

October 24, 2012

Jeffrey Johnson, Chairman  
 Guam Public Utilities Commission  
 Suite 207, GCIC Building  
 Hagatna, Guam 96932

## Docket 12-10: Review of GPA FY 2013 Construction Budget

Dear Chairman Johnson,

Shaw Consultants International, Inc. (Shaw Consultants) is pleased to submit this letter report in response to Mr. Fred Horecky’s request on October 5, 2012, to evaluate and submit a short report with respect to GPA’s FY 2013 Construction Budget.

### Introduction

Shaw Consultants understands that the CIP budget is subject to the Contract Review Protocol and that the Public Utilities Commission sets a construction budget at the beginning of the year based on a “reasonableness” review; however, any project in excess of \$1.5 million still requires the detailed contract review package prior to the Authority entering into contracts.

Table 1, below, summarizes GPA’s externally-funded construction budget for FY 2013 that has been approved by the Consolidated Commission on Utilities (CCU), as well as projections for the following two fiscal years.

Table 1: GPA Three-Year FY2013-15 Construction Budget Summary

	<u>Approved</u> <u>FY2013</u>	<u>Projected</u> <u>FY2014</u>	<u>Projected</u> <u>FY2015</u>
Internally-Funded			
Revenue-Funded Engineering CIPs	\$ -	\$ 7,834,500	\$ 23,074,000
Externally-Funded			
External-Funded Bond Projects	53,467,757	33,234,000	-
	-----	-----	-----
<b>Total Construction Budget</b>	<b>\$ 53,467,757</b>	<b>\$ 41,068,500</b>	<b>\$ 23,074,000</b>

Table 2, below, provides a breakdown of the individual projects that comprise the \$53.5M construction budget for FY2013. We understand that the PUC has already approved these projects as they were under the umbrella of GPA's 2010 bond issue. The PUC approval dates and docket numbers are also shown in the table.

Table 2: GPA Three-Year Existing Bond Capital Improvement Projects

<u>Line Item</u>	<u>CIP Project Name</u>		<u>PUC Approval</u>	
			<u>Dates</u>	<u>Docket No.</u>
1	Smartgrid	\$ 21,900,000	19-Dec-11	11-13
2	GPA New Main Office & Operation Facility Improvements (FADIAN)	6,000,000	11-Jan-11	11-14
3	Underground Fuel Pipeline Conversion & Fuel Monitoring	1,750,000	27-Jul-10	10-01
4	Fire Protection Upgrades @GPA Facilities	1,700,000	27-Jul-10	10-01
5	Power Station/Transmission Upgrades & Improvements		27-Jul-10	10-01
	Dededo Substation Upgrade	1,352,000		
	Line Reclosing & Load Profiling	640,000		
	Tumon Substation Upgrade	1,460,000		
	Agana Substation Capacity Upgrade	1,197,000	27-Jul-10	10-01
6	System Protection Relaying Improvements	1,738,000	27-Jul-10	10-01
7	Power Distribution System Improvements		27-Jul-10	10-01
	Distribution System Performance Improvement	496,000		
	P003 Underground Extension to Port Authority	1,500,000		
	Tumon Bay Lateral Conversion	4,125,000		
	Agat Village Pole Hardening & Hybrid	2,810,000		
8	Generation Bond Projects	5,842,757	15-Dec-10	10-01
9	Ambient Air Quality Monitoring	957,000	27-Jul-10	10-01
		-----		
	Total	\$ 53,467,757		

With respect to our evaluation as to the prudence of these projects, we understand that engineering has only high level justifications available at this time and while GPA has been working on improving its planning and having these justifications done before the beginning of the fiscal year, this is not currently the case. Industry standards in the US typically include a prioritization of projects that includes a description of each project, the economics of each project, and a relative prioritization of all projects such that the reviewers can understand the investment profile for capital projects.

Shaw Consultants believes the purpose of a construction budget review should be to inform stakeholders of the relative importance and worth of capital projects, and the ability to understand the relative prioritization of the projects of interest. Without detailed information regarding a projects justification and how the budget was developed, the "reasonableness" of a particular project and its associated budget is difficult to determine. In order to be able to comment in any meaningful way, project justifications must be clear, concise and

comprehensive. To perform a review each major project (\$1.5 million and above as defined by statute) should address the following:

- Whether the project is consistent with the organization's strategic direction;
- The impact the project will have on service delivery;
- How the project contributes to increased productivity;
- What budgetary impact and economic return the project will produce;
- What options have been considered; and
- Whether the project will require external funding.

Major project justification should at a minimum:

- Identify the project name and location;
- State the project objectives, and identify the most suitable options to meet the objectives;
- Briefly describe the process used to analyze these options;
- Outline the results of the economic analysis including;
  - the costs and benefits of the most suitable options,
  - the results of the analyses of these options, and
  - the identification and justification of assumptions used;
- Outline the results of any social, environmental and budget analyses, as may be applicable;
- Provide a risk assessment of the options;
- Rank the options; and
- Identify the preferred option.

