim milestone, GWA shall develop and implement an Asset Management Program, including a complete and regularly updated asset registry; routine condition assessments; preventive

maintenance schedules for all assets; and a system for maintenance tracking. GWA's Asset Management Program shall meet the standards of the "International Standard ISO 55001 - Asset management – Management systems – Requirements" (2014 edition or any subsequent revision). GWA shall integrate the data from the Asset Management Program into GWA's long- and short-term planning processes, including GWA's official capital improvement plan.

D. PRETREATMENT PROGRAM

39. Industrial Pretreatment Program. As a compliance milestone, GWA shall implement and enforce an Industrial Pretreatment Program that complies with 40 C.F.R. Part 403, and is approved by the Guam Legislature and by EPA.

a. Within nine (9) months of the Effective Date, as an interim milestone, GWA shall submit to EPA, for review and comment, a proposed Industrial Pretreatment Program. As part of the Industrial Pretreatment Program, GWA shall:

i. Submit a revised sewer use ordinance that provides GWA with the authority to enforce the requirements of Sections 307(b) and (c) and 402(b)(8) of the Act, 33 U.S.C. §§ 1317(b) and (c), 1342(b)(8), and any regulations implementing those Sections;

ii. Identify and locate all possible Industrial Users, that might be subject to the Pretreatment Program consistent with 40 C.F.R. § 403.8(f)(6);

iii. Conduct a technically-based local limit evaluation as required by 40 C.F.R. § 403.8(f)(4) and, if required, develop technically-based local limits as required in 40 C.F.R. § 403.5. This local limit evaluation shall include the analyses necessary to determine the maximum headworks loadings for the Northern District and Hagåtña WWTPs and the maximum pollutant levels protection of the Wastewater Collection System, as well as the method of allocating allowable loadings to the Industrial Users (as defined in 40 C.F.R. § 403.3(j)), a schedule of public hearings and outreach, and the ordinance adoption procedure;

iv. Implement control mechanisms (such as permits) to ensure that Industrial Users comply with applicable Pretreatment Standards and requirements consistent with 40 C.F.R. § 403.8(f);

v. Develop and implement an enforcement response plan that contains detailed procedures indicating how GWA will investigate and respond to instances of Industrial User noncompliance in accordance with 40 C.F.R. § 403.8(f)(5);

vi. Develop a sampling program to sample and analyze the effluent of its Industrial Users in accordance with 40 C.F.R. § 403.8(f)(2)(v);

vii. Conduct inspections and surveillance activities of Significant Industrial Users, as defined in 40 C.F.R. § 403.3(v), at least once annually in order to identify, independent of information supplied by the Industrial User, noncompliance with applicable Pretreatment Standards in accordance with 40 C.F.R. § 403.8(f)(2)(v); and

viii. Demonstrate that GWA has sufficient resources and qualified personnel to carry out the Industrial Pretreatment Program in accordance with 40 C.F.R. § 403.8(f)(3).

b. Within six (6) months of receipt of EPA's comments on the proposed Industrial Pretreatment Program, GWA shall develop and submit to the Guam Legislature for approval pursuant to Guam's Administrative Adjudication Act an Industrial Pretreatment Program that complies with 40 C.F.R. Part 403 and addresses EPA's comments.

c. Within thirty (30) Days of the Guam Legislature's approval of the Part 403-compliant Industrial Pretreatment Program, GWA shall submit that program to EPA for final review and approval.

40. Fats, Oils, and Grease Control Program. Within six (6) months of EPA's