

GUAM WATERWORKS AUTHORITY

DEVELOPERS HANDBOOK GUIDE

DRAFT



GUAM WATERWORKS AUTHORITY
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Tumon, Guam 96931
Phone: 646-7810 Fax: 647-2621

Date: January 5, 2010

To: Guam Contractors Association
Guam Society of Profession Engineers (GSPE)
Society American Military Engineer (SAME)
Government of Guam Agencies
All Interested parties

Subject: Draft Guam Waterworks Authority Developers Guide Book 2010

Greetings All,

The Guam Waterworks Authority (GWA) Engineering Department has developed a draft "Developer's Guide Book" which is intended for use by entities interested in development such as housing subdivisions, multi story condominiums/apartment/hotels, large commercial establishment as well as utility extensions required for smaller development projects. The draft guide book is meant to provide guidance with respect to connection into the existing utility infrastructure including GWA expectations and design requirements.

GWA is seeking review comments for the draft guide book, particularly comments on the "Standards for Wastewater" as no standard currently exist and it will be through this exercise that GWA will establish standards for wastewater. The comment period will be 60 days from the date of the cover letter. All comments received will be taken into consideration as GWA engineering is striving to provide an effective tool that will ensure communication and coordination between GWA and people wanting to develop on Guam. Comments can be mailed in or fax to the address and number noted above. Comments can also be emailed to thomas@guamwaterworks.org.

GWA engineering greatly appreciates your time and effort in helping produce a document that will allow GWA and the development communities coordinate and communicate installation of water and wastewater infrastructure.

Sincerely,

Martin R. Roush

Martin Roush, P.E.
Chief Engineer

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Introduction

So you want to develop on the island of Guam? Guam is a largest and most populated island within the Marianas archipelago. The warm tropical weather and friendly island atmosphere has been a factor for many who have come to visit then decide to stay. The steady increase in population over the last three decades has allowed the island to experience an economic growth that has benefit all aspects of island living.

Tourism is the islands major domestic product for over thirty years however the pending increase in US military personnel has spurred many investors and developers alike to pursue the anticipated economic infusion the island will experience. Guam Waterworks Authority (GWA) understands this potential and has set new standards and procedures in order to continue improving water and wastewater services through the island as a means of ensure the island larges natural resource, the Northern Guam Lens Aquifer, is protected and managed accordingly for many years to come.

This Developers Guide Book will be utilized by GWA as a tool for promoting planned development on the island of Guam. GWA is proud to offer through this guide book a clear and well-defined application, review, approval and permitting process for utility service for all property owners and developers seeking to do establish themselves on the island.

What's included in this Guidebook?

The purpose of this guide book is to outline requirements for a developer with regards to water and wastewater services so as to ensure timely connection into the GWA systems. Standard specification guidelines are provided herein which would help developers know what type of materials and permitting procedures are expected. This guide book also provides instructions for an engineer, contractor or related groups to request for change in a specific specification. This guide book also provides rules and regulations for subdivision developments which will have immediate and noticeable impacts to current utility operations. A review check list for water and wastewater is provided herein that will give any developer an understanding of what GWA engineering will be looking for in design plans submitted for permit approval.

It shall be clarified that this Guidebook does not represent a legal document and should not be construed as legal advice.

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Standard Specifications

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Standards for Wastewater

GWA has adopted the following three documents as standards and specifications for wastewater. In the case of conflict between these documents, the following order of precedence shall be followed:

1. Title 28 Guam Administrative Rules
2. Recommended Standards for Wastewater Facilities (commonly referred to as the "Ten State Standards")
3. City of Palm Coast, Florida Standards and Specifications for Water and Wastewater Construction, March 2009 ("Palm Coast Standards"), inclusive of the sections noted below:
   a. Division 2, Part 1, Sections 3 – 6
   b. Division 3, Part 3
   c. Division 4, Force Main and Gravity Sanitary Sewer Details
      i. Force Main and Gravity Sanitary Sewer Details: SS-1 through SS-30 shall apply
      ii. Structural Details S-1 through S5 shall apply
      iii. Miscellaneous Details M-1 though M16 shall apply
   d. All exceptions noted in the 'Guam Water Works Authority *Exceptions* to the City of Palm Coast, Florida Standards and Specifications for Water and Wastewater Construction' shall apply. These exceptions shall be updated as required by the GWA Engineering Department.

   A copy of this standard can be viewed from the following link:
   http://www.ci.palm-coast.fl.us/CityDocs/Departments/Utilities/Standards/DesignManual.pdf

All construction that is not covered under these standards, such as clearing and grubbing, excavation and backfill, distances between water and sewer pipe, etc., shall be from the Water System Standards, Department of Water Supply County of Maui, State of Hawaii 2002 ("Maui Standards").

Guam Water Works Authority Exceptions to the City of Palm Coast, Florida Standards and Specifications for Water and Wastewater Construction

All of the below apply.

- All instances of "The City of Palm Coast" shall be replaced with "the Guam Waterworks Authority" and all instances of "Florida" shall be replaced with "Guam".
- All references to Divisions or Sections not included in GWA's adoption of the Palm Coast Standards shall be replaced by the appropriate Maui Standard.
- For all references to specific products, add the words "or approved equal"
- Unless otherwise noted in these Exceptions, all references to Standard Details shall apply.
- All electrical controls and generators shall be installed in a typhoon hardened structure, the design of which shall be approved by GWA

4.2.2 Peak design flow shall be in accordance with the "Ten State Standards"
4.3.3 Gravity sewer velocity shall be a minimum of 3.0 fps at ½ full flow.
4.4.3 Change "24-inches clear" to "30-inches clear"
4.4.4 Eliminate the words "without special consideration."
4.4.8 Change "Florida Bearing Value of 50psi and compacted to 95% of ASSHTO T-180" to "compacted to at least 95% of the maximum density as specified in Section 204 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-03""
4.5.3 This shall be in accordance with Title 28 GAR.
5.3.7 Change "registered in Florida" to "registered in Guam." To "Army Corps of Engineers and Coast Guard" add "and Guam Environmental Protection Agency."
6.3.5 To the phrase "a minimum of five (5) minutes" add "or manufacturer's specifications, whichever is longer"
6.3.6 Add "in accordance with Title 28 GAR"
32.2.2 Replace sentence beginning "All jointing material" with "Manhole sections must be joined using a bitumastic sealant such as Ramneck or approved equal"
32.4.7 All pipe to manhole connections shall be flexible connectors such as Kor-N-Seal or approved equal
Section 34 Testing requirements shall be in accordance with the "Ten State Standards"
35.10 Division 3 Section 22 valve box requirements shall apply for sanitary sewer valve boxes as defined in this Section.
37.1 Change "Flygt" to "Flygt, ABS or approved equal"

Standards for Water

GWA has adopted the following four documents as standards and specifications for water. In the case of conflict between these documents, the following order of precedence shall be followed:

1) Title 28 Guam Administrative Rules
2) Water System Standards, Department of Water Supply County of Maui, State of Hawaii 2002 ("Maui Standards"), inclusive of the sections noted below:
3) Water Service Limitations Guidance Document. (February 4, 2006)
4) Recommended Standards for Water Facilities (commonly referred to as the "Ten State Standards")

