

# Narrative Supplement to Performance Criteria – GWA General Manager

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### 1.1.7 Maintain Service Pressure Levels

In 2006, of the four stated Levels of Service (LOS) in the Water Resource Master Plan, only one had to do with pressure levels. The LOS – *Continuity of Water Supply* – was focused more on maintaining water supply year-round. In the 2018 WRMP update, a total of 16 LOS were adopted, including LOS 8: *Adequate Pressure Exists within the Distribution System*, which lists specific target pressure range of between 35psi and 90psi. While GWA has not in the past tracked performance specific to pressure levels across the distribution system, one of our current projects is implementation of the *Pressure Zone Re-Alignment Plan*, which will establish correct pressure zones (defined by service pressure/elevations) in over 20 existing water service areas (defined simply by boundaries between areas with service isolation valves, booster pump stations, etc.). Moving forward, GWA will be able to monitor pressure levels within each pressure zone to ensure performance against our published LOS.

Progress to date in this performance indicator can be approximated by:

- LOS detail: the increase in the number and specific metrics for pressure levels of service between 2006 to 2018 WRMP
- Finalization of the *Pressure Zone Re-Alignment Plan* in December 2015
- Integration of PZRP projects into the *Water Resource Master Plan* update in 2018
- Issuance of the Phase 1 Pressure Zone Realignment Construction bid-package in August 2019
- Phase 1 Pressure Zone Realignment: **Construction is 94% Complete as of Sep 30, 2023**
- **Phase 2 Pressure Zone Realignment: Design 100% complete, Construction IFB pending**
- **Phase 3 Pressure Zone Realignment: Design ~55% complete as of Sep 30, 2023**
- **Tank By-pass and repair: Construction work is on-going at northern and southern reservoirs; temporary effects to pressures within these service areas is anticipated until reservoir and BPS operation return to normal and are integrated with PZR work.**

Regular distribution system monitoring has been analyzed to provide a measure of LOS performance within the various pressure zones/subzones. The table below summarizes general performance based on available data.

LOS-8 Performance Summary	Zones / Subzones	%	Remarks
<b>Withing range (30-90psi)</b>	26	45%	All measured sites within range
<b>Partially within range</b>	16	28%	Some measurement sites out of range
<b>Not within range</b>	6	10%	All measured sites out of range
<b>Not regularly monitored</b>	10	17%	Future zones/subzones not measured yet

### 1.2.2 Compliance with effluent discharge permit requirements

Prior to current NPDES permit issuance, GWA had received 301(h) waivers for compliance with secondary treatment requirements for WWTP effluent discharge into receiving waters, and discharge limitations were contained in the 2011 Court Order compliance provisions. After the 2009 denial of the 301(h) waivers by EPA, new NPDES permits required compliance with secondary treatment standards – GWA has technically been in violation of secondary treatment requirements since the permits were issued.

As part of the Court Order requirements GWA embarked on upgrades to the Agat, Baza Gardens and Umatac-Merizo WWTPs. In addition the Agana and Northern District WWTPs were upgraded to enhance primary treatment as an interim measure pending final negotiations on upgrades to secondary treatment. Upgrade compliance is as follows:

- FY 2018: 1 of 5 (20%) of plant compliance upgrades to secondary – A-SR WWTP online
- FY 2019: 1 of 4 (25%) of plant compliance upgrades to secondary – BG WWTP decommissioned
- FY 2020: 2 of 4 (50%) of plant compliance upgrades to secondary – U-M WWTP online
- FY 2021: 3 of 4 (75%) of plant compliance upgrade to secondary – NDWWTP in progress; Agana WWTP Interim Disinfection Pilot Study / Plant Optimization Analysis completed

- FY2022: 3 of 4 (75%) of plant compliance upgrade to secondary – NDWWTP secondary treatment process on-line in mid-2022. Agana WWTP Interim Disinfection study completed with determination that significant process enhancements are needed to make this feasible; plant continues under CEPT performance requirements.
- FY2023: 3 of 4\* (75%) compliance upgrades to secondary – NDWWTP upgrades completed; \*HWWTP compliance negotiations completed under Consent Decree – schedule for upgrades has been agreed.

