

INTERNAL AUDIT



April 13, 2012

Audit Committee
Mayor McMillan and City Council
City of Clarksville
Clarksville, TN 37040

RE: Wastewater Treatment Plant Recovery Audit # 1203

Dear Audit Committee, Mayor McMillan and City Council Members:

Attached is the Internal Audit Department's report on the Wastewater Treatment Plant Recovery. Also attached is an executive summary which highlights the findings and recommendations contained in the full report.

We thank the management and staff of Clarksville Gas and Water for their cooperation and assistance during this audit.

Sincerely,

Lynn Stokes, CPA
Director of Internal Audit

Attachment

cc: Charlie Koon, Chief of Staff
Ben Griffin, Director of Finance
Pat Hickey, General Manager, Clarksville Gas and Water
Fred Klein, CFO, Clarksville Gas and Water
Chris Lambert, Water/Wastewater Operations Manager, Clarksville Gas and Water

One Public Square / Suite 315 / Clarksville, TN 37040
(931) 648-6106 / Fax (931) 645-7408
www.lynn.stokes@cityofclarksville.com
www.jim.mcnaughton@cityofclarksville.com
www.robin.manley@cityofclarksville.com

INTERNAL AUDIT



The Honorable Mayor Kim McMillan
City Council Members
Audit Committee Members
Clarksville, Tennessee 37040

Executive Summary of the Audit of the Wastewater Treatment Plant Recovery

The following is an executive summary of the findings and management's comments in response to the findings related to the internal audit report on the Wastewater Treatment Plant (WWTP) recovery. The full audit report is attached and contains additional details about the findings and recommendations as well as more background information.

Objectives of the Audit

- Report on the status of the WWTP project as of November 2011.
- Report on Clarksville Gas and Water's (CGW's) project management efforts during the WWTP recovery/rebuild.
- Determine compliance with City policies and procedures related to contract management, and the proper classification of expenditures during the WWTP recovery/rebuild.
- Evaluate and report on plant asset and facility risk

Brief Background

The Clarksville Wastewater Treatment Plant (WWTP) was taken out of service and severely damaged by the May 2010 flood. The damage to the area was so severe that a National Disaster was declared. This audit looked at the activity between May 2010 and November 2011 and provides an independent assessment of the progress, the management efforts, and adherence to City policy. The audit also assessed and reported on the facility and asset risk at the WWTP.

Summary of Auditor's Observations and Findings

Project status to date:

- Engineering firm Hazen & Sawyer was selected as the Project Manager for the recovery effort
- Wastewater treatment was restored (partial Primary- May 2010 and partial Secondary- August 2010)
- Expenditures through November 2011 are \$43.1M
- Of the \$43.1M, \$40.8M relates to cleanup and recovery and \$2.3M relates to future construction
- Major construction projected to cost an additional \$60.4M

One Public Square / Suite 315 / Clarksville, TN 37040
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www.lynn.stokes@cityofclarksville.com
www.jim.mcnaughton@cityofclarksville.com
www.robin.manley@cityofclarksville.com

- Projected cost of the completed WWTP recovery project is \$104.7M (43.1M+60.4M+1.2M additional flood related operating expense).
- A cost recovery claim has been filed with FEMA. FEMA is still reviewing the eligibility of the claim
- A cost recovery claim is planned to obtain HUD funded Community Development Block Grants

Project management efforts:

CGW management has developed a recovery and improvement plan and has monitored the progress against the plan. The fully recovered/improved plant has been designed to meet the projected needs of the community over the next 25-30 years. CGW management and Hazen & Sawyer have incorporated more efficient operations, more effective technology and better risk management into the design and improvement of the new WWTP. Major construction at the plant is scheduled to begin in July 2012 and is anticipated to take approximately 30 months. CGW management has committed to a construction end date NLT June 2016. Financing in support of recovery and construction has been obtained at low cost (less than 1%).

The cost of the WWTP recovery less any disaster cost reimbursements will be paid by sewer users. The President's National Disaster declaration opened up the possibility of Federal Emergency Management (FEMA) and Department of Housing and Urban Development Community Development Block Grants (CDBG). CGW management is working with the appropriate authorities to facilitate grant reimbursements for disaster recovery costs. The eligibility of the City to receive grant funding and the likelihood of claim reimbursements have not been determined.

Compliance with City policies and procedures (purchasing/contracting):

Based on our testwork, management has strictly adhered to the City purchasing policy during the audit period. No deviations from policy were noted in either the creation or management of contracts.

Plant asset and facility risk:

We conducted a vulnerability assessment of the WWTP site and communicated the results to management separately. The details of our findings are protected from public disclosure (State of Tennessee code 10-7-504(a)(21)(A)(i)).

Summary of Findings and Related Management Comments:

1. Planning costs were prematurely capitalized

Management's Response: Management agreed that certain planning costs were capitalized in error. Management immediately moved the cost back into construction in process projects. Management also has created new projects to separate spending on future projects from spending on projects that have been placed in service.

