



GUAM WATERWORKS AUTHORITY

Good Water Always

CAPITAL IMPROVEMENT PLAN

2013-2018

February 26, 2013

Approved by CCU February 26, 2013

CAPITAL IMPROVEMENT PLAN 2013-2018

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Appendix A:	CCU Resolution 17-FY2013, "Relative to Approving the Guam Waterworks Authority's Updated Capital Improvements Plan for the Purposes of Planning and Executing Projects in the Near Term" dated February 26, 2013	
Appendix B:	PUC Order GWA Docket No. 11-01 "Request by the Guam Waterworks Authority for Approval of Bond Projects Funded by GWA's 2010 Series Bond Proceeds" dated March 26, 2013	

A. Narrative

Summary of CIP

The Capital Improvement Plan (CIP) is best illustrated by the following two tables: summary of project type and summary of funding source. These tables are synopsis of Table 3. Summary Table By Project Type on page 7 and Table 12. Funding Source Summary on page 19. This 2013-2018 CIP also incorporates the 2011 Court Order which has critical deadlines. For example, the CIP includes over \$150 million in tank upgrades and over \$103 million for wastewater treatment plant upgrades. The estimated \$300 million 2011 Court Order project must be constructed by 2020 and this CIP accounts for advance funding needs to meet the deadlines, which for some projects extend out to year 2020.

Summary of Project Type (x1000):

	2013	2014	2015	2016	2017	2018	Total
Potable Water	25,784	58,695	45,500	35,250	47,000	51,250	263,479
Wastewater	24,936	16,171	26,400	41,500	26,400	28,000	163,407
Electrical Engr.	600	2,470	2,925	500	4,500	1,000	11,995
Miscellaneous	2,344	5,500	4,000	3,000	800	3,000	18,644
Total	53,664	82,836	78,825	80,250	78,700	83,250	457,525

Summary of Funding Source (x1000):

	2013	2014	2015	2016	2017	2018	Total
2010 Bond Series	34,545						34,545
2013 Bond Series		66,000	73,325				139,325
2015 Bond Series				65,250	63,200		128,450
2018 Bond Series						72,250	72,250
Short Term loan							
2012-2013 SRF	15,376	10,536					25,912
SDC		4,300	500	500	500		5,800
Grants	3,243						3,242
Internally Funded CIP	500	2,000	5,000	14,500	15,000	11,000	48,000
Total	53,664	82,836	78,825	80,250	78,700	83,250	457,525

Developing the Capital Improvement Plan (CIP)

The Engineering CIP is normally GWA's five-year blueprint for creating, maintaining, renewing, and replacing the crucial infrastructure that will support Guam's continued growth. This CIP however covers a six-year period primarily to account for Court Order projects that have a start time outside of a five-year period from 2013 but which required funding appropriation from the anticipated 2013 and 2015 bond issuances which are reflected in this updated CIP.

This CIP was developed to include a narrative, 2010 Bond reallocation request, and project description sheets detailing the projects. Other documents, such as the 2006 Water Resource Master Plan, GWA's Comprehensive Management Plan, 2006 Stipulated Order, GWA Production Plan, PUC Order, 2010/2011 SRF Grant Project list, 2011 Amended Stipulated Order, and the

2012 USEPA NEIC Report “Findings of Significant Deficiencies in the Public Water System” provided valuable information and guidance in the preparation of the CIP. GWA anticipates receiving the USEPA NEIC Report related to deficiencies to the wastewater system thus this CIP attempts to account of the potential needs to address this particular USEPA concerns. An important note to remember when reviewing this CIP is the individual projects identified will continue to be subjected to ongoing review by the Chief Engineer, General Manager GWA, General Manager CUS, Consolidated Commission on Utilities (CCU) and possibly the Public Utilities Commission (PUC).

The CIP is an important public communication medium. The CIP gives residents and businesses a view of GWA’s direction for capital improvement and a better understanding of the Island’s ongoing need for stable revenue sources to fund large or multi-year capital projects. The CIP is also an important operational document, providing GWA Engineering, Maintenance & Operation (M&O), Finance, and support staff with a blue print of the overall direction and specific project GWA plans on implementing to improve the utility.

Definition of an Engineering Capital Improvement Project

For the purposes of the Engineering CIP, a capital expenditure is one that results in acquiring and/or replacing GWA’s capital assets. Major projects are those that cost more than \$50,000 or are listed in the 2006 Stipulated Order and/or Master Plan. Water production facilities, water distribution systems, wastewater collection systems, wastewater treatment plants, and major one-time equipment acquisitions are all examples of capital improvements.

Carryover Projects/Fund Balance

Due to the nature of capital projects, the life of a project may span across fiscal years. As funds are received to fund a project, they are accumulated in the appropriate capital fund and expended as projects progress. When the funds are not spent in one year they remain in the fund balance to be used in the future. This is also referred to as carryover. As GWA refines the annual CIP, these carryover projects will be redefined into areas of contractual obligation, and ongoing projects will be re-appropriated in the following year as all of the financing is reevaluated to ensure project funding and funding viability.

Operating and Capital Budget Relationship

The CIP also impacts the operating budget. As projects are completed, operating funds are necessary for routine maintenance and operation costs such as utilities, staffing, repairs, and equipment maintenance. For example, when the Supervisory Control and Data Acquisition (SCADA) system project is delivered, extensive operational, maintenance, and engineering support are required for a reliable and operable SCADA system.

CIP Organization

This fiscally constrained CIP includes project summary tables, funding source tables, funding anticipated to be committed by the Department of Defense funding, and project sheets.

Government of Guam Expenditure

On May 17, 2010, P.L. 30-145 was enacted into law, amending P.L. 28-71, which required GWA to pay a proportionate amount of the funds received up to a cap of \$20 million on a total bond amount of \$240 million. The Public Utility Commission’s Administrative Law Judge (ALJ) made a determination relative to this law, that GWA be ordered “to pay a portion of its statutory obligation,” in particular one-twelfth (1/12) of the bond amounts issues and sold by GWA which was \$220,000,000 which was calculated by the ALJ to be \$18,333,333. Further, the ALJ recommendation is that GWA shall reserve this amount from the 2010 bond proceeds.

GWA petitioned the Superior Court of Guam to review the PUC order as referenced in GWA vs. PUC: Superior Ct. of Guam Case No. SP0118-11. On September 23, 2011, Judge Michael Bordallo issued his Decision and Order granting GWA's Motion to Stay the Order issued by the PUC. The Court has not rendered a decision as of this time. GWA management recognizes the importance of this matter thus GWA will "reserve" the fund obligation through 2010 bond funds even though it has been assigned via this CIP. Additionally, should the Superior Court agree with the PUC order, GWA management will seek approval from the PUC for a rate adjustment to pay the \$18,333,333 obligation.

Department of Defense Funding

The DOD projects identified in the 2013-2018 CIP were based on the Department of Defense Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010. This document assumes changes in the military relocation plans however certain projects herein related to military development will remain along with funding assumption which are shown in Table 13, 14 and 15. GWA is fully aware that the relocation plans of military personnel to Guam may change thus the information provided herein are primarily for discussion purposes and shall not be construed as direct projects affecting GWA.

EPA's PG Reports Reviewed

The USEPA's Consultant PG Environmental completed a series of reports with recommendation to improve GWA's. The PG Reports contain valuable insights on how to improve GWA. The reports are broad based focusing improving GWA's "Sustainable Utility" model by improving master planning. Of course, the PG Reports fully support the investment into the Production Plan and WAP & WLR Plan. Although these reports have some limitations, for example the military build-up assumption, GWA incorporated the comments from *GWA Master Planning Technical Assessment*, January 2010 into this revision of the CIP. GWA reviewed section 2.3, 2.5, 2.6, 2.7 and portions of Appendix 1 of the PG's Master Planning Assessment.

This updated CIP will continue to ensure GWA provides excellence in water and wastewater services. The development of this CIP was truly a team effort with the combined energy of the General Manager, Engineering staff, Grants Section and Finance Department.

B. 2010 Bond Reallocation Request

GWA submitted before the PUC in June 2012 a petition to reallocate 2010 Bond funds to fund various projects, including projects that were specific to the Court Order. Table 1 below shows the breakdown of the CIP projects requiring additional funding and CIP projects that had funding reallocated. The PUC approved the reallocation via PUC Docket 11-01.

Table 1: PUC Approved 2010 Bond Reallocation Request June 2012

CIP No.	Name	Addition Funds (x1000)	Reduction Funds (x1000)
PW 05-01	Ground Water Disinfection	\$500	
PW 05-08	Barrigada Tank Repair/Replacement	\$6,000	
PW 05-09	Leak Detection	\$200	
PW 05-11	Implement Ground Water Rule	\$200	
PW 09-01	Ugum Water Treatment Plant Intake		\$1,000
PW 09-03	Water Distribution System	\$2,816	
PW 09-05	Northern System Water Distribution		\$1,425
PW 09-07	Southern Water Distribution System		\$1,150
PW 09-08	Mechanical/Electrical Equipment	\$930	
PW 09-10	Water Reservoir Internal/External		\$2,400
PW 09-11	Water System Reservoirs 2005 Improvements		\$10,647
PW 11-01	Distribution System Upgrades		\$1,000
PW 11-02	Ugum Water Treatment Plant Reservoir		\$50
PW 12-01	Water Audit Program & Water Loss Control Plan	\$100	
PW 12-02	Production Plan / Reduce Navy Purchases	\$100	
PW 12-03	Hydraulic Assessment of Tanks	\$500	
PW 12-04	Agana Heights & Chaot Tanks	\$4,100	
PW 12-05	Tank Major Repair Yigo #1, Mangilao #2, Astumbo #1	\$2,400	
PW 12-06	Tank Replacement Piti & Hyundai Tanks	\$100	
PW 12-07	Assessment of Malojloj Elevated & Yigo Elevated	\$100	
PW 12-08	Public Water System Asset Inventory/ Condition Assessment	\$100	
WW 09-06	Wastewater Collection System Replacement/ Rehabilitation	\$400	
WW 11-04	Facilities Plan/Design for Umatac-Merizo WWTP	\$750	
WW 12-01	Northern District WWTP Primary Treatment Upgrade	\$2,000	
WW 12-02	Bio-solids Management Plan	\$200	
WW 12-03	Agana WWTP Interim Measures		\$2,000
WW 12-04	I&I SSES Southern	\$1,300	
WW 12-05	I&I SSES Central	\$100	
WW 12-06	I&I SSES Northern	\$100	
WW 12 -07	Umatac-Merizo STP Interim Improvements	\$250	
EE 05-01	Well Electrical Protection		\$26
EE 05-02	SCADA Pilot Project		\$230
EE 09-02	Electrical Upgrade - Water Wells		\$550
MC 09-01	General Plant Improvements / Water		\$2,768
	TOTAL	\$23,246	\$23,246

It is with this CIP document GWA is seeking to execute a third 2010 bond reallocation. This section delineates the additional funding needs of active CIP projects as well as identifies the recommended source from which the required additional funds can be obtained. Project deficits and proposed reallocations to meet deficits are summarized below in Table 2.

Table 2: GWA 2010 Bond Reallocation Request February 2013

CIP No.	Name	Addition Funds (x1000)	Reduction Funds (x1000)
PW 05-07	Meter Replacement Program	\$600	
PW 05-08	Barrigada Tank Repair/Replacement		\$550
PW 05-11	Implement Ground Water Rule	\$1,500	
PW 05-12	Brigade II (Ugum Lift) BPS Upgrade	\$500	
PW 09-01	Ugum Water Treatment Plant Intake		\$970
PW 09-08	Mechanical/Electrical Equipment	\$270	
PW 09-09	Water Reservoir Internal/External	\$1,500	
PW 12-04	Agana Heights & Chaot Tanks	\$600	
PW 12-06	Tank Replacement Piti & Hyundai		\$100
PW 12-07	Assessment/Replacement of Malojloj Elevated & Yigo Elevated	\$100	
PW 12-09	Public Water System GIS & Mapping	\$50	
WW 09-06	Wastewater Collection System Repl/ Rehabilitation	\$750	
WW 11-03	Baza Gardens STP Replacement		\$2,550
WW 11-04	Facilities Plan/Design/Interim for Umatac-Meizo STP Impr.	\$150	
WW 11-08	Agat/Santa Rita STP Replacement		\$250
WW 12-01	Northern District WWTP Primary Treatment Upgrades		\$250
WW 12-03	Agana WWTP Interim Measures	\$500	
WW 12-04	I&I SSES Southern		\$500
WW 12-05	I&I SSES Central	\$750	
WW 12-06	I&I SSES Northern		\$100
EE 09-08	SCADA Improvements – Phase 3		\$2,300
MC 09-01	General Plant Improvements	\$300	
TOTAL		\$7,570	\$7,570

Project Funding Requirements

Given the numerous projects noted in the table above requiring additional funding the following are just a summary of the change in scope and why additional funding is required.

- Meter Replacement Program (PW 05-07) – This CIP line item was provided additional funding from a previous fund reallocation however with the current work activities to replace failing meters, GWA recognizes an funding need to meet Court Order requirements.
- Implement Ground Water Rule (PW05-11) – GWA intends to continue ongoing work related to USEPA regulations for advanced monitoring and disinfecting at the deep wells and springs.
- Brigade II (Ugum Lift) BPS Upgrade (PW 05-12) – This project has existing funding source however cost estimates reveal the current funds are inadequate thus additional funding is required for construction and construction management.
- Mechanical/Electrical Equipment (PW 09-08) – GWA intends to use the additional funds to purchase equipment and materials related to deep wells.
- Water Reservoir Internal/External (PW 09-09) – GWA has an on-going project to inspection all steel water reservoirs however additional funding is required to continue inspection efforts.

- Agana Heights & Chaot Tanks (PW 12-04) – Additional funding is required to provide construction management services related to this project.
- Assessment/Replacement of Malojloj Elevated & Yigo Elevated (PW 12-07) – GWA intends to initiate design services for a new Booster Pump Station adjacent to the Malojloj reservoir.
- Public Water System GIS & Mapping (PW 12-09) – GWA engineering intends to continue efforts in updating the GIS data to ensure current information is available for planning purposes.
- Wastewater Collection System Repl/ Rehabilitation (WW 09-06) – GWA intends to address sewer collection system deficiencies currently identified in-house as well as anticipated from the USEPA NEIC report related to the sewer system.
- Facilities Plan/Design/Interim for Umatac-Merizo STP Impr. (WW 11-04) GWA intends to provide interim improvements to the Umatac- Merizo STP as a means of eliminating as best possible overflow occurrences until full plant upgrades take place.
- Agana WWTP Interim Measures (WW 12-03) – Additional funding is required to properly fund construction management services.
- I&I SSES Central (WW 12-05) – Additional funding is required for GWA to initiate engineering services for I&I and SSES work.
- General Plant Improvements (MC 09-01) – GWA intends to use this line item to fund general improvements needed that are not already captured in specific line items in this CIP.