### 1.2.3 Maintain internal QA/QC processes

One of the initial tasks discussed with the GWA GM in 2016 was the reorganization of the mid-to-upper management levels. The reorganization plan submitted to and approved by the CCU included four Assistant General Manager positions for (1) Compliance & Safety; (2) Operations; (3) Administration & Support; and (4) Engineering. The plan also proposed organization-wide oversight positions for (1) Field Safety Office, and (2) Field Compliance Officer. The additional AGM positions would allow for tighter management control and scope of supervision to improve quality control. The organization-wide oversight positions would allow for full-time efforts to conduct crucial quality assurance inspections at all operations facilities and worksites for safety and compliance. GWA has also implemented QA/QC measures in our metering operations, with an on-going meter maintenance program involving random meter QA/QC testing.

Progress to date in this performance indicated can be approximated by:

- Implementation of meter program QA/QC testing
- Progress in filling AGM positions:
  - AGM-A&S: filled
  - AGM-Ops: filled
  - AGM-Eng'g: filled
- Appointments to QA/QC positions with organization-wide oversight
  - Field Safety Officer (currently being conducted by Safety Inspector Supervisor)
  - Field Compliance Officer (recruitment of additional compliance positions in progress)
- AGM-Ops and AGM-C/S have established internal regulatory compliance QC inspections
- SOP Committee:
  - Regular progress meetings on-going
  - SOP priority listing established
  - SOP standardization, review and revisions on-going

### 1.3.4 Maintain Emergency Response Plan and readiness

GWA has in the past contributed to an overall Government of Guam emergency response plan, with sections of the plan governing water utility preparation, response and recovery actions being prepared by GWA personnel and integrated into the overall plan. GWA's Response Action Coordinators (RACs) have prepared updated information to this planning document, and remain our primary link to overall response efforts when activated during an emergency. GWA has also undertaken the drafting of its own Crisis Management Plan, which includes detailed information on operational preparations in anticipation of emergencies and disasters. Our recent efforts have been focused on:

1. improving system operability to adequately prepare before an emergency,

2. hardening system infrastructure for resiliency during an emergency,
3. maintaining the needed resources for deployment in the immediate post-emergency response and to facilitate recovery thereafter

Progress in this performance indicator can be approximated by:

- improvements in system operational flexibility to increase production to “top-off” reservoirs
- increases in the number of hardened concrete reservoirs
- increased availability of vehicles, heavy equipment and water storage “flex-tanks”
- development of internal crisis management plan, with detailed checklists, operational shift arrangements and communication protocols
- Completion of EPA required water system Emergency Response Plan assessments and certifications
- Participation in Emergency Response Table-top exercise with FEMA/GHS

### 1.3.5 Maintain Continuity of Operations Plan and readiness

Prior to FY20, as an essential utility with a robust emergency response capability, continuity of operations was executed with each emergency declaration through Emergency Response Plan and our internal Crisis Management Plan.

With the onset of the COVID-19 pandemic, GWA was forced to modify its normal response to maintain continuity of operations for a long-term public health emergency. The adoption of new emergency (and now Standard Operating) procedures and contingency plans for staffing and teleworking were undertaken and continue to be refined. External coordination efforts were increased to address supply-chain stability, continuity of regulatory compliance, and inter-utility assistance and emergency response. Business processes were modified to insure continuity of customer service availability, including a rapid deployment of

- on-line resources (both inward facing and outward-customer facing),
- drive-thru payment capability
- expanded mobile app and on-line payment options
- expanded vendor payment options
- public messaging relevant to changes in GWA’s customer service processes

Moving forward, progress in this performance indicator can be monitored by:

- Formal adoption and annual review/updates of GWA COOP – post Mawar update in progress
- Formal adoption and annual review/updates of Emergency/Pandemic Response SOPs - post Mawar update in progress
- Formal adoption of Inter-utility Cooperation Agreements (One-Guam, CNMI, etc.) – **Utility Services Agreement is being drafted through the One-Guam Water program and is expected to be finalized and in place by June 2024; cooperation on non-emergency needs continues on case-by-case basis (e.g., equipment use, training, etc.).**

### 1.3.6 Improve water resource/aquifer protection

For several years, GWA has relied upon the University of Guam Water and Environmental Research institute (WERI) for scientific analysis and advice on water resource issues related to our operations.

GWA has provided water production and analytical data to WERI as part of their mission for water resource monitoring through their various programs, such as the Comprehensive Monitoring Program (CMP) and the Guam Hydrologic Survey (GHS).

With the One-Guam Water initiative, GWA and the Navy have expanded the number of deep monitoring wells available to monitor and protect the northern Guam lens aquifer (NGLA). GWA has completed capital improvement projects for the construction of seven (7) new deep observation wells, and the rehabilitation of 12 existing observation wells within the NGLA.