2. Weakness regarding grant claims (ineffective communication could put cost recovery funding at risk)

Management's Response: After having gone through this disaster recovery application effort, we are acutely aware of the immediate need for accurate, timely and effective communication related to the

monitoring of claims. However, communication is a two way street and we cannot force a response from outside Agencies. We can and have left a clear audit trail of our continued attempts to monitor the status of our claims.

Also, having gone through this process, we more fully understand the value of using legal and technical representation (outside experts) during the disaster recovery process and will use these resources and City management's support to establish effective monitoring of claims when it is not provided by the managing agency or the managing department.

If you have any questions about the audit, the findings, or the recommendations please contact me at 648-6106.

Respectfully,

Lynn Stokes, Director of Internal Audit

Jim McNaughton, Auditor II

cc: Charlie Koon, Chief of Staff
Ben Griffin, Director of Finance
Pat Hickey, General Manager, Clarksville Gas and Water
Fred Klein, CFO, Clarksville Gas and Water
Chris Lambert, Water/Wastewater Operations Manager, Clarksville Gas and Water



INTERNAL AUDIT REPORT

AUDIT TITLE:	WASTEWATER TREATMENT PLANT RECOVERY
DEPARTMENT:	CLARKSVILLE GAS AND WATER
AUDIT PERIOD:	MAY 2010 THROUGH NOVEMBER 2011

CITY OF CLARKSVILLE
CLARKSVILLE GAS AND WATER DEPARTMENT
WASTEWATER TREATMENT PLANT RECOVERY
AUDIT # 1203


Auditor


Audit Director

March 19, 2012
Date

**CITY OF CLARKSVILLE
INTERNAL AUDIT REPORT**

Wastewater Treatment Plant Recovery

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Internal Audit Report

Origin of the Audit

The Internal Audit department of the City reviewed the Wastewater Treatment Plant (WWTP) project to provide assurance and advisory services related to project management during the cleanup and recovery and post recovery period (capital projects planning, acquisition and pre construction phase). This audit was included in the 2011-2012 Audit Plan approved by the Audit Committee.

Audit Objectives

Our objectives for this audit were to:

- Report on the status of the WWTP project as of November 2011.
- Report on Clarksville Gas and Water's (CGW's) project management efforts during the WWTP recovery/rebuild.
- Determine compliance with City policies and procedures related to contract management, and the proper classification of expenditures during the WWTP recovery/rebuild.
- Evaluate and report on plant asset and facility risk.

Scope and Methodology of the Audit

Our audit scope included selected project management activities and transactions during the cleanup, planning, acquisition and pre construction phase from May 2010 through November 2011.

The audit scope did not include an evaluation of the adequacy and quality of the engineering design and/or construction of the Wastewater Treatment Plant. The audit did not include any non flood related projects or projects related to the wastewater collection system.

Since the project is not yet in the construction stage, we focused our audit procedures on assessing project management controls and the controls over the acquisition activities under the multiple sub projects and contracts (opened or existing during the audit timeframe) that make up the WWTP flood related activity through November 2011.

We evaluated management's ongoing efforts to manage the project.

We also evaluated the compliance with City procurement policies (review of awarded contract documentation) and the appropriateness and proper classification of contract expenditures (review of expenditures) and the appropriateness and classification of capital items.

Finally, we evaluated and reported on identified vulnerabilities at the plant in order to take a proactive approach to risk mitigation.

Evidence to support our conclusions was gathered from inquiries of management and staff as well as observations of source documentation and tests of the controls surrounding the transaction approval and recording process and the contract management process. From a population of 1862 flood related transactions, we selected a sample of 50 transactions and the 10 contracts associated with those transactions for review.

Statement of Auditing Standards

We conducted this audit in accordance with generally accepted government auditing standards as set forth in Governmental Auditing Standards issued by the Comptroller General of the United States, with the exception of the peer review. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The Flood

The May 2010 flood in Middle Tennessee was declared a 1000 year flood event by the US Army Corp of Engineers¹. The flood resulted from 2 days of heavy rain that swelled local reservoirs and rivers. Several areas recorded a 2 day total rainfall of well over 15”². Although Clarksville received significantly less rain than several other areas, the swelling of both the Cumberland and Red rivers caused the highest river crests ever measured in the Clarksville area, breaking the old records by several feet. The flood caused extensive damage to businesses and homes in Clarksville and spilled over the levee at the Clarksville Wastewater Treatment Plant. The flooding at the WWTP stopped all wastewater treatment, and damaged or destroyed most of the existing equipment and structures at the plant.

A National Disaster Declaration was issued on May 5th, 2010 that included Montgomery County.

¹The Wilson Post. <http://www.wilsonpost.com/news/3816-usace-notes-1000-year-flood>

²Nation Oceanic and Atmospheric Association (NOAA). <http://www.srh.noaa.gov/ohx/?n=may2010epicfloodevent>

Cleanup and Service Restoration

In a flood recovery effort, there are significant costs that must be recognized before any rebuilding efforts can begin.

