



Wicomico County, Maryland

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Internal Auditor's Report

The County Council and County Executive of Wicomico County, Maryland:

Pursuant to Section 305(D) of the Wicomico County Code and Council Resolution No. 125-2012, the Office of the Internal Auditor (IA) has conducted an Audit of the Energy Systems Group (ESG) contract with Wicomico County. A report is submitted herewith. The purpose of the audit was to determine ESG contract compliance concerning energy upgrades for the County.

IA conducted the audit with due professional care and IA planned and performed the audit to obtain reasonable assurance about whether ESG is in compliance with the accepted proposal to upgrade and improve County infrastructure relating to energy performance and whether savings in energy costs pay for those improvements.

The audit revealed a robust effort by ESG to improve the energy performance for Wicomico County. Additionally, Wicomico County Purchasing Department and General Services Department personnel and engineers worked very closely with the general contractors and subcontractors to assure a smooth, successful completion of the project. IA adjusted the scope and objectives of the audit to match the ongoing nature of the program. That is, this audit takes the form of a continuing audit because the objective concerning measurement of the project benefit takes place over the next twelve years.

IA extends appreciation to Management and Staff in the Purchasing Department, General Services Department, and the GOB Finance Department for their timely assistance, cooperation, and candid assessment project.

Respectfully submitted,

J. Stephen Roser, CPA/CIA
Internal Auditor

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Audit Report

Background

Wicomico County Infrastructure

The buildings and facilities from which Wicomico conducts its business are aging. For example, according to the building's cornerstone, the County constructed the Government Office Building (GOB) in 1975. The natural aging of County properties, coupled with recent economic downturn, leaves infrastructure in need of numerous upgrades. The underlying principle behind the ESG project is; energy technology has advanced to the point that energy savings offset the cost of energy upgrades to the antiquated County infrastructure.

Phase I

The first phase of the operation, according to Purchasing, came about due to massive failure of some major components. As anyone working in the GOB during the summer of 2011 can attest, the failure of the chiller created uncomfortably warm working conditions for a considerable amount of time. Additionally, the County suffered failure of two other major components: the boiler in the Old Courthouse adjacent to the GOB and the boiler at the Sheriff's Office. The original contract price for Phase I was \$1,281,463.

Phase II

The second Phase of the project involved extensive work to various parts of the County infrastructure and contained the bulk of the work. The scope included the following locations:

Airport	Sports Complex
Courthouse/Courts	Tourism
Detention Center	Westside Community Center
Goldman Annex	Winterplace
Government Office Building	Roads Division
Seth Hurdle Health Center	Sheriff's Office
Wm Fritz Health Center	Solid Waste Division
Library	Nursing Home
Co-op Extension	Perdue Stadium
Wicomico Youth and Civic Center	

Upgrades for various locations included:

- Electrical Systems
- Lighting
- Cooling Systems
- Heating Systems
- HVAC Controls
- Water Conservation
- Building Envelope

Original cost of Phase II according to the contract was \$4,059,985. Appendix I contains a grid outlining the work scheduled for each location. Additionally, Phase II included management services for \$213,715. Management services include measurement and verification, preventative maintenance, and guarantee bonding.

Completion

According to Purchasing, Phase II of the project is substantially complete as of March 1, 2013. The contractor billed for final payment less retained funds in January. Wicomico County and ESG are working out remaining issues and training. Going forward savings must be determined, reviewed, and booked.

Audit Objective

The objective of the audit was to assure that ESG is in compliance with the contract in force with the county.

Scope of the Audit

The audit period, examined on a test basis, was FY 2013 to date. The Scope was open ended. Observations and Inquiries with appropriate personnel were conducted, as well as examination of various documents pertaining to the following:

- Contract in force between ESG and Wicomico County including change orders and revisions
- Interview ESG officials responsible for the county contract
- Work with County engineers to map particulars of the contract and timetable to create a baseline for follow-up
- Work with County Finance to assure tracking for future energy savings

General Highlights

The project to install energy upgrades for the County took a considerable amount of planning. An undertaking of the size and scope of the ESG project requires continuous monitoring, adjustments, coordination, and cooperation among the general contractor, subcontractors, and numerous County departments. IA gathered a vast amount of material during the audit in effort to track the process to completion and beyond. Working papers accumulated can assist in tracking future savings and, with Council's permission, may become available to management and external auditors. The observations in this section are, by no means, a complete description of the information gathered during the audit.