C. CIP Summary Tables

Table 3. Summary Table By Project Type (x1000)

		2013	2014	2015	2016	2017	2018	TOTAL
PW	Potable Water	25,784	58,695	45,500	35,250	47,000	51,250	263,479
WW	Wastewater	24,936	16,171	26,400	41,500	26,400	28,000	163,407
EE	Electrical Engineering	600	2,470	2,925	500	4,500	1,000	11,995
MC	Miscellaneous	2,344	5,500	4,000	3,000	800	3,000	18,644
	Total	53,664	82,836	78,825	80,250	78,700	83,250	457,525

Table 4. Summary Table Potable Water

CIP #	Project Name	2013	2014	2015	2016	2017	2018	TOTAL (x1000)	Refer to
		(X1000)							
PW 05-01	Ground Water Disinfection	101						101	
PW 05-02	Water Reservoir Assessment								PW 09-09
PW 05-03	Santa Rita Springs Booster Pump Rehab Phase II		100					100	
PW 05-04	Ugum Water Treatment Plant								PW 09-01
PW 05-05	"A" Series Well Transmission Line	600	400					1,000	
PW 05-06	Water Booster Pump Station	435	3,000	3,000	1,000	1,000	1,000	9,435	
PW 05-07	Meter Replacement Program	767				4,000		4,767	
PW 05-08	Barrigada Tank Repair/Replacement	385	6,000			1,500	6,000	13,885	
PW 05-09	Leak Detection			100	100	100		300	
PW 05-10	Potable Water System Planning	2,606	3,405	400	400	400	1,000	8,611	
PW 05-11	Implement Ground Water Rule	2,085	1,000					3,085	
PW 05-12	Brigade II (Ugum Lift) BPS Upgrade	1,450						1,450	
PW 05-13	Deep Well Rehabilitation		400	400				800	
PW 05-14	New Deep Wells at Down Hard	1,322	2,000					3,322	
PW 05-15	Rehabilitation of Asan Springs	1,535						1,535	

PW 05-16	Master Meters	1,191	2,000	2,000				5,191	
PW 09-01	Ugum Water Treatment Plant Intake Modifications	689	1,000					1,689	
PW 09-02	Water Wells		5,160	2,700	3,000	3,500	4,000	18,360	
PW 09-03	Water Distribution System Pipe Replacement and Upgrades	2,072	6,000	6,000	1,000	8,600	5,000	28,672	
PW 09-04	Pressure Zone Realignment / Development 2005 Improvements		1,000			1,400		2,400	
PW 09-05	Northern System Water Distribution System 2005 Improvements								PW 09-03
PW 09-06	Central Water Distribution System 2005 Improvements	296						296	
PW 09-07	Southern System Distribution System 2005 Improvements								PW 09-03
PW 09-08	Mechanical/Electrical Equipment	328	430					758	
PW 09-09	Water Reservoir Internal/External	1,731						1,731	
PW 09-10	Water Reservoir Internal/External		400	400				800	
PW 09-11	Water System Reservoirs 2005 Improvements	16	5,000	18,000	27,250	24,000	33,250	107,516	
PW 11-01	Distribution System Upgrade	26						26	
PW 11-02	Ugum Water Treatment Plant Reservoir		4,000	3,000				7,000	
PW 12-01	Water Audit Program & Water Loss Control Plan	100					1,000	1,100	
PW 12-02	Production Plan / Reduce Navy Purchases	100						100	
PW 12-03	Hydraulic Assessment of Tanks	500						500	
PW 12-04	Agana Heights & Chaot Tanks	4,700	1,500	3,000				9,200	
PW 12-05	Tank Major Repair Yigo #1, Mangilao #2, Astumbo #1	2,400	13,500					15,900	
PW 12-06	Tank Replacement Piti & Hyundai		1,500	6,500	2,500	2,500		13,000	
PW 12-07	Assessment of Malojoj Elevated & Yigo Elevated	200	500					700	
PW 12-08	Public Water System Asset Inventory/ Condition Assessment	100						100	
PW 12-09	Public Water System GIS& Mapping	50						50	
Sub-Total		\$25,784	58,695	45,500	35,250	47,000	51,250		
Grand Total for PW Funding		\$263,479							

Table 5.Summary Table Wastewater

		2013	2014	2015	2016	2017	2018	TOTAL	Refer to
CIP #	Project Name	(X1000)						X1000	
WW 05-01	Old Agat Wastewater Collection (Phase II)								WW 09-06
WW 05-02	Collection Line Upgrade / Collection System Upgrade								WW 09-06 DoD- 07
WW 05-03	NDWWTP Diffuser Installation								DOD -02
WW 05-04	Wastewater System Planning	2,455	2,865	400			2,000	7,720	
WW 05-05	Wastewater Vehicles **								MC 09-01
WW 05 06	Wastewater Pumps Station Upgrade								WW 09-06
WW 05-07	NDWWTP - Chlorine Tanks**								WW 12-01
WW 05-08	Umatac-Merizo STP Improvements								WW 11-04
WW 09-01	Lift Station Upgrades	5,208	3,000	2,000		3,700	500	14,408	
WW 09-02	Moratorium***								
WW 09-03	Old Agat Collection Continuation (Phase III)								WW 09-06
WW 09-04	Manholes Frame Seal Repair								WW 09-06
WW 09-05	Agat Manhole Rehabilitation								WW 09-06
WW 09-06	Wastewater Collection System Replacement / Rehabilitation	2,122	5,506	5,000	3,000	2,000	500	18,128	
WW 09-07	Tumon Bay Sewer Upgrades								WW 09-06
WW 09-08	Facilities Plan/Design/interim for Baza Gardens STP improvements	623						623	
WW 09-09	Facilities Plan/Design for N. District STP Bio-solids								WW 12-02
WW 09-10	Facilities Plan/Design/interim for Agat-Santa Rita STP Improvements	900						900	
WW 09-11	WWTP Priority 1 Upgrades		1,300					1,300	
WW 11-01	Priority 1 Sewer Upgrades – Agat District								WW 09-06
WW 11-02	Priority 1 Sewer Upgrades – Baza Gardens District								WW 09-06
WW 11-03	Baza Gardens STP Replacement	1,267			500	5,700	25,000	32,467	
WW 11-04	Facilities Plan/Design/Interim for Umatac-Meizo STP Improvements	900						900	
WW 11-05	Facilities Plan for Hagatna STP Impr. & Effluent WWPS								WW 12-03
WW 11-06	Hagatna STP Improvements & Effluent WWPS								WW 12-03
WW 11-07	Northern District STP Expansion – Biosolids Electrical								DOD -02

WW 11-08	Agat-Santa Rita STP Replacement	2,697	2,000	17,000	38,000,000			59,697	
WW 12-01	Northern District WWTP Primary Treatment Upgrades	30	1,500					1,530	
WW 12-02	Bio Solids Management Plan	52						52	
WW 12-03	Agana WWTP Interim Measures	601						601	
WW 12-04	I&I SSES Southern	3,410						3,910	
WW 12-05	I&I SSES Central	2,155						2,155	
WW 12-06	I&I SSES Northern	1,305						1,305	
WW 12-07	Umatac - Merizo STP Replacement	250		2,000		15,000		17,250	
WW 12-08	Wastewater System GIS & Mapping								WW 05-04
WW 12-09	Wastewater Facility Back Up Power	960						960	
WW 12-10	Wastewater System Asset Inventory								WW 05-04
Sub-Total		24,936	16,171	26,400	41,500	26,400	28,000		
Grand Total for WW Funding		163,406							

** - Encumbered in 2011
***- Encumbered in 2012

Table 6. Summary Table Electrical Engineering

CIP #	Project Name	2013	2014	2015	2016	2017	2018	TOTAL	Refer to
		(X1000)						X1000	
EE 05-01	Well Electrical Protection								EE 09-02
EE 05-02	SCADA Pilot Project	8						8	
EE 09-01	Wastewater Pumping Station Electrical Upgrade		620					620	
EE 09-02	Electrical Upgrade – Water Wells	439		1,500		1,500	1,000	4,439	
EE 09-03	Electrical Upgrade – Water Booster			325				325	
EE 09-04	Electrical Upgrade –Water Booster			350				350	
EE 09-05	Electrical Upgrade – Other Water			250				250	
EE 09-06	SCADA Improvements – Phase 1	103						103	
EE 09-07	SCADA Improvements – Phase 2								EE-09-08
EE 09-08	SCADA Improvements – Phase 3	50	1,850					1,900	
EE 09-09	SCADA Improvements – Phase 4			500	500	3,000		4,000	
Sub-Total		600	2,470	2,925	500	4,500	1,000		
Grand Total for EE Funding		11,995							

Table 7. Summary Table Miscellaneous

		2013	2014	2015	2016	2017	2018	TOTAL	Refer to
CIP #	Project Name	(X1000)						X1000	
MC 05-01	Laboratory Modernization		1,500					1,5000	
MC 05-02	Land Survey	344	1,000	1,000				2,344	
MC 09-01	General Plant Improvements / Water	2,000	3,000	3,000	3,000	800	3,000	14,800	
Sub-Total		2,344	5,500	5,000	3,000	800	3,000		
Grand Total for MC Funding		18,644							

D. CIP FUNDING TABLES

Funding Source Key:

- 2010 Bond B2010
- 2013 Bond B2013
- 2015 Bond B2015
- 2018 Bond B2018
- System Development Charge SDC
- Short Term Loan STL
- Internally Funded CIP IFCIP
- Grants (DOI, EPA ARRA, etc) GRANTS
- FY 2010/2013 State Revolving Fund SRF

Table 8. Potable Water Funding Table

FS – Funding Source		2013		2014		2015		2016		2017		2018	
		FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)
PW 05-01	Ground Water Disinfection	B2010	101										
PW 05-03	Santa Rita Springs Booster Pump Rehab Phase II			B2013	100								
PW 05-05	“A” Series Well Transmission Line	B2010	600	B2013	400								
PW 05-06	Water Booster Pump Station	B2010	435	2013	3,000	B2013	3,000	IFCIP	1,000	IFCIP	1,000	B2018	1,000
PW 05-07	Meter Replacement Program	B2010	767							B2015	4,000		
PW 05-08	Barrigada Tank Repair/Replacement	B2010	385	B2013	6,000					IFCIP	400		
		GRANT								B2015	1,100	B2018	6,000
PW 05-09	Leak Detection Line Replacement	B2010				B2013	100	B2015	100	IFCIP	100		
		GRANT											
PW 05-10	Potable Water System Planning	B2010	6	SRF	3,405								
		SRF	2,600	B2013	400	B2013	400	B2015	400	IFCIP	400	B2018	1,000
PW 05-11	Implement Ground Water Rule	B2010	1,700	B2013	1,000								
		SRF	385										
PW 05-12	Brigade II (Ugum Lift) BPS Upgrade	B2010	1,450										
PW 05-13	Deep Well Rehabilitation	B2010		B2013	400	B2013	400						

PW 05-14	New Deep Wells at Down Hard	B2010	1,322	B2013	2,000				
PW 05-15	Rehabilitation of Asan Springs	B2010	600						
		Grant	935						
PW 05-16	Master Meters	B2010	1,191	B2013	2,000	B2013	2,000		
PW 09-01	Ugum Water Treatment Plant Intake	B2010	689	B2013	1,000				
PW 09-02	Water Wells			B2013	2,000	B2013	2,200	IFCIP	2,500
				SRF	1,660	SDC	500	SDC	500
				SDC	1,500			SDC	500
PW 09-03	Water Distribution System Pipe Replacement and Upgrades	B2010	2,072	B2013	6,000	B2013	6,000	B2015	1,000
								IFCIP	8,600
PW 09-04	Pressure Zone Realignment / Development 2005 Improvements			B2013	1,000			B2015	1,400
PW 09-06	Central Water Distribution System 2005 Improvements	B2010	296						
PW 09-08	Mechanical/Electrical Equipment	B2010	328	B2013	430				
PW 09-09	Water Reservoir Internal/External	B2010	1,731						
PW 09-10	Water Reservoir Internal/External			B2013	400	B2013	400		
PW 09-11	Water System Reservoirs 2005 Improvements	B2010	16	B2013	5,000	B2013	16,000	B2015	22,750
						IFCIP	2,000	IFCIP	4,500
PW 11-01	Distribution System Upgrade	B2010	26						
PW 11-02	Ugum Water Treatment Plant Reservoir			B2013	4,000	B2013	3,000		
PW 12-01	Water Audit Program & Water Loss Control Plan	B2010	100						
PW 12-02	Production Plan / Reduce Navy Purchases	B2010	100						
PW 12-03	Hydraulic Assessment of Tanks	B2010	500						
PW 12-04	Agana Heights & Chaot Tanks	B2010	4,700	B2013	1,500	B2013	3,000		
PW 12-05	Tank Major Repair Yigo #1, Mangilao #2, Astumbo #12	B2010	2,400	B2013	13,500				
PW 12-06	Tank Replacement Piti & Hyundai			B2013	1,500	B2013	6,500	B2015	2,500
								B2015	2,500
PW 12-07	Assessment of Malojloj Elevated & Yigo Elevated	B2010	200	B2013	500				
PW 12-08	Public Water System Asset Inventory/ Condition Assessment	B2010	100						
PW 12-09	Public Water System GIS & Mapping	B2010	50						

(Continuation Table 8)

	2013	2014	2015	2016	2017	2018
TOTAL POTABLE WATER PROJECTS (B2010)	21,864					
TOTAL POTABLE WATER PROJECTS (B2013)		52,130	43,000			
TOTAL POTABLE WATER PROJECTS (B2015)				26,750	36,000	
TOTAL POTABLE WATER PROJECTS (B2018)						51,250
Short Term Loan						
SRF Grant Funds	2,985	5,065				
System Development Charge (SDC)		1,500	500	500	500	
GRANTS	935					
IFCIP			2,000	8,000	10,500	

Table 9.Wastewater Funding Table

FS – Funding Source		2013		2014		2015		2016		2017		2018	
		FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)
WW 05-04	Wastewater System Planning	B2010	345	B2013	400	B2013	400					B2018	2,000
		SRF	2,110	SRF	2,465								
WW 05-05	Wastewater Vehicles	B2010											
WW 05-07	NDWWTP - Chlorine Tanks	B2010											
WW 09-01	Lift Station Upgrades	GRANT	2,308	B2013	3,000	B2013	2,000			IFCIP	1,700	IFCIP	500
		SRF	2,900							B2015	2,000		
WW 09-02	Moratorium	STL											
WW 09-06	Wastewater Collection System Repl/ Rehabilitation	B2010	921	B2013	2,500	B2013	4,000						
		SRF	1,201	SRF	3,006	IFCIP	1,000	IFCIP	3,000	IFCIP	2,000	IFCIP	500
WW 09-08	Facilities Plan/Design/interim measures for Baza Gardens STP Improvements	B2010	623										
WW 09-10	Facilities Plan/Design/interim measures for Agat-Santa Rita STP Improvements	B2010	900										
WW 09-11	WWTP Priority 1 Upgrades			SDC	1,300								
WW 11-03	Baza Gardens STP Replacement	B2010	1,267					IFCIP	500	B2015	5,700	IFCIP	6,000
												B2018	19,000
WW 11-04	Facilities Plan/Design/Interim for Umatac-Merizo STP Improvements	B2010	900										
WW 11-08	Agat/ Sta Rita STP Replacement	B2010	2,697	B2013	2,000	B2013	17,000	B2015	38,000				
WW 12-01	Northern District WWTP Primary Treatment Upgrades	B2010	30	SDC	1,500								
WW 12-02	Bio Solids Management Plan	B2010	52										
WW 12-03	Agana WWTP Interim Measures	B2010	601										
WW 12-04	I&I SSES Southern	B2010	800										
		SRF	2,610										
WW 12-05	I&I SSES Central	B2010	850										
		SRF	1,305										

WW 12-06	I&I SSES Northern	SRF	1,305					
WW 12-07	Umatac Merizo STP Replacement	B2010	250		B2013	2,000	B201	15,000
WW 12-08	Wastewater System GIS& Mapping							
WW 12-09	Wastewater Facility Back Up Power	SRF	960					
WW 12-10	Wastewater System Asset Inventory							

(Continuation Table 9)

	2013	2014	2015	2016	2017	2018
TOTAL WASTEWATER PROJECTS (2010)	10,237					
TOTAL WASTEWATER PROJECTS (2013)		7,900	25,400			
TOTAL WASTEWATER PROJECTS (2015)				38,000	22,700	
TOTAL WASTEWATER PROJECTS (2018)						21,000
Short Term Loan						
SRF Grant Funds	12,390	5,471				
System Development Charge (SDC)		2,800				
GRANTS	2,307					
IFCIP			1,000	3,500	3,700	7,000

Table 10. Electrical Engineering Funding Table

FS – Funding Source		2013		2014		2015		2016		2017		2018	
		FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)
EE 05-02	SCADA Pilot Project	B2010	8										
EE 09-01	Wastewater Pumping Station Electrical Upgrade			B2013	620								
EE 09-02	Electrical Upgrade - Water Wells	B2010	439			B2013	1,500			B2015	1,500	IFCIP	1,000
EE 09-03	Electrical Upgrade - Water Booster					B2013	325						
EE 09-04	Electrical Upgrade -Water Booster					B2013	350						
EE 09-05	Electrical Upgrade - Other Water					B2013	250						
EE 09-06	SCADA Improvements – Phase 1	B2010	103										
EE 09-07	SCADA Improvements – Phase 2												
EE 09-08	SCADA Improvements – Phase 3	B2010	50	B2013	1,850								
EE 09-09	SCADA Improvements – Phase 4					B2013	500	B2015	500	B2015	3,000		
TOTAL ELECTRICAL PROJECTS (2010)			600										
TOTAL ELECTRICAL PROJECTS (2013)					2,470		2,925						
TOTAL ELECTRICAL PROJECTS (2015)								500		4,500			
TOTAL ELECTRICAL PROJECTS (2018)													
Short Term Loan													
SRF Grant Funds													
System Development Charge (SDC)													
GRANTS													
IFCIP													1,000

Table 11. Miscellaneous Funding Table

FS – Funding Source		2013		2014		2015		2016		2017		2018	
		FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)	FS	(x1000)
MC 05-01	Laboratory Modernization			B2013	1,500								
MC 05-02	Land Survey	B2010	344	B2013	1,000	B2013	1,000						
MC 09-01	General Plant Improvements / Water	B2010	1,500										
		IFCIP	500	IFCIP	2,000	IFCIP	2,000	IFCIP	3,000	IFCIP	800	IFCIP	3,000
				B2013	1,000	B2013	1,000						
TOTAL MISCELLANEOUS PROJECTS (2010)			1,844										
TOTAL MISCELLANEOUS PROJECTS (2013)					3,500		2,000						
TOTAL MISCELLANEOUS PROJECTS (2015)													
TOTAL MISCELLANEOUS PROJECTS (2018)													
Short Term Loan													
SRF Grant Funds													
System Development Charge (SDC)													
GRANTS													
IFCIP			500		2,000		2,000		3,000		800		3,000

Table 12. Funding Source Summary (x1000)

		2013	2014	2015	2016	2017	2018	TOTAL
B2010	2010 BOND SERIES	34,545						34,545
B2013	2013 BOND SERIES		66,000	73,325				139,325
B2015	2015 BOND SERIES				65,250	63,200		128,450
B2018	2018 BOND SERIES						72,250	72,250
STL	Short Term loan							
SRF**	2012-2013 State Revolving Fund	15,376	10,536					20,042
SDC	System Development Charge		4,300	500	500	500		5,800
GRANTS	Grants	3,243						3,242
IFCIP	Internally Funded CIP	500	2,000	5,000	14,500	15,000	11,000	48,000
		53,664	82,836	78,825	80,250	78,700	83,250	457,524

SRF** includes in-kind contributions of the USEPA consultant

E. Department of Defense (DoD) Funding

The following tables illustrate where overlap can occur between GWA projects and projects related to the military relocation. The projects and funding noted are assumed and will be changed once clear direction is obtained from DoD.