Management’s first priority was to reestablish sewer treatment as soon as possible to protect the public welfare of the City’s citizens. This involved debris removal, disinfection, assessing critical processes, prioritizing process fixes, and implementing a plan to address the identified priorities. The City of Clarksville Code allows for emergency procurement/ contracting under these circumstances which helps accelerate procurement by exempting it from the competitive bidding

process. Additionally, City Code mandates that a project manager (an engineering firm in this case) be selected to assist management in the design, contracting, and oversight of the project. The City selected the engineering firm Hazen & Sawyer in this role.

CGW was able to restore partial primary wastewater treatment (settlement and removal of solids) and chlorination treatment in May 2010 and partial secondary treatment (aeration and biotic treatments) in August 2010.

Recovery

Once basic service was restored, management began the long process of recovery.

During this recovery process, equipment and structures were opened up, cleaned, and assessed. Decisions were made to repair, replace temporarily, replace permanently, or write off the equipment or structure. Secondary processes were cleaned, recovered and brought into service. Critical temporary structures were erected, procured, or rented to support continued operations. Redundancy was established to allow for the possibility of mechanical failure in primary systems.

It should be noted that during the recovery period, additional emergency purchases were made, which therefore did not go through the normal competitive bidding process. This was due to emergency situations which continued to develop or be exposed such as critical pump failures or newly discovered damage that threatened to delay critical deadlines. However, all emergency purchase decisions were explained, justified and subsequently approved by the City's procurement agent.

Also during this period, expenditures were evaluated to distinguish between flood related costs and non flood related costs. Flood related costs are costs that are directly or indirectly related to the flood.

Additionally, operating costs were distinguished from capital costs. According to CGW capitalization policy, capital costs are those costs that exceed \$5k and fall into an asset category. Once placed into service the asset will be expensed over its useful life which is based on the type of asset (as defined by CGW capitalization policy). Operating costs are all costs that do not qualify for capital treatment. Operating costs are expensed when paid or accrued.

Capital Projects (Rebuilding the Plant)

Capital projects are managed through construction life cycle phases- 1) Planning, 2) Acquisition, 3) Construction, 4) Implementation, and 5) Evaluation. The City and CGW have no formal capital project policy other than the requirement to assign a project manager who is an architect/engineer to assist in design, contracting, and oversight of projects.

Funding of the Recovery

A disaster recovery effort requires a substantial funding resource. In Tennessee, this local government funding is coordinated through the Tennessee Municipal Bond Fund (TMBF). The TMBF works with banks to obtain loans in order to support local government and utility borrowing needs. The local government must establish its ability to pay back the loans. In the case of the

City's WWTP recovery and rebuild project, the revenue generated from Sewer users supplies the means to pay back the loans.

Pursuit of Available Cost Reimbursement

When the May 2010 flood was declared a national emergency, the recovery project became eligible for federal disaster recovery funding.

The primary source of disaster recovery cost reimbursement is the Federal Emergency Management Agency (FEMA). FEMA allows claims for up to 75% of the cost to recover from a qualifying disaster. Eligible costs include repair, restoration, and replacement of a public facility. Eligible costs also include debris removal, emergency protective measures, repair of damaged public property, and risk mitigation. FEMA funding must be claimed in detail and supported to be considered.

Additionally, the Community Development Block Grant Program (CDBG) funded through the Department of Housing and Urban Development (HUD) has made funds available for short term relief, mitigation actions, and long term recovery related to the May 2010 flood. The administration and distribution of the funds has been assigned to the State of Tennessee. Any recovery cost reimbursements will be distributed through the issuance of CDBG program grants. Those communities that qualify under the program are tasked with establishing a basis for a claim and for filling out a CDBG disaster recovery application.

Status of the Project

Wastewater Treatment Plant (WWTP) Project

Since the flood took place in May 2010, CGW was 18 months into the cleanup and recovery process as of November 2011. At the end of November 2011, the plant was operating close to its pre flood treatment capacity, but the 24 hour operations were still being run out of temporary structures, were still relying on manual process evaluation and adjustment, and were depending on a significant amount of rented equipment (pumps/generators). Through November \$43.1M had been expended for flood related cleanup, service restoration, and recovery. Here is the summary breakdown of that amount:

Spending to Date	Amount
Extraordinary expense (flood related cleanup and restoration through June 2010)	\$13.5M*
Other operating expenses (flood related cleanup and restoration July 2010 through November 2011)	3.6M
Capital Assets (mostly site wide improvements and some equipment)- placed in service	17.5M
Construction in Process (CIP) Assets (improvements and equipment)- not placed in service	6.2M
Construction in Process (CIP) Assets (H&S planning for future projects)- not placed in service	2.3M
Total Spending to Date	\$43.1M

Source: Summary of activity in all flood related projects

- * As this flood event was considered an extraordinary event. The 2010 recovery costs were reclassified as extraordinary expense recognized (as an extraordinary loss outside of operations) at the end of June 2010.

Flood related operating costs incurred after June 2010 were recognized simply as a flood related component of operating costs. This amount includes asset write off amounts totaling \$2.8M.