Contract

IA reviewed the contract between ESG and the County supplied by the Wicomico County Department of Law. The complete contract dated April 23, 2012, totals \$5,555,163. Breakout is as follows:

Phase I completed prior:	
GOB Chiller	
Old CH/SO Boilers	\$1,281,463
Phase II	
Payable monthly	\$4,059,985
Management services	
Upon Completion	\$213,715
Total	\$5,555,163

The contract includes:

- State of Maryland's Indefinite Delivery Contract No. DGS-06-EPC-IDC-5.0, Dated August 21, 2006¹
- Engineering drawings and designs
- Detailed Proposal

Wicomico County entered into a 12-year 3.40% capital lease with the Contractor with a present value of \$4,059,985. The contract guarantees energy savings and overall savings to the County as outlined in the Energy Performance Contract Cash Flow Phase II Proposal dated April 9, 2012 (please see Appendix III for detail). Additionally, ESG provided the County with a bond that warrants and guarantees County realization of the guaranteed energy savings.

Scheduling

On Sunday of each week, ESG supplied the County with a spreadsheet matrix entitled "2 Week Look Ahead". The matrix listed the tasks performed, area of performance, subcontractors involved, number of crews, and County escort requirements. Additionally ESG provided the County with detailed Gantt charts² describing the scheduled work over a period of months.

Billing

We reviewed the billing from the general contractor (ESG). ESG submitted monthly billing, as outlined in the contract, in AIA billing format³. Billing commenced in May 2012 and the County received the final bill less retention in January 2013. ESG did not include any change orders on any of the billing.

Government Office Building Control System

ESG, through a subcontractor, established a computerized monitoring system for the GOB. Management invited IA to a training session for County engineers and gained first-hand information concerning the nature of the system. The County now has a robust system for monitoring and controlling the air in the GOB. The system has a server that captures historical data for tracking. Additionally engineers can control dampers, pumps, boilers, air handlers, chillers, and other components from their desk computers. Air temperatures and other data are instantly available to County engineers through this system.

Conclusion

Due to the ongoing nature of this project, we cannot definitively conclude that ESG is, or is not, in compliance with the contract as stated in the audit objective. However, we can conclude that the process as outlined in the contract including the proposal is at a level satisfactory⁴ to its parameters to date. IA, with Council's permission, can work with Finance and continue to monitor the project especially as it relates to future energy savings.

¹ Maryland solicitation selecting a qualified list of Energy Service Companies (ESCOs) with certain capabilities regarding development and implementation of comprehensive energy efficiency and guaranteed savings programs

² A Gantt chart is a chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.

³ This billing system was created by the American Institute of Architects and is based upon a schedule of values

⁴ For the purposes of this audit, IA uses a three-tier grading system recommended by the International Professional Practices Framework (IPPF) as expressed by the IPPF Practice Guide issued March 2009. The three tiers are Inadequate System of Internal Control, Adequate System of Internal Control, and Satisfactory System of Internal Control. Satisfactory findings indicate that overall controls are satisfactory, although some enhancements may be recommended. It is the highest rating on the scale.

Schedule of Findings and Recommendations

The findings listed below represent some key issues that bear discussion as an added feature to the audit process. It is noteworthy that the objectives to date for the ESG Contract Compliance Audit, as stated in the conclusion, were satisfactory. The audit revealed no evidence of material weakness or significant deficiencies in the areas tested.

Monitoring

The Measurement and Verification section of the proposal, updated May 2012, defines the baseline period as June 2010 to May 2011. Guaranteed savings over the twelve-year period following substantial completion total \$6,275,332⁵. According to management, the guarantee period was shortened from fifteen to twelve years because the County completed and paid for Phase I in full prior to the commencement of Phase II. The scope section of the proposal establishes energy conservation measures (ECMs) for each building going forward. Future savings calculations are made and booked according to specific formulas applied to each area:

- Lighting and lighting controls
- Transformer upgrades
- Motor replacements
- Chiller replacement
- Boiler replacement
- HVAC control upgrades
- Water upgrades
- Infiltration reduction

IA, with Council's permission, can monitor the savings and report periodically in future years.

