



GWA RESOLUTION NO. 30-FY2023

**RELATIVE TO REQUESTING APPROVAL TO PROCURE ENGINEERING,
CONSTRUCTION, AND PROJECT/CONSTRUCTION MANAGEMENT SERVICES
FOR SEWAGE PUMP STATION AND FORCE MAIN
REPAIR/REHABILITATION/REPLACEMENT**

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

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

WHEREAS, GWA’s public wastewater collection/transmission system includes Eighty-two (82) sewage pump stations (SPS) and approximately Forty-Three (43) miles of force main (FM); and

WHEREAS, GWA’s 2018 Water Resources Master Plan Update (WRMPU) includes SPS condition assessments (see Exhibit A) identifying actions needed to ensure continuity of wastewater service; and

WHEREAS, most of GWA’s FMs were constructed from the 1960s to the 1990s, including asbestos cement pipe force mains, and are in need of repair, rehabilitation, or replacement in various locations island-wide, as identified in the WRMPU (see Exhibit B); and

WHEREAS, GWA endeavors to enter into contracts to repair, rehabilitate, or replace SPSs and FMs for the protection of human and environmental health, and in anticipation of a consent decree or other enforcement action with the United States Environmental Protection Agency (USEPA); and

1 **WHEREAS**, funding is available through bonds identified on the GWA Capital
2 Improvements Plan and grants; and

3
4 **WHEREAS**, GWA is seeking to advertise requests for proposals (RFPs) for experienced
5 and qualified SPS and FM designers to provide Indefinite Delivery–Indefinite Quantity (IDIQ)
6 engineering services; and

7
8 **WHEREAS**, GWA is seeking to advertise invitations for bid (IFB) for experienced and
9 qualified SPS and FM contractors to provide construction services while ensuring continuity of
10 sewer service to customers and minimizing adverse impacts to the island, with each IFB scope to
11 include multiple SPSs and FMs; and

12
13 **WHEREAS**, GWA is seeking to advertise RFPs for experienced and qualified
14 professionals to provide IDIQ project/construction management services to support SPS and FM
15 construction; and

16
17 **WHEREAS**, due to the number of SPSs and FMs, and in order to meet potential USEPA
18 compliance deadlines, multiple contracts per IDIQ procurement and construction procurement
19 will be considered; and

20
21 **WHEREAS**, the 2018 WRMPU estimated a cost of Five Million Five Hundred Forty
22 Thousand Dollars (\$5,540,000.00) to rehabilitate Ten (10) stations, correlating to Forty-Five
23 Million Four Hundred Twenty-Eight Thousand Dollars (\$45,428,000.00) to rehabilitate Eighty-
24 Two (82) stations (Appendix A); and

25
26 **WHEREAS**, the 2018 WRMPU estimated FM costs ranging from Seventeen Million
27 Three Hundred Fourteen Thousand Dollars (\$17,314,000.00) for FM rehabilitation to One
28 Hundred Sixteen Million Four Hundred Thirty-Five Thousand Dollars (\$116,435,000.00) to
29 replace FMs (Appendix B); and

30
31 //

1 **WHEREAS**, construction costs have greatly increased since 2018 due to supply chain
2 issues and actual costs are anticipated to exceed the WRMPU estimates; and

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

7
8 **WHEREAS**, the CCU must approve all petitions to the PUC.

9
10 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on Utilities
11 does hereby approve the following:

- 12 1. The recitals set forth above hereby constitute the findings of the CCU.
- 13 2. The CCU finds that procurement for engineering, construction, and
14 project/construction management services for the repair, rehabilitation, or
15 replacement of SPSs and FMs are necessary for the protection of human and
16 environmental health, and to meet the anticipated consent decree or other
17 enforcement action with the United States Environmental Protection Agency.
- 18 3. The CCU hereby authorizes management to submit a petition to the PUC for
19 the procurement of engineering, construction, and project/construction
20 management services for SPS and FM repair, rehabilitation, and replacement.