Table 13. DoD Funded GWA Wastewater CIP's

CIP #	Name
WW 05-02	Collection Line Upgrade/ Collection System Upgrades
WW 05-03	NDWTP Diffuser Installation
WW 11-07	Northern District STP Expansion – Biosolids Electrical

Table 14. DoD Wastewater Project Description

Project	Project Details	GWA CIP Included
Northern District WWTP	Phase 1: Primary Capacity 12 MGD	WW 05-03, WW 11-07
	Phase 2: Secondary Capacity 12 MGD	
	Phase 3: Final Capacity 16 MGD	
Hagatna WWTP	Phase 2: Secondary Capacity 12 MGD	
Collection System Improvements	Central and Northern Systems	WW 05-02

Table 15. Estimated DoD Funding(x1,000)

CIP	Project Details	2013	2014	2015	2016	2017	2018	Refer to
DoD-01	NDWWTP Interim Capacity 8-9MGD							WW12-01
DoD-02	NDWWTP Phase 1: Primary Capacity 12 MGD			\$60,000				
DoD-03	NDWWTP Phase 2: Secondary Capacity 12MGD				\$100,000			
DoD-04	NDWWTP Phase 3: Final Capacity 16 MGD				\$29,000			
DoD-05	HWWTP Phase 1: Primary Capacity 12 MGD							WW 12-03
DoD-06	HWWTP Phase 2: Secondary Capacity 12MGD				\$100,000			
DoD-07	Central and Northern Systems Wastewater System			\$50,000				
DoD-08	Water Transmission loop in Northern Guam			\$100,000				
Total				\$210,000	\$229,000			

F. Project Sheets

Project Sheet Water

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-01

Categorization: Project

Name of Project: Ground Water Disinfection

Reference Documents:

- a) Stipulated Order 2006, Item 12 (C) Ground Water Chlorination Systems
- b) Amended Stipulated Order 2011, Item 21

Project Description:

Design of this project has been complete and construction activities to upgrade chlorination systems for 99 deep wells and one spring source are near complete.

Project Justification:

This project is identified in the Stipulated Order 2006, Item 12(C) and Amended Stipulated Order 2011, Item 21.

Financing Options & Grants:

The source of funding for the remaining scope in the project will be the 2005 and 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results:

Phase I and II completed, Phase III is on-going.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$101
2014		
2015		
2016		
2017		
2018		
Project Total		\$101

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-02

Categorization: Program / Assessment

Name of Project: Water Reservoir Condition Assessment

Reference Documents:

- a) Stipulated Order 2006, Item 38(C) - Water Reservoir Condition Assessment
- b) Phase 1 Summary Report for inspection of water storage tanks, October 17, 2008.
- c) CIP PW 09-08, 09 & 10
- d) PG Environmental – GWA Master Planning Technical Assessment, January 29, 2010

Project Description:

This project includes professional engineering service and construction service contracts to conduct an assessment of the structural integrity and soundness for all GWA reservoirs. The assessment will include internal and external inspections from which recommendations will be provided in the form of a work plan and schedule.

Project Justification:

This project is identified in the Stipulated Order 2006, Item 38(C).

Financing Options & Grants:

The source of funding for this project will be the 2005 bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results:

Project completed ten out of thirty tanks required by SO, funding depleted. **Work will be continued under PW 09-09 and funded with 2010 Bonds.**

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-03

Categorization: Project

Name of Project: Santa Rita Springs Booster Pump Rehabilitation, Phase II

Reference Documents:

- a.) Stipulated Order 2006, item 44. Basis of Design Santa Rita Springs Booster Pump Rehabilitation Project, July 2005.
- b.) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

The original construction scope of work for the project intent has been completed. The project now requires completion of incidental work related to the spring impound and facility function controls. It is the intent of this CIP project to be “transitioned” into a project where work is required to address the GEPA pending action related to “Ground Water Under the Direct Influence (GWUDI)”. Should GWUDI be designated the project scope will focus on necessary design and improvements to meet GWUDI conditions.

Project Justification:

The original project is identified in the Stipulated Order 2006, Item 44. Relative to the GWUDI project scope there are indications from GEPA that water coming from natural springs has a high probability of being designated as GWUDI. This project intends to meet the GWUDI requirements.

Financing Options & Grants:

The source of funding for the original scope was under 2005 bond. Additional work will be funded with 2013 bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results:

Project completed. Project continued due to GWUDI pending action by GEPA.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		\$100
2015		
2016		
2017		
2018		
Project Total		\$100

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-04

Categorization: Project

Name of Project: Ugum Water Treatment Plant Refurbishment

Reference Documents:

- a) Stipulated Order 2006, Item 41 - Ugum Surface Water Treatment Plant
- b) CIP PW 09-01 Ugum Water Treatment Plant Intake Modifications.

Project Description:

This project will renovate the Ugum Treatment Plant. The refurbishment will include the conversion of existing conventional surface water plant to a micro-filtration system; replacement of electrical control systems; replacement of finished water pumps; installation of SCADA equipment; and the refurbishment of the backwash waste handling system.

Project Justification:

The Ugum Treatment Plant is a vital drinking water source. An integrated approach is needed to ensure the reliability of this treatment plant.

Financing Options & Grants:

The source of funding for this project is EPA Grant and 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Results:

The construction activities for the micro-filtration system is complete. **Additional work outside of the current construction scope but related to the plant improvements will continue under PW 09-01.**

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-05

Categorization: Project

Name of Project: A-Series Well Transmission Line

Reference Documents:

- a) Stipulated Order 2006, Item 38(B), Sinajana Water Transmission Line
- b) Amended Stipulated Order 2011, Item 28, Sinajana Water Transmission Line

Project Description:

Construction of approximately 24,800-feet of 8, 12, and 24-inch water transmission lines between the Chaot and Agana Heights water storage tanks; the connection of 7 existing A-series wells to the transmission line, and chlorination equipment at each of the two storage tanks has been completed. The new pipeline will be a dedicated transmission line to the storage tanks. This project is broken down to 4 phases. Phase 1, Phase 2a and Phase 2b are completed. Phase 3 entails design services and is completed which resulted in the need for a BPS in Agana Heights. Phase 4 will include construction activities that will provide the water service area with the acceptable pressure once the system as intended is put in service.

Project Justification:

This project is identified in the Stipulated Order 2006, Item 38(B) and the Amended Stipulated Order 2011, Item 28.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Modeling Support are required.

Results:

Phase 1, Phase 2a, Phase 2b, and Phase 3 are completed. Phase 4 entails construction of water storage tanks under PW 12-04 and is ongoing.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Construction	\$600
2014	Construction	\$400
2015		
2016		
2017		
2018		
Project Total		\$1,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-06

Categorization: Project

Name of Project: Water Booster Pump Station

Reference Documents:

a) MASTER PLAN, VOLUME 2, TABLE 9-13

Project Description:

The 2005 hydraulic model for GWA's three water systems identified deficiencies in water booster pump capacity to provide adequate supply to areas in the Northern, Southern and Central water systems. The project will include all improvements necessary to address capacity limitations as well as facility functionality such as motors, controls, valves etc. Additional improvements shall include the use of VFD for better energy efficiency and facility functionality.

Project Justification:

This project will provide additional booster pump capacity to ensure adequate supply to affected areas are provided as well as to ensure existing BPS are equipped with efficient pumps, motors, controls, etc. The improvements are to also address the USEPA's "Findings of Significant Deficiencies in the Public Water System"

Financing Options & Grants:

The source of funding for this project will be the 2010 bond, 2013 bond, 2018 Bond and Internally Funded CIP.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design	\$435
2014	Construction	\$3,000
2015	Construction	\$3,000
2016	Construction	\$1,000
2017	Construction	\$1,000
2018	Construction	\$1,000
Project Total		\$9,435

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-07

Categorization: Program / Construction

Name of Project: Meter Replacement Program

Reference Documents:

- a) Stipulated Order 2006, Item 14
- b) Amended Stipulated Order 2011, Item 23, Water Meters

Project Description:

The project will continue to replace all GWA customer water (mechanical) meters with AMR (automatic meter reading) meters. This project will replace old, underperforming and broken meters. The AMR meters will allow data logging and electronic collection of monthly metering data.

This project will develop a water meter improvement program to ensure that each connection to the three public water systems has an accurate and accessible water meter that is GPS and reflected on the GIS, and asset inventory, read monthly and billed

Project Justification:

Currently, GWA's unaccounted water rate is over 36%. It is believed that a portion of this loss is due to leakage and a portion is attributable to metering problems.

Financing Options & Grants:

The source of funding for this project will be the 2010 and 2015 bonds.

Project Staffing Implications:

Major Field Support, Contract Administration, Project Management, and GIS Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$767
2014		
2015		
2016		
2017		\$4,000
2018		
Project Total		\$4,767

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-08

Categorization: Project

Name of Project: Barrigada Tank Repair/Replacement

Reference Documents:

- a) Amended Stipulated Order 2011, Item 29 (b) (3) Storage Tank/Reservoir, Repair, Rehabilitation, Replacement and Relocation program

Project Description:

This project will replace the 1.0 MG tank that collapsed in 2003. The new tank will be located in the same footprint as the previous tank. This project will include a design analysis for a replacement tank.

Project Justification:

The reduction in storage capacity of the Barrigada reservoirs due to the catastrophic failure of the previous 1.0 MG steel tank has negatively impacted the ability of GWA to effectively supply adequate water source to the villages of Barrigada and Maite.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 Bond, 2015 Bond, 2018 Bond, Department of Interior grant and Internally Funded CIP.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/Construction	\$385
2014	Construction	\$6,000
2015		
2016		
2017		\$1,500
2018		\$6,000
Project Total		\$13,885

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-09

Categorization: Program / Assessment

Name of Project: Leak Detection / Line Replacement

Reference Documents:

a) PG Environmental – GWA Master Planning Technical Assessment, January 29, 2010

Project Description:

This project will perform system wide leak detection, line location and mapping, leak repair and inspection, leak analysis and control, and training and technology transfer. Line location will be performed where GIS and model data are incomplete. Leak detection will be performed on 450 miles of system pipe, including use of acoustical surveying and water audits. Leaks and repairs will be inspected, standard operating procedures reviewed/revised and material inventories developed. GWA personnel will receive training in leak detection methods and equipment. Pressure, surge and frequency analysis will be conducted, and recommendations developed for pipeline replacement, system reconfiguration, and other adjustments needed to control leakage. Data from leak detection will be used to set line replacement priorities with a goal to design and construct the replacement of approximately 10 miles of distribution mains annually depending on availability of funding.

Project Justification:

GWA system consists of hundreds of miles of water distribution mains consisting of numerous different pipe sizes and types. Many of these lines are undersized and/or failing due to improper construction, earthquake damage, and/or material failures. Operating personnel average about 5 distribution main breaks per week. GWA management considers any water loss a priority.

Financing Options & Grants:

The source of funding for this project will be the 2013 Bond, 2015 Bond and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015	Planning	\$100
2016	Planning	\$100
2017	Planning	\$100
2018		
Project Total		\$300

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-10

Categorization: Program / Planning

Name of Project: Potable Water System Planning

Reference Documents:

- a) MASTER PLAN, VOLUME 2, CHAPTER 6
- b) GUAM CONSOLIDATED COMMISSION ON UTILITIES RESOLUTION NO. 11

Project Description:

This project will include long term planning, system planning, and environmental planning. Specific applications will include potable water hydraulic modeling and the potable water bubble map. This will be used to update a portion of the Master Plan. Hydraulic modeling includes the software, hardware, travel and training. System planning includes but not limited to GIS mapping, asset inventory, asset management, asset management software, GIS software, GIS training, asset management training and asset condition assessment.

Project Justification:

Long term planning, system planning, and environmental planning is essential for developing capital improvement programs. Potable Water System Planning ensures that a system approach is used in project development which specifies how specific projects fit into the overall planning goals.

In addition, the 2006 Master Plan requires updating every two years by the Guam Consolidated Commission on Utilities Resolution No. 11 – FY 2007 Relative to Approving the Guam Waterworks Authority Master Plan. The resolution states “The Guam Waterworks Authority is hereby directed to continue refining the Master Plan and every two years from the date of approval of this document to recommend to the Consolidated Commission on Utilities improvements and modifications to the Master Plan and the hydraulic model and to recommend and re-prioritize capital projects resulting from said changes or modifications.”

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 Bond, 2015 Bond, 2018 Bond, SRF Grant and Internally Funded CIP.

Project Staffing Implications:

Major modeling services and GIS support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design Planning	\$2,606
2014		\$3,805
2015		\$400
2016		\$400
2017		\$400
2018		\$1,000
Project Total		\$8,611

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-11

Categorization: Program / Construction

Name of Project: Implement Ground Water Rule

Reference Documents:

a) Implementation of the Groundwater Rule GEPA

Project Description:

This project will provide upgrades to the deep wells for the implementation of the Groundwater Rule. This project will install chlorine residual monitors on all GWA wells. The wells will include SCADA equipment to communicate the well chlorine levels to central location.

Project Justification:

The Groundwater Rule requires GWA to install chlorine residual monitors on all GWA wells.

Financing Options & Grants:

This project will be funded from 2010 Bond, EPA Grant and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required. A control system technician will be required to maintain the monitors and related SCADA equipment.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design and construction	\$2,085
2014	construction	\$1,000
2015		
2016		
2017		
2018		
Project Total		\$3,085

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-12

Categorization: Project

Name of Project: Brigade II (Ugum Lift) BPS Upgrade

Reference Documents:

- a) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

A new Brigade II booster pump station is required to fully utilize the surface supply from the south or the Ugum Treatment Plant. A new pump station, located at the Brigade II BPS site, will serve both the Windward Hills Reservoir and the Pulantat Reservoir. To provide this operational flexibility, the new pump station is to be located on the downstream side of Ugum Reservoir and should be able to overcome the pipe head loss plus the elevation difference (139 feet) between the Pulantat Reservoir and the Ugum Reservoir. Approximately 1100 feet of pipe is required in addition to the pump station. Additionally, the Brigade booster pump station and Windward Hills booster pump station will be upgraded to increase reliability and energy savings.