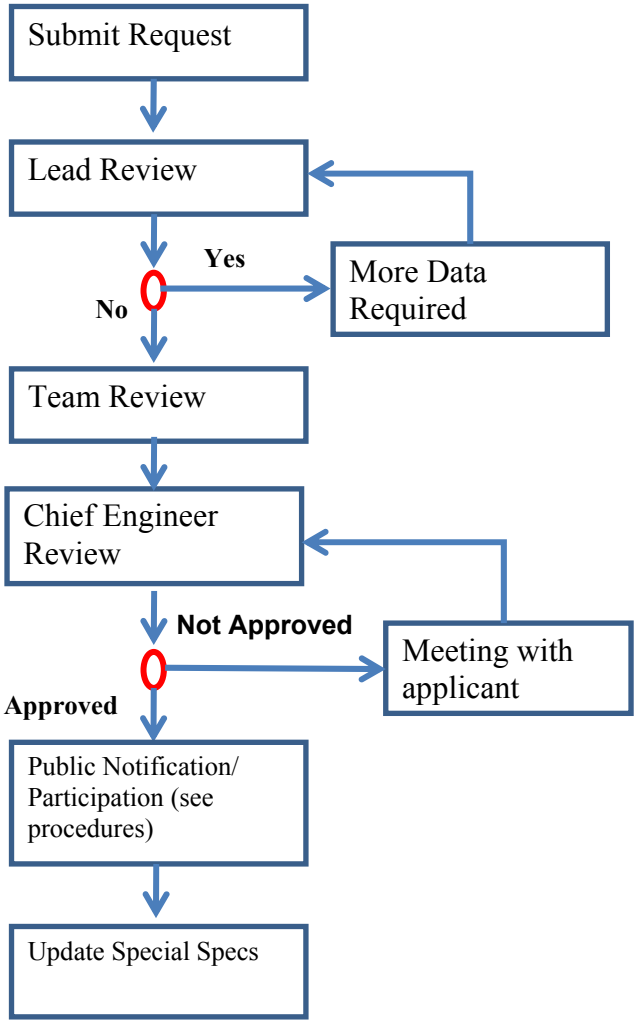
A copy of this standard can be viewed from the following link:
http://www.boardofwatersupply.com/files/With%20Amendments%20Final%20Complete%20Copy%20of%20Water%20System%20Standards%202002.pdf

Guam Waterworks Authority Exceptions to the Water System Standards, Department of Water Supply County of Maui, State of Hawaii 2002

All of the below apply.

- All references of "Maui" shall be replaced with "the Guam Waterworks Authority" and all references of "Hawaii" shall be replaced with "Guam".
- For all references to specific products, add the words "or approved equal".
- Unless otherwise noted in these Exceptions, all references to Standard Details shall apply.
- All electrical controls and generators shall be installed in a typhoon hardened structure, the design of which shall be approved by GWA.

Special Specification Review Process



Special Specification Review Process

Submit Request: A request to change the standard specification may be submitted from internally or externally. For example, internal request can come from operation, field engineering, or project engineers. External request can come from the development community, from engineering firms, or regulators.

Lead Reviewer: GWA chief engineer will assign a lead reviewer for sections of the wastewater, water, electrical, or SCADA. The lead reviewer will assess if all required information for request is submitted.

Team Review: The lead reviewer will create a technical team comprised of operations, engineering and/or a private consultant.

Chief Engineer Review: The chief engineer will review the recommendations for the Team Review and approve or disapprove the recommendation.

Public Notification and Participations: Upon approval of the chief engineer for a specification change the Lead Reviewer will initiate the Public Participation process as outline in this section.

Update Special Specifications: After the request for specification change has gone through the Public Notification and Participation process the specification change will be included in this "developer Guide Book" and posted on GWA's website.

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Special Specification Public Participation

The following process will be taken as a means of informing the public and requesting comments to a specification change related to water and wastewater utility.

Step 1: The Lead Reviewer handling the request for change in specification will generate a standard letter to the following entities:

1. Guam Association of Professional Engineers
2. Society of Military Engineers
3. Guam Contractors Licensing Board
4. Professional Engineers and Architects Licensing Board

The Lead reviewer also will post the same letter addressed to “All interested Parties” on the GWA website. The letters transmitted will request for comments applicable to the “specification change” and state the review and comment period will be forty five (45) days from the date of the letter. A sample of the letter is attached in this section.

Step 2: At the end on the forty five (45) days all comments received will be complied by the Lead Reviewer.

Step 3: The Lead reviewer will reconvene the “Review Team” to discuss and generated final recommendations.

Step 4: The recommendations from the Review Team will be submitted to the Chief Engineer for review and approval. If the Chief Engineer disapproves the recommendations the Review Team will be notified and requested to come up with alternative recommendations.

Step 5: Once the Chief Engineer approves the Review Teams recommendations the Lead reviewer will update the “Developers Guide Book” and post the change on the GWA website.

Sample Letter for Specification Change Request

(Company/Entity Letterhead with mailing address)

Date:

Martin Roush, P.E.
GWA Chief Engineer
587 North Marine Corps. Drive
Tumon, Guam 96931

Subject: Request for Revision to
GWA Standard (Water or Wastewater) Specification
(Specify exact Chapter/Section/paragraph)

Greetings Mr Roush,

Upon review of the above noted GWA standard specification, this letter requests for a revision to the said specification for the following reasons:

1) The specification in question does not meet current AWWA C651requirements (sample of general reason)
2) …

This letter specifically request that the following sentence(s):

(type out complete sentence found in the Chapter/Section/paragraph)

be revised to read

(type out complete revised sentence)

Your review and consideration of this request to revise a GWA Standard Specification is greatly appreciated. I look forward to receiving notification of action from GWA.

Regards,

(Name)
(Title)

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Subdivision Map Review Rules

Map Requirements for Subdivisions

The following are general requirements that developers shall consider:

A. Plan appropriately for future developments of neighboring properties that would facilitate looping of water lines.
B. Minimum Right-of-Way width shall be 20'.
C. Minimum size of waterline shall be 6" diameter.
D. Installation of fire hydrants meeting appropriate fire code.
E. Provide valve system to allow for operational flexibility.
F. Minimum size of sewer line shall be 8" diameter. The engineering calculations shall indicate that the 8" diameter sewer line can accommodate future development where appropriate.
G. Sewage pumps stations and decentralized systems shall meet GWA standards.
H. Design drawings shall be submitted for GWA engineering review at the 30% and 60% design level.
I. The design shall consider right-of-way or utility easement access as it relates to adjacent developments.
J. Any and all existing utilities requiring relocation shall be shown on the design drawings and shall be at the expense of the developer.
K. The design drawings shall indicate all water and sewer (if applicable) service laterals.

Pertinent Rules applicable to Subdivisions

A. GWA Rules and Regulations:
   - § 2102. Rues II Definitions
   - § 2118. Main Extensions, paragraph (f)

B. 21 GCA Chapter 60 Land Management, Article 3 Land Records
   - § 60314 Documents Violable and Not to be Recorded

C. 21 GCA Chapter 62 Subdivision Law, Article 4: Requirements for Plans and Maps.
   - § 62401 Form of Tentative Plans
   - § 62402 Forms of Final Plans

(The following are excerpts from)

21 GCA Chapter 60 – Land Management
Article 3 – Land Records

§ 60314. Documents Voidable and Not to be Recorded.

The Legislature finds that all buyers and transferees of real property should be aware of the availability of water and power on the land they buy or obtain at the time they purchase or obtain it. Therefore:

(a) No document transferring an interest in real property, except for leases of less than one (1) year, shall be recorded until the transferee has signed and acknowledged a statement, which should be included in the document, indicating that the transferee is aware of the availability or non-availability of power and water on the transferred property. The statement shall be in substantially this form:

AS TO WATER:
WATER IS IMMEDIATELY AVAILABLE ON THE PROPERTY OR WITHIN 100 FEET OF THE PROPERTY.

or

WATER IS NOT AVAILABLE ON THE PROPERTY. THE BUYER (TRANSFEREE) UNDERSTANDS THAT HE WILL HAVE TO PAY FOR WATER HOOKUP AT HIS SOLE EXPENSE. THE GOVERNMENT IS NOT REQUIRED TO PAY FOR THE WATER HOOKUP. WATER IS NOT AVAILABLE ON THE PROPERTY. THE SELLER (TRANSFEROR) HAS PROMISED TO MAKE WATER AVAIL ABLE WITHIN ONE YEAR OR LESS. IF THE SELLER (TRANSFEROR) FAILS TO DO SO, THE BUYER (TRANSFEREE) UNDERSTANDS THAT THE GOVERNMENT IS NOT REQUIRED TO PAY FOR WATER HOOKUP.