Partnering with the City of Salisbury

In October 2012, Wicomico County and the City of Salisbury entered into an agreement with CQI Associates, LLC in Columbia, Maryland to provide electricity to most combined facilities starting in March 2014. According to Purchasing, the combined buying power of the City and the County increases usage allowing better rates saving the County \$55,000 per year. Calculated energy savings for the County after March 2014 should take the partnership with the City and its corresponding impact into account.

Additional Work

In October 2012, the County and ESG agreed to some scope additions and deletions. The changes involved lighting, controls, and other work. The additions and deletions balanced in that there were no additional costs to the County.

Rebate Allocation

Another change to the Scope of work involved new LED exterior lighting, damper repair, and other work to coils and duct systems. Cost of the additional scope was \$271,389. The County paid for this additional work with anticipated energy rebates from Delmarva Power.

⁵ Final revised savings calculation (April 9, 2012) – please see Appendix II for more information

Tax Credits

Internal Revenue Code §179D provides substantial deduction for energy efficient commercial buildings. Additionally, it provides special rules for government-owned buildings that allow the government entity the option to transfer these deductions to the contractor. The proposal portion of the contract in sections 10 and 11 transfers the tax deductions and any assignment of environmental attributes to ESG.

Management Services

The contract provides for management services from ESG costing \$213,715. Management services have three components⁶:

- Measurement and Verification
- Preventative Maintenance
- Guarantee Bonding

With Council’s permission, IA can include verification of management services as a component of any ongoing continuous auditing project.

Auditor’s Closing Remark

IA would like to express special appreciation to the Purchasing Department for their effort to keep this office informed of ongoing project progress and its willingness to provide a vast amount of documentation and other information. Additionally, IA would like to recognize General Services, Department of Law, and the Finance Department for their assistance in this effort.

⁶ Please see Appendix III for breakout

Appendix I - Scope by Building

Building	Lighting	Trans-former	Motor	Chiller	Boiler	Boiler Control	HVAC	Water	Envelope
Airport # 2 & 3	X								
Airport Complex-Engineering Bldg #15	X								
Airport Complex-A.G. Atlantic #18	X								
Airport Complex-Bayland #6	X								
Airport Cplx-Bayland Mtn Hngr#14	X								X
Airport Cplx-Bayland Terminal #21	X								
Airport Cplx-Control Tower	X								X
Airport Cplx-Henson Hngr Personal#5	X								
Airport Cplx-US Helicopter #17	X								
Airport Cplx-10T Hangars #8	X								
Airport Cplx-14T Hangars #22	X								
Airport Cplx-14THangars #23	X								
Airport Cplx-14THangars #24	X								
Airport Cplx-8T Hangars #7	X								
Airport Cplx-8T Hangars #9	X								
Airport Cplx New Terminal Bldg	X	X							X
Airport Cplx Old Terminal Bldg	X	X							X
Airport maintenance #26	X								
Courthouse	X				X			X	X
Courts Building	X	X						X	X
Detention Center	X	X				X		X	X
Goldman Annex - Aftercare	X								
Goldman Annex - Generator Building	X								
Goldman Annex - Wicomico Hall	X								
Goldman Annex - Worcester Hall	X								
Government Office Building	X	X	X	X			X	X	X
Seth Hurdle Health Center	X							X	X
Wm C Fritz Health Center	X	X						X	X
Library - Wicomico County	X							X	X
Misc - Co-op Extension Svc Building	X								X
Park-Wicomico Youth & Civic Center	X	X						X	X
Park -Maintenance Center	X								X
Park-Sports Complex Contact Bldg	X							X	
Park-Sports Complex Main Bldg #1								X	
Park-Tourism & Visitor's Center	X								X
Park-Westside Comm Cntr Actv Bldg	X								X
Park-Winterplace Maintence Garage	X								X
Park-Winterplace Stable Barn	X								
Road Dept-Fuel Station	X								

