



**AGENDA**  
**Water and Wastewater Financing Board**

March 10, 2015  
10:00 am  
Room 31, Legislative Plaza  
301 Sixth Avenue North  
(6<sup>th</sup> Avenue between Charlotte Avenue and Union Street)  
Nashville, Tennessee

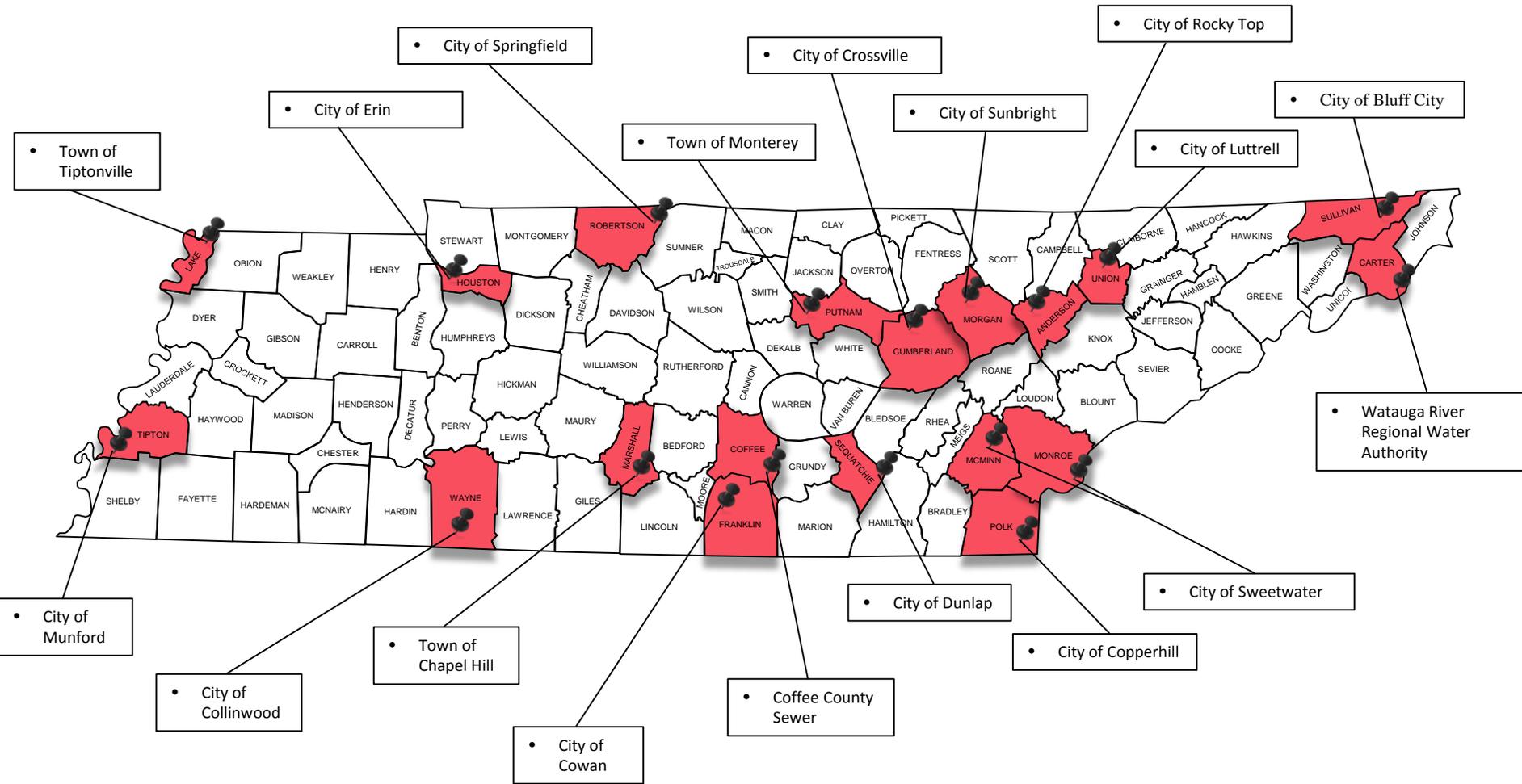
Call to Order			
Approval of Minutes		December 3, 2015	Pg. 3
Staff Update			
Cases – Financial Distress	City of Crossville	Cumberland County	Pg. 10
	City of Luttrell	Union County	Pg. 29
	Town of Monterey	Putnam County	Pg. 31
	Watauga River Regional Water Authority	Carter County	Pg. 41
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	City of Munford	Tipton County	Pg. 56
	City of Bluff City	Sullivan County	Pg. 66
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Cases – Water loss:	City of Sweetwater	Monroe/McMinn Counties	Pg. 109
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Status – Water loss:	Town of Chapel Hill	Marshall County	Pg. 135
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	Water Loss Discussion		Pg. 169
	Oversight List		
	Next meeting		
Open Discussion			

Visitors to the Legislative Plaza are required to pass through a metal detector and must present photo identification. Individuals with disabilities who wish to participate in this meeting or to review filings should contact the Office of Administration to discuss any auxiliary aids or services need to facilitate such participation. Such contact may be in person or by writing, telephone or other means, and should be made prior to the scheduled meeting date to allow time to provide such aid or service. Contact the Office of Administration (Mr. John Greer) for further information.

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# WWF&B

MARCH 10, 2016



# Minutes

December 3, 2015

**MINUTES**  
**of the**  
**WATER AND WASTEWATER FINANCING BOARD MEETING**  
**December 3, 2015**  
**9:15 a.m.**

Chair Ann Butterworth detected a quorum and called to order the meeting of the Water and Wastewater Financing Board (Board) in Legislative Plaza, Room 31, in Nashville, Tennessee.

**Board members present and constituting a quorum:**

Ann Butterworth, Chair, Comptroller Designee

Tom Moss, Department of Environment and Conservation (TDEC), Commissioner Designee

Randy Wilkins, Representing Utility Districts

Kenneth Wiggins, Active Employee of a Municipal Water System

Drexel Heidel, Active Employee of a Water Utility District

Rick Graham, Representing Municipalities

**Board members absent:**

Tamika Parker, Representing Environmental Interests

Mechele Williams, Representing Government Finance

VACANT, Representing Manufacturing Interests

**Staff present:**

Joyce Welborn, Comptroller's Office

John Greer, Comptroller's Office

**Counsel present:**

Betsy Knotts, Comptroller's Office

Ms. Butterworth asked that all members and staff introduce themselves. It was noted that the meeting was the last for Ms. Welborn, and the first for Mr. Graham.

Ms. Knotts provided a brief summary of the conflict of interest policy.