AS TO POWER:
POWER (ELECTRICITY) IS IMMEDIATELY AVAILABLE ON THE PROPERTY OR WITHIN 100 FEET OF THE PROPERTY.

or

POWER (ELECTRICITY) IS NOT AVAILABLE ON THE PROPERTY. THE BUYER (TRANSFEREE) UNDERSTANDS THAT HE WILL HAVE TO PAY FOR ELECTRICITY HOOKUP AT HIS SOLE EXPENSE. THE GOVERNMENT IS NOT REQUIRED TO PAY FOR THE HOOKUP.

or

POWER (ELECTRICITY) IS NOT AVAILABLE ON THE PROPERTY. THE SELLER (TRANSFEROR) HAS PROMISED TO MAKE ELECTRICITY AVAILABLE ITHIN ONE YEAR OR LESS. IF THE SELLER (TRANSFEROR) FAILS TO DO SO THE BUYER (TRANSFEREE) UNDERSTANDS THAT THE GOVERNMENT IS NOT REQUIRED TO PAY FOR POWER (ELECTRICITY) HOOKUP.

(b) In a document transferring an interest in real property except for a lease for less than one (1) year, there is an implied warranty made by the transferor as to the accuracy and correctness of any statement to the effect that water or power or sewer

are available on the property or within one hundred (100) feet of the property; and the transferor has impliedly warranted to the transferee that the named utilities are immediately available as of the date of signing the document. Breach of such warranty, whether intentional or unintentional, shall be enforceable in law or in equity in the same manner as any other warranty, and the transferee may also recover costs and reasonable attorney's fees for breach of such implied warranty.

(c) If there is no disclosure made by the transferor as to the availability or lack of availability of water or power in a document transferring an interest in real property, except for a lease of less than one (1) year, a deed of gift or quitclaim deed given for no consideration, court decrees, tax deeds, marshall's deeds and deeds of administrators or executors of estates, there is an implied warranty made by the transferor to the effect that the utility whose availability is not disclosed is available on the property or within one hundred (100) feet of the property; and the transferor has impliedly warranted to the transferee that the omitted utilities are immediately available as of the date of signing the document. Breach of such warranty, whether intentional or unintentional, shall be enforce able in law or in equity in the same manner as any other warranty, and the transferee may also recover costs and reasonable attorney's fees for breach of such implied warranty.

(d) Power and water shall be considered immediately available on the property or within one hundred (100) feet of the property at the time the document is signed if utility hookups can be applied for at the office of the utility and can be made within ninety (90) days of the application with a hookup of not more than one hundred (100) feet from the property line. Power and water shall be considered not available on the property if hookups are not immediately available, if the distance to the hookup from the border of the property is more than one hundred (100) feet, or although applied for at the office of the utility, the hookup cannot be made within ninety (90) days of the application.

(e) If any document transferring an interest in real property, except for a lease of less than one (1) year, fails to contain such statement as to water and power as is indicated in Subsection (a) of this Section, the document shall be voidable and the transaction may be rescinded at the sole option of the transferee or his successor for a period to ten (10) years from the date of the transaction if water or power is not available on the property or within one hundred (100) feet of the property. Failure to include such a statement shall not preclude recording if the transferee or successor records an acknowledged statement stating that under no circumstances will the government of Guam be in anyway responsible for paying for any required power or water hookups, power line extensions, or waterline extensions.

(f) If the transferor agrees to make water or power or sewer available to the property, such shall be stated in the document transferring an interest in the property, and such hookup shall be made available to the property by the transferor within one (1) year or such lesser time as may be agreed upon between transferor and transferee. Failure to make power or water or sewer available to the property within one (1) year or such lesser time as agreed upon will result in the transferee being allowed, at his option, to:

(1) rescind the transaction and recover all money paid, reasonable interest, and reasonable costs and attorney's fees; or
(2) recover from the transferor all amounts required to make the promised utilities available on the property, plus all related costs and reasonable attorney's fees. Failure to put the promise to make a utility available in the document transferring an interest in the property shall not be a defense raised by the transferor.

(g) This Section shall not apply to applicable transfer documents recorded before the effective date of this Act and no implied warranties contained in this Section shall attach to any document signed before the effective date of this Act. This Section shall not apply, for a period of ninety (90) days, to applicable transfer documents which were signed and not recorded before the effective date of this Act. Thereafter, applicable transfer documents signed before the effective date of this Act may be recorded if the transferee executes and records an acknowledged statement as indicated in Subsection (e) of this Section.

(h) None of the provisions of this Section shall be waived by the parties or by the government of Guam including the Guam Power Authority.

(i) The disclosures contained in this Section should be placed at the end of the applicable document, immediately before the signature lines of the parties, unless the Department of Land Management designates some other place on the document by rule or regulation, however placement of the required disclosures at some other place in the instrument shall not void the effect of the disclosures.

(j) Prior to the transferee signing any contract of sale or other document evidencing an obligation to buy an interest in land, any subdivider, except for a parental subdivision or a subdivision of fifteen (15) or fewer lots, must provide a transferee of land in the subdivision with an accurate written estimated cost of hooking up to power and water if such are not immediately available within one hundred (100) feet of border of the property and are not to be provided within one (1) year or less to the property by the subdivider. Each buyer must acknowledge receipt of the estimate in writing. Failure to provide such estimate shall allow the transferee to rescind the transaction or to recover from the subdivider or from any real estate broker, title insurance company or escrow company involved in the transaction, the cost of hooking up the utility concerned, plus reasonable cost and attorney's fees. This Subsection (j) does not apply to parental subdivision or subdivision of fifteen (15) or fewer lots.

(k) All provisions of this Section as to breach of implied warranty or express agreements to provide a utility may be enforced by the transferee, his successors in interest or through the Attorney General's Office by the government of Guam. SOURCE: GC '13124 added by P.L. 18-40:14; subsection (j) amended by P.L. 19-14:32.

REQUIREMENTS FOR PLANS AND MAPS

§ 62401. Form of Tentative Plans.

Tentative plans will include six (6) copies of a subdivision map, two (2) copies of a statement of intent by subdivider, and two (2) copies of subdivision improvement plans.

(a) The subdivider shall cause the tentative subdivision map to be prepared by an engineer or surveyor. The map shall be clearly and legibly drawn on one or more sheets having dimensions of twenty-two inches (22”) by twenty-nine inches (29”). The scale of the map shall be as prescribed by the Commission and the map shall generally include:

(1) The tract number as issued by the Territorial Planner.
(2) The name and address of the owner or owners of record, of the subdivider and of the person preparing the map.
(3) Date, north arrow and scale.
(4) A key map locating the subdivision in relation to surrounding areas.
(5) The exact length and bearing of the exterior boundaries of the subdivision which data shall be referenced to the Guam Geodetic Triangulation Control Net or such alternative system of triangulation control as the Territorial Surveyor may direct.
(6) The accurate placement and outline of structures existing of the site.
(7) The location, names, and existing widths of adjacent street rights of way.
(8) The location and dimensions of all known existing easements and reservations.
(9) The location of existing utilities, sewers, drainage ditches and other drainage facilities located in, or adjacent to, the proposed subdivision.
(10) The lot numbers and lines of all adjacent parcels of land.
(11) The location, width and direction of flow of all water courses within the subdivision area.
(12) Topography with contour intervals of two feet (2') where the grounds slope is five percent (5%) or less or contour intervals of five feet (5') where the ground slope is more than five percent (5%).
(13) The location and widths of all existing or proposed streets in the subdivision.
(14) The approximate lot layout and approximate lot dimensions of each lot.
(15) Areas intended to be reserved for public use.