Project Justification:

Based on GEPA 2009 Annual Production Well Inspection Report, 13 of GWA's wells were required to decrease production due to the chloride levels; and 16 wells were approaching the chloride limit. One approach to supplementing the water supply due to the decrease in production of these 13 wells is to maximize the use of GWA's surface water and ground water. It is estimated that an increase in production of 2 MGD is needed to offset this loss in production. The source water from Ugum WTP is intended to cover the loss in deep well production.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/construction	\$1,450
2014		
2015		
2016		
2017		
2018		
Project Total		\$1,450

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-13

Categorization: Project

Name of Project: Deep Well Rehabilitation

Reference Documents:

a) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

This project will design and construct up to 3 new wells to increase supply and include the design and rehabilitation of seven “down-hard” wells. This project will require a feasibility study to determine the specific approach and cost estimate for each well.

Project Justification:

Based on GEPA 2009 Annual Production Well Inspection Report, 13 of GWA’s wells were required to decrease production due to the chloride levels; and 16 wells were approaching the chloride limit. One approach to supplementing the water supply due to the decrease in production of these 13 wells is to maximize the use of GWA’s surface water and ground water. It is estimated that an increase in production of 2 MGD is needed to offset this loss in production

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design	
2014	Construction	\$400
2015	Construction	\$400
2016		
2017		
2018		
Project Total		\$800

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-14

Categorization: Project

Name of Project: New Deep Wells at Down Hard Well Sites

Reference Documents:

a) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

This project will provide wells to increase supply and include new source water by drilling new wells adjacent to existing wells. This cost of these new wells will include casing and the transmission line to tie the wells into the system. This project will require a feasibility study to determine the specific approach and cost estimate for each well.

Project Justification:

Based on GEPA 2009 Annual Production Well Inspection Report, 13 of GWA's wells were required to decrease production due to the chloride levels; and 16 wells were approaching the chloride limit. One approach to supplementing the water supply due to the decrease in production of these 13 wells is to maximize the use of GWA's surface water and ground water. It is estimated that an increase in production of 2 MGD is needed to offset this loss in production.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, design, construction	\$1,322
2014	Construction	\$2,000
2015		
2016		
2017		
2018		
Project Total		\$3,322

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-15

Categorization: Project

Name of Project: Rehabilitation of Asan Springs Ground Reservoir

Reference Documents:

a) GWA Engineering Division, *Potable Water Production Enhancement Plan*, June 10, 2010.

Project Description:

This project will include design and construction work to rehabilitate/upgrade the reservoir, treatment/chlorination facility, pump/motors and electrical controls.

Project Justification:

Based on GEPA 2009 Annual Production Well Inspection Report, 13 of GWA's wells were required to decrease production due to the chloride levels; and 16 wells were approaching the chloride limit. One approach to supplementing the water supply due to the decrease in production of these 13 wells is to maximize the use of GWA's surface water and ground water. It is estimated that an increase in production of 2 MGD is needed to offset this loss in production.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and DOI grant.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/Construction	\$1,535
2014		
2015		
2016		
2017		
2018		
Project Total		\$1,535

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 05-16

Categorization: Program / Construction

Name of Project: Master Metering

Reference Documents:

a) The Bubble Map and Water Service Area Map.

Project Description:

This project will provide for the design, installation, and materials for water meters to be installed at major GWA facilities and pressure zones to fully account for water consumption. This project will aid in analyzing and forming a more accurate picture related to leak detection studies and reports. Additionally the hydraulic model will benefit from the data collected.

Project Justification:

The project is needed to perform water audits on water service areas (WSA) as required by US EPA. This project will greatly enhance the data from the current leak detection contract.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management Services, and Major Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/Planning/Construction	\$1,191
2014	Construction	\$2,000
2015	Construction	\$2,000
2016		
2017		
2018		
Project Total		\$5,191

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-01

Categorization: Project

Name of Project: Ugum Water Treatment Plant Intake Modifications

Reference Documents:

- a) Stipulated Order 2006, item 41, Ugum Surface Water Treatment Plant. Due January 5, 2008.
- b) MASTER PLAN, VOLUME 2, TABLE 9-6
- c) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

This project includes an alternative analysis and a design concept report to refine the extent and cost of this critical project. This project will improve the intake structure of the Ugum Water Treatment Plant to minimize siltation and provide more reliable raw water supply during low river flow conditions. This project also includes master planning for future treatment capacity and projects that increase plant capacity. Additionally vehicles, equipment, software, hardware, training for the planning, engineering, operation and maintenance of the treatment plant are part of the scope. This project will cover all related work that fell under PW 05-04.

Project Justification:

The existing intake is susceptible to siltation and requires frequent maintenance. The project will allow for GWA to efficiently extract the Ugum water even during high silt periods and operate at low river conditions. More importantly the Ugum WTP is a major source of water for supplying the Southern Water System thus continued water supply is necessary.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Contract Administration, Project Management, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design	\$689
2014	Construction	\$1,000
2015		
2016		
2017		
2018		
Project Total		\$1,689

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-02

Categorization: Program / Construction

Name of Project: Water Wells

Reference Documents:

- a) GWA Needs Assessment for Anticipated Guam Military Buildup 08/2007 and 08/2009 update.
- b) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

GWA projects a need to construct new production wells to produce an estimated 5-7 MGD for natural growth of the island and pending military development. This project will require studying the aquifer with respect to all production wells, water system demand analysis, and development/construction of new well. It is imperative that the site locations of the new wells are executed with a whole-aquifer perspective. This project also includes addressing replacement of pumps, motors, cables, motor controls, and electrical systems at existing wells to meet GWA's production needs.

Project Justification:

Water demands for all population residing outside military property will be met by GWA sources. This project will ensure water supply can meet customer demands taking into account economical, environmental, health and safety factors.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond, 2015 Bond, 2018 Bond, System Development Charge, U.S.EPA SRF Grant and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, and Modeling Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Planning/Design/Construction	\$5,160
2015	Construction	\$2,700
2016	Construction	\$3,000
2017	Construction	\$3,500
2018	Construction	\$4,000
Project Total		\$18,360

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-03

Categorization: Program / Construction

Name of Project: Water Distribution System Pipe Replacement

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-7
- b) GWA Engineering Division, Potable Water Production Enhancement Plan, June 10, 2010.

Project Description:

In addition to specific pipe replacement projects identified through hydraulic modeling, there is an ongoing need to fund pipe replacement to address leaks, failure and age issues. In addition the 2005 hydraulic model identified deficiencies in pumping capacity and pipe size to provide adequate fire flow and pressure, and reduce high velocities and friction losses throughout the island. The basis for this project is to replace 13,500 linear feet of pipe per year through 2015 and 2,000 feet of pipe replacement per year thereafter. Pipe replacement includes but is not limited to replacement of fire hydrants, PRV, valves (isolation valves, air lease valves blow off valves, etc.), vaults, and line segment replacement. In addition these projects include leak detection, leak repair, the mapping and records related to these activities, and valve exercise program.

Project Justification:

Under the current leak detection project sites have been identified where substantial leaks are occurring. This pipe replacement project intends to use the information from the leak detection project in prioritizing pipe replacement. The GWA system also has numerous substandard/undersize pipes which would be address through this project. The improvements are to also address the USEPA's "Findings of Significant Deficiencies in the Public Water System"

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 bond, 2015 Bond and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Major Modeling Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$2,072
2014	Construction	\$6,000
2015	Construction	\$6,000
2016	Construction	\$1,000
2017	Construction	\$8,600
2018	Construction	\$5,000
Project Total		\$28,672

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-04

Categorization: Program / Construction

Name of Project: Pressure Zone Realignment/Development 2005 Improvements

Reference Documents:

a) MASTER PLAN, VOLUME 2, TABLE 9-12

Project Description:

The hydraulic modeling of the water system identified areas with inadequate service pressures and flows. Installation of pressure regulating valve and pressure sustaining valve stations is required at strategic locations to facilitate the development of defined pressure zones, and improve circulation of flow from a higher pressure zone to a lower pressure zone. These projects include repairs of existing PRV and PSV to ensure the water system meets services pressure and flow.

Project Justification:

Pressure zone changes needed to improve flow circulation and defined pressure zones.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond, and 2015 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Major Modeling Support are required. The modeling support to achieve this project will be extensive.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Planning/Design/Construction	\$1,000
2015		
2016		
2017	Construction	\$1,400
2018		
Project Total		\$2,400

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-05

Categorization: Program / Construction

Name of Project: Northern System Water Distribution System 2005 Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-11

Project Description:

The 2005 hydraulic model for GWA's Northern Water System identified deficiencies in pumping capacity and pipe size to provide adequate fire flow and pressure, and reduce high velocities and friction losses.

Project Justification:

This project's primary justification is to improve fire flow and pressure in the respective areas.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Modeling Support are required.

Results:

Work related to this project sheet will be continued under PW 09-03.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-06

Categorization: Program / Construction

Name of Project: Central Water Distribution System 2005 Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-10

Project Description:

There is an ongoing need to fund pipe replacement to address leaks, failure and age issues. In addition the 2005 hydraulic model identified deficiencies pipe size to provide adequate fire flow and pressure, and reduce high velocities and friction losses throughout the island. Pipe replacement includes but is not limited to fire hydrants, PRV, valves, vaults and line segment replacement. These projects include leak detection, leak repair, and the mapping and records related to these activities.

Project Justification:

Under the current leak detection project sites have been identified where substantial leaks are occurring. This pipe replacement project intends to use the information from the leak detection project in prioritizing pipe replacement. The GWA system also has numerous substandard/undersize pipes which would be address through this project.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, Construction Management Services, GIS Support, and Modeling Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$296
2014		
2015		
2016		
2017		
2018		
Project Total		\$296

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-07

Categorization: Program / Construction

Name of Project: Southern Water Distribution System 2005 Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-9

Project Description:

The 2005 hydraulic model for GWA's Southern Water System identified deficiencies in water pipe sizes required to provide adequate fire flow.

Project Justification:

This project's primary justification is to improve fire flow and pressure in the respective areas.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Contract Administration, Project Management Services, Construction Management Services, Major GIS Support, and Modeling Support are required.

Results:

Work related to this project sheet will be continued under PW 09-03.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-08

Categorization: Program / Construction

Name of Project: Mechanical/Electrical Equipment Replacement

Reference Documents:

a) MASTER PLAN, VOLUME 2, TABLE 9-8

Project Description:

This project will create an equipment reserve for routine mechanical/electrical equipment replacement due to age, capacity, or failure. This reserve includes well pumps, booster pumps, valves, emergency generators and other items associated with the Northern, Central and Southern Water Systems.

Project Justification:

Sufficient funds must be reserved to ensure water system mechanical and electrical equipment is replaced in a timely manner.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$328
2014	Construction	\$430
2015		
2016		
2017		
2018		
Project Total		\$758

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-09

Categorization: Program / Assessment

Name of Project: Water Reservoir Internal/External Corrosion Assessment Program

Reference Documents:

a) MASTER PLAN, VOLUME 2, TABLE 9-2

Project Description:

This project will develop and implement a corrosion assessment program for all steel water reservoirs to determine the extent of internal and external reservoir corrosion and necessary course of action to rehabilitate or replace the affected reservoirs.

Project Justification:

The failure of the Barrigada Water Reservoir #1 in June 2005 demonstrated the urgent need to internally inspect and carry out a full condition assessment of all steel reservoirs to determine the degree of corrosion damage and establish remedial action or reservoir replacement as appropriate.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management, and Construction Inspection are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Assessment/Planning	\$1,731
2014		
2015		
2016		
2017		
2018		
Project Total		\$1,731

**GWA Capital Improvement Plan
Project Sheet FY 2013-2018**

Project Number: CIP PW 09-10

Categorization: Program / Construction

Name of Project: Water Reservoir Internal/External Corrosion Rehabilitation Program

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-3

Project Description:

This project will program the rehabilitation of designated reservoirs over a four-year period as a phased project based on the results of the corrosion assessment program for all steel water reservoirs.

Project Justification:

The failure of the Barrigada Water Reservoir #1 in June 2005 demonstrated the urgent need to internally inspect and carryout a full condition assessment of all steel reservoirs to determine the degree of corrosion damage and establish remedial action or reservoir replacement as appropriate.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Assessment/Planning/Construction	\$400
2015	Construction	\$400
2016		
2017		
2018		
Project Total		\$800

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 09-11

Categorization: Program / Construction

Name of Project: Water System Reservoirs 2005 Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-14 & 15
- b) Amended Stipulated Order 2011, Item 29

Project Description:

This project will construct additional reservoirs that address deficiencies in water storage capacity.

Project Justification:

The 2005 hydraulic model for GWA's three water systems identified deficiencies in reservoir capacity. This project will provide adequate capacity and pressure for fire and customer supply.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 Bond, 2015 Bond, 2018 Bond, and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management and Major Modeling are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Assessment/Planning/Construction	\$16
2014	Assessment/Planning/Construction	\$5,000
2015	Construction	\$18,000
2016	Construction	\$27,250
2017	Construction	\$24,000
2018	Construction	\$33,250
Project Total		\$107,516

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 11-01

Categorization: Program / Construction

Name of Project: Distribution System Upgrades

Reference Documents:

Project Description:

Waterlines from the 2009 Leak Detection Program distribution system upgrades will be identified that are in conformance with the Master Plan but are not scheduled with the current time horizon but need to be repaired sooner.

Project Justification:

Water Distribution System Pipe: GWA's system consists of hundreds of miles of water distribution mains consisting of various pipe sizes and types. Many of these lines are undersized and/or failing due to improper construction, earthquake damage, and/or material failures. Additionally, pressure zone changes are needed to improve flow circulation and define pressure zones.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Modeling Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$26
2014		
2015		
2016		
2017		
2018		
Project Total		\$26

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 11-02

Categorization: Project

Name of Project: Ugum Water Treatment Plant Reservoir Replacement

Reference Documents:

- a) Amended Stipulated Order 2011, Item 29

Project Description:

This project will provide a new 2 MG finished water reservoir at the Ugum Water Treatment Plant. The reservoirs will be the sole source of finished water for most of the Southern Water System. Failure of the existing lone reservoir would result in a significant hardship on customers in the system. The new 2 MG reservoir would allow the existing reservoir to be taken off-line and refurbished and ultimately allow for redundancy and maintenance.

Project Justification:

To provide redundancy in storage at the treatment plant that will allow for periodic maintenance. The existing reservoir is damaged, but cannot be taken out-of-service for repair because there is no back-up.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Assessment/Planning/Construction	\$4,000
2015	Construction	\$3,000
2016		
2017		
2018		
Project Total		\$7,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-01

Categorization: Program / Planning

Name of Project: Water Audit Program & Water Loss Control Plan

Reference Documents:

PUC Docket 09-03

Project Description:

This project will perform system wide leak detection, leak repair and inspection, leak analysis and control. Leak detection will be performed on 450 miles of system pipe, including use of acoustical surveying and water audits. The information resulting from the work completed in the project will be used to update the AWWA M-36 Water Audit which will allow GWA to address PUC STIP 4.c.i, apparent losses: a forensic assessment, Customer Service Meter Inaccuracies, PUC STIP 4.c.ii, apparent losses: including potential outsourcing and Unbilled Unmetered, PUC STIP 4.c.iii, apparent losses: unauthorized consumption.

This project will also address the Tiyan properties returned to the original home owner who are not currently meter. This project therefore will include installation of individual residential meters as well as installation of any water distribution system that will improve GWA's ability to serve these customers.

Project Justification:

This project will develop a water meter improvement program to ensure that each connection to the three public water systems has an accurate and accessible water meter that is read monthly and billed.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond. Line item MC 09-01 within the 2010 Bond shall be an alternative source of funding for projects generated through CIP PW 12-01 if GWA engineering can show the project meets MC 09-01 capital project criteria.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET(x1000)
2013	Planning	\$100
2014		
2015		
2016		
2017		
2018		
Project Total		\$100

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-02

Categorization: Program / Planning

Name of Project: Production Plan / Reduce Navy Purchases

Reference Documents:
GWA Production Plan 2010

Project Description:

This project will implement the GWA Production plan which includes but not limited to down hard wells that were rehabilitated, development of new well, rehabilitation of springs, and improvements to the Ugum WTP. This project will also include planning and design of transmission mains to move larger volumes of water to areas supplied by Navy water.

Project Justification:

Navy water purchase is expensive for GWA for resale. The anticipated growth of the island due to the military buildup will have impacts to GWA if additional Navy purchases were to occur.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond. Line item MC 09-01 within the 2010 Bond shall be an alternative source of funding for projects generated through CIP PW 12-02 if GWA engineering can show the project meets MC 09-01 capital project criteria.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning	\$100
2014		
2015		
2016		
2017		
2018		
Project Total		\$100

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-03

Categorization: Program / Assessment

Name of Project: Hydraulic Assessment of Tanks

Reference Documents:

- a) Amended Stipulated Order 2011, Item 29 (a)

Project Description:

The hydraulic analysis through the use of hydraulic modeling program shall evaluate each service area to identify deficiencies that impact the short and long term water storage and pressure needs of that service area. The analysis will also include at a minimum defining the zones in the Bubble Map, updating Demand (Population).