**Approval of Minutes:**

Mr. Wilkins moved approval of the minutes of September 10, 2015. Mr. Wiggins seconded the motion, which was approved unanimously.

### **Cases – Financial distress**

Mr. Greer presented the following cases:

#### **City of Luttrell**

The Mayor of Luttrell had planned on attending the meeting, but due to vehicle issues had been unable. Mr. Moss moved that the City of Luttrell be deferred until the next Board meeting. Mr. Heidel seconded the motion, which carried unanimously.

#### **City of Rocky Top**

The City of Rocky Top (City) was reported to the Board for having two consecutive years with a negative net change in net position, in its water and sewer fund, as of June 30, 2014. The City has had an operating loss for a minimum of 5 years, but grants and capital contributions have allowed them to be in financial compliance.

The following individuals were present and representing the City:

Mayor – Michael Lovely

City Recorder – Michael Foster

Commissioner – Denise Casteel

Ms. Casteel addressed the Board and asked for a deferral of action. This request was made to allow the City ample time to produce a corrective action plan for the Board to consider. MTAS has been contracted to provide a rate study that will be part of the plan submitted to the Board. The City is waiting on their 2014-2015 audit to have accurate numbers to provide to MTAS.

Mr. Heidel moved, by formal order, that the City of Rocky Top submit a corrective action plan, and appear before the Board in March. Mr. Moss seconded the motion, which carried unanimously.

### **Status reports – Financial Distress**

Mr. Greer explained that status reports are presented simply to update the Board on certain matters specific to the entities involved. No action is taken unless specified by members. The entities will continue to be monitored by the Board until compliance is reached. Mr. Greer presented the following cases:

#### **City of Bluff City**

The City of Bluff City was referred to the Board for three consecutive years with a negative net change in net position as of June 30, 2014. At a previous meeting, the Board endorsed the plan submitted by the city which consisted of three 15% rate increases on July 1<sup>st</sup> 2014, 2015, and 2016. On June 3, 2015, staff received a letter stating that the City decided it no longer needed those rate increases and would not be putting them into effect.

The following individuals were present on behalf of the City:

Mayor – Irene Wells

City Recorder – Sharon Green

City Public Works Director – Hugh Thomason

City Engineer – Dave Wilson

The City provided an engineering study based on projected audit totals. This showed the City losing approximately \$70,000 for the 2015 fiscal year.

Mr. Moss moved that the City appear before the Board at the first meeting after July 1, 2016 and show evidence of an 8% rate increase. The motion failed for lack of a second.

Mr. Heidel commented that the Board was uncomfortable taking any action due to the lack of sound financial data.

Mr. Heidel moved, by formal order, that the City work with staff and provide revised numbers (to include depreciation and inter-fund transfer payments) for the March Board meeting. Mr. Wiggins seconded the motion, which carried unanimously.

### **Town of Stanton**

The Town of Stanton was reported to the Water and Wastewater Financing Board as being financially distressed based on a negative change in net position for a third consecutive year in its water and sewer system. Effective January 1, 2015, the Town raised water and sewer rates 60% based on an MTAS rate study. The Town has applied for grants to rehab the sewer lagoon and restore an outdated water tank.

### **Cases – Water loss**

Mr. Greer explained that water loss cases are simply presented, but no action is taken unless specifically requested by individual members. The cases will continue to be reviewed annually until they are in compliance. Mr. Greer presented the following cases:

### **City of Ripley**

The City of Ripley was reported to the Board for having a low validity score of 70. No action was taken by the Board.

### **Status reports – Water loss**

Mr. Greer explained that status reports are presented simply to update the Board on certain matters specific to the entities involved. No action is taken unless specified by members. The entities will continue to be monitored by the Board until compliance is reached.

### **Town of Byrdstown**

The Town of Byrdstown was originally referred to the Board for having excessive non-revenue water of 49%. The Town submitted an updated meter replacement policy, and the Board chose to take no action at this meeting.

### **Miscellaneous**

#### **Approval of Rules**

Ms. Knotts presented the draft rules which the Board members received via email in October. The rewrite of the rules is basically a streamlining of the current rules in place. Mr. Wiggins suggested that the word shall be changed to may in the section that details the Board setting guidelines for staff on an annual basis. Ms. Welborn suggested that unaccounted for water be changed to non-revenue water in all applicable places.

With the suggested changes, the board unanimously promulgated the rules via roll call vote and directed counsel to complete the remainder of the rulemaking process.

**Compliance List**

A compliance report for the cities of Kingston and Jellico was included in the packet.

**Jurisdiction List**

A schedule identifying all systems which were under the Board's jurisdiction was included in the packet. A separate sheet was included for those the systems dealing only with excessive non-revenue water or a low validity score.

**Proposed 2016 Meeting Schedule**

Mr. Wilkins moved, by resolution, to set the 2016 meeting schedule as follows:

Thursday, January 14, 2016

Thursday, March 10, 2016

Thursday, May 12, 2016

Thursday, July 14, 2016

Thursday, September 08, 2016

Thursday, November 10, 2016

Mr. Graham seconded the motion, which passed unanimously.

Ms. Butterworth recessed the meeting at 10:25.

Ms. Butterworth called the meeting back into session at 10:40 am, to discuss the items on AGENDA # 2. The Utility Management Review Board was also present at this time.

**Tennessee Water Loss Regulatory History**

Ms. Welborn provided a brief history of the water loss regulatory environment in Tennessee.

**AWWA Methodology**

Mr. Chris Leauber with the Water Authority of Wilson County presented a brief overview of the AWWA spreadsheet and reporting structure.

**Water Research Foundation**

Water loss data from Tennessee was included in the Water Research Foundation's annual report. This data showed Tennessee to be in a strong position compared to other similar states. Tennessee also had one of the lowest percentages of unusable data.

**Presentation of Draft Validity Score Non-Compliance Questionnaire**

Mr. Leauber presented the draft Validity Score Non-Compliance Questionnaire. No action was taken by the Board.

**Presentation of Draft Non-Revenue Water Non-Compliance Questionnaire**

Mr. Leauber presented the draft Non-Revenue Water Non-Compliance Questionnaire. No action was taken by the Board.

**Respectfully submitted,**

**Ann Butterworth  
Chair**

**John Greer  
Utilities Board Specialist**

Cases

Financial Distress

**WATER AND WASTEWATER FINANCING BOARD  
Case Study**

**Case:** City of Crossville  
**Mayor:** James Mayberry  
**Customers:** 12,460 Water, 4,913 sewer  
**Validity Score:** 88  
**Non-Revenue Water:** 23.70%

The City of Crossville (City) has been reported to the Water and Wastewater Financing Board (Board) as having two consecutive years with a negative net change in net position, in its water and sewer fund, as of June 30, 2015. A sheet reflecting the financial and rate history is attached.