(b) The statement of the subdivider shall include a resume of the improvements proposed to be made in the subdivision, the existing zone district or districts applicable to the property, proposed use or uses of the subdivision lots and, in the absence of zoning, the proposed setback requirements for individual property development.

(c) Subdivision improvement plans shall include:
(1) Street construction plans including, but not limited to, planned grading, street centerline gradients and typical road cross-sections specifying material and depths.
(2) Water and sewer line plans showing pipe sizes, routing, gradients, pressure regulation and point of origin.
(3) A drainage plan showing methods and facilities for collection and disposal of storm waters. The storm drainage disposal area or channel must have a demonstrated ability to accept additional water in view of capacity of area or channel and of capacity of existing improvements confining the channel.

The tentative plan shall be prepared in sufficient detail for analysis by the Commission as to sufficiency and most suitable location. The

Commission may require the submission of detailed construction drawings as subdivision work is initiated to permit detailed analysis of construction conformity to law and the rules and regulations of the Commission, and to facilitate improvement inspections.
SOURCE: GC §18300.

§ 62402. Form of Final Plans.
The final plan submitted for approval shall include a map of the subdivision and a final survey of improvements as installed.

(a) The map of the subdivision shall be prepared by an engineer or surveyor in accordance with the following:
(1) The final map shall be clearly and legibly drawn in opaque black ink on good quality tracing paper or cloth acceptable to the Territorial Planner. Signatures shall be in opaque black ink. The size of the each sheet shall be twenty-two by twenty-nine inches (22” x 29”). A marginal line shall be drawn completely around each sheet, leaving an entirely blank margin of one inch (1”). The scale of the map shall be as prescribed by the Commission and shall show all details clearly, with enough sheets used to accomplish this purpose. The map shall be so made and shall be in such condition when filed that good, legible prints can be made therefrom.
(2) The map shall contain the tract number in letters no less than one-half inch (1/2”) in height, north directional point, map scale, and date of final survey.
(3) The map shall show all survey and mathematical information and data necessary to locate all monuments, and to locate and retrace any and all interior and exterior boundary lines appearing thereon including bearings and distances of straight lines, radii, arc and tangent lengths of all curves. The final map shall particularly define, designate and delineate all road and alley rights-of-way and easements and other parcels offered for dedication for public use.
(4) The following certificates shall be placed on the first sheet of the map in a form prescribed by the Commission:

(A) Dedication of streets, easements and other parcels of land intended for public use by the owner.
(B) Acknowledgment of dedication for certification by a Notary Public.
(C) Acceptance of dedication to be signed by the Governor.

(D) Certification by the surveyor making the map (record plat) that the map is correct and accurate and that the monuments described thereon have been so located.
(E) Limited access dedication where a nonaccess reservation is used to restrict access. The map shall be lettered Avehicular access rights dedicated to the government of Guam@ along the thoroughfare adjacent to the lots affected.
(F) Endorsement of Territorial Surveyor.
(G) Approval by the Commission.
(H) Certificate of recordation.

In addition, the map shall be accompanied by statements concerning any proposed deed restrictions or covenants.

(b) As part of the final plan, the subdivider shall submit a copy of an as-built drawing shall show, but not be limited to a showing of, the precise placement, sizing and characteristics of water lines, drainage measures, streets, street curbs and similar constructed utilities. The as-built drawing shall be to specifications satisfactory to the Commission.

(c) Acceptance of Dedication to be Signed by the Governor. The Governor shall not withhold acceptance of the dedication of any right-of-way in any agricultural subdivision provided the subdivision shall have had *de facto* existence at the time of this Law and the right-of-way is at least twenty (20) feet wide; provided, however, that the owners of the properties within said subdivision shall organize themselves for the creation of improvement districts for the construction, or reconstruction, of needed public facilities in accordance with the provisions of the Improvement District Law (Chapter 69 of this Title), as amended; and provided further that the acceptance of the dedication herein authorized shall become effective only after the Governor of Guam shall have given his approval of the final report by Executive Order as required § 69122 of the this Title 21 GCA.

SOURCE: GC 18301. Subdivision (c) added by P.L. 13-68, enacted July 26, 1976.

ARTICLE 5

21 GCA REAL PROPERTY
CH. 62 SUBDIVISION LAW

IMPROVEMENTS

§ 62501. Required Improvements.
The subdivider shall provide the following improvements and improvement areas within time limits specified by the Commission:

(a) Streets, Alleys and Sidewalks - Urban areas. Where general plans have been or are hereafter duly adopted and show an area as planned for development into urban use, the following street, alley and sidewalk improvements shall be required:

All streets and alleys within the subdivision shall be graded and drained the full width of the right-of-way. The roadbed portion of the right-of- way shall be improved with a stabilized coral base and surfaced with light bituminous surface treatment having a minimum width of twenty-two feet (22'). The roadway centerline gradient and right of way cross-section including drainage ditches, traveled roadway design and paving and shoulders shall be in conformity to criteria established by the Commission.

Permanent sidewalks having a minimum width of four feet (4') shall be laid out for all streets and shall be dedicated to the government of Guam. The Commission shall establish criteria relating to width and construction of such sidewalks, and all such sidewalks shall be in conformity thereto.

(b) Streets and Alleys - Unplanned Areas. Where at the time of a subdivision a general plan has not been adopted or where the general plan designates the area as agricultural, the following street and alley improvements will be required:

All streets and alleys within the subdivision shall be graded and drained the full width of the right-of-way. The roadbed portion of the right-of-way shall be improved with a stabilized coral base. The roadway centerline gradient and right-of-way cross-section including drainage ditches, traveled roadway and shoulders shall be in conformity to criteria established by the Commission.

(c) Storm Water Drainage. Storm drainage facilities shall be provided in all subdivisions in accordance with plans prepared by the subdivider conforming to criteria established by the Commission. These facilities shall be designed to dispose of normal storm waters falling on the subdivision without hazard of flooding, inconvenience of ponding, and the erosion of public or private lands.

(d) Domestic Water. Potable domestic water shall be piped onto each lot within the subdivision. Water pipes shall be new and so sized to supply normal household pressures.

(e) Sanitary Sewage Disposal. When sanitary sewers are provided in a subdivision, they shall be in conformity to plans prepared by the subdivider satisfactory to the Commission. When sewers are placed within a subdivision, the minimum permissible lot size shall be as determined by the applied zoning district, or in the absence of zoning, shall be not less than seven thousand (7,000) square feet. In subdivisions where sanitary sewers are not provided, the minimum permissible lot size shall be determined by the slope and characteristics of the subdivision soil and subsoil but in no event shall be less than is established by the applied zoning district, or in the absence of zoning, seven thousand (7,000) square feet. Determination of lot size shall be made on the basis of soil percolation tests made in conformity to standards adopted by the Commission. Lot sizes, including area and minimum widths and depths shall be related to the ability of the subdivision lands to accept the anticipated septic tank

effluent whereby no sanitary problem will be created. The Commission shall establish criteria relating lot sizes and shapes to tested rates of seepage, and all lots created after the enactment of this Chapter shall conform thereto.

(f) Survey Monuments. Permanent concrete monuments shall be installed at all points of direction changed in the subdivision perimeter and in the exterior lines of blocks.

SOURCE: GC §18400 enacted 1952. Subsection (a) amended by P.L. 11-134.

§ 62502. Utilities Extensions - Planned Areas.