The two tables below provide total expenditures as of November 30, 2011 by cost category and vendor:

Project Expenditures by cost category as of November 30, 2011

Cost Category Description	Expended (includes accruals)	Total Expended as of 11/30/2011	Percent of
Site Wide Cleanup / Electrical	24,882,225.29	57.69%	
Engineering Support	6,797,658.16	15.76%	
Equipment / Repair parts	3,222,532.02	7.47%	
Equipment Rental	3,124,504.15	7.24%	
Mechanical / Electric Maintenance	587,579.25	1.36%	
Construction Services	377,936.07	0.88%	
Chemicals	372,165.43	0.86%	
Payroll (CGW direct labor and associated benefits charged to the recovery)	219,543.25	0.51%	
Miscellaneous Other Categories	690,496.13	1.60%	
Asset Write off (Loss on Disposition)	2,852,616.57	6.61%	
Total Costs by Category (through 11/30/2011)	43,127,256.32	100.00%	

Source: Summary of activity in all flood related projects

Project Expenditures by Vendor as of November 30, 2011

Vendor Description	Expended (includes accruals)	Total Expended as of 11/30/2011	Percent of
Shermco Industries	24,575,099.66	56.98%	
Hazen & Sawyer, PC	6,574,983.82	15.25%	
Allied Technical Services	901,023.15	2.09%	
Aggreko, LLC	897,701.18	2.08%	
R. Lafferty & Son, LLC	588,719.50	1.37%	
MSD Environmental Services, Inc	511,592.75	1.19%	
Turblex, Inc	482,382.88	1.12%	
Heartland Pump Rental & Sales. Inc	466,618.79	1.08%	
CDM	457,627.76	1.06%	
Payroll (CGW direct labor and associated benefits charged to the recovery)	219,543.25	0.51%	
All remaining vendors	4,599,347.01	10.66%	
Asset Write off (Loss on Disposition)	2,852,616.57	6.61%	
Total Costs by Vendor (through 11/30/2011)	43,127,256.32	100.00%	

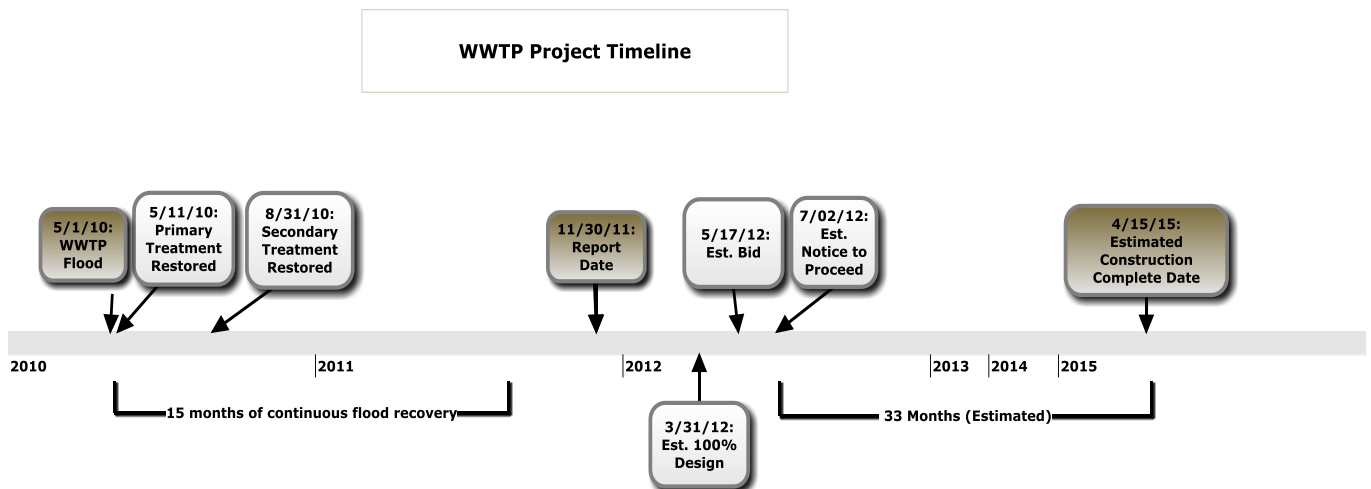
Source: Summary of activity in all flood related projects

The Plan Going Forward

The WWTP Improvement Project construction phase is the next step in the recovery effort. This major construction project has been designed to upgrade the facility with the intent of increasing the capacity of the plant while significantly improving the efficiency of operations. Hazen & Sawyer is in the process of developing a detailed construction plan for remodeling the plant and bringing it up to full capacity. The detailed construction plan is scheduled to be completed in late March 2012.

The WWTP Improvement project plan estimates the cost of the retooled plant at \$62.7M (which includes a 10% contingency to buffer against unexpected costs and price increases). To date CGW has incurred \$2.3M of the cost of construction related to the WWTP Improvement Project plan (all \$2.3M relate to Hazen & Sawyer planning costs).