The City has had an operating loss for a minimum of 3 years, but grants and capital contributions have allowed them to be in financial compliance.

On July 1, 2015, the City raised water rates 10% and sewer rates 25%. The City is also proposing an additional 10% rate increase in sewer over the next two fiscal years, and an additional 4% rate increase for water over the same period.

**Staff recommends the Board endorse, by formal order, the City of Crossville's corrective action plan.**

CITY OF CROSSVILLE HISTORY FILE						
	Audited	Audited	Audited	Audited	Audited	Audited
Fiscal Year 6/30	2010	2011	2012	2013	2014	2015
Water/Sewer revenues	\$ 6,373,151	\$ 8,437,668	\$ 8,665,368	\$ 7,783,939	\$ 8,374,798	\$ 8,689,381
Intergovernmental Revenues		\$ 3,753,186	\$ 1,348,779	\$ 1,153,661	\$ 127,339	\$ 591,965
Other revenues	\$ 458,461	\$ 61,927	\$ 11,088	\$ 4,352	\$ 6,078	\$ 13,713
<b>Total Operating Revenues</b>	<b>\$ 6,831,612</b>	<b>\$ 12,252,781</b>	<b>\$ 10,025,235</b>	<b>\$ 8,941,952</b>	<b>\$ 8,508,215</b>	<b>\$ 9,295,059</b>
<b>Operating Expenses</b>	<b>\$ 6,476,564</b>	<b>\$ 6,673,123</b>	<b>\$ 7,360,824</b>	<b>\$ 7,900,295</b>	<b>\$ 8,337,543</b>	<b>\$ 9,299,789</b>
<b>Operating Income</b>	<b>\$ 355,048</b>	<b>\$ 5,579,658</b>	<b>\$ 2,664,411</b>	<b>\$ 1,041,657</b>	<b>\$ 170,672</b>	<b>\$ (4,730)</b>
Capital Contributions	\$ 3,892,015	\$ 1,313,317	\$ -	\$ 23,535	\$ -	\$ 101,000
Interest Expense	\$ (466,303)	\$ (418,172)	\$ (605,316)	\$ (878,580)	\$ (859,794)	\$ (626,807)
Other Expense					\$ (111,846)	
<b>Change in Net Position</b>	<b>\$ 3,780,760</b>	<b>\$ 6,474,803</b>	<b>\$ 2,059,095</b>	<b>\$ 186,612</b>	<b>\$ (800,968)</b>	<b>\$ (530,537)</b>
<u>Supplemental Information</u>						
Principal payment	\$ 1,294,209	\$ 1,298,271	\$ 1,884,613	\$ 7,680,814	\$ 1,217,016	\$ 11,062,078
Depreciation	\$ 2,138,982	\$ 2,255,800	\$ 2,651,336	\$ 2,933,552	\$ 3,112,086	\$ 3,063,551
<b>Water Rates</b>						
<b>Inside City Limits</b>						
First 2,000 gallons	\$ 7.74	\$ 7.38	\$ 8.52	\$ 8.94	\$ 8.94	\$ 9.12
All over	\$ 3.87	\$ 3.69	\$ 4.26	\$ 4.47	\$ 4.47	\$ 4.56
<b>Water Rates</b>						
<b>Outside City Limits</b>						
First 2,000 gallons	\$ 11.62	\$ 11.08	\$ 12.78	\$ 13.42	\$ 13.42	\$ 13.68
All over	\$ 5.81	\$ 5.54	\$ 6.39	\$ 6.71	\$ 6.71	\$ 6.84
<b>Sewer Rates</b>						
<b>Inside City Limits</b>						
First 2,000 gallons	\$ 9.49	\$ 9.00	\$ 10.42	\$ 10.94	\$ 10.94	\$ 11.48
All over	\$ 4.73	\$ 4.50	\$ 5.21	\$ 5.47	\$ 5.47	\$ 5.74
<b>Sewer Rates</b>						
<b>Outside City Limits</b>						
First 2,000 gallons	\$ 14.20	\$ 13.50	\$ 15.62	\$ 16.40	\$ 16.40	\$ 17.22
All over	\$ 7.10	\$ 6.75	\$ 7.81	\$ 8.20	\$ 8.20	\$ 8.61
<b>Utility Districts</b>	<b>\$ 2.80</b>	<b>\$ 2.80</b>	<b>\$ 3.09</b>	<b>\$ 3.24</b>	<b>\$ 3.24</b>	<b>\$ 3.30</b>
Water Customers	11,876	11,745	12,167	12,244	12,369	12,460
Sewer Customers	4,662	4,670	4,778	4,819	4,883	4,913
<b>Water Loss</b>	<b>27.70%</b>	<b>21.40%</b>	<b>21.10%</b>			
<b>Non-Revenue Water</b>				<b>24.10%</b>	<b>7.70%</b>	<b>23.70%</b>
<b>Validity Score</b>				<b>75</b>	<b>88</b>	<b>88</b>

City of Crossville  
392 North Main Street  
Crossville, Tennessee 38555

931-484-7060 (Phone)  
931-484-7713 (Fax)

February 9, 2016

John Greer  
Utilities Board Specialist  
Suite 1700, James K. Polk Building  
505 Deaderick Street  
Nashville, TN 37243-1402

John:

Thank you for meeting with me, the Mayor and Finance Director to discuss the issues concerning the city's financially stressed water and sewer funds. As I explained to you in the meeting, the city had already undertaken a significant rate increase in the water and sewer funds just the past fiscal year, July 1, 2015 - June 30, 2016. You were provided financial statements showing the results of such an increase on the overall position of cash flow. I shared with you the transmittal letter that I presented to Council when they received their proposed budget for this fiscal year. I also shared with you a copy of the transmittal letter when Council was presented the projected three year budget. I have pulled information pertinent to water and sewer and included it in this response.