In September 2022, GWA, the Navy, WERI and the US Geological Survey (USGS) transitioned the existing monitoring program into the One-Guam Water Resource Information Program (OGWRIP). A Memorandum of Agreement was officially executed under the One-Guam Water initiative to share in the cost of maintenance of the deep observation wells, and ongoing monitoring efforts for water resource management. Work on the instrumentation and use of these wells is on-going by USGS/WERI.

#### 1.4.2 Achieve Target CIP Spending Plan

Starting in 2006, GWA has produced comprehensive 20-year master plans, and 5-year Capital Improvement Programs (CIP) which outline needed improvements to our systems. The latest 5-year CIP covers FY2020-FY2024 and outlines anticipated projects, funding sources and expenditures over that period.

Moving forward, in accordance with the stated financial objectives of the CCU-adopted 2018 Water Resources Master Plan update, GWA intends to strike a balance between debt-financing of large capital program requirements (e.g., new WWTPs, pump stations, etc.), and revenue-financing regular annual renewal requirements (pipeline replacements, fleet vehicles, etc.). GWA's ability to achieve this balance has been disrupted by the prolonged economic impacts of the global pandemic, which has severely restricted the available revenues to fund capital improvements and scheduled renewals. GWA's Comprehensive Review & Update to the 5-Yr Financial Plan submitted to the GPUC in FY2021 took into consideration updated projections for revenue and for IFCIP in an effort to re-align to our stated financial and CIP objectives. However, the PUC in its September 2022 Rate Order did not provide sufficient rate relief to support additional internally funded capital (IFCIP) or additional debt service, impacting the CIP in the last 2 years of the 5-yr plan. Therefore, IFCIP expenditures under the FY20-FY24 CIP for FY22 and FY23 have not been keeping pace with goals because of insufficient rate relief provided.

#### 1.4.3 Achieve Water System Expansion Goals

GWA has an established line replacement program which is intended to replace and expand distribution system capacity. Since 2012, this program has resulted in the installation of over 98,000 linear feet (18.6 miles) of water distribution piping. The line replacement project is currently in its 5<sup>th</sup> phase.

GWA is also expediting replacement of problematic lines as follows:

- Pale Ferdinand, Santa Rita (Completed)
- Casimiru (Completed)
- Tai Road / S-13 and Toto – Canada Loop / Blas Street (Construction 86% complete)

The 2018 WRMPU contained several programmatic items relative to water system expansion and upgrade. These include the following each:

- MP-PW-Pipe-12: Rehabilitation and Replacement Program (continuation of line replacement above)
- **MP-PW-Pipe-13: 2-inch Pipe Replacement Program** (Although this program has been delayed, older bond funded CIP line item is being used to advance 2-inch galvanized line replacements in FY21 in targeted areas, such as Balaku Street, Borja Street; **in FY22/23 ID-IQ contract issued for design – initial task order being scoped/negotiated**)
- **MP-PW-Pipe-14: Asbestos Cement Pipe Replacement Program** (FY22/23 ID-IQ contracts issued for design – initial task order being scoped/negotiated)

#### 1.4.4 Achieve Wastewater System Expansion Goals

Since 2016, GWA has been coordinating with the Guam Environmental Protection Agency (GEPA) to identify residential customers within 200-ft of GWA sewer lines who are not yet connected to the public sewer in an effort to encourage connection, especially in areas that are within close proximity to GWA production wells. This effort has seen limited success.

In the 2018 WRMPU, GWA adopted the Septic Tank Elimination Program which aimed to construct 5000 linear feet of new sewer infrastructure each year (FY22 start). GWA has also proposed improvements to the existing but underfunded and cumbersome Sewer Connection Revolving Fund to go hand-in-hand with the STE Program, such as 1) easing qualification requirements, 2) increasing loan limits, and 3) increasing the total revolving fund amount, to increase participation and effectiveness of the program. The STE Analytical Study has been completed and costs for conservative implementation has been included in the Comprehensive Review & Update to the GWA 5-Year (FY20-FY24) Financial Plan and CIP submitted to the GPUC in May of 2021.