Project Justification:

This is a stipulated order project intended to help GWA understand and manage the water storage capacity throughout the island.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Systems Planning	\$500
2014		
2015		
2016		
2017		
2018		
Project Total		\$500

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-04

Categorization: Project

Name of Project: Agana Heights and Chaot Tank Construction

Reference Documents:

- a) Amended Stipulated Order 2011, Item 28(c)

Project Description:

This project will replace the existing Agana Heights and Chaot steel tanks to concrete tanks. Concrete tank design and construction management will be required.

Project Justification:

Results from internal and external corrosion assessment deemed tanks to be replaced. In addition, this is a Court Ordered project. Additionally this project complete the Sinajana/Agana Hts Water Transmission line project.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/CM/Construction	\$4,700
2014	CM/Construction	\$1,500
2015		\$3,000
2016		
2017		
2018		
Project Total		\$9,200

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-05

Categorization: Project

Name of Project: Tank Major Repair Yigo #1, Mangilao #2, Astumbo #1

Reference Documents:

- a) Amended Stipulated Order 2011, Item 29
- b) Duenas, Camacho & Associates (DCA) "Structural Inspection and Assessment of the Mangilao 2 Tank", April 6 2011
- c) DCA "Structural Inspection and Assessment of the Astumbo 1 Tank", April 6 2011
- d) DCA "Structural Inspection and Assessment of the Yigo 1 Tank", April 6 2011

Project Description:

This project will replace all deteriorated steel within the existing steel tank for the Mangilao #2 tank. Scope of work includes improvements to the steel floor; steel columns, roof purlins as well as interior and exterior re-coating. This project will also include the replacement of the steel tanks at the Yigo site and Astumbo site with concrete tanks and booster pumps station.

Project Justification:

Results from internal and external corrosion assessment deemed the Mangilao tank to require major improvements. AS for the Yigo and Astumbo tanks GWA find it is on the best interest of the public to fully replacement the Yigo and Astumbo Tanks as well as build a booster pump station. .

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Design/Construction	\$2,400
2014	CM/Construction	\$13,500
2015		
2016		
2017		
2018		
Project Total		\$15,900

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-06

Categorization: Project

Name of Project: Tank Replacement Piti & Hyundai Tanks

Reference Documents:

a) Amended Stipulated Order 2011, Item 29

Project Description:

This project will include the design and construction of replacement tanks for the Piti and Hyundai steel tanks. The new tanks more than likely will be located in the same footprint as the previous tanks however should the tank assessment project (PW 12-03) indicate otherwise the tanks will be located as recommended. This project will include a design analysis for a replacement tank.

Project Justification:

Results from internal and external corrosion assessment deemed tanks to be replaced. In addition, this is a Court Ordered project.

Financing Options & Grants:

The source of funding for this project will be the 2013 Bond and 2015 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Planning/Design	\$1,500
2015		\$6,500
2016	CM/Construction	\$2,500
2017		\$2,500
2018		
Project Total		\$13,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-07

Categorization: Project

Name of Project: Assessment/Replacement of Malojloj Elevated & Yigo Elevated Tanks

Reference Documents:

- a) Amended Stipulated Order 2011, Item 29

Project Description:

This project will include the design and construction of replacement tanks for the Malojloj and Yigo elevated steel tanks. GWA may also assess the abandonment of these tanks and/or replacement with pump stations. The new tanks more than likely will be located in the same footprint as the previous tanks however should the tank assessment project (PW 12-03) indicate otherwise the tanks will be located as recommended. This project will include a design analysis for a replacement tank.

Project Justification:

Results from internal and external corrosion assessment deemed tanks to be replaced. In addition, this is a Court Ordered project.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design	\$200
2014	CM/Construction	\$500
2015		
2016		
2017		
2018		
Project Total		\$700

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-08

Categorization: Program / Assessment

Name of Project: Public Water System Asset Inventory/Condition Assessment

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project includes but not limited to water asset inventory development, asset management planning and implementation, asset management software procurement, asset management training and asset condition assessment. The information gathered will also be integrated with the GWA GIS system.

Project Justification:

This project is intended to provide GWA with data, information and the ability to understand and manage the water system such as the distribution line, booster pump station, section valves, and treatment facility to ensure planning effort to upgrade the system is done effectively and efficiently.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration and Project Management are required. GWA staff training and management of the asset inventory also required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning	\$100
2014		
2015		
2016		
2017		
2018		
Project Total		\$100

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP PW 12-09

Categorization: Program / Planning

Name of Project: Public Water System GIS& Mapping

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project intends to improve GWA’s GIS data base through improvements with GWA data management system. The improvements will include integration of other data sources into GIS to close the data gaps as well as implement system hardware to ensure use and expansion of GIS is achievable.

Project Justification:

Continued update of the GIS system will allow GWA to understand and manage GWA infrastructure more effectively. Accurate GIS information is vital to new development planning as well as system maintenance.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Management for GIS services and GIS support are required

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$50
2014		
2015		
2016		
2017		
2018		
Project Total		\$50

Project Sheet Wastewater

GWA Capital Improvement Plan
Project Sheet FY 2013-2018

Project Number: CIP WW 05-01

Categorization: Project

Name of Project: Old Agat Wastewater Collection (Phase II)

Reference Documents:

CIP WW 09-03 Old Agat Wastewater Collection (Phase III)

Project Description:

This project will replace a portion of 32,800 LF (6.21 miles) of existing wastewater collection line including manholes and sewer service laterals in the Agat collection system. The replacement sewer lines will be connected to the mainline along Route 2A at Tomas Mesa Street.

Project Justification:

A major collection system rehabilitation program is needed in this area due to capacity-related sewer back-ups, overflows, and the age and material of the pipe.

Financing Options & Grants:

The source of funding for this project will be the U.S. EPA Grant.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management and GIS services are required.

Results:

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan
Project Sheet FY 2013-2018

Project Number: CIP WW 05-02

Categorization: Program / Construction

Name of Project: Collection Line Upgrade/ Collection System Upgrades

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-23

Project Description:

Annual recurring design and construction project to replace/rehabilitate collection systems. This would focus on the worst condition pipes not already scheduled for hydraulic related rehab or replacement. The Water Resources Master Plan prioritized sewer rehabilitation projects and recommended an annual rehabilitation budget. The Master Plan priority list undergoes continual updates as GWA Operations utilizes Closed Circuit TV to inspect the sewers and reprioritize rehabilitation projects. Ongoing collection line inspection reports are used to develop and update the priority rehabilitation list.

Project Justification:

An annual collection system rehabilitation program prevents condition (age, material, etc.) and capacity related sewer back-ups and overflows.

Financing Options & Grants:

The main source of funding for this project is the Department of Defense.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Modeling Support are required.

Results:

Work related to this project sheet will be continued under WW 09-06 or D0D-07.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 05-03

Categorization: Project

Name of Project: NDWWTP Diffuser Installation

Reference Documents:

- a) Stipulated Order 2006, Item 36

Project Description:

The USEPA-approved design for the Northern District Wastewater Treatment Plant (NDWWTP) outfall extension project included a diffuser to promote initial mixing at the discharge point. The design parameters for the diffuser, as illustrated in the Basis for Design document, were established in order to meet permit requirements at the boundary of a zone of initial dilution. Because of the costs which have exceeded the amount of funding GWA has available, the uncertainty regarding the regulatory advantage of utilizing a diffuser and the likelihood that the diffuser will be obsolete in the next two years because of the Department of Defense (DoD) build-up and possible expansion of NDWWTP, GWA postponed diffuser installation until the next bond issuance. However, having a properly designed and installed diffuser is critical for environmental protection and needs to be a priority.

Project Justification:

The outfall was designed to be used with the diffuser, and therefore having a properly designed diffuser for mixing is critical to environmental protection and compliance.

Financing Options & Grants:

The main source of funding for this project will be the Department of Defense.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results:

Work related to this project sheet will be continued under DoD-02.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan

Project Sheet FY 2013-2018

Project Number: CIP WW 05-04

Categorization: Program / Planning

Name of Project: Wastewater System Planning

Reference Documents:

- a) MASTER PLAN, VOLUME 3, CHAPTER 4.7.3
- b) GUAM CONSOLIDATED COMMISSION ON UTILITIES RESOLUTION NO. 11-FY2007

Project Description:

Wastewater System Planning will include long term planning, system planning, and environmental planning. Specific application would include wastewater hydraulic modeling and the wastewater skeletal basin map. This will be used to update a portion of the Master Plan. Hydraulic modeling includes the software, hardware, travel and training. System planning includes but not limited to GIS mapping, asset inventory, asset management, asset management software, GIS software, GIS training, asset management training and asset condition assessment.

Project Justification:

Long term planning, system planning, and environmental planning is essential for developing capital improvement programs. Wastewater System Planning ensures that a system approach is used in project development.

In addition, the 2006 Master Plan requires updating every two years by the Guam Consolidated Commission on Utilities Resolution No. 11 – FY 2007 Relative to Approving the Guam Waterworks Authority Master Plan. The resolution states “The Guam Waterworks Authority is hereby directed to continue refining the Master Plan and every two years from the date of approval of this document to recommend to the Consolidated Commission on Utilities improvements and modifications to the Master Plan and the hydraulic model and to recommend and re-prioritize capital projects resulting from said changes or modifications.”

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 bond and SRF funding.

Project Staffing Implications:

Major modeling services and GIS support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning	\$2,455
2014		\$2,865
2015		\$400
2016		
2017		
2018		\$2,000
Project Total		\$7,720

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 05-05

Categorization: Program / Equipment

Name of Project: Wastewater Vehicles

Reference Documents:

Project Description:

Approval is requested for \$235k to replace 8 of existing vehicle fleet with: 4 pickups fitted with tool boxes; 3 maintenance vans; and 1 ton pickups fitted with racks, tool boxes.

Project Justification:

The operations and maintenance team have a critical need for safe and reliable vehicles. Many of the existing vehicles are in an extremely poor and unsafe condition. Due to their unsafe condition, a number of vehicles have been taken off the road reducing efficiency and effectiveness of the team. To maintain minimum levels of coverage, 3 vehicles have been leased. This is not a cost effective solution.

Due to the age of the vehicles (11 of the 31 vehicles are over 10 years old); there are an increasing number of breakdowns which result in lost time of high value employees. This often leads to delays in essential operator input or equipment repairs.

On a number of occasions repair bills have been presented which are greater than the value of the vehicle.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration

Results:

Work related to this project sheet will be continued under MC 09-01.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 05-06

Categorization: Program / Construction

Name of Project: Wastewater Pump Station Upgrades

Reference Documents:

Project Description:

This project will replace aging pumps at Fujita, Yigo, Chalan Pago, PS 14, Harmon and Tipalao SPS. The pumps at these key sites failed in the first part of 2009 and are beyond economic repair.

Project Justification:

The above sites operate either without standby pumps or inadequate standby pumps. These sites have historically experienced a number of sewage overflows as a result of these conditions. For example, Fujita pump station failures have caused the Hyatt Regency Hotel to flood causing significant issues for the hotel.

Due to the public health risks associated with sewage overflows and the critical operating regimes at these sites, it is highly recommended that funding approval be given to replace pumps at these key sites.

Financing Options & Grants:

The main source of funding for this project is the Department of Defense.

Project Staffing Implications:

Project Management Services and Construction Management Services are required.

Results:

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 05-07

Categorization: Project

Name of Project: NDWWTP - Chlorine Tanks

Reference Documents:

- a) Performance Management Contract, CIP / PIP Review June 2007

Project Description:

This project will safely remove and dispose hazardous materials stored in eleven (11) one ton chlorine cylinders of indeterminate age located at the Northern District Wastewater Treatment Plant. The amount of chlorine in the tanks is unknown.

Project Justification:

These tanks represent a significant public health and safety threat and need to be removed as soon as possible, in a manner that protects the plant and surrounding community.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results:

Work related to this project sheet will be continued under WW 12-01.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: WW CIP 05-08

Categorization: Project

Name of Project: Umatac-Merizo STP Improvements

Reference Documents:

Project Description:

Installation of high efficiency motors, high efficiency aerator, new valves and dredging of the lagoon.

Project Justification:

The lagoon has continually been filling with sludge, significantly reducing capacity, increasing overflows from the system, and increasing the risk of NPDES violations. The project will also improve the overall energy efficiency of the plant.

Financing Options & Grants:

This project is funded through USEPA ARRA Grant in the amount of \$535,000.

Project Staffing Implications:

Contract Administration, Project Management, and Construction Inspection are required.

Results:

Work related to this project sheet will be continued under WW 11-04.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-01

Categorization: Project

Name of Project: Lift Station Upgrades

Reference Documents:

- a) Performance Management Contract, CIP / PIP Review June 2007

Project Description:

Specific rehabilitation and repair capital projects are needed for the sewage pump stations. These projects include: Health and Safety (e.g. overhead crane repair and fall protection barriers, lock, wet well fencing, fans and basic security), Environmental Protection and Compliance (e.g. high level and overflow alarm systems), Energy Optimization Programs (e.g. upgrading electrical controls and motors, add amp meters, add run time meter), and economically beneficial Asset Replacement (e.g. replacement of a pump for \$9,000 rather than repair it for \$7,600).

Project Justification:

Sewage pump stations require ongoing capital upkeep in order to maintain safety, prevent sewer overflows, maintain environmental compliance and optimize energy usage. Installation of control equipment such as amp meters and alarms help maintenance of the pumps and motors. These improvements are to also address the pending USEPA's "Findings of Significant Deficiencies in the Wastewater System" report.

Financing Options & Grants:

The main source of funding for this project is the EPA grants, SRF funding, 2013 Bond, 2015 Bond, and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$5,207
2014	Construction	\$3,000
2015	Construction	\$2,000
2016	Construction	
2017	Construction	\$3,700
2018		\$500
Project Total		\$14,407

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-02

Categorization: Project

Name of Project: Moratorium

Reference Documents:

- a) Central Guam Sewer Improvements Functional Design Report, January 2009
- b) MASTER PLAN, VOLUME 3, TABLE 9-7, 8, 9, 10, 28, 29, 43, 44

Project Description:

The Moratorium project is a collection of specific wastewater projects within the Tamuning and Agana villages. These projects include upgrades to the Mamajanao, Chaot, and Agana Main Pump Stations.

Project Justification:

The sewer system in the Central Guam catchment along Marine Corp. Drive and Route 4 close to Agana Bay is stressed. The primary sewers in these locations experience periodic overflows with 2008 flows and by 2025 the system could be completely overwhelmed. This problem is exacerbated by the Mamajanao Sewage Pump Station, which under certain operating conditions is unable to cope with the influent flows without surcharging and locally flooding the downstream system.

Financing Options & Grants:

The source of funding for this project will be Short-Term Loan.

Project Staffing Implications:

Major Contract Administration, Major Project Management, GIS Support, and Modeling Support, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-03

Categorization: Project

Name of Project: Old Agat Collection Continuation (Phase III)

Reference Documents:

CIP WW 05-01, Old Agat Wastewater Collection (Phase II)

Project Description:

This project will replace a portion of about 32,800 LF (6.21 miles) of existing wastewater collection line including manholes and sewer service laterals in the Agat collection system. The replacement sewer lines will be connected to the mainline along Route 2A at the Tomas Mesa Street.

Project Justification:

Sewers are in extremely poor condition and are a significant source of rainwater inflow and infiltration (I&I). Excessive I&I causes the Agat Wastewater Treatment Plant to exceed its design capacity, exceed permit limits, requires occasional bypasses, and leads to sewer back-ups and overflows. Sewers currently run behind houses and not in utility easements and cannot be accessed for maintenance.

Financing Options & Grants:

The source of funding for this project will be the U.S. EPA grant.

Project Staffing Implications:

Contract Administration, Project Management Services, Construction Management Services, Major GIS Support, and Modeling Support are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

**GWA Capital Improvement Plan
Project Sheet FY 2013-2018**

Project Number: CIP WW 09-04

Categorization: Program / Construction

Name of Project: Manhole Frame Seal Repair

Reference Documents:

a) MASTER PLAN, VOLUME 3, TABLE 9-20 & 21

Project Description:

Repair the manhole cover frame to barrel/cone seal at multiple manhole locations identified by manhole inspections and rehabilitate manholes with severe infiltration.