- *Our water and sewer fees need to be increased to make sure that adequate funds are, or will become available for maintenance, operations, and capital expenditures. There are some significant capital expenses proposed in the water and sewer department. Water rates are proposed to increase 10% while sewer rates will increase 25%. These increases result in an additional \$2.89 a month on a minimum residential account, up from \$21.49 to \$24.38. These increases are needed to actually fund depreciation. These funds would then be accessible to do rehab in the existing system. The Council may have to look at expanding the treatment capacity of the water plant at Meadow Park Lake within the next four years. The regional water supply study being conducted by the Corps of Engineers is nearing completion. The wastewater treatment facility will need to expand in the next several years if the City continues to grow. If the state does not issue a permit increase in treatment capacity for the wastewater plant, then the City may have to look at another treatment plant with land application instead of surface water discharge.*
- *There are several capital projects to be scheduled for the coming years other than the upgrade of the Meadow Park Lake water treatment plant. There are several projects that are not included*

*in the operating budget for next year but should be thoroughly discussed and considered. Work is progressing on the line replacement in Brookhaven.*

- *A request for a meter testing program with equipment and an employee, which is required by official reporting for the audit, has been made. Staff recommends that Council seriously consider this request.*
- *Our water and sewer fees need to be examined closely to make sure that adequate funds are, or will become, available for maintenance, operations, depreciation, debt services, and capital expenditures.*
- *The Water and Sewer funds are facing a significant rate increase to cover depreciation expense that must be funded. A proposed sewer rate of 35% has been spread over the three year operating budget. A proposed water rate increase of 14% has been spread over the three year operating budget. With depreciation actually funded, these funds would be available to do rehab work throughout the system without having to increase debt service for certain rehab projects.*

I have also included the water and sewer infrastructure/capital needs from the city's 2015-2024 capital plan. The financial summary shows the projected needs over a three, five and ten year time frame. The city is currently revising the capital plan for 2016-2017 and that plan should be adopted by Council in May of this year.

I will be presenting another rate increase for water and sewer in the 2016-2017 operating budget. The proposed rate increase identified in the three year operating budget transmittal letter was 14% for water and 35 % for sewer over the three year period. This requires a rate increase of 2% for water and 5% for sewer for the 2016-2017 budget.

If I can be of further assistance, please do not hesitate to call. Thank you for presenting to the Board on the City's behalf.

Respectfully,



David A. Rutherford, AICP, ICMA-CM  
City Manager

March 31, 2015

TO: Mayor and Councilmembers  
FR: David A. Rutherford, City Manager, AICP, ICMA-CM  
RE: 2015-16 Budget Transmittal Letter

The proposed budget for 2015-16 for the city of Crossville is beginning to reflect positive conditions that are being experienced throughout many cities in the state of Tennessee and across the nation. Sales tax has surpassed the lows of 2005-09, while other revenues remain stagnant. The proposed budget (2015-16) for the state of Tennessee is expected to have reductions in funding for the local government. It is expected that fuel prices will continue to rise to the levels of the past years thus costing more for public safety and other departments to operate vehicles. The costs of electricity and fuel will probably increase, as has been the case for the past several years.

However, it should be noted that the city of Crossville has weathered the economic storm of the past several years. The city has a "rainy day fund" of \$7.8 million in cash that can cover 200 days of operating expense. The city has had to cut-back on some of the normal expenses for street resurfacing and police car replacement. For the city to get back on schedule to deal with its capital projects and new programs, the Council must look at stabilizing revenues and controlling expenses. The Council does understand that any new program(s) or capital project(s) will have to bring the corresponding revenue stream or reduction in existing expenses in order to meet debt service and not create a negative cash flow problem for the future. For the city to undertake new programs or projects and continue to provide current services to city residents, new revenues (even if from fund balance), will be needed or services and staff will have to be reduced.

It is projected that sales tax revenues may not increase significantly for the next budget year. With the potential reduction in sales tax at the state level, it is not clear yet whether the state-shared taxes that the city receives from the state will be unaffected. The majority of funds to operate the city come from fees, state-shared taxes, local option sales tax and property taxes.

The property tax collected in the city of Crossville contributes approximately 15% of the city's operating budget. The basic general operating budget for the city of Crossville is \$13.4 million dollars. This amount does not include any grants or loans for any capital projects or special programs. Similar sized cities' percentage of property tax of the total budget range from 44 % to 60%. The local option sales tax collected in Crossville for city use contributes approximately 54 % of the city's operating budget. Similar sized cities' percentage of local option sales tax of the total budget range from 30% to 45%.

For the proposed 2015-2016 budget, staff is proposing a ten cent increase (\$400,000) in property tax rate. Staff has spent the past year reviewing property tax rates, fees and charges for services, and overall operating efficiencies of all departments to determine what, if any, savings can be achieved. The city did offer an early retirement incentive program that was accepted by 18 eligible employees. This incentive program did result in a decrease of payroll and benefits of \$314,504 in general fund and \$89,175 in the water/sewer fund, an enterprise fund. The overall savings to the budgets, after deducting retiree insurance expense, is \$357,679.

The city has prepared its second 3 year operating budget as a guide for the Council to use in understanding the present and future impact of operating expenses for its departments. The three year budget will allow Council to plan for capital expenditures, recurring costs from those and deal with the inflationary increases in the operating budget.

Our water and sewer fees need to be increased to make sure that adequate funds are, or will become, available for maintenance, operations and capital expenditures. There are some significant capital expenses proposed in the water and sewer department. Water rates are proposed to increase 10% while sewer rates will increase 25%. These increases result in an additional \$2.89 a month on a minimum residential account, up from \$21.49 to \$24.38. These increases are needed to actually fund depreciation. These funds would then be accessible to do rehab in the existing system. The Council may have to look at expanding the treatment capacity of the water plant at Meadow Park Lake within the next four years. The regional water supply study being conducted by the Corps of Engineers is nearing completion. The wastewater treatment facility will need to expand in the next several years if the city continues to grow. If the state does not issue a permit increase in treatment capacity for the wastewater plant, then the city may have to look at another treatment plant with land application instead of surface water discharge.

The Council has been presented with a draft Capital Improvement Program (CIP) for 2015-2024. The CIP is divided into three sections: three year, five year and ten year. This document includes projects that have been discussed often but not funded over the last seven years or so. The city charter requires that the CIP be adopted by City Council on or before June 1<sup>st</sup> of the current year.

Each city department has presented in the CIP the capital expenses needed for their department. The Council needs to review and determine when the best time to fund the expense is. As explained to Council, capital projects listed in the CIP are needed for the city's future to protect assets and to continue to deliver necessary services to citizens.

The operating budget does not include any cost of living adjustment (COLA) for the employees. The city completed over the past year a comprehensive compensation study and classification plan. The compensation study included salary comparisons from the Municipal Technical Advisory Service's (MTAS) annual salary survey. The study looked at similar sized cities in population and overall budgets. The classification study included a review by department heads of all job descriptions for their employees. The Council approved the compensation and classification plan in January 2015. The recommendations in compensation were implemented in January. There was one caveat; the

compensation for the Fire Department employees will continue to be reviewed and some adjustments may have to be made in next year's operating budget. The reason for this is that the Fire Department is now working a standard 28 day cycle.

The Police Department will be working a standard 14 day cycle, 12 hour shifts. A new organizational structure will be presented by the Police Chief at a future work session.