**In FY2022, GWA received over \$8.6M in federal American Rescue Plan Act (ARPA) funding for infrastructure for the specific purpose of expanding the wastewater collection system for low-income / underserved communities. In FY2023, GWA encumbered \$1.2M for the engineering design for this project and has expended ~\$100K in initial funding for survey and geotechnical work. Additionally, two contracts IDIQ for Design-Build of Sewer Collection/Transmission System have been awarded and are currently in initial task order negotiations.**

#### 1.4.5 Achieve NRW / Water Loss Reduction Goals

This has been a perennial problem for GWA and continues to be a challenge to GWA Management. Previous efforts to address water loss include leak detection and repair projects, establishment of an internal Leak Detection team, and performance of annual water audits in accordance with AWWA Manual 36.

Over the last several years, GWA has undertaken a more multi-faceted and comprehensive approach to water loss control. This has included:

- Production meter replacements (Phase 1 & 2 construction completed) – to improve accuracy of measured supply
- Master Meter installations (construction suspended, integrated into current DMA project, see below) – to monitor usage within the system and identify leaks

- Pressure Zone Realignment Project (Phase 1 construction 94% complete; Phase 2 design 100% complete, Phase 2 construction in procurement; and Phase 3 design ~60% complete) – to control pressures within acceptable limits and eliminate background losses from excessive pressure
- Pilot Test of Satellite Leak Detection – to identify leaks where system piping locations are unknown (e.g., lines through undeveloped areas, Tiyan, former NAS)
- Pilot Test of District Metered Areas (DMA) – to establish and monitor supply and usage within metered areas to identify and repair leaks (completed with average water loss recovery of 45% in 3 pilot areas)
- Customer Model LP meter replacements (completed) – to improve accuracy of water demand and improve water audit results
- Completion of Water Loss Control Analytical Study which establishes permanent DMAs, refine water loss control goals and metrics in accordance with new AWWA recommendations, and provides for annual reporting to track progress moving forward.
- DMA Implementation: 3-year implementation of 36 DMAs is currently underway; includes baseline leak detection work and CIPs to create the DMAs. As of FY2023 (Year 2 of 3-year plan), a total of 21 active DMA's are being actively monitored, analyzed or investigated (leak detection).
- Two permanent Leak Detection teams have been assembled, and additional training/equipment has been procured to advance the overall Water Loss Control Program objectives. At least one additional leak detection team(s) will be added as more DMA's come on-line.
- Permanent DMA installations are being constructed as part of ongoing PZR or other distribution system CIP projects, where feasible.
- An ID-IQ contract for design of DMA CIPs has been awarded and is pending negotiation of first task order.

GWA is also moving towards Advance Metering Infrastructure (AMI) implementation for customer (demand) meters as part of the overall Water Loss Control Program. GWA continues to explore low-cost alternatives to implementation and is currently pilot testing an AMI metering solution using GPA network.

### 1.5.1 Advance GWA-DoD System Integration

The 2018 WRMPU identified as a new Level of Service (LOS) goal, the interoperability of GWA and DoD utility system facilities. The GWA operation of the DoD Tumon Maui Well was a proof-of-concept for the One-Guam Water initiative and has been successfully licensed for several years beyond the initial 1-year “test.” GWA has pursued and advanced other interoperability initiatives (i.e., the Mt. Santa Rosa Reservoir Inter-tie with AAFB), however DoD has not authorized final execution as of yet. GWA continues to improve the reliability and resiliency of our water system in this area with the recently completed new Santa Rosa Reservoir, and assessment/repair of existing steel reservoir in this area. Stub-outs for future connection to the AAFB system are in place.

GWA and DoD have revised the “framework” for interoperability, and progress on new goals/projects, and have initiated discussions on new GWA service for DoD installations. Discussions continue on the feasibility of expanding the A-SR WWTP to accept all wastewater generated on Naval Base Guam. In



response to Typhoon Mawar resiliency concerns, discussion on system redundancies, interconnections and mutual supply have increased. In addition, metered water connection at Marine Corps Base Camp Blaz has been executed and requested supply by GWA may be increased temporarily pending completion of the DoD water system at this location.

#### 1.5.4 Improve/maintain affordability of service

GWA's significant capital improvement program, which is needed to complete the 2011 Court Order and impending Consent Decree compliance requirements, will result in rate increases to support debt-financing. GWA's challenge will be to keep rates within generally accepted limits related to median household income, and develop affordability/customer assistance programs which address the most vulnerable segment of our customer base.