Where general plans have been duly adopted and show an area as planned for development into urban uses, the following development criteria will apply for subdivisions within the area so delineated:

(a) Road extensions. Where roads must be extended form existing roads in order to gain suitable access to a subdivision. The subdivider shall negotiate with the property owners involved and acquire rights-of-way to width and alignment approved by the Commission. The subdivider shall improve such access road or roads the same as he improves the interior subdivision roads.

(b) Power, water mains, and fire hydrants may be installed by the Public Utility Agency in accordance with 5 GCA '56111.

(c) The subdivider shall provide easements for all utility extensions to the satisfaction of the Commission, and acceptable to the Public Utility Agency.

SOURCE: GC §18401.

§ 62503. Utilities Extension - Unplanned Areas.

In areas where general plans have not been adopted but where water, electrical facilities and roads exist within or adjacent to a planned subdivision area, the criteria of § 62502 will be applicable. In unplanned areas where water service, electric service or public roads are not immediately available, the government shall not supply any utility or road extension to make the site suitable for development.

SOURCE: GC §18402.

§ 62504. Time Allowed for Completion of Improvements.

Upon approval of the tentative subdivision plan by the Commission, the subdivider shall complete within one (1) year all of the improvements required, except that the Commission, for good cause shown, may authorize an extension of time, not to exceed twelve (12) months, for such completion. Within such time, the subdivider must either:

(a) Complete the required improvements and, upon acceptance thereof by the government, file his final plans; or

(b) Furnish bond acceptable to the Commission for the completion of improvements, the bond to be in penal sum of one hundred fifteen percent (115%) of total work costs as verified by the Director of Public Works. On approval of the bond, the final plans may be filed.

SOURCE: GC §18403.

GUAM WATERWORKS AUTHORITY

Water Service Limitation Guidance

GUAM WATERWORKS AUTHORITY

WATER SERVICE LIMITATIONS GUIDANCE DOCUMENT

February 14, 2006

PURPOSE: Existing Guam Waterworks Authority (GWA) rules and regulations specify that a prospective consumer whose premises are within service limits established by GWA and where pressure conditions permit, may obtain water service, provided that GWA has a sufficient water supply developed for domestic use and for fire protection and can provide new or additional water service without detriment to those already served. This rule has not been uniformly enforced. Service has been provided to nearly all comers with little regard for the adequacy of the new service or the impact on existing customers. The result is a distribution network that is both difficult and inefficient for GWA to operate and maintain. GWA shall begin to implement and enforce existing service limitation rules in order to cease propagation of issues associated with indiscriminant approval of service connections.

The intent of this plant is to clarify and communicate GWA service limitations to the general public and to establish a plan for the implementation of existing rules addressing service limitations. The objective is to minimize the impact on consumers and simultaneously position GWA to be able to enforce rules that will facilitate continued improvements in overall service delivery.

This implementation plan is rooted in existing rules and regulations based on Guam Law. The plan does not intend to create or alter any existing rules and regulations. All existing rules and regulations remain in full force and effect.[1]

DEFINITIONS:

Developed Area shall mean an area in which water supply and sewer service is currently provided by GWA, whether the water service is from a *sufficient water supply* or not.

Functional Water Line shall mean a water line that can provide *Sufficient Water Supply*. A waterline capable of delivering only sufficient domestic water service may be considered functional provided that sufficient fire protection can be provided from an alternate water line within 400 feet, measured along an all weather road or one usable by the fire department, of the residential property line.

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[1] A few additional definitions (indicated by an asterix) are provided for clarity. The one double asterix indicates an existing rule that has been modified for clarity. The original definition appears to indicate that GWA has ownership of backflow prevention devices. Back flow prevention devices are required for all commercial and agricultural services and for other services deemed by GWA to be risk for a cross connection that might compromise the public water system. These devices are owned and maintained by the property owner and not GWA.

Main Extension shall mean the extension of water and/or sewer mains beyond existing facilities.

***Point of Delivery* is the point where customer facilities owned, leased, or under license connects its shut off valve to GWA's pipe at the outlet side of the meter box.

**Service Limit* is the established distance from an existing *sufficient water supply* to the customer property boundary within which GWA shall not deny service. When a customer is outside of the service limit, a main extension shall be required in order to provide service. The current service limit is 100 feet, or the width of the public right-of-way fronting the customer property, whichever is less.

Subdivider shall mean a person, or other legal entity, who causes land to be divided into two or more division of land for the purpose of sale, lease, rental, transfer of title to or interest in, and or all of such divisions and shall include resubdivisions.

Subdivision shall be approved by the Territorial Land Use Commission and shall mean improved or unimproved land divided or proposed to be divided into two or more division of land for the purpose of sale, lease, rental, transfer of title to or interest in, and or all off such divisions and shall include resubdivisions.

Subdivision Water System shall mean the water system, to and within any subdivision, including mains, valves, hydrants, laterals, pumps, tanks reservoirs, and all appurtenances necessary to provide water and fire protection for such subdivisions, and where necessary, sources of supply.

**Sufficient Water Supply* shall mean a water supply that can provide for both domestic water service and fire protection as follows:

- Domestic Water Service provided at a minimum 24-hour dynamic pressure of 30 psi.[2]
- Fire Protection of 1000 gpm with a residual pressure of 20 psi from a public fire hydrant located within 400 feet of the residential property line, measured along an all weather road or one usable by the fire department.[3] (A waterline must be a minimum of 6-inch diameter to provide for fire protection.)

**Transmission Line* shall mean a pipeline 12-inch or larger without services or fire hydrants connected to the pipeline that takes water from a source to a storage tank or from a storage tank to another storage tank and may be used to meet disinfection contact time.

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[2] GWA endeavors to deliver water at a pressure of 20 psi on the customer side of the meter. Since system pressure is normally measured in the distribution main, a higher pressure is necessary to account for pressure loss through the service line and meter.

[3] The Uniform Fire Code (UFC) has been adopted by the Fire Department as the reference code from which fire flow requirements for individual structures are determined. Per the UFC, the minimum required fire flow for residential areas is 1000 gpm. Fire flow requirements for individual buildings may be greater. While GWA's Service Regulations provide for fire flow requirements, the reference standards upon which these limitations are based are more than 30 years old. Given that the Guam Fire Department also mandates fire flows for individual structures and has authority over said requirements, the Guam Waterworks Authority has determined that it is in the best interest of the Authority and the People of Guam to utilize the fire flow standards set by the Guam Fire Department."

Undeveloped Area shall mean an area beyond the established *service limits* or an area or tract of land in which a distribution system has not been installed.

LIMITATIONS ON SERVICE

Adequacy of the Supply: In general, service will be denied if *sufficient water supply,* as defined above, cannot be provided by the existing distribution system except as follows:

- In *existing developments* without adequate fire protection provided that property owner obtains a written waiver of the fire flow requirements from the Guam Fire Department and from the insurance company providing homeowner insurance for the property, and;
- The new service will have no impact[4] on existing customers, or;
- The customer at his/her own expense agrees to upgrade the existing distribution system such that sufficient water supply can be provided, or;
- For structures for which building permits were approved by GWA prior to Jan 31, 2006.

In the past, exceptions have been made for customers willing to accept in writing the water service as available. This exception will no longer be made, except as otherwise provided in existing rules and regulations. No exceptions to these requirements will be made for new developments.

Adequate Wastewater Facilities: A residential water service connection will not provided in the absence of adequate wastewater treatment and disposal facilities. If an onsite wastewater system is proposed, it must be approved by Guam Environmental Protection Agency (GEPA) and supported by onsite soil or percolation tests demonstrating the suitability of the local soils for the proposed system.

Main Extensions:

- Main extensions shall have a pipe diameter of not less than six (6) inches and shall be designed to provide *sufficient water supply*. Main extensions of less than six (6) inches (including agricultural subdivisions) will not be accepted for operation and maintenance by GWA.
- Dead end service laterals smaller than six (6) inches may be approved for a fixed number of customers if there is no chance for future expansion provided that the line can provide sufficient domestic water supply and that fire protection is available from an alternate pipe within 400 feet, measured along an all weather road or one usable by the fire department, of the property line.