The projected additional cost of health insurance (20%) for 2016 has been calculated and included in the proposed 2015-16 operating budget. An employee wellness program was presented to Council for its consideration last year and will be presented again this year. The estimated cost of the wellness program is approximately \$50,000, if a majority of employees participate, and incentives offered were to be awarded to the participants. In conjunction with the wellness program is a biometric screening program by BlueCross BlueShield with a cost of \$10,000. In 2014, BCBS covered the cost of the biometric screening for city employees. The Council will decide if the wellness program becomes a reality in July 2015 for the fiscal year.

The city has participated in a benchmarking study conducted in 2015 by Municipal Technical Advisory Service (MTAS) comparing eleven service areas with 21 comparable cities from the MTAS study. The city expects to receive the report by June. The Council will no doubt spend considerable time during budget review with individual departments to get a better understanding of the overall operation.

In the proposed operating budget for 2015-16, staff was asked to review the departmental expenses and make necessary changes, increases or decreases in individual line items. Staff was asked to closely look at the maintenance expense for equipment, vehicles and facilities. There were some minor increases in certain departments that have been included in the proposed budget. Large departmental requests are noted, but have not been included in the proposed budget. Council will have to review those requests and determine whether to include them.

The annual summer help program has not been included in the budget. A proposed change this year is to have each department hire the employees they need for the time period. The previous funding was \$70,000. This year we have included the social security amount to cover that expense. As you can see from the departmental review of the budget, the requested seasonal help is not listed and has not been included in the operating budget.

Following is a general discussion about certain projects or departmental requests. For your ease in reviewing the budget, the correct budget page is referenced for the particular department.

### General Fund

#### **Community Development** Downtown project and Northwest Connector **page 43**

The downtown project has been greatly reduced from the original concept. At present, it only includes the replacement of a major water line and necessary ADA upgrades to the sidewalks. The costs of the sidewalk project will be covered with city funds and no grant funds. The waterline project costs will be

covered by state loan dollars. The city returned more than \$3.5 million dollars to several state & federal agencies when the decision was made to reduce the concept.

Northwest Connector Phases II & III are shown in the budget as a capital expenditure for 2015-16 and will require funding from a line of credit. The amount for 2015-16 is \$1,457,000. Funds needed in 2016-2017 are estimated to be \$956,250. These funds will also come from a line of credit. TDOT-STP funds of \$980,849 will reimburse acquisition/ROW costs.

### **Central Staff pages 9-10**

The city completed the security audit funded in 2014-15 for the computer networks systems. There were good recommendations that will be reviewed and implemented. There is a request for a generator to maintain our systems should we have a weather event similar to February 2015.

### **Engineering pages 11-12**

The request is to upgrade the GPS equipment and an upgrade of GIS software.

### **City Hall Building page 15**

The capital request is for new windows on the third floor of the building. These windows were not replaced when the building was upgraded as a measure to save money.

### **Maintenance pages 16-17**

The capital request is for a new truck to replace a 1997 model that is unreliable and has high mileage. There are also requests for a heater that will burn waste oil and a generator.

### **Administration pages 18-19**

Several operating requests are included here: Wellness & Biometric program and additional funding to the Cumberland County Veterans Affairs office. This increase in funding is made for the next four years at which time it would be continued at that level or another increase due to growth of the office and services provided.

Listed here are the costs of all special events, (special event costs) held in the city by other groups. The amount listed is to cover expenses of the police department, street, maintenance, and park and recreation staff as they help with special events throughout the year.

### **Police Department pages 20-22**

The capital items requested here are replacement of five equipped police cars, animal control truck and two detective vehicles. Two new items for consideration are generators and drones. The drones would be used in drug surveillance activities. The concept of purchasing 20 police vehicles this year is being

considered. Funding would be three year capital outlay notes from TML. There will be more discussion on this when the police department budget is reviewed by Council.

**Fire Department      pages 23-25**

The fire department has requested three new firefighter positions and a light rescue truck to change the way first responder calls are handled from one station. Funds are requested to complete a re-modeling project at station 2. Requests for two generators and a washer/dryer has also been made.

The fire department was reviewed by Insurance Services Organization (ISO) to determine the classification of the city. The city had a rating of 4 and now the new rating splits the city into two classifications: 3/3X. The city had not been reviewed by ISO in 20 years. The city had anticipated a split rating could be issued partly due to the city boundaries expansions in the past, lack of adequate water supply and some structures greater than five miles from a responding station. There is an immediate need to install some fire hydrants in strategic locations to provide adequate flow for some commercial establishments, as well as improve water distribution systems in some neighborhoods which would also include fire hydrants. Some of this work has already begun.

Funding of \$400,000 has been requested for tornado warning sirens. This would cover the purchase and installation of eight warning sirens.

**Codes Administration    pages 26-27**

An operating request for funds to be used for demolition of dilapidated structures is proposed so that the city can remove those structures and improve neighborhoods. The amount should cover the disposal costs of the materials. If the city continues to do building inspections for the county, a new employee will be needed to continue the work of code enforcement in the city. The administrative hearing officer program can help the Codes Department deal with the violations of building and property maintenance codes. This program can reduce the time involved in trying to get violations corrected. Penalties can be up to \$500 per day per violation as opposed to the normal \$50 fine allowed by the State Constitution. Staff strongly recommends Council move forward in creating this program.

**Highways and Streets    pages 28-30**

An operating request for infrared asphalt patching equipment has been made. Some capital items requested include two new trucks to replace older vehicles. Construction of a building over the wash pad would aid in cleaning equipment, especially salt truck cleanup. The cost of this would be split with water and sewer. The other operating requests are for a new sidewalk and drainage improvement on Industrial Blvd. at Centennial Park. There is a request for a small generator. There are also numerous sidewalk project requests.

The funds needed for street resurfacing (\$600,000) have not been included. Staff is recommending that a line of credit be established to pay for resurfacing and to create a schedule that would allow for a twelve year cycle to resurface all city streets.

**Park and Recreation    pages 32-34**

A request for two full time employees is proposed, a full time secretary and a maintenance person. There are numerous capital items requested including the light pole replacement at Warner and demolition of Garrison Park to make room for a new park and splash pad as identified in the comprehensive recreation plan.

**Meadow Park Lake    pages 36-37**

The operating requests are for additional funds to do facility maintenance and a boat motor for the park's boat.

**Palace Theater    pages 38-39**

The operating request is for funds to improve stage lighting by changing it to LED.