Per the Hazen & Sawyer plan, major construction on new structures is projected to begin in July 2012 and is projected to continue until April 2015. Once this major construction is completed, the WWTP project plan will be fully implemented.



Source: Hazen & Sawyer projections

To Summarize, the projected total cost of the WWTP recovery including the major construction is:

The total cost of the cleanup and service recovery (through November 2011)	\$ 43.1M
Estimated non project WWTP flood related costs (December 2011 through April 2015).	1.2M*
The remaining cost of the WWTP project (90% plan estimate less \$2.3M expended)	60.4M
Total projected cost of the completed WWTP project¹	\$104.7M

* An estimate of \$30k of flood related operating costs per month going forward (\$30k x 41 months = \$1.2M). That rate is based on recent operating cost activity.

¹ This is the cost to recover the sewer plant. Any of the cost to recover from flood damage to the sewer collection system is not within the scope of this audit.

WWTP Project Funding

In May 2010, CGW had an existing \$49.2M Tennessee Municipal Bond Fund (TMBF) loan which was to be used for water and sewer improvements. At the time of the flood \$38.1M of the authorized amount was still available. CGW used \$25M of this undrawn balance as the funding tool for the WWTP cleanup and recovery efforts through January 2011. In October 2010, the City approved an additional \$100M in funding for WWTP construction and repair. The source of the \$100M was a line of credit obtained through TMBF. CGW began drawing on this \$100M line in February 2011. This \$100M funding will be used throughout the cleanup (and recovery), planning, acquisition, and early construction phases. However, this \$100M funding must be repaid in full by December 2013. Both of these loans are 100% collateralized by CGW sewer revenue (CGW's ability to bill users over time to repay the loans).

The rates on these instruments are variable and have been hovering around .5%. This rate is expected to remain low through the end of construction.

CGW management states that it will have several options at the December 2013 expiration date of the \$100M loan, including refinancing the debt with more short term funding. Due to the uncertainty of the timing and amount of FEMA and CDBG reimbursements and the projected ability of CGW to obtain replacement funding in the future, CGW management is keeping all funding options open at this time.

In any event, once construction is complete, CGW will need to request new TMBF funds to retire the WWTP project debt. The accumulated debt less any FEMA and CDBG reimbursements would need to be paid back through either a long term special purpose assessment to sewer system users (special purpose fee), rate increase or some combination.

The debt accumulated between May 2010 and November 2011 is \$40.3M (\$43.1M expended less \$2.8M asset write off).

Here is a chart showing the projected accumulation of flood related debt (principal only) through the end of the WWTP Improvement project. May 2010 through April 2015:

Fiscal Year	Amount Drawn	Project Running Total	
2010	1,092,013.75	1,092,013.75	Actual
2011	33,545,614.39	34,637,628.14	Actual
2012	16,159,206.73	50,796,834.87	Actual through Nov 2011. Projected through Jun 2012
2013	18,038,048.78	68,834,883.65	Projected
2014	18,038,048.78	86,872,932.43	Projected
2015	15,031,707.32	101,904,639.75	Projected

Source: Actual draws through Nov 2011 plus straight line projection of remaining draws (remaining construction cost / period of construction)

Funding Interest:

Both of the existing funding resources have variable rates (1-month LIBOR plus .15%). The LIBOR rate has been fluctuating between .25% and .375% since the recovery effort began. At these rates the estimated cost of borrowing (interest) thru the projected construction period end date (April 2015) will be \$1.4M. The interest is being paid and expensed as occurred (each month).

Progress toward Recovery: Measurement Criteria

This audit was designed as a way to measure CGW progress toward recovery of the WWTP. The criteria below were derived by Internal Audit in an effort to address the most likely public concerns related to the recovery project:

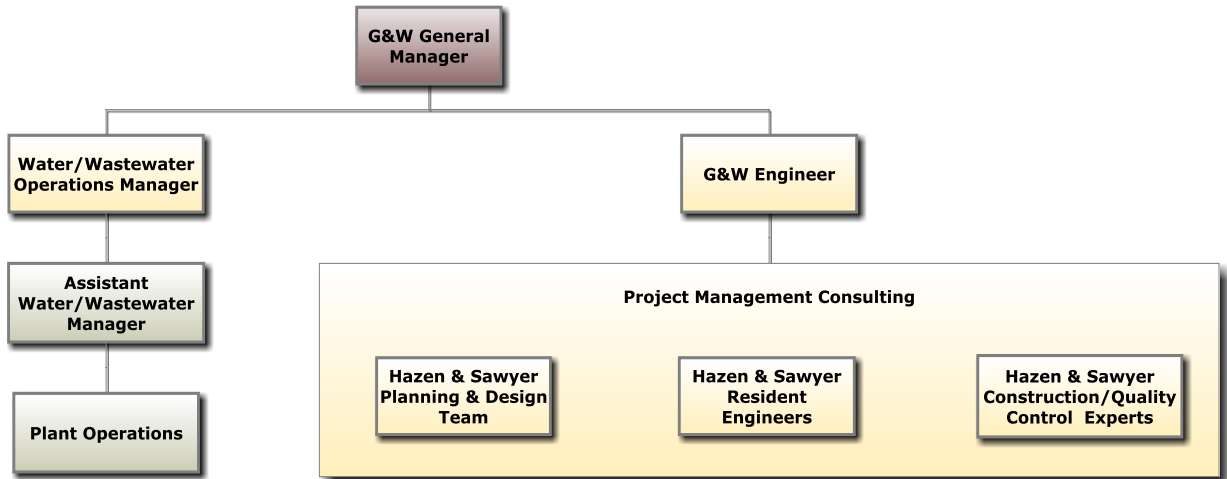
Project Measurement Criteria Description	Yes	No	Other	Comment
Service Restored Reestablished wastewater treatment service?	X			Partial primary wastewater treatment reestablished in May 11, 2010. Partial secondary wastewater treatment reestablished in August 31, 2010.
Project Planning Was a project manager (engineering or architectural firm) engaged?	X			Hazen & Sawyer was engaged on 06/01/2010
Did CGW management and program manager establish project plan?	X			On target- Engineer planning document is 90% complete and is scheduled to be fully complete in March 2012.
Control costs Competitive purchase process followed per City policy?	X			
Competitive purchase exceptions valid?	X			
Emergency procurement utilized only with justification and approval?	X			
Contract management tracking procedures held vendors to contract terms?	X			
Change Orders are used appropriately?	X			
Budgetary Control Was the project managed against a			X	Not possible-- There were too

Project Measurement Criteria Description	Yes	No	Other	Comment
<p>budget?</p> <p>Were other cost control measures used?</p>	X			<p>many unknowns.</p> <ul style="list-style-type: none"> - The scope of the cleanup was not known - Ex. Original Shermco contract for cleanup and site wide electrical work was at \$5M and ended up at \$24M <p>Contracts provided cost control through Competitive Bid Process or valid exception. CGW management also utilized Hazen & Sawyer to validate pricing of contracts/equipment purchases and any contract change orders</p>
<p>Complete the project on time</p> <p>Was recovery effort managed against a timetable?</p> <p>Were other period of performance controls used?</p>	X		X	<p>Not possible-- There were too many unknowns.</p> <ul style="list-style-type: none"> - The scope of the cleanup was not known - Ex. Original Shermco contract for cleanup and site wide electrical work was estimated immediately after the flood at 3 months and ended up at 18 months <p>Contracts. Hazen & Sawyer assessed any requests to extend the contract performance period and advised on change order decisions.</p>
<p>Plant Design</p> <p>Plant meets CGW management's specified operational and maintenance reliability expectations?</p>	X			<p>CGW management has taken a long term approach during the recovery and rebuild process. The goal of the management team is to have a rebuilt WWTP that is as efficient and effective as possible, and will meet the projected needs of the City of Clarksville for the next 25-30 years (through 2040). The engineering plan includes the following improvements:</p>

Project Measurement Criteria Description	Yes	No	Other	Comment
				<p>decision on the appeal by April 2012.</p> <p>CDBG</p> <ul style="list-style-type: none"> - CDBG claims not been filed yet (A Resolution to file was approved by the City's Finance Committee in February 2012)

Project Controls and Compliance with City Code and Policies:

Project Management Team for WWTP Recovery Project



Source: Discussions with CGW management team

Relevant Procedures and Controls	Yes	No	Other	Status
Direct activity management				
Are the project management roles clearly defined?	X			Top level approval and oversight is CGW management – City Engineer oversees Hazen & Sawyer
Was the project directed by CGW management?	X			Refer to “Project Management Team for WWTP Recovery Project” chart the organizational structure. CGW managers provided the vision for the WWTP and made all final decisions as well as provided all final approvals.
Was the project professionally planned?	X			CGW management relied heavily on Hazen & Sawyers wastewater, engineering and architectural expertise. They took the vision of CGW management and CGW Engineer (capacity needs, funding limitations, geography, risk mitigation, environmental concerns, and

Relevant Procedures and Controls	Yes	No	Other	Status
<p>Is there a process that ensures contractor accountability, approving work at critical points?</p> <p>Is a system with clear communication established?</p>	<p>X</p> <p>X</p>			<p>security needs) and developed plans to meet the identified needs.</p> <p>The Hazen & Sawyer (consultant) was tasked to monitor and oversee construction activities to:</p> <ul style="list-style-type: none"> • ensure design plans are followed • help manage contractor performance by <ul style="list-style-type: none"> - assessing bids - validating work performed - assessing quality - providing feedback. <p>Hazen & Sawyer meet with CGW Engineer and management regularly.</p>
<p>Project Tracking</p> <p>Does CGW management compare actual performance (i.e. expenditures) to budgets and forecasts, and track major initiatives to measure the extent to which targets are being reached?</p> <p>Is CGW management responsible for prohibiting deficits in their prospective projects' total budget and making sure project completion dates are on track?</p> <p>Is CGW management responsible for managing the use of change orders (contract amendments)?</p>	<p>X</p> <p>X</p> <p>X</p>			<p>Each contract has specific performance and timing guidance. Hazen & Sawyer and CGW engineers monitor progress.</p> <p>No project budget but the project as a whole is managed through the management of individual contracts.</p> <p>Liquidated damages (penalties) are included in each contract as an incentive for the contractor to meet the contract terms.</p>
<p>Transactions and events</p> <p>Are contract payments properly executed, classified, and recorded?</p>	<p>X</p>			<p>CGW procurement, accounts payable and contract</p>