[4] A new service will be deemed to have no impact on existing customers if a 24-hour dynamic pressure test conducted by GWA, or approved contractor, indicates a minimum pressure in the distribution system of 35 psi or greater. This minimum requirement is slightly greater than described in the definition of *sufficient water supply* in order to account for the impact of the proposed connection on system dynamic pressures.

Point of Delivery Location: For residential services, the point of delivery is the outlet of the water meter. The point of delivery must be located adjacent to the customer property boundary. When this is not logistically feasible, a waiver may be granted with the recommendation of the chief engineer and the approval of the general manager.

Subdivisions: The *subdivider* is responsible for installation of a *subdivision water system*. GWA will not be responsible for *subdivision water system* installation if not provided by the *subdivider*. Provision of water service to unimproved subdivisions shall be subject to the service limitations described herein.

Transmission Lines: No service connections shall be made to transmission lines.

INSTALLATION OF WATER SERVICES

GWA does not maintain the in-house capacity to design and construct extensions to the water or wastewater system for new services and/or new developments, nor does GWA fund such improvements. The individual homeowner and/or developer are responsible for all costs associated with extensions to the system, whether it is a large development or an extension for a single home.

All water system improvements shall be designed by a Guam Registered Engineer and constructed by appropriately licensed and permitted contractors either by the applicant paying GWA to get the work done or by directly hiring a Guam Registered Engineer and licensed contractor for the work needed. Should the applicant hire registered engineers and licensed contractors, GWA must still approve the design and inspect the work to be sure it is done according to GWA design and construction standards. Work not approved and/or inspected is subject to being rejected for acceptance by GWA.

IMPLEMENTATION SCHEDULE

Effective Date: This implementation plan is effective as of January 31, 2006

Grace Period: A grace period until April 30, 2006 has been established during which time a waiver of service limitations may be granted with the recommendation of the Chief Engineer and the approval of the General Manager. A waiver will be considered if all of the following conditions can be met:

- The proposed connection is for a residential service connections in an existing development; and,
- The proposed connection will not cause the service pressure at existing services to drop below 20 psi; and,

- Denial of service will have a documented negative financial impact on the proposed customer. [5]

This grace period is intended to accommodate individual customers who have made investments in properties with a reasonable expectation of water service. Waivers will no longer be considered after the grace period.

Waiver's will not be considered for unimproved subdivisions or undeveloped areas. Individuals denied service in unimproved subdivisions are encouraged to check their deeds to determine what the subdivider was offering to do or was required to do when the subdivision was approved.

NOTES TO PROPOSED COSTUMERS AND DEVELOPERS

Inquiries to GWA: Prospective property owners are encouraged to inquire at GWA regarding the status of and/or potential for water service prior to purchasing real estate. It is the applicants responsibility to investigate and understand what water service limitations may exist for their properties or properties considered for purchase. GWA will not be responsible for any losses due to denied service.

Agriculture Subdivisions: Properties in unimproved agricultural subdivisions shall be held to the same residential water service limitations as all other areas when homes are being built. *Subdivision water systems* that cannot provide *sufficient water supply* will not be accepted by GWA for operation and maintenance. Water systems to agricultural subdivisions consisting of main extensions less than six (6) inches may be provided with a master meter located where the main extension enters the subdivision, provided that the subdivider or lot owner association shall be responsible for meter payments and for operation and maintenance of distribution lines beyond the meter. Water service for residential use shall not be provided in any case if adequate wastewater treatment and disposal facilities are not available.

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[5] Purchasing a lot with incorrect information about availability of water service from the seller will not necessarily be considered a negative impact unless the seller has a letter from GWA indicating the line fronting the property is adequate.

APPLICABLE PUBLIC LAWS AND RULES:

12GCA--Autonomous Agencies, CH. 14-Guam Waterworks Authority

21GCA-Real Property, CH. 62-Subdivision Law

28 GAR – Public Utilities, CH. 2 – GWA – 1997

Public Law 27-155 specifies that service may not be denied an applicant for water service if there is a "functional" water line within one hundred feet of the applicant's property boundary.

Recommended by: _____
Chief Engineer

Approved by: _____
General Manager

GUAM WATERWORKS AUTHORITY

Plan Review Checklist for Water and Wastewater

Common Issues for Wastewater Development Plan Review

☐ In general, sewer installation must comply with the Recommended Standards for Wastewater Facilities commonly referred to as the "Ten State Standards" and Guam regulations. When in doubt, or in unusual circumstances, consult with the Chief Engineer or Senior Engineer Supervisor, Wastewater

Specifications

☐ Sewer specifications MUST be included. Specifications must include
- Lamping, deflection and leakage testing in accordance with Sections 33.85 and 33.9 the Recommended Standards for Wastewater Facilities commonly referred to as the "Ten State Standards." Include allowable infiltration.
- Compaction requirements
- Piping specifications specific to the pipe being used. Minimum of SDR 35
- Concrete specifications
- Road paving specifications where applicable
- Type, size, strength, operating characteristics and rating of equipment
- Complete requirements for all mechanical and electrical equipment including machinery, valves, piping, pipe joints, electrical apparatus, wiring, instrumentation, meters
- Construction materials

Calculations

☐ See separate Calculation requirement sheet

Plans: General

☐ Plans should be clear and legible; easily delineate between existing and proposed; and without overlapping text and features. Plans that are not clear can be returned with the comment that they have not been reviewed, or may take considerably longer to review.

☐ Plans must include plan and profile drawings and all appropriate details

Gravity Sewer Design

☐ No gravity sewer after the government clean-out shall be less than 8 inches

☐ All sewers must have a velocity of at least 2 fps

☐ Bends and connections must have a manhole, and manholes must be located at least every 400 feet

☐ Ensure that sewer mains have adequate minimum slopes as defined in the Ten States Standards Chapter 30 paragraph 33.41 (page 30-2 in the 2004 edition).

☐ Ensure that laterals have at least a 2% slope in accordance with Guam regulations. Slopes must be calculated from the invert of the outlet from the house to the invert of the sanitary wye and elbow (NOT from the slab or "FFE" to the invert of the main")

☐ Sewer and water lines must have a minimum 10 foot horizontal separation. Where water and sewer mains cross, water lines must cross at least 18" above (vertical separation) sewer lines. Where these distances cannot be met, encasement may be approved on a case-by-case basis, but should be minimized

- ☐ All sewer lines must be at least three feet below grade, or reinforced with concrete (NOT the preferred option and may not to be used merely to reduce construction costs).
- ☐ Gravity sewers shall be designed with a maximum flow depth of pipe 2/3 full.
- ☐ No sewer line shall connect to a manhole at less than a 90 degree angle to the direction of flow.
- ☐ Connections to mains shall use saddle-type connectors or wye-connectors; no direct pipe to pipe is permitted. Connections to mains greater than 18" must use a manhole.
- ☐ Smaller lines connecting to larger lines shall be invert of smaller pipe to design flow line (60%) of the receiving line rather than invert to invert.
- ☐ Profile provided for all gravity sewer lines.