**Marketing and Promotions    pages 42-43**

A new funding request is made to help fund the cost of a documentary on the Cumberland County Playhouse celebrating its 50 year history. Funding for several golf tournaments has been cut with the plans to get co-sponsors to assist with the overall cost. Staff did alert Council in the three year operating budget transmittal letter in 2014 that the marketing program be reviewed carefully for possible cutbacks and determination of direct community benefit. The production of the annual report also has been removed from the budget.

**Outside Agencies    page 41**

Funding for the outside agencies (non-profits) has been stricken from the budget. The only funding to outside agencies is for the Chamber of Commerce and the Cumberland County Playhouse. Funding for the agencies can be added back with Council action. The funds requested by the agencies are shown on page 41.

**Water and Sewer Fund**

There are several capital projects that need to be scheduled for the coming years other than the upgrade of the Meadow Park Lake water treatment plant. There are several projects that are not included in the operating budget for next year but should be thoroughly discussed and considered. Work is progressing on the line replacement in Brookhaven.

A request for a meter testing program with equipment and an employee, which is required by official reporting for the audit, has been made. Staff recommends that Council seriously consider this request.

**The following projects are not included in the operating budget for next year:**

A truck is requested for water resources and funds for the demolition of the old water plant are requested. **page 8**

The wash pad requested by Street Department will have half the costs shared by water and sewer. **page 18**

7 Waterline Projects **page 18**

2 Sewer Projects **page 18**

3 Pump Station Upgrades **page 18**

1 Utility Relocation **page 18**

**Catoosa Utility Department** **page 6**

Capital projects requests, not included in the operating budget for 2015-16, for Catoosa include:

Generators

Engineering for water line Relocation on Hwy 127 N

Facility maintenance for office shelves.

Parking lot paving has been requested last few years and not funded. A decision needs to be made this year.

**Public Works Director**

The position of the Director of Municipal Operations (Public Works Director) is not included in the 2015-16 operating budget, but has been listed as a request. Staff thinks this position would be beneficial to the overall operation of the four departments (Catoosa, maintenance, streets, and water transmission/utility maintenance). With the winter storm event of February 2015 and the efficient departmental cooperation, a decision on this position could be addressed in the future.

**Tennessee Consolidated Retirement System**

In 2012, the city decided to opt out of the TCRS for new employees hired after July 1, 2013. This decision was made as a cost saving measure. The new employees would pay 5% of their salary to a 401-A contributory retirement plan with the International City Management Association. The city will contribute 5% as a match and up to 3% more if the employee chooses to put in additional money. Although the decision may have resulted in some savings, the major problem is that the City of Crossville is no longer attractive to seasoned employees. The Police Department has had several good candidates interested in positions, but when they learn that the city is no longer participating in TCRS, they withdraw. The city can enroll back into TCRS by paying the costs for the new employees hired since July

2013. The projected cost for this is \$59,000. My recommendation is that the city enroll the new employees in TCRS.

### **Refinancing of Rural Development Loans**

The city refinanced some bond loans for Catoosa in the amount of \$2.454 million. The refunding debt loan with US Bank for \$3.915 million was refinanced. The Rural Development loan for the Meadow Park Lake dam for \$3.917 was refinanced. The projected interest savings is over \$3.9 million by cutting the 38 year time to 20 years.

### **Budget for fiscal year 2015-16**

The operating budget presented for your review and adoption has “no frills”. There are many worthwhile projects and programs that have not been included in this budget. At present, the budget shows a small positive surplus of \$49,137 which can be added to the \$500,000 available cash from the year end cash balance of \$7,849,137. A list of requested budget items, but not included, has been generated. The Council can review the individual projects and discuss with staff to determine which projects might be placed in the 2015-16 operating budget.

The city’s policy on “rainy day” funds needs to be reviewed and consideration given to modifying it. Staff proposes that the funds be placed in two categories: restricted and non-restricted. The restricted fund would cover one year’s debt service and three months operating expense. There would be approximately \$4 million in the restricted account. The only way these funds could be used is for the council to vote to utilize them. The non-restricted account would include the remaining non-budgeted funds. These funds could be used to balance the budget and/or fund capital expenditures. Staff further recommends that the operating budget be balanced when adopted and the practice of deficit budgeting cease. Unrestricted cash balance is projected to be \$3,849,137.

The 2015-16 operating budget can be adopted without any tax increase for this fiscal year, but I recommend against this. Even though the increase is significant, those funds will be available to do upgrades to the system. A major concern is how the Council wishes to incorporate the capital expenditure items into the operating budget, through future operating funds or through loans. This Council is reminded that for every major expense addition that might be added now or in the future, there must be a source of new revenue, a corresponding reduction in current services, or a reduction in the non-restricted “rainy day fund”.

**413-Water & Sewer Fund**

FINANCIAL SUMMARY

REVENUE SUMMARY

INTERGOVERNMENTAL REV.	<b>PAGE 2</b>	195,200	500,200	200
CHARGES FOR SERVICES	<b>PAGE 2</b>	40,000	40,000	40,000
OTHER REVENUE	<b>PAGE 2</b>	11,000	12,000	11,200
PUBLIC ENT REVENUE	<b>PAGE 2-3</b>	7,887,680	8,166,808	8,416,704
<b>TOTAL REVENUE</b>		<b>8,133,880</b>	<b>8,719,008</b>	<b>8,468,104</b>

EXPENDITURE SUMMARY

Sewer Rehab-Veolia	<b>PAGE 4</b>	272,272	286,500	286,500
Administration	<b>PAGE 5-6</b>	4,154,950	4,023,900	4,055,900
Water Resources	<b>PAGE 7-8</b>	2,009,750	1,887,800	2,861,700
Water Trans. & Dist.	<b>PAGE 9-10</b>	617,900	729,775	858,025
Sewer Collection	<b>PAGE 11-12</b>	282,475	313,000	298,800
Sewer Treatment-Veolia	<b>PAGE 13</b>	1,100,416	1,225,000	1,225,000
Grinder Pumps	<b>PAGE 14-15</b>	293,125	302,175	303,175
Customer Acct/Collection	<b>PAGE 16-17</b>	313,975	331,050	332,050
Water & Sewer Projects	<b>PAGE 18</b>	6,710,550	2,700,000	2,249,000
Less Capital Expenses		(7,141,550)	(3,050,000)	(4,393,000)
<b>TOTAL EXPENDITURES</b>		<b>8,613,863</b>	<b>8,749,200</b>	<b>8,077,150</b>

REVENUE OVER/(UNDER) EXPENDITURES		<b>(479,983)</b>	<b>(30,192)</b>	<b>390,954</b>
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Water rate increase	10%	2%	2%
Sewer rate increase	25%	5%	5%