21
22 **RESOLVED**, that the Chairman certified, and the Board Secretary attests to the adoption
23 of this Resolution.

24
25 **DULY AND REGULARLY ADOPTED**, this 30th day of May 2023.


26
27 Certified by:

28 

29 **JOSEPH T. DUENAS**

30 Chairperson

31 Attested by:



PEDRO ROY MARTINEZ

 Secretary

1 **SECRETARY'S CERTIFICATE**

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

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

8
9 AYES: 4
10 NAYS: Ø
11 ABSTAIN: Ø
12 ABSENT: 1

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EXHIBIT A

Table 6.2. Lift Station Condition Assessment

Station	Electrical			Health and Safety			Capacity			Building and Site				Station					Other						
	No Generator Present	Generator Needs Repair or Replacement	Control Systems, Alarms, or SCADA Problem	Other (including lighting)	Ventilation Needed	Railings Needed	Eye Wash Stations Needed	Grates/Hatches Needed	Backup Pumps Needed	Under Capacity	General Building or Site Issue (e.g. painting, rustproofing, spalling)	Water Supply Needed	Road, Fencing, or Other Site Access Problem	Crane/Lift Needed	New Station Needed	Entire Station Rehabilitation Needed	Wet Well Too Small	Is or Was Ejector Station, Upgrade Needed	Comminutor, Screen, or Grit Removal Needed	Flow Meter Needed	Piping and/or Valve Issues (e.g. needs painting or rusty)	Other Equipment Corrosion	Maintenance Difficult		
Agat-Santa Rita Basin																									
Agat-Challigan Takefac (Challigan)			X	X	X	X	X	X	X																
Pagachao			X	X																					
Tipisao																									
Bazo Gardens Basin																									
Main Trunk Line			X	X	X	X	X	X	X																
Taloforo																									
Haggita Basin																									
Alupang Cove																									
Asan																									
Berrigada																									
Bayside																									
Casamino																									
Chalan Pago PS 3																									
Chalan Pago PS 5																									
Commercial Port																									
Daily Road																									
Haggita Main																									
Hamon																									
Leyang																									
Marla																									
Mamajanso																									
Mangbao																									
Mongmong Tolo																									
Namo Yona																									
New Chaot																									
Ondot																									
Pago Double Shaft																									
Paseo De Oro																									
Piti																									
Sinajana																									



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Table 6-2. Lift Station Condition Assessment

Station	Electrical			Health and Safety			Capacity			Building and Site				Station				Other				
	No Generator Present	Generator Needs Repair or Replacement	Control Systems, Alarms, or SCADA Problem	Ventilation Needed	Railings Needed	Eye Wash Stations Needed	Gratings/Hatches Needed	Backup Pump(s) Needed	Under Capacity	General Building or Site Issue (e.g. painting, rustproofing, spalling)	Water Supply Needed	Road, Fencing, or Other Site Access Problem	Crane/Lift Needed	New Station Needed	Entire Station Rehabilitation Needed	Wet Well Too Small	Is or Was Ejector Station Upgrade Needed	Comminutor, Screen, or Grit Removal Needed	Flow Meter Needed	Piping and/or Valve Issues (e.g. needs painting or rusty)	Other Equipment Corrosion	Maintenance Difficult
Tai Mangjiao				X				X									X	X				
Toto Garde	X				X		X															
Ypao		X		X		X		X	X				X									
Inarajan Basin																						
Inarajan					X			X	X											X		
Inarajan Main					X	X		X	X											X		
Northern District Basin																						
Late Heights Double Tree			X	X	X			X		X							X	X		X		
Late Heights Submarine			X			X		X	X		X									X		
Late Plantation			X	X				X	X								X	X		X		
Machanao	X		X	X		X		X	X		X							X	X		X	
Pacific Late	X		X	X		X		X	X		X							X	X		X	
PGD			X	X		X		X	X		X							X	X		X	
Sunrise Villa			X	X		X		X	X		X							X	X		X	
Umatac-Merizo Basin																						
Ejector Station No. 2			X					X	X						X	X				X		
Ejector Station No. 3			X					X	X						X	X				X		
Ejector Station No. 5			X					X	X											X		
Ejector Station No. 6			X					X	X											X		
Ejector Station No. 7			X					X	X											X		
Pump Station No. 11				X				X	X											X		
Pump Station No. 12			X	X				X	X											X		
Pump Station No. 13			X	X		X		X	X											X		
Pump Station No. 14			X	X				X	X											X		
Pump Station No. 15			X	X				X	X											X		
Pump Station No. 16			X	X				X	X											X		
Pump Station No. 17			X	X				X	X											X		
Pump Station No. 18			X	X				X	X											X		
Reyes	X							X	X											X		