Building	Lighting	Trans-former	Motor	Chiller	Boiler	Boiler Control	HVAC	Water	Envelope
Road Dept-Admin & Shop	X								X
Road Dept-Salt Shed	X								
Road Dept-Equipment Storage	X								
Sherriff-Public Safety Building	X				X			X	X
Solid Waste-Administration Bldng	X								X
Solid Waste-Lift Pump Station #1	X								
Solid Waste-Lift Pump Station #2	X								
Solid Waste-Operations Building	X								X
Solid Waste-Pump House			X						X
Solid Waste-Scale House	X								X
Solid Waste-Storage Shed for Trucks	X								X
Solid Waste-Work Release BreakRm	X								X
Solid Waste-Attendant's Office	X								
Solid Waste-Garage & Shop	X								X
Solid Waste-Garage Storage	X								
Solid Waste-General Services Shop	X								X
Nursing Home-Laundry & Maint. Bldg									X
Nursing Home & Addition	X							X	X
Arthur W. Perdue Stadium	X	X						X	

Appendix II – Guaranteed Savings

Year	Annual Option A Savings	Agreed Upon Savings	Annual Operational Savings	Total Annual Savings
	Constr. Period	\$42,353		\$42,353
1	\$423,533		\$15,655	\$439,189
2	\$436,239		\$16,125	\$452,364
3	\$449,327		\$16,609	\$465,935
4	\$462,806		\$17,107	\$479,913
5	\$476,691		\$17,620	\$494,311
6	\$490,991		\$18,149	\$509,140
7	\$505,721		\$18,693	\$524,414
8	\$520,893		\$19,254	\$540,147
9	\$536,519		\$19,832	\$556,351
10	\$552,615		\$20,427	\$573,042
11	\$569,193		\$21,039	\$590,233
12	\$586,269		\$21,671	\$607,940
Totals	\$6,010,799	\$42,353	\$222,180	\$6,275,332

Appendix III – Phase II Cash Flow Proposal

Year	PROJECT SAVINGS			PROJECT COSTS				Total Costs	Net Savings
	Guaranteed Annual Energy Savings	Maintenance Material Savings	Total Savings	Lease Payment	ESG M&V	Energy Bond	Preventive Maintenance Costs		
Construction	42,353		42,353						
2	423,533	15,655	481,542	421,777	21,177	5,082	7,500	455,536	26,006
3	436,239	16,125	452,364	421,777	1,091	5,235	7,725	435,828	16,536
4	449,327	16,609	465,935	421,777	1,123	5,392	7,957	436,249	29,686
5	462,806	17,107	479,913	421,777	1,157	5,554	8,195	436,683	42,230
6	476,691	17,620	494,311	421,777	1,192	5,720	8,441	437,130	57,181
7	490,991	18,149	509,140	421,777	1,227	5,892	8,695	437,591	71,549
8	505,721	18,693	524,414	421,777	1,264	6,069	8,955	438,065	86,389
9	520,893	19,254	540,147	421,777	1,302	6,251	9,224	438,554	101,593
10	536,519	19,832	556,351	421,777	1,341	6,438	9,501	439,057	117,294
11	552,615	20,427	573,042	421,777	1,382	6,631	9,786	439,576	133,466
12	569,193	21,039	590,233	421,777	1,423	6,830	10,079	440,109	150,124
13	586,269	21,671	607,940	421,777	1,466	7,035	10,382	440,660	167,280
AGGREGATE	6,053,152	222,180	6,275,332	5,061,324	35,145	72,130	106,440	5,275,039	1,000,293

Appendix IV – Selected Photographs



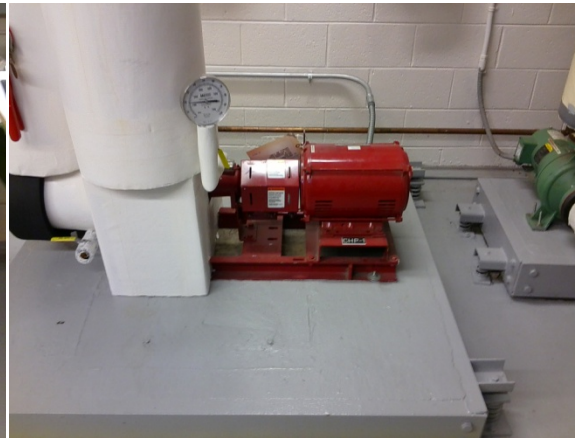
New controller for variable speed pump GOB



Local control center GOB heat and ventilation



New power efficient transformer GOB



Variable speed chill water pump GOB