Relevant Procedures and Controls	Yes	No	Other	Status
<p style="text-align: center;">Is capitalization policy followed?</p>			X	<p>management activity was reviewed for the audit period. Activity was supported, properly executed, classified and recorded without exception.</p> <ul style="list-style-type: none"> • We selected a sample of 50 expenditures charged to flood related projects through November 30, 2011. • There were 10 Contracts related to the above sample. The selected activity on these 10 contracts totaled \$31M in expenditures or 72% of all expenditures through November 30, 2011. <p>CGW capitalization activity was reviewed for adherence to capitalization policy. We found \$235k in planning costs that should not have been capitalized.</p> <ul style="list-style-type: none"> • We reviewed all 26 capitalization entries (\$17.5M) for adherence to capitalization policy
<p>Segregation of Duties Are key duties and responsibilities in authorizing, processing, recording, and reviewing transactions segregated?</p>	X			
<p>Adherence with City Policy Does CGW flood related activity comply with all aspects of City policies?</p>	X			
<p>Cost Recovery Efforts Has CGW management established a basis to support reimbursement claims?</p>	X			<p>CGW policy and guidance has been amended to facilitate CGW and Hazen & Sawyer's ability to manage project cost</p>

Relevant Procedures and Controls	Yes	No	Other	Status
<p>Is CGW management tracking the FEMA recovery process to ensure deadlines are met and FEMA has all the claim information?</p> <p>Is CGW management tracking the CDBG recovery process to ensure deadlines are met and HUD has all the claim information?</p>	X		X	<p>and FEMA/CDBG claim requirements.</p> <p>FEMA defunded the claim related to the WWTP site and CGM management filed an appeal.</p> <p>CGW management has engaged representation from the Nashville legal firm Bass, Berry & Sims to help work with FEMA to receive maximum reimbursement. The firm has experience in addressing environmental law issues and in dealing with Tennessee and Federal agencies as a client representative.</p> <p>As of the issue date for this report, the application for CDBG disaster recovery grant funds was in process. In February 2012, a Resolution to seek flood related CDBG funding for the WWTP recovery was approved by the Finance Committee.</p> <p>CGW management has engaged representation from the engineering firm CDM to help work with the State of TN.</p>
<p>Internal Control</p> <p>Has CGW management designed and implemented procedures to help ensure the proper recording, design, and use of transactions and events?</p>	X			<p>CGW policies provide internal control over the validation of transaction amounts and posting instructions</p>

Vulnerability Assessment

We conducted a vulnerability assessment of the WWTP site and communicated the results to management separately. The details of our findings are protected from public disclosure (State of Tennessee code 10-7-504(a)(21)(A)(i)).

Results of Audit

Auditor testing and research revealed the following findings and recommendations.

1. Planning costs were prematurely capitalized.

Criteria: All costs (including planning costs) related to construction of a capital asset should be maintained in a construction in progress (CIP) account until the asset is complete and placed into service. At that time, all related capital costs should be capitalized.

Condition: During the audit \$236k of planning costs were prematurely capitalized. The asset to which these planning costs related had not yet been placed into service.

Cause: Costs in flood related CIP projects include both costs related to assets that have been placed in service and planning costs for assets which have not yet been placed in service

Effect: Planning costs for assets that have not been placed in service have been capitalized

Recommendation: CGW management has created new project codes in MUNIS to help provide separation between future projects and current projects. The auditor recommends periodic reconciliations be performed that account for the planning cost related to assets that have not been placed in service. Hazen & Sawyer has the information needed for the reconciliation.

Management Comments:

Agree X

Disagree

Corrective Action Plan:

As stated in the recommendation we have already created some additional project codes to better delineate engineering costs. In addition, as soon as this error was brought to our attention (February 2012) the \$236k was moved back to CIP. Projects are being reviewed as part of the capitalization process.

Projected Completion Date: February, 2012

Responsible Manager: Fred Klein

2. Weakness regarding grant claims

Criteria: The status of cost recovery and grant claims should be checked and documented so that any change in status will be detected at the earliest possible date. Effective communication with State agencies and between departments within the City is critical to accomplishing this goal. Process ownership needs to be at the highest effective level in the City to ensure action by all responsible parties. All cost recovery and grant requests should be submitted in a timely manner.