Project Justification:

The project will reduce the potential for inflow to the collection system during wet weather events, which will subsequently prevent system overloading and avoid backups and overflows.

Financing Options & Grants:

The main source of funding for this project will be Department of Defense.

Project Staffing Implications:

Project Management and Construction Inspection are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-05

Categorization: Project

Name of Project: Agat Manhole Rehabilitation

Reference Documents:

a) MASTER PLAN, VOLUME 3, TABLE 9-21

Project Description:

This project will rehabilitate four (4) manholes that were identified to have active infiltration by manhole inspection.

Project Justification:

This project will reduce infiltration to the collection system during wet and dry weather events.

Financing Options & Grants:

The main source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Project Management and Construction Inspection are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-06

Categorization: Program / Construction

Name of Project: Wastewater Collection System Replacement/Rehabilitation Program

Reference Documents:

a) MASTER PLAN, VOLUME 3, TABLE 9-23

Project Description:

Annual recurring design and construction project to replace/rehabilitate 3/4 of the total collection system (~8,600 feet) per year. This would focus on the worst condition pipes not already scheduled for hydraulic related rehab or replacement. Additional work under this CIP includes manhole repair/replacement, manhole collar replacement, and manhole lid seals.

Project Justification:

Replacement/rehabilitation program will upgrade sewer collection system as a proactive activity to mitigate catastrophic system failure. These improvements are to also address the pending USEPA's "Findings of Significant Deficiencies in the Wastewater System" report.

Financing Options & Grants:

The main source of funding for this project will be 2010 Bond, 2013 bond and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Major Construction Management, Major GIS Support, and Modeling Support are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$2,122
2014	Construction	\$5,506
2015	Construction	\$5,000
2016	Construction	\$3,000
2017	Construction	\$2,000
2018	Construction	\$500
Project Total		\$18,128

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-07

Categorization: Project

Name of Project: Tumon Bay Sewer Upgrades

Reference Documents:

- a) Final Tumon Wastewater Study, January 2008

Project Description:

There are several major sewer project upgrades identified in the reference document that will increase the collection and pumping capacity for GWA. The continued growth in Tumon Bay has raised concerns with GWA regarding the current sewer capacity and the lack of system redundancy.

Project Justification:

Inadequate sewer capacity in Tumon Bay, Guam's premier tourist district and a Marine Preserve, leads to current overflows; future development will exacerbate this condition, potentially leading to a failure of the system.

Financing Options & Grants

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-08

Categorization: Project

Name of Project: Facilities Plan/Design/Interim for Baza Gardens STP Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-26
- b) Wastewater Facilities Plan, Baza Gardens WWTP, August 2008
- c) CIP WW 11-03 Baza Gardens STP Replacement
- d) Guam Environmental Protection Agency Requirements meeting minutes, December 19, 2007 and letter, May 13, 2008.

Project Description:

This project includes planning, design and implementation for interim improvements at the wastewater treatment facility to meet permit conditions. Due to strict effluent limits imposed by the stream discharge and difficulty in operating complex treatment systems to reliably meet these limits, an alternative means of disposal should be considered in the Facility Plan. Facility Plan process recommendations will be based on the recommended alternative means of disposal. The new facilities will incorporate provisions for redundancy to improve reliability and facilitate operations and maintenance activities. Design and test the concept of utilization of Underground Injection Wells (UIC) for effluent discharge and design a replacement for the existing wastewater treatment plant with a new Membrane Bioreactor plant at the same location.

Project Justification:

Existing facilities lack redundancy and reliability, are difficult to operate, and require significant repair. Existing disposal requirements cannot be achieved, so a different effluent disposal system must be identified. The current secondary treatment plant cannot meet the stringent nutrient limits in the receiving stream, and the facility has outlived its design life and has severe operational challenges. A new plant is required that discharges to an Underground Injection Well (pursuant to Guam Environmental Protection Agency requirements).

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET(x1000)
2013	Planning/Design/Construction	\$623
2014		
2015		
2016		
2017		
2018		
Project Total		\$623

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-09

Categorization: Project

Name of Project: Facilities Plan/Design for the Northern District STP Bio-solids

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-32
- b) CIP, WW CIP 11-07, Northern District STP Expansion – Bio-solids

Project Description:

Planning and design for repairs to the bio-solids stabilization facilities (digesters) and dewatering system (centrifuges) for present and future flows. Facility Plan should include an evaluation of creating a centralized bio-solids treatment and processing facility at this location.

Project Justification:

Existing bio-solids treatment facilities were damaged by the typhoon and have been out of service. Centralized processing of bio-solids from smaller STPs may be more reliable and efficient than the current decentralized approach. The capacity of the existing solids treatment facilities should be adequate to process the solids from GWA's other treatment plants, although lacks redundancy.

Financing Options & Grants:

The main source of funding for this project will be Department of Defense.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results

Work will be continued under WW 12-02.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-10

Categorization: Project

Name of Project: Facilities Plan/Design/Interim Measures for Agat-Santa Rita STP Replacement

Reference Documents:

a) MASTER PLAN, VOLUME 3, TABLE 9-24

Project Description:

This project includes planning and design for interim improvements at the wastewater treatment facilities to meet existing and future flow capacity and reliably achieve regulatory compliance. The facilities will incorporate provisions for redundancy to improve reliability and facilitate operations and maintenance activities.

Project Justification:

Existing facilities do not have sufficient capacity for current and future flow projections. Existing facilities lack redundancy and reliability, are difficult to operate, and require significant repair.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$900
2014		
2015		
2016		
2017		
2018		
Project Total		\$900

GWA Capital Improvements Plan Project Sheet FY 2013-2018

Project Number: CIP WW 09-11

Categorization: Project

Name of Project: WWTP Priority 1 Upgrades

Reference Documents:

- a) Performance Management Contract, CIP / PIP Review June 2007

Project Description:

Specific rehabilitation and repair capital projects are needed for the sewage pump stations. These include projects: Health and Safety (e.g. overhead crane repair and fall protection barriers), Environmental Protection and Compliance (e.g. grit removal), Energy Optimization Programs (e.g. upgrading electrical controls and motors), and economically beneficial Asset Replacement (e.g. replacement of a pump for \$9000 rather than repair it for \$7600).

Project Justification:

Aging infrastructure leads to environmental impacts, non-compliance, inefficiencies, and safety problems that must be addressed on an annualized basis.

Financing Options & Grants:

The source of funding for this project will be the System Development Charge.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Construction	\$1,300
2015		
2016		
2017		
2018		
Project Total		\$1,300

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-01

Categorization: Program / Construction

Name of Project: Priority 1 Sewer Upgrades – Agat District

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-11

Project Description:

The Master Plan defined 1720 feet of sewer as priority 1 for upgrade to avoid overflows as population growth occurs.

Project Justification:

This project's primary justification is avoidance of overflows. Inadequate sewers for future growth will result in sewage back-ups and overflows.

Financing Options & Grants:

The source of funding for this project will be the U.S.EPA grant.

Project Staffing Implications:

Contract Administration, Project Management Services, Construction Management Services, Major GIS Support, and Modeling Support are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-02

Categorization: Program / Construction

Name of Project: Priority 1 Sewer Upgrades – Baza Garden District

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-13

Project Description:

1,600 feet of sewage lines have been assigned a Priority 1 ranking in the Master Plan for improvement in the Baza Gardens STP service area to respond to growth in the connected population. This also includes the sewers in the area of the Talofoto pump station service area that have currently unconnected sewers; these sewers were installed with gravity lines and force mains, but without pumps and those projects must be completed.

Project Justification:

This project's primary justification is avoidance of overflows. Inadequate sewers for future growth will result in sewage back-ups and overflows.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management Services, Major GIS Support, Modeling Support and Construction Management Services are required.

Results

Work related to this project sheet will be continued under WW 09-06.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-03

Categorization: Project

Name of Project: Baza Gardens STP Replacement

Reference Documents:

a) MASTER PLAN, VOLUME 3, TABLE 9-26 & 27

Project Description:

Construction of new wastewater treatment facilities that will meet secondary treatment limits. Due to strict effluent limits imposed by the stream discharge and difficulty in operating complex treatment systems to reliably meet these limits, an alternative means of disposal should be considered in the Facility Plan. Facility Plan process recommendations will be based on the recommended alternative means of disposal. The new facilities will incorporate provisions for redundancy to improve reliability and facilitate operations and maintenance activities at the existing facility.

Project Justification:

Existing facilities lack redundancy and reliability, are difficult to operate, and require significant repair. Existing disposal requirements cannot be achieved, so a different effluent disposal system must be identified.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2015 Bond, 2018 Bond, and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$1,267
2014		
2015		
2016	Construction	\$500
2017	Construction	\$5,700
2018	Construction	\$25,000
Project Total		\$32,467

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: WW CIP 11-04

Categorization: Project

Name of Project: Facilities Plan/Design/Interim for the Umatac-Merizo STP Improvements

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-36

Project Description:

Phase 1 of this project is a facility planning to meet permit conditions; phase 2 is the design of the interim improvements. Planning and design for interim improvements such as new mechanically cleaned bar screen facilities to improve reliability and facilitate operations and maintenance requirements.

Project Justification:

All interim improvements, including mechanically cleaned bar screens, is intended to improve process performance and reduce O&M requirements.

Financing Options & Grants

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management, and Construction Inspection are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$900
2014		
2015		
2016		
2017		
2018		
Project Total		\$900

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-05

Categorization: Project

Name of Project: Facilities Plan for Hagatna STP Improvements & Effluent WWPS

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-28
- b) CIP 11-07 Hagatna STP Improvements and Effluent WWPS
- c) Stipulated Order 2006, Item 35

Project Description:

Planning and design for wastewater treatment plant improvements. The following improvements should be considered: Based on current and future flow projections, at least one additional primary clarifier of similar size is required to meet current and future wastewater capacity and redundancy requirements. New head works equipment (including mechanically cleaned screens and grit removal) is recommended to improve process performance, reduce wear on downstream equipment, and improve reliability. A new effluent pump station is required for the disposal of future flows at high tide conditions.

Project Justification:

Existing facilities lack redundancy to reliably treat existing and projected future flows. The Upstream screening facilities at the influent pump station are not functional and beyond repair. Relocating the preliminary treatment equipment to the STP will enhance operations and maintenance of the screens. Grit removal will reduce the amount of grit that gets into the clarifier and digester, improving performance and reducing O&M requirements.

Financing Options & Grants:

The main source of funding for this project will be Department of Defense.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results

Work will be continued under WW 12-03.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-06

Categorization: Project

Name of Project: Hagatna STP Improvements and Effluent WWPS

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-29

Project Description:

Provide a new primary clarifier to meet current and future wastewater capacity and redundancy requirements. Provide screenings and grit removal for wastewater treatment plant improvements. The new head-works equipment will improve performance, reduce wear on equipment, and improve reliability. The new equipment includes screenings, grit removal and effluent WWPS sized for current and future (Year 2015 projected flow).

Project Justification:

Existing facilities lack redundancy to reliably treat existing and projected future flows. The upstream screening facilities at the Hagatna influent pump station are not functional and beyond repair. Relocating equipment at the STP will enhance operations and maintenance of the screens. Reducing the amount of grit that gets into the clarifier and digester will improve performance and reduce O&M requirements. Effluent WWPS required to convey effluent to outfall during high flow and tide periods.

Financing Options & Grants:

The main source of funding for this project will be Department of Defense.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results

Work will be continued under WW 12-03.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-07

Categorization: Project

Name of Project: Northern District STP Expansion – Bio-solids

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-33

Project Description:

The project includes construction of repairs to the bio-solids stabilization facilities (digesters) for present and future flows. Design will be based on Facilities Plan recommendations. Master Plan construction budget is based on repairs to existing anaerobic digesters, construction of one additional digester tank to provide redundancy facility for treating GWA bio-solids. Project assumed to be built in two phases.

Project Justification:

Existing bio-solids treatment facilities experienced typhoon damage and have been out of service. The centralized processing of bio-solids from smaller STPs may be more reliable and efficient than the current decentralized approach. The capacity of the existing solids treatment facilities should be adequate to process the solids from GWA's other treatment plants, although lacks redundancy.

Financing Options & Grants:

The main source of funding for this project will be Department of Defense.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Results

Work will be continued under DOD-02.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 11-08

Categorization: Project

Name of Project: Agat/Santa Rita STP Replacement

Reference Documents:

Project Description:

Construction of new wastewater treatment facilities that will meet secondary treatment limits. The new facilities will incorporate provisions for redundancy to improve reliability and facilitate operations and maintenance activities at the existing facility.

Project Justification:

Existing facilities lack redundancy and reliability, are difficult to operate, and require significant repair.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 Bond and 2015 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning	\$2,697
2014	Design/Construction	\$2,000
2015	Construction	\$17,000
2016	Construction	\$38,000
2017		
2018		
Project Total		\$59,697

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-01

Categorization: Project

Name of Project: Northern District WWTP Primary Treatment Upgrades

Reference Documents:

Project Description:

The Project is intended to deliver, as closely as possible and subject to the terms and conditions of the Contract, the requirements of the Stipulated Order as set out in 1.2 above including, but not limited to, the design, build and commission of the interim primary treatment improvements works at the NDWWTP that will bring the NDWWTP back into compliance with the current NPDES Permit for the quality parameters of TSS and BOD and also provide additional flow capacity of 7.5 MGD (monthly average daily flow) while still complying with the NPDES Permit concentration limits for TSS and BOD.

Project Justification:

The assets at the NDWWTP are not in good condition: sludge stream processes are largely inoperable and the treatment process are compromised, as many of the components are in poor condition or are inoperable.

The assets condition significantly impacts the capacity and performance of the NDWWTP and therefore, the NDWWTP cannot consistently meet the treatment standards required by the National Pollutant Discharge Elimination System (NPDES) discharge permit for the Site (the "NPDES Permit").

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and SDC funds.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	On-going construction	\$30
2014	Construction	\$1,500
2015		
2016		
2017		
2018		
Project Total		\$1,530

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-02

Categorization: Program / Planning

Name of Project: Bio Solids Management Plan

Reference Documents:

Project Description:

This project will allow GWA to plan and management the increased generation of sludge from the wastewater treatment plant throughout the island. The initial focus of the plan would be on the management of GWA's bio-solids (and NDWWTP and Agana WWTP being the primary focus), but in keeping with the spirit of the 'One Guam' utility solution, the plan will develop an island wide bio-solids management plan and include the DoN Apra Harbor Plant bio-solids as well (although it is likely that these bio-solids are likely to contain more constituents of concern than that of GWA bio-solids).

Project Justification:

The current cost of bio-solids disposal is becoming a significant financial liability to GWA with the advent of large increase in tipping fees related to GBB management of Ordot and the development of the new landfill. In addition over the coming 5 years there will be a significant increase in bio-solids production volumes.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$52
2014		
2015		
2016		
2017		
2018		
Project Total		\$52

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-03

Categorization: Project

Name of Project: Agana WTP Interim Measures

Reference Documents:

- a) Amended Stipulated Order 2011, Item 5 and 6

Project Description:

This project will include process upgrades to include grit removal; fat, oil and grease (FOG) removal; septage handling facility; prevent back flow from the new outfall; bio-solids treatment; and any additional improvements, rehabilitation or improvements, such as the use of chemically enhanced treatment.

Project Justification:

The *Order for Preliminary Relief Re: Deadlines for Outstanding Projects under the Amended Stipulated Order (ASO)*, filed on 11th November 2011, contains requirements to upgrade the Agana WWTP achieves consistent compliance with the WWTP's NPDES permit, and comply with the sludge and bio-solids requirements in 40 C.F.R. Part 503 (**Paragraph 5**).

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	On-going Construction	\$601
2014		
2015		
2016		
2017		
2018		
Project Total		\$601

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-04

Categorization: Program / Planning

Name of Project: I&I SSES Southern

Reference Documents:

- a) Amended Stipulated Order 2011, Item 8 (b) and (d)

Project Description:

This project will include a comprehensive I&I/SSES assessment work to determine the high probable locations where I&I is occurring. The work will include the minor repairs necessary to decrease infiltration and inflow. This will include but is not limited to manhole inspection, manhole mapping, raising manholes, manhole seals, manhole repair to the cover frame, manhole repair to barrel/cone seal, collection line inspection, collection line repair/rehabilitation.