Lift Station Rehabilitation/Replacement Program	
Project Number	Basin
MP-WW-Pump-01	All
Description	<p>Rehabilitate and replace lift stations based on the capacity and condition assessment risk analysis. Lift stations should be grouped into projects and GWA should put the projects out to bid to be fixed by a qualified contractor. The projects should include a contract every two years with lift stations selected based on current information for each pump stations. This project includes adding minor features such as pump hoists, odor control, grit removal, etc. at existing pump stations.</p> <p>The first group of projects should include adding grit removal before the Route 16 lift station as a high priority rehabilitation project.</p>
Justification	The model identified capacity issues and GWA operations found deficiencies at lift stations during condition assessment site visits. Continuation of CIP Project WW 09-01.
Proposed Schedule	Begin Design: 2020 (rehabilitation of 10 lift stations every 2 years)
Cost Estimate	\$5.54M (assuming rehabilitation of 10 lift stations every 2 years)
Reference Documents	See lift station prioritization list in WRM/PU Volume 3, Section 6.2
<p><i>This proposed project is subject to change. Projects will generally include an engineering study, detailed design, and field verification to refine the exact project scope and budget. Costs are presented in 2017 dollars and do not account for increases due to inflation and escalation. See Volume 1, Appendix D for cost estimate assumptions.</i></p>	

EXHIBIT B

Table 5-5. Force Main Renewal Prioritization

Force Main Lift Station	Basin	Diameter (inches)	Length (feet)	Material ^a	Installation Year	Failure Score (1 to 5)		Risk (1 to 100)	Full Replacement (1,000s of dollars) ^b	Targeted Rehabilitation/ Replacement (1,000s of dollars)
						Likelihood	Consequence			
Known Poor Condition										
Hagåtña Main	Hagåtña	24	2,724	Reinforced concrete	1965	Known issue	4.9		\$7,399 ^c	\$449
Asan	Hagåtña	12	2,993	Cast iron	1971	Known issue	2.8		\$2,327	\$347
High Priority (Likelihood >= 3, Consequence >= 3)										
Bayside	Hagåtña	6	646	ACP	1966	5.0	3.6	100	\$411	\$67
Pago Double Shaft	Hagåtña	8	2,474	ACP	1973	4.9	3.2	85	\$1,682	\$267
Mamajanao	Hagåtña	14	1,186	Unknown	1971	3.2	4.4	77	\$925	\$144
Barrigada	Hagåtña	14	6,078	ACP	1978	3.9	3.1	67	\$4,742	\$736
High Likelihood (Likelihood >= 3, Consequence < 3)										
Mangilao	Hagåtña	10	2,739	ACP	1974	4.5	2.8	68	\$1,989	\$301
Piti	Hagåtña	9.1	4,336	ACP	1971	4.5	2.6	64	\$3,148	\$476
Tai Mangilao	Hagåtña	8	1,618	ACP	Unknown	3.4	2.7	51	\$1,100	\$174
Pump Station No. 17	Umatac-Merizo	6	2,840	Ductile iron	1980	3.9	2.3	50	\$1,807	\$295
Paseo De Oro	Hagåtña	6	686	ACP	1967	5.0	1.8	49	\$436	\$71
Dairy Road	Hagåtña	6	3,616	Ductile iron	1983	3.1	2.5	42	\$2,301	\$376
Pump Station No. 16	Umatac-Merizo	6	1,095	Ductile iron	1980	3.1	2.5	42	\$697	\$114
Maife	Hagåtña	4	393	Unknown	1971	3.2	1.7	29	\$250	\$41
Harmon	Hagåtña	6	2,260	Unknown	1972	3.2	1.5	26	\$1,438	\$235
Highly Critical (Likelihood < 3, Consequence >= 3)										



