


3rd Guam Affordable Housing Symposium

INFRASTRUCTURE & UTILITIES

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Utilities Existing Conditions, Impediments, Barriers, Constraints

- Provide an overview of Guam's current state
- Team Chartered to track and provide recommendations

Current State of Utilities - Power

- All energy production by Guam Power Authority
- Excess production capacity (550MW vs 280MW load)
- Transmission and Distribution system adequate
- GPA postured to meet growth
- Reliability Improvement projects in progress
- Power Quality improvements in progress
- Fuel Diversification /Alternative energy being pursued
- 3,0000 new affordable homes require about 5MW

Current State of Utilities - Water

- Aquifer and surface water sources substantial
- GWA Supplies Civilian Community (40mgd)
- NavFac Supplies Military Bases
- GWA Purchases about 3.5mgd from NavFac
- GWA and NavFac systems inter- connected in central and southern Guam; not in northern part
- GWA meets demand, but inadequate reserve capacity
- Substantial Capital Investments required
- High unaccounted for water
- 3,000 new affordable homes require about 1mgd

Current State of Utilities - Wastewater

- Northern treatment plant near 6mgd capacity and non-compliant with USEPA permit –major constraint
- Hagatna treatment plant has adequate capacity but non-compliant with USEPA permit
- Agat / Santa Rita Treatment plant is non compliant and beyond permitted capacity
- GWA treats all civilian wastewater, AAFB, Finegayan
- Collection systems improved, but more work needed
- Plans underway for substantial investments to achieve compliance at all treatment plants.
- Stipulated Order triggering upgrades for compliance
- 3,000 new affordable homes generate 0.9 mgd waste

Current State of Utilities – Solid Waste

- Receives Civilian Community solid waste
- Under Federal Receivership
- Closure of existing Ordot Dump Ordered
- Court Ordered New Layon Landfill nearing completion – adequate capacity
- Challenges ahead, but steadily improving



Infrastructure Recommendations, Alternatives, Options (Afternoon Session)

- Team Chartered to track and provide recommendations
- Initiatives planned and underway

Civilian Military Coordination Council

- Utility Working Group – Oversee Capacity of Power, Water, Wastewater and Solid Waste
- Membership:
 - Guam Waterworks Authority
 - NAVFAC
 - Guam Power Authority
 - Guam Housing and Urban Renewal Agency
 - Guam Environmental Protection Agency
 - GBB – Municipal Solid Waste Receiver
 - US Environmental Protection Agency

Proposed Metrics

Power/ (similar for Water)			
Category	Metric	Trigger	
Generation	Production Reports	Capacity and required reserve	Green: Yellow: Red:
Transmission	Transformer Metering Data	Voltage and loading	Green: Yellow: Red:
Distribution	Feeder Metering Data	Voltage and loading	Green: Yellow: Red:

Proposed Metrics - Wastewater

Wastewater			
Category	Metric	Trigger	
Collection Capacity	Flow rate as a % of capacity	Increased frequency of overflow events in the collection system	Green: Yellow: Red:
	Flow rate as a % of capacity	Sewer Pump Station	Green: Yellow: Red:
	MCL compliance (coliform/bacti/ecoli)	Increase “bacti/fical” hits at production well	Green: Yellow: Red:
Treatment Capacity	Maintain treatment limits	Compliance with effluent quantity and quality limits (NPDES Permits)	Green: Yellow: Red:

Data Sources:

Power: GPA

Water: GWA, NAVFAC, GEPA, USEPA

Wastewater: GWA, GEPA, USEPA

Solid Waste: GBB, DPW, GEPA

Concerns:

Reliable, accurate, consistent and timely data

Clear identification of alternatives to cure violated triggers in order to set cure timelines

Regularly set meetings to review the metrics and to provide an infrastructure outlook report

Infrastructure Initiatives - Power

- Upgrades of combustion turbines for reliability, \$160M funding thru Govt. of Japan (JY2012)
- Renewable energy bids opening this month
- Determination of LNG as alternative fuel source, study underway – completion 6 month
- Plant reliability improvement projects underway
- Smart Grid Project for quality improvements underway
- \$200M CIP program underway

Infrastructure Initiatives - Water

- The one Guam policy underway
- Aquifer Management project underway
- GWA and NavFac working as team
- DoD new Northern System loop, \$160M Govt. of Japan funding JY11
- Maui Well rehabilitation in works
- GWA increasing production capacity to 120%
- Rehabilitation and new wells studies underway
- Over \$200M bond funded CIP over next 5 years

Infrastructure Initiatives - Wastewater

- \$10M interim project to increase Northern treatment capacity 3mgd by end of CY2012
- Upgrade of Northern treatment plant and various collection systems, about \$270M funding thru Govt. of Japan (JY2011)
- Upgrade of Hagatna treatment plant , about \$150M funding thru Govt. of Japan (JY2013)
- Major system evaluation projects in progress
- \$200M CIP investment over next 5 years