Project Justification:

The *Order for Preliminary Relief Re: Deadlines for Outstanding Projects under the Amended Stipulated Order (ASO)*, filed on 11th November 2011, contains requirements to conduct I&I/SSES assessment of the southern wastewater system.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and SFR Funds.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, design, construction	\$3,410
2014		
2015		
2016		
2017		
2018		
Project Total		\$3,410

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-05

Categorization: Program / Planning

Name of Project: I&I SSES Central

Reference Documents:

- a) Amended Stipulated Order 2011, Item 8 (c) and (e)

Project Description:

This project will include a comprehensive I&I/SSES assessment work to determine the high probable locations where I&I is occurring. The work will include the minor repairs necessary to decrease infiltration and inflow. This will include but is not limited to manhole inspection, manhole mapping, raising manholes, manhole seals, manhole repair to the cover frame, manhole repair to barrel/cone seal, collection line inspection, collection line repair/rehabilitation.

Project Justification:

The *Order for Preliminary Relief Re: Deadlines for Outstanding Projects under the Amended Stipulated Order (ASO)*, filed on 11th November 2011, contains requirements to conduct I&I/SSES assessment of the central wastewater system.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and SRF funding.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, design, construction	\$2,155
2014		
2015		
2016		
2017		
2018		
Project Total		\$2,155

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-06

Categorization: Program / Planning

Name of Project: I&I SSES Northern

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project will include a comprehensive I&I/SSES assessment work to determine the high probable locations where I&I is occurring. The work will include the minor repairs necessary to decrease infiltration and inflow. This will include but is not limited to manhole inspection, manhole mapping, raising manholes, manhole seals, manhole repair to the cover frame, manhole repair to barrel/cone seal, collection line inspection, collection line repair/rehabilitation.

Project Justification:

Continued development in the northern part of the island will contribute to impacts to the existing wastewater collection system. It is the intent of the to determine where I&I is occurring and make necessary repairs.

Financing Options & Grants:

The source of funding for this project will be the SRF funding.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, design, construction	\$1,305
2014		
2015		
2016		
2017		
2018		
Project Total		\$1,305

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-07

Categorization: Project

Name of Project: Umatac-Merizo STP Replacement

Reference Documents:

Project Description:

Construction of new wastewater treatment facilities that will meet secondary treatment limits. The new facilities will incorporate provisions for redundancy to improve reliability and facilitate operations and maintenance activities at the existing facility.

Project Justification:

Existing facilities lack redundancy and reliability, are difficult to operate, and require significant repair.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 Bond and 2015 Bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning	\$250
2014		
2015	Design	\$2,000
2016		
2017	Construction	\$15,000
2018		
Project Total		\$17,250

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-08

Categorization: Program / Planning

Name of Project: Wastewater System GIS & Mapping

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project intends to improve GWA’s GIS data base through improvements with GWA data management system. The improvements will include integration of other data sources into GIS to close the data gaps as well as implement system hardware to ensure use and expansion of GIS is achievable.

Project Justification:

Continued update of the GIS system will allow GWA to understand and manage GWA infrastructure more effectively. Accurate GIS information is vital to new development planning as well as system maintenance.

Financing Options & Grants:

The source of funding for this project will be the EPA State Revolving Fund Grant.

Project Staffing Implications:

Major Contract Management for GIS services and GIS support are required

Results

Work will be continued under WW 05-04.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-09

Categorization: Program / Equipment

Name of Project: Wastewater Facility Back Up Power

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project will assess back up power needs at critical sewer pump stations and develop criteria for implementation of back-up power installation. This project is also intended to install necessary equipment as called out in the assessment.

Project Justification:

Sewer pump station are a critical facility that requires continued operations during power outages to ensure there are no wastewater overflows at sewer manholes or the sewer pump station itself. Complete avoidance of overflows is a high priority of GWA.

Financing Options & Grants:

The source of funding for this project will be the SRF funds.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		\$960
2014		
2015		
2016		
2017		
2018		
Project Total		\$960

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP WW 12-10

Categorization: Program / Equipment

Name of Project: Wastewater System Asset Inventory

Reference Documents:

- a) Work Plan USEPA Region IX – R9 Tracking #11-277 “Water and Wastewater System Improvements

Project Description:

This project includes but not limited to wastewater asset inventory development, asset management planning and implementation, asset management software procurement, asset management training and asset condition assessment. The information gathered will also be integrated with the GWA GIS system.

Project Justification:

This project is intended to provide GWA with data, information and the ability to understand and manage the wastewater system such as the gravity sewer, sewer pump station, force mains pipe, manholes, and treatment facility to ensure planning effort to upgrade the system is done effectively and efficiently.

Financing Options & Grants:

The source of funding for this project will be the SRF funding.

Project Staffing Implications:

Contract Administration and Project Management are required. GWA staff training and management of the asset inventory also required.

Results

Work will be continued under WW 05-04.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

Project Sheet Electrical

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 05-01

Name of Project: Well Electrical Protection

Reference Documents:

Project Description:

Variable frequency drives (VFD) are being considered to reduce the voltage imbalance in the power supply to well pumps (pumps designed for 1% imbalance – supply standard is 3% imbalance). Two pilot installations have been made at wells to gather data that can be used to develop a standard installation design and evaluate the effectiveness of the VFDs. On October 9, 2007, GWA issued an Invitation for Bid to install VFDs to provide adequate and effective electric motor protection at 20 priority deep well sites. It includes installation of magnetic flow meters and pressure transmitters for future application of variable speed motor operation.

Project Justification:

GWA utilizes 100 wells to produce approximately 80% of the water consumed on the island. These wells experience an unusually high rate of failure. Many of the failures are due to inadequate or non-existent protections incorporated into the motor controls. This project will develop a standard design for electrical motor controls and install the new controls at critical well sites.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management, Construction Inspection, and Technical Support after completion are required.

Results

Work will be continued under EE 09-02.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 05-02

Name of Project: SCADA Pilot Project

Reference Documents:

Project Description:

This pilot project will procure communication services and install field instrumentation and a Human-Machine Interface (HMI) to support supervisory control and data acquisition (SCADA) of selected water and wastewater facilities. For this pilot GWA will only make functional real time data acquisition for status monitoring and alarming.

Project Justification:

This pilot project is to identify and evaluate proposed solutions and gather information that will be used to develop design standards for the water and wastewater SCADA system.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Project Management, Construction Inspection and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET(x1000)
2013	Pilot Project	8
2014		
2015		
2016		
2017		
2018		
Project Total		\$8

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-01

Name of Project: Wastewater Pumping Station Electrical Upgrade

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-43

Project Description:

This project will upgrade and standardize the electrical control system at the wastewater pumping stations as recommended in the GWA Master Plan Report. An initial assessment using a standard checklist will be conducted. Project scope will include the reconnection of the electrical service to a grounded WYE system involve replacement of the electrical meter and service conductors. Transient voltage surge suppression will also be installed at the station main service. The level control system will be standardized with a level transducer to provide level indication and communication with the SCADA unit. The back-up will be a float located out of the wet well. Also included are dry well level sensor alarms that are connected to SCADA, where applicable. The motor starters will be replaced with electronic soft start type to reduce mechanical wear.

Project Justification:

It is necessary to improve the electrical reliability at each wastewater pump station and minimize overflows by implementing the recommendations of the GWA Master Plan. Stations that are critical to operations are priority and will be completed first.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Construction Management, and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Construction	\$620
2015		
2016		
2017		
2018		
Project Total		\$620

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-02

Name of Project: Electrical Upgrade - Water Wells

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-25

Project Description:

This project will upgrade the electrical system at each of the water wells as recommended in the Electrical Assessment of the GWA Master Plan. First, a standard electrical checklist and guideline will be developed followed by an assessment of the electrical system at each station. Goals are to change the transformer secondary connection and surge suppression, replace the service conductors, correct the voltage unbalance, prevent water conductor entry, replace the meter socket, install transient voltage surge suppression, install electronic motor protection, install electronic motor starter, install power factor correction equipment, integrate voltage unbalance relays in the auto transfer switch control system, interlock the chlorination controls with the well controls, and interlock with well flush controls.

Project Justification:

This project will improve the electrical reliability at each of the water pumping stations by implementing the recommendations of the GWA Master Plan. Stations that are critical to operations and require high maintenance are priority and will be completed first.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 bond, 2015 and Internally Funded CIP.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Construction Management, and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, construction	\$439
2014		
2015	Construction	\$1,500
2016		
2017	Construction	\$1,500
2018	Construction	\$1,000
Project Total		\$4,439

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-03

Name of Project: Electrical Upgrade - Water Booster Pump Stations (Pago Bay, Brigade, Windward Hills)

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-22

Project Description:

This project is for the electrical upgrade at the Pago Bay, Brigade, and Windward Hills water booster stations by replacing the existing motors with premium efficiency motors, improve the system grounding, install transient voltage surge suppression equipment (TVSS), replace the motor control center, replace instrumentation controls, and add power factor correction. This project includes a detailed engineering assessment and preparation of design engineering plans.

Project Justification:

The original distribution boards and motor controls have reached their useful lives, have signs of corrosion, and are missing parts. Improvements in motor efficiency and control devices reduce energy consumption costs. The voltage and transient surge suppressions reduce voltage surges within the facility while power factor correction help improve voltage stability.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Construction Management, and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015	Construction	\$325
2016		
2017		
2018		
Project Total		\$325

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-04

Name of Project: Electrical Upgrade -Water Booster Pump Stations (Gayinero, Santa Rosa, Santa Rita Springs and Truman)

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-23

Project Description:

This project is for the electrical upgrade at the water booster stations by replacing the existing motors with premium efficiency motors, improve the system grounding, installation of transient voltage surge suppression equipment (TVSS), replace the motor control center and main distribution board, replace the instrumentation controls, and add power factor correction, where applicable. Included is a detailed engineering assessment and preparation of design engineering plans and specifications.

Project Justification:

The original distribution board and motor controls have reached their useful lives, have signs of corrosion, and are missing parts. Improvements in motor efficiency reduce energy costs. The application of transient surge suppressions and power factor capacitors reduce voltage surges and improve stability.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Construction Management, and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015	Planning/Design/Construction	\$350
2016		
2017		
2018		
Project Total		\$350

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-05

Name of Project: Electrical Upgrade - Other Water Booster Pump Stations

Reference Documents:

- a) MASTER PLAN, VOLUME 2, TABLE 9-24

Project Description:

This project is for the electrical upgrade at the other water booster stations such as Yigo Elevated Tank, Pale Kieran, etc. Project scope includes: replacing the existing motors with premium efficiency motors, improve system grounding, install transient voltage surge suppression equipment (TVSS), replace the motor control center and main distribution board, replace instrumentation controls, and add power factor correction, where applicable.

Project Justification:

Several stations' original distribution board and motor controls have reached their useful life, have signs of corrosion, and are missing parts. Improvements in motor efficiency reduce energy costs. The voltage and transient surge suppressions and power factor correction also reduce voltage surges and improve voltage stability.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, Construction Management and Technical Support after completion are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015	Planning/Design/Construction	\$250
2016		
2017		
2018		
Project Total		\$250

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-06

Name of Project: SCADA Improvements – Phase 1

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-44
- b) *GWA Engineering Division, Potable Water Production Enhancement Plan*, June 10, 2010.

Project Description:

Phase 1 of this project involves the development of a SCADA (Supervisory Control and Data Acquisition) Master Plan, design and construction standards and installation of a SCADA Master Station and SCADA system at selected critical water wells and critical wastewater pumping stations along with the critical chlorination system wells. The SCADA system will convey SCADA data and status information to a GWA central dispatch center where digital text messaging would be directed to key personnel.

Project Justification:

GWA's present method of monitoring the water and wastewater pumping stations is through the use of "rover" personnel to visit each site. Often times this does not produce timely notification of an outage or overflow condition. A GWA SCADA system would allow 24/7 monitoring and provide timely alarm and status information to operations personnel. This will greatly enhance the effective and efficient use of GWA personnel and resources.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Major Project Management Services, Construction Inspection, and Major Technical Support after completion.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design	\$103
2014		
2015		
2016		
2017		
2018		
Project Total		\$103

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-07

Name of Project: SCADA Improvements – Phase 2

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-45

Project Description:

In Phase 2 of this project, the critical water and wastewater pumping stations are monitored by activating and updating the existing Motorola SCADA system. In this phase of the project, the balance of the pumping stations and the treatment facilities are updated and incorporated into the GWA SCADA System. The treatment facility alarms would be identified and activated to a digital telephone text messaging unit to call key operations personnel related to that specific area. Phase 2 will also continue any master planning efforts not completed in Phase 1.

Project Justification:

This phase is a continuation of this project to improve the efficiency and effective utilization of GWA personnel and performance of the water and wastewater pumping systems.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond.

Project Staffing Implications:

Contract Administration, Major Project Management Services, Construction Inspection and Major Technical Support after completion.

Results

Design work is ongoing however related work will be continued under EE 09-08.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	On-going Design	
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-08

Name of Project: SCADA Improvements – Phase 3

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-46

Project Description:

In Phase 3 of this Project, improvements in real time data acquisition for status monitoring and process control is expanded at the treatment facilities through the incorporation of Programmable Logic Controllers (PLCs). The data is conveyed to the GWA Central as well as identified engineering and operations personnel for analysis and process optimization through the use of Virtual Private Networks (VPNs) or other available secured technology. Further improvements and updating of the pumping station SCADA monitoring would be expanded using digital communications (the Gov Guam system is scheduled to be updated during this period) and the radio units would require replacement.

Project Justification:

This phase is a continuation of this project to improve the efficiency and effective utilization of GWA personnel and performance of the water and wastewater pumping systems.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 Bond.

Project Staffing Implications:

Contract Administration, Major Project Management Services, Construction Inspection and Major Technical Support after completion.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning, construction	\$50
2014	construction	\$1,850
2015		
2016		
2017		
2018		
Project Total		\$1,900

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP EE 09-09

Name of Project: SCADA Improvements – Phase 4

Reference Documents:

- a) MASTER PLAN, VOLUME 3, TABLE 9-47

Project Description:

In Phase 4 of this project, accounting information such as equipment and parts costs along with the condition data such as equipment operating time and preventive/predictive maintenance programs are to be incorporated into an asset management program. The SCADA system's role will be incorporated into the overall GWA asset management program and the SCADA equipment, hardware, and software will be updated.

Project Justification:

This phase is a continuation of this project to improve the efficiency and effective utilization of GWA personnel and performance of the water and wastewater pumping systems.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond and 2015 Bond.

Project Staffing Implications:

Contract Administration, Major Project Management Services, and Major Technical Support after completion.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015	Construction	\$500
2016	Construction	\$500
2017	Construction	\$3,000
2018		
Project Total		\$4,000

Project Sheet Miscellaneous

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP MC 05-01

Name of Project: Laboratory Modernization

Reference Documents:

- a) Criteria and specification for Design of the Renovation and Enlargement of the Dededo Laboratory, 4/12/2007.

Project Description:

The existing lab is about 2300 square feet and work under this project will enlarge the facility to allow for expanded testing capabilities as well as increased office/storage space. The renovation work to the lab will include increasing testing counter space and modernizing all equipment to maintain Guam EPA certification. The renovation work will also include any improvements to ensure the facilities ability to remain open during typhoon weather conditions.

Project Justification:

GWA laboratory tests the quality of the water throughout the water system which are then reported to GEPA and USEPA. The GWA laboratory plays a vital role in ensuring GWA meets the Clean water Act and a modern laboratory is required to do so.

Financing Options & Grants:

The source of funding for this project will be the 2013 bond.

Project Staffing Implications:

Major Contract Administration, Major Project Management, and Major Construction Management are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014	Planning/Design/Construction	\$1,500
2015		
2016		
2017		
2018		
Project Total		\$1,500

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP MC 05-02

Name of Project: Land Survey

Reference Documents:

a) Public Law 22-47, 22-28, 22-18

Project Description:

This project will survey GWA property and property to be deeded to GWA and add these properties to GWA assets. A portion of work to be completed with the current contract for professional services as well as subsequent contracts to complete remaining work.

Project Justification:

GWA has been granted land from the Government of Guam for the purpose of locating water and wastewater system assets such as water storage tanks and water and wastewater treatment plants. The land was granted under the condition that GWA complete a legal boundary survey of the properties.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond and 2013 bond.