Table 5-5. Force Main Renewal Prioritization

Force Main Lift Station	Basin	Diameter (inches)	Length (feet)	Material ^a	Installation Year	Failure Score (1 to 5)		Risk (1 to 100)	Full Replacement (1,000s of dollars) ^b	Targeted Rehabilitation/ Replacement (1,000s of dollars)
						Likelihood	Consequence			
Fujita	Tumon	18	7,154	Ductile iron	1992	3.0	3.7	62	\$6,365	\$982
Route 16	Northern District	30	5,741	Unknown	1989	2.1	5.0	59	\$7,768	\$1,126
Yigo	Northern District	16	3,077	Polyethylene	1973	2.8	3.5	54	\$2,559	\$394
Chaligan	Agat-Santa Rita	16	6,352	Ductile iron	1995	2.6	3.1	44	\$5,282	\$813
Ypao	Hagåtña	7.3	1,741	PVC	Unknown	1.7	3.9	37	\$1,184	\$188
Lower Priority (Likelihood < 3, Consequence < 3)										
Inarajan Main	Inarajan	8	3,893	Unknown	1984	2.7	2.9	42	\$2,646	\$419
Southern Link	Northern District	36	4,311	Ductile iron	1992	2.6	2.9	41	\$6,999	\$980
Inarajan	Inarajan	4	505	Unknown	1984	2.7	2.5	36	\$321	\$53
Commercial Port	Hagåtña	6	8,672	Cast Iron	2001	2.5	2.5	33	\$5,517	\$902
Pump Station No. 12	Umatac-Merizo	6	1,619	Unknown	Unknown	3.0	2.0	32	\$1,030	\$168
Pagachao	Agat-Santa Rita	4	27	Unknown	Unknown	2.1	2.6	30	\$17	\$3
Ejector Station No. 2	Umatac-Merizo	4	225	PVC	1980	2.2	2.5	30	\$143	\$23
Sinajana	Hagåtña	4	302	Cast Iron	Unknown	3.0	1.8	30	\$192	\$31
Mongmong-Toto	Hagåtña	8	1,334	Polyethylene	1972	2.8	1.9	29	\$907	\$144
Toto Garden	Hagåtña	4	2,748	Unknown	1988	2.1	2.5	29	\$1,748	\$286
Pump Station No. 14	Umatac-Merizo	8	466	PVC	1980	2.2	2.2	28	\$317	\$50
Pump Station No. 15	Umatac-Merizo	8	1,687	PVC	1980	2.2	2.2	28	\$1,147	\$182
New Chaot	Hagåtña	20	2,319	PVC	1989	1.7	2.9	28	\$2,510	\$371