Manholes
- ☐ Pipe to manhole connections must use flexible connectors such as Kor-N-Seal or approved equal (A-Lock 2000 is an approved equal).
- ☐ Manhole sections must be joined using a bitumastic sealant such as Ramneck or approved equal.
- ☐ Manholes less than 6 feet from the top of the cover frame to the invert of the outlet must be "shallow manhole" type with a flat, reinforced concrete top.
- ☐ Drops must be used where the new pipe invert enters 24" or more above the invert of the existing pipe.
- ☐ If drop type manholes are used, drops must be on the outside, have wye bends and be concrete encased. Benches must be sloped no less than ½ inch per foot (4%). No lateral sewer, service connection or drop manhole pipe can discharge onto the surface of the bench.
- ☐ Minimum MH diameter 48", minimum cover diameter 30"

Clean-outs
- ☐ Clean-outs shall be a minimum of 6", or 4" if a rubber reducer with stainless steel straps is used prior to the wye bend, which is a minimum of 6".
- ☐ Clean-outs shall be cast iron
- ☐ Clean-outs under pavement shall have details for concrete reinforcing.
- ☐ The concrete collar shall be 12"x12"x6".

Off-Site
- ☐ Verify the adequacy of downstream sewers. Ensure that comments note that any necessary extensions or upgrades are the responsibly of the developer. If there is any question regarding downstream capacity, inform developer that they must complete an engineering investigation to ensure adequate capacity.
- ☐ Under no circumstances allow any developer to tie into any sewer in Tumon, Nimitz Hill, Piti or Tamuning without discussing with the Chief Engineer or Supervising Wastewater Engineer

Pump Stations
- ☐ All pump or lift stations must have a terminating gravity manhole prior to connection to the GWA sewer
- ☐ Pump stations shall comply with the design requirements of the Ten State Standards
- ☐ In most cases pump station design must be approved by the Chief Engineer or Supervising Wastewater Engineer
- ☐ Design must include a system curve and manufacture's pump curve. Pump curve shall be appropriate for system curve.
- ☐ No force main shall be less than 4 inches

Grease Traps

- ☐ Any plan with a commercial/industrial facility with a restaurant or cafeteria (or the potential for one) must include a grease interceptor
- ☐ Details and Sizing criteria must be included
- ☐ Internal under-sink interceptors are not acceptable
- ☐ Sizing criteria must follow USEPA or UPC guidelines
- ☐ Sizing criteria may NOT follow manufacturer's guidelines

Common Issues for Water System/Development Plan Review

☐ In general, water installation must comply with the Hawaii Water System Standards, Ten State Standards and Guam regulations. When in doubt, or in unusual circumstances, consult with the Chief Engineer or Senior Engineer Supervisor, Water

Specifications

☐ Water specifications MUST be included with plans. Specifications must include:
- Cleaning and Disinfection procedures per AWWA standards
- Compaction requirements
- Pipe specifications
- Concrete specifications (if part of the design)
- Road paving specifications where applicable
- Type, size, strength, operating characteristics and rating of equipment
- Complete requirements for all mechanical and electrical equipment including machinery, valves, piping, pipe joints, electrical apparatus, wiring, instrumentation, meters
- Construction materials

Calculations

☐ Ensue calculations include demand factors for Maximum Daily Demand and Peak Hour.

Plans: General

☐ Plans should be clear and legible; easily delineate between existing and proposed; and without overlapping text and features. Plans that are not clear can be returned with the comment that they have not been reviewed, or may take considerably longer to review.

☐ Plans must include plan and profile drawings and all appropriate details.

General Water Design Requirements

☐ Sewer and water lines must have a minimum 10 foot horizontal separation. Where water and sewer mains cross, water lines must cross at least 18” above (vertical separation) sewer lines. Where these distances cannot be met, encasement may be approved on a case-by-case basis, but should be minimized

☐ We should consider what impacts the development may have on the domestic water service available by GWA. If the new development for example is large, the infrastructure being connected to should be adequate to feed the new development and not impact existing customers.

Protection of the Water System

☐ Back flow preventors shall be set above finish grade by a minimum of 18”. Back flow preventor shall not be placed in a location subject to flooding.

☐ Review the type of back flow preventor being call out either in the drawing or specification. Reduced Pressure Zone Backflow Preventor is what we want to see used however the type of back flow preventor should fit the required use.

In-line appurtenances

- ☐ Blow-off valves shall be placed the lowest elevation point of a waterline, particularly at troughs or where the end of the waterline is t the lowest elevation.
- ☐ Air relief/release valves shall be placed the highest elevation point of a waterline, particularly at crest or where the end of the waterline is at the highest elevation.

Water Meters

- ☐ Water meters larger that 2-inches shall be placed in concrete vaults/box. Concrete vault/box shall provide a minimum of 12 inches of space between the inside of the concrete wall and the furthest extruding appendix of the meter.

Fire Protection Systems

- ☐ Fire hydrants shall have break away bolts or break away spools along the vertical stem of hydrant.
- ☐ Dedicated fire line shall have a detector check valve with by-pass and meter.

Trench work for water mains/laterals

- ☐ Bedding sand on sides of pipe shall be a minimum of 6". Thickness of bedding sand below the pipe shall be a minimum of 10".
- ☐ All PVC pipes installed shall have a tracer/toner wire running along the top of the pipe in additional to the warning tape.
- ☐ Water mains/laterals shall have a minimum cover of 3 feet.

Thrust Blocks

- ☐ Thrust blocks shall be called out in plan along critical bends, tee, ends, etc. with reference detail provided.

Connection to water main/lateral

- ☐ New connections to existing ACP shall be with transition couplings, tee and spools.
- ☐ Domestic water connections shall have a minimum spacing of 5 feet between each other. This would occur for example in new subdivision plan where 2 inch diameter service laterals are tapped to the main to feed homes on both sides of the street.

GUAM WATERWORKS AUTHORITY

Internal Standard Operating Procedures

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 01 Consultants Responsibilities**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

New Area Development Review Section reviews all water and wastewater projects including development plans and improvement plans. This includes all private construction, commercial construction, government projects, and residential projects on the island of Guam. This is accomplished by utilizing the both In-House Review and Development Review Consultants.

All reviews by the GWA's Development Review Consultants must be under the direction of a Professional Engineer.

Improvement Plans are reviewed in accordance with the Plan Review Checklist. It is the responsibility of the Development Review Consultants to review Improvement plans with respect to the approved Guam Land Use Commission (GLUC) submissions and any applicable planning documents.

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 02 GWA's Responsibilities**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

New Area Development Review Section reviews all water and wastewater projects including development plans and improvement plans. New Area Development Review Section also reviews all Guam Land Use Commission (GLUC) submissions, Application Review Committee (ARC) submissions, and the Guam State Clearing House (GSCH) request. This includes all residential projects, commercial construction, and government projects on the island of Guam. This is accomplished by utilizing the both In-House Review and Development Review Consultants.

The general responsibilities of the GWA staff are listed below but are not limited to this SOP:

- NAD Associate Engineer is responsibilities are to receive, file, distribute, and organize all incoming plans, submissions, and request. Additionally responsibilities are to respond to inquiries of plans, submissions, and request status, respond to request for forms and check list, and answer any questions customers have.
- Plan Review Project Manager is the "In-House Plan Review" employee assigned to review the project.
- GWA's Engineer Supervisor primary responsibilities are to review all NAD improvement plans and provide comment. Additionally provide draft responses to the GLUC submissions, ARC submissions, and GSCH request.
- GWA's Chief Engineer will sign all improvement plans and letters and submissions to the GLUC. Additionally sign responses to the GLUC submissions, ARC submissions, and GSCH request.

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 03 Communications and Review Time**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

Any and all new inquiries with regards to New Development Review external to the Department shall be directed to the GWA's Engineering Supervisor. Once a new project file has been assigned to the GWA's Development Review Consultant all standard communication between the Developer Engineer and the GWA Engineer will be the responsibility of the GWA's Development Review Consultant.

Any and all meetings with the GWA Engineer shall be scheduled through the GWA's Associate Engineering. A pre-submittal meeting may be required between the Developer Engineer and the GWA Engineering Supervisor.