<b>WATER &amp; SEWER FUND</b>		FY	FY	FY	THREE	FY	FY	FIVE	FY	FY	FY	FY	TEN	
		2015/16	2016/17	2017/18	YEAR	2018/19	2019/20	YEAR	2020/21	2021/22	2022/23	2023/24	2024/25	YEAR
					TOTAL			TOTAL					TOTAL	
<b>Operating Funds</b>		1,417,550	690,000	418,000	<b>2,525,550</b>	175,000	87,000	<b>2,787,550</b>	-	415,000	125,000	86,000	335,000	<b>3,748,550</b>
<b>Grants</b>		-	2,304,756	2,100,000	<b>4,404,756</b>	1,000,000		<b>5,404,756</b>	2,000,000					<b>7,404,756</b>
<b>Loans</b>		5,723,000	5,380,893	1,900,000	<b>13,003,893</b>	-	7,600,000	<b>20,603,893</b>		9,000,000	5,300,000	-		<b>34,903,893</b>
<b>Total</b>		7,140,550	8,375,649	4,418,000	<b>19,934,199</b>	1,175,000	7,687,000	<b>28,796,199</b>	2,000,000	9,415,000	5,425,000	86,000	335,000	<b>46,057,199</b>
<b><u>Operating Funds</u></b>														-
Catoosa		100,000	470,000	174,000	<b>744,000</b>	100,000	27,000	<b>871,000</b>		50,000	65,000	50,000	335,000	<b>1,371,000</b>
Utility Maintenance		-	45,000	210,000	<b>255,000</b>	75,000	60,000	<b>390,000</b>		205,000				<b>595,000</b>
HWY 127S Cash Pd TDOT		1,142,550												
Veolia WWTP		50,000			<b>50,000</b>			<b>50,000</b>		160,000	60,000	36,000		<b>306,000</b>
Water Resources		125,000	175,000	34,000	<b>334,000</b>			<b>334,000</b>						<b>334,000</b>
					-			-						-
		1,417,550	690,000	418,000	<b>2,525,550</b>	175,000	87,000	<b>2,787,550</b>	-	415,000	125,000	86,000	335,000	<b>3,748,550</b>
<b><u>Grants</u></b>														
Catoosa			2,304,756	2,100,000	<b>4,404,756</b>	1,000,000		<b>5,404,756</b>						<b>5,404,756</b>
Veola (CDBG)		-			-			-						-
					-			-						-
		-	2,304,756	2,100,000	<b>4,404,756</b>	1,000,000		<b>5,404,756</b>						<b>5,404,756</b>
<b><u>Loans</u></b>														
Catoosa			2,331,893		<b>2,331,893</b>									
Maintenance		3,773,000	-		<b>3,773,000</b>			<b>3,773,000</b>						<b>3,773,000</b>
Veolia		1,950,000	3,049,000		<b>4,999,000</b>			<b>4,999,000</b>		800,000				<b>5,799,000</b>
Water Resources				1,900,000	<b>1,900,000</b>	-	7,600,000	<b>9,500,000</b>						<b>9,500,000</b>
					-			-	2,000,000	9,000,000	4,500,000	-		<b>15,500,000</b>
		5,723,000	5,380,893	1,900,000	<b>13,003,893</b>	-	7,600,000	<b>20,603,893</b>	2,000,000	9,000,000	5,300,000	-		<b>36,903,893</b>
<b><u>LOANS BORROWED EACH YEAR</u></b>	Borrow	5,550,000	5,400,000	1,900,000	<b>12,850,000</b>	-	7,600,000	<b>20,450,000</b>	2,000,000	9,000,000	5,300,000	4,500,000		<b>41,250,000</b>

**WATER & SEWER FUND**

	FY	FY	FY	THREE YEAR TOTAL	FY	FY	FIVE YEAR TOTAL	FY	FY	FY	FY	FY	TEN YEAR TOTAL
	2015/16	2016/17	2017/18		2018/19	2019/20		2020/21	2021/22	2022/23	2023/24	2024/25	
Payment		360,750	360,750	<b>721,500</b>	360,750	360,750	<b>1,443,000</b>	360,750	360,750	360,750	360,750	360,750	<b>3,246,750</b>
Payment			351,000	<b>351,000</b>	351,000	351,000	<b>1,053,000</b>	351,000	351,000	351,000	351,000	351,000	<b>2,808,000</b>
Payment				-	123,500	123,500	<b>247,000</b>	123,500	123,500	123,500	123,500	123,500	<b>864,500</b>
Payment				-			-	494,000	494,000	494,000	494,000	494,000	<b>2,470,000</b>
Payment				-			-		130,000	130,000	130,000	130,000	<b>520,000</b>
Payment				-			-			585,000	585,000	585,000	<b>1,755,000</b>
Payment				-			-				344,500	344,500	<b>689,000</b>
Payment				-			-						-
Payment				-			-						-
Payment				-			-						-
Totals		360,750	351,000	<b>711,750</b>	835,250	835,250	<b>2,743,000</b>	1,329,250	1,459,250	2,044,250	2,388,750	2,388,750	<b>12,353,250</b>

Loan payments that are calculated at 3% for 20 years is approx. \$65,000 per million.

	Balance	Principle/												
	42,004	Interest												
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5		Yr 6	Yr 7	Yr 8	Yr 9	Yr 10		
SRF 00-020 MPL Plant (water)	3,112,229	347,904	347,904	347,904	<b>1,043,712</b>	347,904	347,904	<b>1,739,520</b>	347,904	347,904	347,904	347,904	86,973	<b>3,218,109</b>
SRF 00-033 SO. Lines (water)	679,996	70,452	70,452	70,452	<b>211,356</b>	70,452	70,452	<b>352,260</b>	70,452	70,452	70,452	70,452	64,592	<b>698,660</b>
SRF 2010 - WWTP	2,440,758	177,744	177,744	177,744	<b>533,232</b>	177,744	177,744	<b>888,720</b>	177,744	177,744	177,744	177,744	177,744	<b>1,777,440</b>
SRF 2010 WTR Harvesting	2,721,282	196,608	196,608	196,608	<b>589,824</b>	196,608	196,608	<b>983,040</b>	196,608	196,608	196,608	196,608	196,608	<b>1,966,080</b>
SRF 2010 WWTP (\$500,000)	440,397	32,616	32,616	32,616	<b>97,848</b>	32,616	32,616	<b>163,080</b>	32,616	32,616	32,616	32,616	32,616	<b>326,160</b>
SRF - DWF 10-105	607,718	42,636	42,636	42,636	<b>127,908</b>	42,636	42,636	<b>213,180</b>	42,636	42,636	42,636	42,636	42,636	<b>426,360</b>