GWA completed an analytical study on Affordability which contains recommendations on rate design and a Customer Assistance Program (CAP) which have been incorporated into GWA's Comprehensive Review & Update to its 5-Year (FY20 – FY24) Financial Plan and CIP, submitted to the GPUC in May of 2021. The PUC, during its September hearing on GWA's Comprehensive Review & Update for FY22 thru FY24, indicated it would consider GWA's proposed rate design for possible implementation in FY2023. GWA submitted the petition for the proposed rate design in April 2023 and amended the petition in September 2023. However, the PUC has not schedule the hearing at this time.

#### 2.5 Identify cost efficiencies / reduce waste

There are no over-arching metrics at this time for this performance criterion. GWA Management's continued work with our Internal Auditor to identify areas to focus efforts on efficiencies and waste reduction will provide a means to accomplish this objective. In FY2023, GWA initiated a performance audit for operational divisions to determine conformance with level of service objectives from our 2018 WRMP. The FY2024 Audit Plan objectives include continued focus on operational efficiencies.

In addition to completing its enterprise resource planning system upgrade in FY2021, GWA completed FY2022 mobile workforce upgrades to improve efficiency in several key areas, including customer service, field operations, and procurement/supply. In FY2023, additional work was initiated on engineering and construction procurement process management, which continues into FY2024.

#### 3.2 Improve / Maintain succession planning

GWA continues to struggle with employee recruitment and retention. We have lost several experienced and licensed operations personnel to competing entities because of the disparities in available compensation rates. Management has encouraged the identification of "alternates" for supervisory positions within the operational divisions as a means to bring up potential succession candidates, and integrate them into management meetings, decision-making and exercising responsible control of their facilities/systems. Moving forward, a formal succession planning policy will be developed and proposed for implementation, to monitor this performance objective. In the interim, AGM's continue to emphasize continued testing, certification in operations and in engineering to augment the pool of



potential supervisors and managers. Management is also revising outdated position descriptions in certain position series to integrate progressive certification and professional registration.

### 3.4 Enhance employee training & development

In prior years, GWA employees were encouraged to take GEPA-administered certification exams which were offered once or twice a year. Examinees had to wait 4 months to obtain exam scores and find out if they passed or failed. Exam preparation was limited and offered only immediately preceding the exams.

GWA Management worked with GEPA and the University of Guam to establish computer-based testing administered by UOG under GEPA's authority, in accordance with the national testing standards. The computer-based testing can be conducted on a weekly basis, depending on demand, and results are immediately available. EPA Certification is now made within weeks of a passing result on the certification exams, instead to 1x or 2x per year.

GWA Management also negotiated with the local subsection of the American Waterworks Association (AWWA-Hi Western Pacific Subsection) to provide operator training on a regular basis at no/reduced costs for GWA employees. In addition, AWWA training materials have been purchased and are available through the Personnel Services Division for independent study by GWA employees.

In FY2023, GWA was again able to work with the local AWWA chapter to jointly sponsor an in-person water/wastewater conference which was the most successful to date with increased participation from the local water/wastewater community and increased vendor presence. GWA also continued to facilitate operator training events, and advanced the renewal/overhaul of its apprenticeship program with GCC.

### 4.2 Improve accuracy of public / media communications

In order to improve information management in this area, Management has issued guidelines establishing a vetting process for operational information prior to release, and standardized media release format for GWA's Water Systems Control Center (WSCC) and Dispatch operators. GWA has also engaged a media/communications consultant to enhance and modernize communications on multiple platforms. This will include messaging on GWA's planned capital improvements and CIP progress.

GWA implemented enhanced multimedia public outreach to assist with pandemic response activities, highlight system enhancements, and to advance public messaging regarding significant GWA initiatives. Additionally, in FY2022 and continuing into FY2023, Management launched an initiative to highlight GWA's achievements in system improvement as recommended by both the CCU and PUC, with focused web portals for specific information dissemination and a multi-media campaign to broadly distribute targeted content across available platforms. This effort was greatly expanded in the aftermath of Typhoon Mawar and proved effective at communicating GWA's progress during recovery and restoration efforts.

#### 4.4 Maintain / enhance reporting to CCU

In the last several years, Management has attempted to streamline and refine information presented to the CCU, providing tabular and graphical summaries of data previously submitted in bullet form. A continuing effort will be made to prioritize information in an easily digestible format that can translate across digital devices and platforms. Management's intent is to allow for at-a-glance summaries on key utility operations and performance, while providing relevant content on more topical matters, and detailed back-up reports/information as appendices.