#### Discussion of GPA Construction Budget

The following is the available information provided to Shaw Consultants in response to a request for additional major project justification information. No information has been provided relative to any alternative options that may have been considered nor has any information been provided relative to how the budgetary estimate was developed. Along with each project description, we have included additional information that we would normally expect to accompany the project descriptions for more complete justification.

#### Line Item 5: Harmon X82 to Yigo X160 Overhead Line Upgrade

Loading: For certain transmission line outage contingencies, this transmission line show an overload condition. The Harmon-Yigo 34.5 kV line is one of the routes that GPA has to move bulk power from GPA's plants to the northern part of the island, most notably, Andersen Substation. Hence, upgrading this #4/O AWG Cu. wire to 927.2 kcmil Al. is imperative to ensure we meet the needs of our civilian customers in Dededo and Yigo as well as our US military customers at Andersen.

Shaw Consultants' additional concerns:

1. What are the specific outage contingencies that trigger a concern?
2. What is their context with the overall system planning criteria?
3. Which line is overloaded? To what degree?

4. What alternatives were considered?
5. How was the budgetary estimate developed?

Line Item 7: Harmon to Andersen 34.5 kV Reconductoring

Loading: When modeled with the impending military build-up load consideration, this transmission line shows voltage problems and overload conditions as well in the base case as well as the exacerbated voltage and overload conditions for certain outage contingencies. Thus, this #4/O AWG Cu. wire transmission line requires an upgrade to 927.2 kcmil Al. GPA will secure US DoD funding for this project.

Shaw Consultants' additional concerns:

1. What is the nature of the load buildup? Timing? Magnitude? Likelihood?
2. What is meant by "voltage problems"? Degree? Frequency?
3. What are the specific outage contingencies that trigger a concern?
4. What is their context with the overall system planning criteria?
5. To what degree is the line overloaded?
6. What alternatives were considered?
7. How was the budgetary estimate developed?

Line Item 12: Fadian SCADA System

Reliability: By late 2014, GPA will be moving to the new consolidated GPA – GWA office building at Fadian, Mangilao. This new office building is designed to house GPA's Power System Control Center (PSCC) along with other key divisions such as Customer Services, Engineering, IT, and Executive Management. PSCC is the main control center for GPA's operations inclusive of generation, transmission and distribution. PSCC handles the dispatching of generating plants, switching of high voltage 115 kV transmission, and 34.5 kV transmission, and 13.8 kV distribution lines. PSCC controls the power supply to the Island Wide Power System. PSCC is currently located at Cabras Island, which is very vulnerable to the threat of tsunamis. Thus, relocating PSCC to Fadian, which is at a higher elevation, is imperative to ensure the continuous operation of the electric grid. Additionally, the existing Energy Management System (EMS) is approaching obsolescence. The new Supervisory Control and Data Acquisition (SCADA) system will allow for the full integration of the functionalities provided by the Smart Grid Initiative, such as Outage Management, Geographic Information Systems, Substation Automation, and Advanced Metering Infrastructure.

Shaw Consultants' additional concerns:

1. How was the risk of a tsunami quantified in the analysis?
2. How is obsolescence defined in this context?
3. Is this project part of an overall strategic direction to improve operations and reliability? Has this effort been previously approved as part of a larger scope?
4. What alternatives were considered?
5. How was the budgetary estimate developed?

Line Item #15: Substation Automation

Reliability: The purpose of this project is to improve the reliability and stability of the electric system including outage management and to reduce operating costs and manage peak demand. This will in turn reduce the cost of energy to our customers. The additional capabilities provided by substation automation will increase our efficiencies and lead to better service for our customers including a reduction in outages, quicker response times, and decreased outage durations. GPA's operational and capital costs will go down as a result of these efficiencies and the cost savings will be passed down to our customers.

GPA has initially obtained 50% funding from US DOE to fund a portion of Substation Automation project through the Smart Grid Initiative Grant (SGIG). Through the SGIG, 7 substations have been funded. This separate project funds the remaining substations (22 total), which were not part of the SGIG due to funding limitations.

Shaw Consultants' additional concerns:

1. Please explain the specific nature and degree of improved reliability, stability, outage management and reduced O&M? Degree? How determined?
2. What is the degree of reduced cost to customers? Was a specific economic analysis performed to warrant such a conclusion?
3. Is this project part of an overall strategic direction to improve operations and reliability? Has this effort been previously approved as part of a larger scope?
4. What alternatives were considered?
5. How was the budgetary estimate developed?

Shaw Consultants' recommendations

1. Shaw Consultants believes the purpose of a construction budget review should be to inform stakeholders of the relative importance and worth of capital projects. Without detailed information regarding project justification and how the budget was developed the "reasonableness" of project and its associated budget is difficult to determine. Every effort should be made to have the needed project justification information available before the beginning of the fiscal year.
2. With the limited information provided Shaw Consultants is left to base its "reasonableness" solely on the basis of very high level information and comparing the proposed projects to similar efforts with which we are familiar. With that understanding Shaw Consultants finds the proposed projects and their associated budgets "reasonable" in that they are of a similar nature and scope to projects being performed by electric utilities in other jurisdictions.

Sincerely,



**Kathleen A. Kelly**

Vice President

Shaw Consultants International Inc.