The GWA Engineering Supervisor shall be invited to any and all meetings the Development Review Consultant has with the Developer Engineer. Failure to do so will result in non payment for the time spent at the meeting. Any and all correspondence the Development Review Consultant has with respect to the review of projects must be copied to the GWA Engineering Supervisor. This includes correspondence with any other GWA departments.

It is the responsibility of the Development Review Consultant to provide monthly summaries of the status of projects. It is also required that the Development Review Consultant make weekly meetings with the GWA Engineering Supervisor if requested.

It is the responsibility of both the GWA's Development Review Consultant and the GWA's Associate Engineering to keep and maintain an accurate log of all submittals and correspondence with the Developer Engineer. This log should include at a minimum the name of the project, the contact for the project, the date material is received, and the date of distribution or date of comments. It is the responsibility of the GWA's Associate Engineering to provide electronic files of any logs or reports upon request.

The review time for first submittal should be within ten (10) working days. The second submittal should be reviewed within five (5) working days.

Attachment: Example Logs

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 04 New Project Form and Comment Letter**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

It is the responsibility of the GWA's Associate Engineering to prepare a New Project Form. The intent of this SOP is that the GWA Engineering Supervisor will assign the Development Review duties to a consultant or "In-House Plan Review." A new project is defined as the first submittal of a Improvement Plan. The GWA's Development Review Engineer will not review any new project unless it has been assigned via the New Project Form. The form must include the following: project name, project type, the firm name, the engineer of record, the firm phone number, and the firm address. No deviation from the attached form will be accepted. It is the responsibility of the GWA's Development Review Consultant to provide a draft comment letter for all improvement plans, and related reports to the GWA's Associate Engineering. The letter is to be sent via e-mail with the original letter mailed. It is the responsibility of the GWA's Associate Engineering to meet with the GWA's Engineering Supervisor to combine comments, and provide a memo/letter to be signed by the GWA's Engineering Supervisor. After a signature has been obtained on improvement plans the GWA's Associate Engineering will send the letter to the Developer Engineer.

Attachment: New Project Form

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 05 New Project File**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

It is the responsibility of the NAD Associate Engineer to update the Master Development Map for all new plan submittals. This should be done at the time of the creation of the New Project File to comply with the Master Development Map.

It is the responsibility of the NAD Associate Engineer to create a New Project File for all new plan submittals. The New Project File shall be submitted with the New Project Form to the City Engineer within two working days. The New Project File will include the following:

- Approximate to scale location map
- Completed New Project Form
- Master Development Review Map
- Water System Map
- Water Model nodes and Pipes
- Wastewater System Map
- Wastewater Model nodes and Pipes

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 06 Improvement & Development Plans**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

Improvement Plans are offsite plans where development plans are on site. Development Plans can include Improvement Plans.

It shall be the sole responsibility of the GWA's Chief Engineering to oversee all Improvement Plans and Development Plans on the Island. It shall be the responsibility of the GWA's Employees and the GWA's Development Review Consultants to follow the established standards and procedures for Sewer Improvement Plans, Water Improvement Plans and related easements and right-of-way.

If a third review is required the GWA's Associate Engineering will notify the GWA's Engineering Supervisor via e-mail and schedule a meeting with the owner/developer and the developer's engineer.

It is the responsibility of GWA's Associate Engineering to keep a log of all Improvement Plans. The attached sample log should be used for all Improvement Plans. The following also apply:

- Logs are to be submitted on Microsoft Word table format.
- Each submittal should be logged.
- Date should be in the 01/01/01 format.
- Number of days means number of days it took for the GWA to review the plans, or date from the date submitted to the date of comment.
- Project name should be highlighted. Approved should be highlighted.
- The reviewer is the reviewer hired by the City.
- This list must be updated every Friday.
- The line fonts must separate the projects.
- Verify GGN93 (Grid System) No Deviation from the attached sample will be accepted.

Attachment: Sample Improvement Plan Log

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 07 Guam Land Use Commission (GLUC) Submissions**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

It shall be the responsibility of the GWA's Employees to follow procedures for Guam Land Use Commission (GLUC) submissions, Application Review Committee (ARC) submissions, and the Guam State Clearing House (GSCH) request.

It is the responsibility of the GWA's Associate Engineer to prepare the GLUC submission Log which includes all Guam Land Use Commission (GLUC) submissions, Application Review Committee (ARC) submissions, and the Guam State Clearing House (GSCH):

- Logs are to be submitted on Microsoft Word table format.
- All submittal are to be logged.
- Date should be in the 01/01/01 format.
- Number of days is the days for the GWA to review the plans, or the date plans are submitted to the date of comments. * Project name is to be highlighted.
- Approvals are to be highlighted.
- This list must be updated on the last day of each week.
- The line fonts must separate the projects.
- Verify GGN93 (Grid System) No Deviation from the attached sample will be accepted.

Attachment: Sample GLUC Submission Log

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 08 Monthly Report**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

It is the responsibility of the NAD Associate Engineer to create a monthly report and summit it to the GWA's Engineer Supervisor by the 20th of the following month. This report shall include the Log Summaries and Monthly Update. All Log Summaries shall contain Active GLUC Submission and Active Improvement Plans. Summary is also to include approved plans, current submittal status with corresponding dates of the approvals and reviews. Summary sheet will only contain most current submittals of plans and will exclude older ones.

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 09 Generation of Fees**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

The GWA's Development Review Consultant or "In-House Plan Review" will submit a draft fee calculation letter via e-mail to the NAD Associate Engineer with a follow-up by mail. It is the responsibility of the NAD Associate Engineer to combine fee letters and provide a letter for review and signature by the GWA's Engineer Supervisor. After a signature has been obtained, the NAD Associate Engineer will send the letter to the Developer Engineer. The fee letters must be generated within two weeks after the approval of the plans. It is the responsibility of the NAD Associate Engineer to notify the GWA's Development Review Consultant within 48 hours that plans have been approved.

It is the responsibility of the NAD Associate Engineer to track these fee review letters and have them ready for review.

Standard Operating Procedures (SOP)
New Area Development (NAD)

Subject: **NAD SOP 10 Filing System**

Martin Roush, P.E.	Thomas Cruz, P.E.	Date
Chief Engineer	Engineering Supervisor	Approved

It is the responsibility of the NAD Associate Engineer in the Development Review Division to prepare and maintain and keep consistent master files for all development projects on the Island.

Each master file for plats should contain the following files in separate folders:

- GLUC Submission & Correspondence
- Improvement Plan & Correspondence

The timely update of these files, reports and maps is essential to Development Review; therefore, all documents must be filed within two (2) working days.

Standard Forms

GUAM WATERWORKS AUTHORITY

Development Review
New Project Form

Date Submitted: _____

Project Name: _____

Project Type: _____

Firm Name: _____

Engineer of Record: _____

Telephone Number: _____ Fax: _____

Firm Address: _____

_____ _____
Engineering Aide: Date:
GWA

☐ GWA – Employee assigned to: _____

☐ (Name of GWA approved engineering Firm)

☐ (Name of GWA approved engineering Firm)

☐ (Name of GWA approved engineering Firm)

☐ Other _____

_____ _____
GWA Chief Engineer Date

(DGB Form 1)

GUAM WATERWORKS AUTHORITY

DEVELOPMENT/PROJECT REVIEW LOG

SUBMITTED BY/CONTACT NO.	Bldg Permit No.	PROJECT NAME	PROJECT LOCATION	DATE REC'D	Routed to Engineer	ITEMS SUBMITTED FOR REVIEW	STATUS OF PROJECT	DATE RETURNED

(DGB Form 2)

GUAM WATERWORKS AUTHORITY

Guam Land Use Commission Submission Log

ARC#	Type of Application	Lot Description	Municipality	Representative/Owner	Contact Information	Decription	Start Date	Position Statement Due Date	Statements	Remarks

(DGB Form 3)