Project Staffing Implications:

Contract Administration, Project Management, Major GIS Support.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Research, Survey	\$344
2014	Survey	\$1,000
2015	Survey	\$1,000
2016		
2017		
2018		
Project Total		\$2,344

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP MC 09-01

Name of Project: General Plant Improvements

Reference Documents:

Project Description:

These capital improvements project will provide GWA with general plant improvements that will enhance operations and maintenance capabilities throughout the utility. The criteria for a project and/or general plant improvement to be considered a capital and eligible for bond funding is the value is greater than \$5,000 and has a life span greater than one year. This line item is general in nature to support Operations and Maintenance Program that meet funding criteria noted above. Work items to support O&M includes: replacing failing pipelines and refurbish PRV to improve the water system pressure zones. Work related to the replacement of failing pipes includes but is not limited to fire hydrants, PRV, valves, vaults and line segment replacement. The General Manager will be responsible to generate and update a list of eligible projects for General Plant Improvements. The "General Plant Improvements List" will be approved by the General Manager with concurrence by the Chief Engineer and Chief Financial Officer and submitted to the CCU by the General Manager in the Monthly Report. Additional projects that may be cover under this project sheet includes leak detection, leak repair, and the mapping and records related to these activities as well as contingency funding needs related to CIP projects.

This funding source can be used to complete any 2011 court order project relative to all capital improvements installed in water and wastewater system. Therefore it is also the intent of this CIP to cover two important aspects of planning, 1) hydraulic modeling and 2) system planning. Work under hydraulic modeling includes but not limited to hydraulic modeling training, planning tool software/hardware acquisition, and travel related to hydraulic modeling training. The system planning work will include, but not limited to, GIS mapping, asset inventory, asset management, asset management software, GIS software, GIS training, asset management training and asset condition assessment, updates to CIS and MWMS software and software and equipment GPS in vehicles.

Project Justification:

Capital improvements project are required to help maintain GWA level of service to its customers, thus the work described above will enhance operations and maintenance capabilities. The water and wastewater system for example consists of hundreds of miles of infrastructure, including facilities that are failing due to improper construction, earthquake damage, and/or material failures. Specifically for the water system GWA needs to change pressure zones to improve flow circulation and define pressure zones.

Financing Options & Grants:

The source of funding for this project will be the 2010 Bond, 2013 bond and Internally Funded CIP.

Project Staffing Implications:

Contract Administration, Project Management Services, and Construction Management Services are required.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013	Planning/Design/Construction	\$2,000
2014	Planning/Design/Construction	\$3,000
2015	Planning/Design/Construction	\$3,000
2016	Planning/Design/Construction	\$3,000
2017	Planning/Design/Construction	\$800
2018	Planning/Design/Construction	\$3,000
Project Total		\$14,800

Project Sheet DoD

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-01

Name of Project: NDWWTP Interim Capacity 8-9MGD

Reference Documents:

Pre-Final Northern District Wastewater Treatment Plant (WWTP) Interim Improvements
Preliminary Design Report Guam, November 2010

Project Description:

This project will increase capacity at NDWWTP to 8-9 MGD. The project will use advanced primary treatment in order for GWA to meet USEPA APP discharge requirements.

Project Justification:

This project is a requirement in order to accelerate the Military Build-up. The Department of Navy has committed to this project.

Financing Options & Grants:

The Department of Navy was responsible for funding this project however GWA is currently funding this project with 2010 Bond.

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Results

Work will be continued under WW 12-01.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-02

Name of Project: NDWWTP Phase 1: Primary Capacity 12 MGD

Reference Documents:

Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.

Project Description:

This project will increase NDWWTP Primary Capacity 12 MGD for GWA to meet USEPA NDPES discharge requirements. This project will utilize much of the existing plan structures and add major upgrades and modifications.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		\$60,000
2016		
2017		
2018		
Project Total		\$60,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-03

Name of Project: NDWWTP Phase 2: Secondary Capacity 12MGD

Reference Documents:

- a. Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.
- b. CIP WW 05-03 and CIP WW 11-07
- c. Evaluation of Northern District Wastewater Treatment Plant Capacity, December 2009

Project Description:

This project will increase NDWWTP Primary Capacity 12 MGD for GWA to meet USEPA NPDES discharge requirements. This project will utilize much of the existing plan structures and add major upgrades and modifications.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		\$100,000
2017		
2018		
Project Total		\$100,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-04

Name of Project: NDWWTP Phase 3: Final Capacity 16 MGD

Reference Documents:

Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.

Project Description:

This project will increase NDWWTP Primary Capacity 16 MGD for GWA to meet USEPA secondary treatment requirements.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		\$29,000
2017		
2018		
Project Total		\$29,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-05

Name of Project: HWWTP Phase 1: Primary Capacity 12 MGD

Reference Documents:

- a. Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.
- b. WW 11-05, WW 11-06

Project Description:

This project will upgrade HWWTP Primary Capacity to meet USEPA NDPES discharge requirements.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Results

Work will be continued under WW 12-03.

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		
2017		
2018		
Project Total		

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-06

Name of Project: HWWTP Phase 2: Secondary Capacity 12MGD

Reference Documents:

Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.

Project Description:

This project will upgrade HWWTP to meet USEPA secondary treatment requirements.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		
2016		\$100,000
2017		
2018		
Project Total		\$100,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-07

Name of Project: Central and Northern Systems Wastewater System

Reference Documents:

- a. Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.
- b. WW 05-02, WW 05-06, WW 09-0, WW 09-02, WW 09-04, WW 09-06, & W 09-09

Project Description:

This project will upgrade the sewer collection system and sewer lift stations in the Hagatna Sewer Basin and Northern District Sewer Basin.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office will be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		\$50,000
2016		
2017		
2018		
Project Total		\$50,000

GWA Capital Improvement Plan Project Sheet FY 2013-2018

Project Number: CIP DoD-08

Name of Project: Water Transmission loop in Northern Guam

Reference Documents:

Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement July, 16, 2010.

Project Description:

Although this project upgrades the DoD Water System, GWA will have an important role in the design of these upgrades because many of these upgrades will be to supply GWA's water. These Water System Upgrades including new wells, Storage, Transmission, and Transmission loop in Northern Guam.

Project Justification:

This project is a requirement of the Record of Decision for the Mariana Island Range Complex Final Environmental Impact Statement.

Financing Options & Grants:

The Department of Navy is responsible for funding this project

Project Staffing Implications:

A Program management office may be required for GWA to manage this project

Project Time Table/Budget:

FISCAL YEAR	ACTIVITY	BUDGET (x1000)
2013		
2014		
2015		\$100,000
2016		
2017		
2018		
Project Total		\$100,000

APPENDIX A

(4 pages)

1 **GUAM CONSOLIDATED COMMISSION ON UTILITIES**
2 **RESOLUTION NO. 17-FY2013**

3 **RELATIVE TO APPROVING THE GUAM WATERWORKS AUTHORITY'S**
4 **UPDATED CAPITAL IMPROVEMENT PLAN FOR THE PURPOSES OF**
5 **PLANNING AND EXECUTING PROJECTS IN THE NEAR TERM**

6
7 **WHEREAS**, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities
8 ("CCU") has plenary authority over financial, contractual and policy matters relative to the
9 Guam Waterworks Authority ("GWA"); and

10
11 **WHEREAS**, the Guam Waterworks Authority ("GWA") is a Guam Public
12 Corporation established and existing under the laws of Guam; and

13
14 **WHEREAS**, on November 23, 2010, GWA closed on the 2010 bond issuance that
15 provided a net total of Eighty Seven Million Four Hundred Two Thousand Dollars
16 (\$87,402,000.00) for Capital Improvements Projects; and

17
18 **WHEREAS**, GWA has revised and updated the previously approved 2012-2016
19 Capital Improvements Plan ("CIP") dated June 5, 2012, to the plan attached herein as Exhibit
20 A, covering fiscal years 2013 through 2018 (the "2013-2018 CIP") to expend the amounts
21 from the following sources: (a) balance of the 2010 bond funds which is approximately
22 \$34,500,000; (b) \$139,325,000 from the anticipated 2013 bond issuances; (c) \$128,450,000
23 from the anticipated 2015 bond issuances; (d) \$72,250,000 from anticipated 2018 bond
24 issuance; (e) \$20,041,819 in State Revolving Funds from the USEPA; (e) \$5,800,000 in
25 System Development Charges; (f) \$3,242,200 in grant funding from a variety of federal
26 sources; (g) \$48,000,000 in anticipated funds generated from revenues for internal CIP, all
27 resulting in a grand total of \$451,654,012 in capital expenditures over the next 5 years; and

28
29 **WHEREAS**, the 2013-2018 CIP also estimates for planning purposes a \$339,000,000
30 funding needed for infrastructure improvements associated with the military buildup; and

1 **WHEREAS**, the 2013-2018 CIP identifies existing and new CIP projects that GWA
2 is requesting the CCU approval to reallocate funds from the 2010 bond proceeds after which
3 the PUC approval will be sought; and
4

5 **WHEREAS**, some of the major projects identified in the 2013-2018 CIP include, but
6 which are not limited to, the following:

- 7 • Northern District Wastewater Treatment Plant Primary Treatment Upgrades
8 which will bring the plant into NPDES permit compliance;
- 9 • Hagatna Wastewater Treatment Plant Primary Treatment Upgrades which will
10 bring the plant into NPDES permit compliance as well as address septage
11 handling, grit and fats/oil/grease (“FOG”) removal and solids handling;
- 12 • Infiltration & Inflow (I&I)/ Sanitary Sewer Evaluation Survey work in the
13 southern, central and northern wastewater systems to identify areas requiring
14 collection system upgrades;
- 15 • Agat-Santa Rita Wastewater Treatment Plant interim improvements to
16 address disinfection, solids handling and by-pass reduction;
- 17 • Baza Gardens Wastewater Treatment Plant interim improvements to address
18 critical structural repairs, and solids handling from the plant;
- 19 • Umatac-Merizo Wastewater Systems which will address required
20 improvements at the treatment plant and collection systems;
- 21 • Water line replacement which will reduce GWA’s water loss and improve
22 GWA’s power cost, given less water is needed to pump out of the wells;
- 23 • Sewer pump station upgrades which will provide more efficient pumping
24 operations reducing GWA power consumption and improve system reliability
25 to prevent sewer spills;
- 26 • Implement a SCADA system to allow GWA to have real time information on
27 the water and wastewater facilities throughout the island which will allow for
28 better planning and troubleshooting;
- 29 • Rehabilitate down hard wells and develop new wells for additional source
30 water capacity to address the islands natural population growth as well as
31 growth related to the military build-up;

- 1 • Replace many of GWA’s steel water storage tanks with concrete tanks that
- 2 have a better life cycle cost;
- 3 • Refurbish some of GWA’s steel water storage tanks that will give the tanks an
- 4 additional ten to fifteen years of life to allow GWA the ability to replace the
- 5 tanks as necessary; and
- 6 • Replace all existing water meters, manual reads and AMR, that have failed
- 7 with new AMR water meters that were evaluated to have better reliability
- 8 which will allow GWA to maintain revenues projects.

9
10 **WHEREAS**, in the PUC’s Bond Approval Order dated October 29, 2010, PUC
11 Docket 10-03, the PUC indicated that GWA must obtain prior approval of the projects as
12 identified in Schedule A of the Debt Order of the 2010 Bond issuance prior to GWA being
13 able to expend or commit the \$87,402,000 in bond proceeds; and

14
15 **WHEREAS**, the 2013-2018 CIP attached herein as Exhibit A contains a plan to
16 expend the funds for the projects identified in Schedule A of the Debt Order as well as new
17 projects that are to address the 2011 Court Order; and

18
19 **NOW BE IT THEREFORE RESOLVED**, the Consolidated Commission on
20 Utilities does hereby approve and authorize the following:

- 21 1. The recitals set forth above hereby constitute the findings of the CCU.
- 22 2. The 2013-2018 Capital Improvements Plan attached as Exhibit A is
- 23 incorporated into this resolution in its entirety.
- 24 3. The CCU approves the 2013-2018 Capital Improvements Plan in its
- 25 entirety and accepts the fact that updated information and changing
- 26 circumstances through the year requires GWA to make changes necessary
- 27 and for the betterment of the people they serve.
- 28 4. The 2013-2018 CIP constitutes as GWA’s requirement to provide a capital
- 29 plan on or before September 15th of each year to the PUC with prior
- 30 submission to and approval from the CCU on or before the 15th of August.
- 31
- 32

1 5. GWA is hereby authorized to seek approval from the Guam Public
2 Utilities Commission for all reallocations to the 2010 bond proceeds
3 which are set forth in the CIP.
4

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

8 **DULY AND REGULARLY ADOPTED AND APPROVED** this 26th day of
9 February, 2013.
10

11 Certified by:

12 

13 **SIMON A. SANCHEZ, II**
14 Chairperson
15

11 Attested by:

12 

13 **JOSEPH T. DUENAS**
14 Secretary
15

16
17 I, Joseph T. Duenas, Board Secretary, of the Consolidated Commission on Utilities as
18 evidenced by my signature above do hereby certify as follows:
19

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

25 AYES: 5

26 NAYS: 0

27 ABSTENTIONS: 0

28 ABSENT: 0
29
30
31
32



APPENDIX B

(4 pages)

water and wastewater projects, as well as an electrical engineering project, and a single miscellaneous project.

On March 25, 2013, the Administrative Law Judge of the PUC, David A. Mair (the “ALJ”), issued an ALJ Report regarding GWA’s request to reprogram the 2010 Bond proceeds. Upon review, and based on the documentation provided by GWA, the ALJ subsequently found that the projects for which GWA sought approval in its Petition were reasonable and necessary for the expansion and improvement of Guam’s water and wastewater systems, as well as for compliance under the Amended Stipulated Order. The ALJ, therefore, recommended approval of GWA’s Petition.

The ALJ, however, further recommended that GWA submit to the PUC updates on several of its CIP projects that required additional funding. Specifically, the ALJ recommended that, with respect to the meter replacement program, GWA report on the status of this program by May 15, 2013. The ALJ also recommended that, with respect to GWA’s Water Reservoir Internal/External Assessment Program, GWA provide the PUC with documentation on the status of this project, as well as documentation related to cost estimates for this project by June 15, 2013. Finally, the ALJ recommended that, with respect to GWA’s Wastewater Collection System Replacement and Rehabilitation program, GWA report on the status of this program by July 15, 2013.

Finally, on July 30, 2012, the PUC “recommended” that GWA comply with its obligations pursuant to P.L. 30-145. The approval of the current petition for reprogramming should not be interpreted so as to vacate or amend that “recommendation.” However, inasmuch as GWA has judicially challenged the PUC’s “recommendation,” the

approval of the current petition should also not be interpreted as a waiver of any of GWA's rights in the pending civil action. GWA has duly preserved its right to challenge the PUC's "recommendation." The PUC is hopeful that the Guam Legislature and GWA will resolve the dispute relating to P.L. 30-145 in GWA's next bond application.

The Commission hereby adopts the findings made in the March 25, 2013 ALJ Report and, therefore, issues the following:

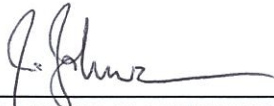
ORDERING PROVISIONS

Upon consideration of the record herein, the March 25, 2013 ALJ Report, and for good cause shown, on motion duly made, seconded and carried by the affirmative vote of the undersigned Commissioners, the Commission hereby ORDERS the following:

1. GWA's expedited petition for approval to reallocate \$7.57 million of 2010 Bond funds is hereby GRANTED.
2. With respect to the Meter Replacement Program, GWA shall file a report with the PUC detailing the status of the program by May 15, 2013.
3. With respect to the Water Reservoir Internal/External Assessment Program, GWA shall file a report with the PUC detailing the status of the project, and shall file with the PUC documentation related to cost estimates for the project by June 15, 2013.
4. With respect to the Wastewater Collection System Replacement and Rehabilitation program, GWA shall file a report with the PUC detailing the status of the program by July 15, 2013.
5. GWA is further ordered to pay the PUC's regulatory fees and expenses, including and without limitation, consulting and counsel fees, and the fees and

expenses associated with this docket. Assessment of the PUC's regulatory fees and expenses is authorized pursuant to 12 G.C.A. §§ 12002(b) and 12024(b), and Rule 40 of the Rules of Practice and Procedure before the PUC.

SO ORDERED this 26th day of March, 2013.



JEFFREY C. JOHNSON
Chairman



JOSEPH M. MCDONALD
Commissioner



ROWENA E. PEREZ
Commissioner



FILOMENA CANTORIA
Commissioner



MICHAEL A. PANGELINAN
Commissioner



PETER MONTINOLA
Commissioner