Table 5-5. Force Main Renewal Prioritization

Force Main Lift Station	Basin	Diameter (Inches)	Length (feet)	Material ^a	Installation Year	Failure Score (1 to 5)			Risk (1 to 100)	Full Replacement (1,000s of dollars) ^b	Targeted Rehabilitation/ Replacement (1,000s of dollars)
						Likelihood	Consequence				
Pump Station No. 11	Umatac-Merizo	6	1,249	Unknown	Unknown	2.1	2.3	27	\$795	\$130	
Reyes	Umatac-Merizo	4	703	Unknown	1994	2.1	2.3	27	\$447	\$73	
Gaan	Agat-Santa Rita	16	10,125	PVC	1995	1.7	2.9	27	\$8,420	\$1,295	
Alupang Cove	Hagåtña	6	905	PVC	1991	1.7	2.8	26	\$576	\$94	
Pump Station No. 18	Umatac-Merizo	6	1,575	PVC	1980	2.2	2.1	26	\$1,002	\$164	
Ypaopao	Northern District	8	989	Unknown	Unknown	2.1	2.0	23	\$672	\$107	
Ejector Station No. 5	Umatac-Merizo	4	188	Unknown	1980	2.7	1.5	22	\$120	\$20	
Sunrise Villa	Northern District	3	1,571	Unknown	1981	2.7	1.5	22	\$1,000	\$163	
Talofolo	Baza Gardens	10	8,849	PVC	1994	1.7	2.2	20	\$6,424	\$971	
Macheche	Northern District	6	825	Unknown	Unknown	2.1	1.7	20	\$525	\$86	
Latte Heights Submarine	Northern District	8	1,283	Unknown	Unknown	2.1	1.6	19	\$872	\$138	
Machanaoao	Northern District	6	987	Polyethylene	1992	1.7	2.0	19	\$628	\$103	
Tipalao	Agat-Santa Rita	16	11,076	PVC	1995	1.7	2.0	19	\$9,211	\$1,417	
PGD	Northern District	6	4,569	PVC	Unknown	1.7	2.0	18	\$2,907	\$475	
Santa Ana	Northern District	8	189	Unknown	Unknown	2.1	1.4	17	\$128	\$20	
Casamiro	Hagåtña	8	263	Unknown	Unknown	2.1	1.4	17	\$179	\$28	
Latte Heights Double Tree	Northern District	12	1,424	Unknown	Unknown	2.1	1.4	17	\$1,107	\$165	
Namo Yona	Hagåtña	8	317	Unknown	Unknown	2.1	1.4	17	\$215	\$34	
Astumbo No. 1	Northern District	8	109	PVC	1993	1.7	1.8	17	\$74	\$12	



Table 5-5. Force Main Renewal Prioritization

Force Main Lift Station	Basin	Diameter (inches)	Length (feet)	Material ^a	Installation Year	Failure Score (1 to 5)		Risk (1 to 100)	Full Replacement (1,000s of dollars) ^b	Targeted Rehabilitation/ Replacement (1,000s of dollars)
						Likelihood	Consequence			
Latte Plantation	Northern District	4	115	PVC	1982	2.2	1.3	16	\$73	\$12
Pacific Latte	Northern District	4	894	PVC	1986	2.2	1.3	16	\$569	\$93
Ordot	Hagåtña	4	1,291	PVC	1994	1.7	1.7	16	\$821	\$134
Chalan Pago PS 3	Hagåtña	10	1,045	Polyethylene	1992	1.7	1.6	15	\$759	\$115
Astumbo No. 2	Northern District	8	376	PVC	1993	1.7	1.4	14	\$256	\$41
Chalan Pago PS 5	Hagåtña	8	904	Polyethylene	1992	1.7	1.4	14	\$615	\$97
Main Trunk Line	Baza Gardens	4	573	PVC	1996	1.7	1.3	12	\$365	\$60
Leyang	Hagåtña	8	548	PVC	2004	1.2	1.6	10	\$373	\$59
Total			140,799						\$116,435	\$17,314

a. ACP = asbestos cement pipe

b. The replacement costs assume replacement due to condition at the same diameter. The costs may differ in other sections where the force mains are recommended for upsizing due to capacity.

c. The replacement cost is based on replacing the existing 24-inch with a new 42-inch pipeline. See the project description for project MP-WW-MP-04 in Section 11 for more details.