Condition: The auditors documented that management took several proactive steps to determine status of claims, but we noted two situations in which flood related cost recovery/grant request-s were still delayed for several months before management became aware that a problem existed. The City’s request for FEMA assistance was defunded in February 2011 and management was not aware of the defunding until several months later. Also, the CDBG grant application for disaster assistance related to the WWTP recovery was not submitted to the grantor by another City the Housing and Community Development (HCD) department. Management was not aware of the lack of submission until several months had passed.

Cause: The steps taken by management proved ineffective at discovering changes/delays in cost recovery/grant claims. For both the FEMA and CDBG recovery efforts, communication on claim status between CGW and TEMA and between CGW and HCD was ineffective.

Effect: Cost recovery process may be delayed or put at risk.

Recommendation: Learn from this situation. Management needs to take whatever actions are necessary that ensure state/federal agencies and other City departments provide CGW with accurate, timely and effective communication (status updates) so that the City’s interests are protected.

Management Comments:

Agree X

Disagree

Corrective Action Plan:

We took several actions to ensure the claim process was monitored.

FEMA:

The structure of the grant program requires CGW to work through TEMA throughout the recovery application process.

- CGW management continuously questioned the status of the claim through a TEMA representative
- CGW submitted all claims for FEMA funding in a timely manner including time extension requests as required under the FEMA guidelines even though the status of the worksheets is unknown
- CGW clearly defined in the initial Designation of Applicants Agent Certification filed with TEMA that all correspondence associated with the grant application be forwarded to the General Manager of CGW. (No notice of the defunded claim was sent to this contact). TEMA claims notice was sent to the former Mayor at City Hall but no evidence of that communication was found.

- Since being notified in May of 2011 of the declaration that projects were ineligible CGW has retained the services of Bass, Berry and Sims to appeal the decision.
- CGW management and City representatives including the Mayor and City Attorney, have met on several occasions with the Director of TEMA and his staff as well as representatives from Tennessee's legislative body and FEMA representatives.
- Since June 2011 we have corresponded with TEMA legal staff thru Bass, Berry & Sims as we await a decision from FEMA on the appeal.

CDBG:

The CDBG disaster recovery funding is administered through the City's Housing and Community Development Department (HCD). Clarksville Gas and Water cannot apply for CDBG funding independently and must go through HCD to apply for grants. Clarksville Gas and Water does not have a point of contact with the State for these grants.

- All requested documentation has been supplied to HCD as it became available.
- Since becoming aware that the City had not applied for CDBG disaster recovery funds, CGW has retained the services of CDM Smith which assisted in the initial flood recovery effort and has experience administering State disaster recovery programs. CDM Smith helps insure we meet all required deadlines and submittals.

After having gone through this disaster recovery application effort, we are acutely aware of the immediate need for accurate, timely and effective communication related to the monitoring of claims. However, communication is a two way street and we cannot force a response from outside Agencies. We can however leave a clear audit trail of our continued attempts to monitor the status of our claims.

Also, having gone through this process, we more fully understand the value of using legal and technical representation (outside experts) during the disaster recovery process and will use these resources and City management's support to establish effective monitoring of claims when it is not provided by the managing agency or the managing department.

Projected Completion Date: Completed

Responsible Manager: Pat Hickey,

Conclusion:

Our report described the WWTP recovery process and communicated the project's status and accomplishments as of November 30, 2011; and it evaluated the status against project management criteria, and assessed the relevant procedures and project controls observed during the period May 2, 2010 through November 30, 2011.

As of November 30, 2011, the WWTP recovery has expended \$43M (\$38M on cleanup and recovery, \$3M related to asset write offs, and \$2M on planning for the upcoming WWTP Improvement Project). Major construction is projected to begin in the summer of 2012 on the \$62M WWTP Improvement Project. This major construction project is expected to complete the WWTP recovery process. Without considering FEMA and CDBG reimbursement, the recovery related loan funding needed is projected to be \$102M (\$38M cleanup and recovery expended, plus \$62M WWTP Improvement Project plus \$2M in projected flood related operating costs

Our assessment of project procedures and controls indicated that the majority of project controls have been in place to minimize project risks. However, we have identified areas where improvement should be made and provided recommendations to assist management in reducing risks, and assuring that internal controls are applied. There is some uncertainty related to the City's qualification for FEMA and CDBG cost reimbursements. There is also uncertainty concerning the amount and timing of those reimbursements. A FEMA ruling on CGWs disaster recovery claim is expected in late spring/early summer 2012. The CDBG claim has not been filed as of the date of this report, but is scheduled to be filed in late spring/early summer 2012. The difference between the cost of the recovery and the FEMA reimbursements will be funded by the ratepayers through either a special purpose fee, rate increase, or some combination.

We separately presented a vulnerability assessment to CGW management for their consideration. As this information is protected by State of Tennessee code 10-7-504(a)(21)(A)(i) we cannot report the results in a public document.

The auditor would like to thank the Clarksville Gas and Water staff and the engineering firm Hazen & Sawyer for their help and support during the performance of this audit. Their positive attitude facilitated the conduct of the audit and provides the necessary environment for process improvements to take place.

If further information about this audit is desired please contact Internal Audit at 931-648-6106.