<b>WATER &amp; SEWER FUND</b>	FY	FY	FY	<b>THREE</b>	FY	FY	<b>FIVE</b>	FY	FY	FY	FY	FY	<b>TEN</b>	
	2015/16	2016/17	2017/18	<b>YEAR</b>	2018/19	2019/20	<b>YEAR</b>	2020/21	2021/22	2022/23	2023/24	2024/25	<b>YEAR</b>	
				<b>TOTAL</b>			<b>TOTAL</b>						<b>TOTAL</b>	
TMBF - MPL Dam Project	3,934,216	124,752	222,602	224,477	<b>571,831</b>	225,668	227,422	<b>1,024,921</b>	228,492	230,125	231,694	233,198	235,256	<b>2,183,686</b>
SRF 01-156 I/I (SEWER)	270,362	27,396	27,408	27,408	<b>82,212</b>	27,408	27,408	<b>137,028</b>	27,408	27,408	27,408	27,408	27,408	<b>274,068</b>
SRF 92-043 (SEWER)	98,107	98,107			<b>98,107</b>			<b>98,107</b>						<b>98,107</b>
Project 400-03 (sewer)	28,974				-			-						-
2012 Series C Bonds	8,660,000	252,794	377,794	385,294	<b>1,015,882</b>	381,244	382,194	<b>382,994</b>	380,094	382,194	384,194	650,900	823,150	<b>3,003,526</b>
TMBF Refund 2005 Bonds	3,747,350	263,000	264,200	270,000		277,000	278,000		285,000	291,000	297,200	308,200	318,775	<b>1,500,175</b>
TMBF Cumb Cove	2,440,377	76,500	136,433	137,583		138,312	139,388		140,043	141,045	142,006	142,928	144,189	<b>710,211</b>
					-			-						-
	<b>29,181,766</b>	<b>1,710,509</b>	<b>1,896,397</b>	<b>1,912,722</b>	<b>5,519,628</b>	<b>1,917,592</b>	<b>1,922,372</b>	<b>9,359,592</b>	<b>1,928,997</b>	<b>1,939,732</b>	<b>1,950,462</b>	<b>2,230,594</b>	<b>2,149,947</b>	<b>19,559,324</b>
<b><u>TOTAL PAYMENTS FOR</u></b>														
<b><u>THE YEAR</u></b>	<b>1,710,509</b>	<b>2,257,147</b>	<b>2,263,722</b>	<b>6,231,378</b>	<b>2,752,842</b>	<b>2,757,622</b>	<b>12,102,592</b>	<b>3,258,247</b>	<b>3,398,982</b>	<b>3,994,712</b>	<b>4,619,344</b>	<b>4,538,697</b>	<b>31,912,574</b>	

May 12, 2015

TO: Mayor and Councilmembers

FR: David A. Rutherford, City Manager, AICP, ICMA-CM

RE: Three Year Budget FY 16,17,18 Transmittal Letter

For the city to get back on schedule to deal with its capital projects, new programs or projects, the Council must look at stabilizing revenues and controlling expenses. For the city to undertake new programs or projects and continue to provide current services to city residents, the Council must understand that new revenues, even if from fund balances, will be needed or services and staff will have to be reduced.

It is projected that sales tax revenues will not increase significantly for the next three budget years. The majority of funds to operate the city come from fees, state-shared taxes, local option sales tax and property taxes. For the proposed 2015-16 and 2016-17 budgets, staff is proposing a modest increase in property tax rate of 10 cents and 5 cents respectfully.

Staff did spend the 2014-15 budget year reviewing property tax rates, fees and charges for services, and overall operating efficiencies of all departments to determine what, if any, savings can be achieved. This exercise resulted in several proposed changes in programs that Council has funded for years. There is still a lot of work to be done in the way services and programs are delivered to the citizens. The city's recreation program must increase its revenue stream to begin to offset the costs.

With this in mind, the city has prepared its second three year operating budget as a guide for the Council to use in understanding the present and future impact of operating expenses for its departments. The three year budget will allow Council to plan for capital expenditures, recurring costs from those and deal with the inflationary increases in the operating budget.

Our water and sewer fees need to be examined closely to make sure that adequate funds are, or will become, available for maintenance, operations, depreciation, debt service and capital expenditures. There are some significant capital expenses proposed in the water and sewer department over the next few years.

The 2015-16 operating budget does not include any cost of living adjustment (COLA) for the employees. Staff did prepare a comprehensive compensation and classification plan for the city employees and Council did adopt the plan in January 2015. The operating budget for 2016-17 does include a COLA of 2.50 %. The projected additional cost of health insurance (20%) for 2015-16 has been calculated and included in the

proposed 2015-16 operating budget. There has been a small inflationary increase proposed for the 2016-17 and 2017-18 operating budgets. However, it is quite possible that health insurance increases will exceed normal inflationary amounts. Staff has reviewed going to a self-funded approach with regard to health insurance and recommendations will be presented to Council this summer. Our insurance coverage period is calendar year as opposed to fiscal year. The basic plan of coverage has been reviewed with Blue Cross and potential changes that would result in savings for the city have been identified.

The 2015-16 operating budget can be adopted without any property tax increase for this fiscal year, but staff does recommend increasing the property tax by at least 10 cents. This 10 cent increase will raise approximately \$400,000 a year. However, for 2016-17, there is a proposed 5 cent property tax increase. For 2016-17, another 5 cent property tax increase will be proposed, which will bring an additional \$200,000 a year. The proposed COLA for 2016-17 will have a cost of approximately \$175,000. Departmental review for efficiencies for project completion and staff utilization must continue and could result in some saving alternatives, should Council wish to accept. There is significant savings in the 2015-16 budget from the early retirement of nineteen eligible employees. Even after their insurance expense is calculated, the saving exceeded \$350,000.

In order to have funds to cover new expenses in the operating budget, reductions have been proposed to cover these annual expenses. In the 2015-16, 2016-17 and 2017-18 budgets, funding for outside agencies has been eliminated, a savings of approximately \$90,000 a year. The remaining funding for the Chamber of Commerce, Chamber Visitor Center and Playhouse will have to be closely examined and will probably need to be reduced. The Chamber is embarking on a program to raise 60% of the expense for an economic development program from the private sector. It is recommended that contributions and some events through the marketing program be carefully examined for possible cut-backs.

The proposed 2015-16 budget has been examined to see if there was any possible cuts city wide that would not reduce any service delivery of programs to citizens. The only potential savings in each department would come from a reduction in force (RIF). For planning purposes, a 5% cut in departmental budgets would generate approximately \$581,000 in savings. This savings would result from employee layoffs.

A major concern is how does the Council wish to incorporate the capital expenditure items into the operating budget, through future operating funds or through loans? This Council is reminded that for every major expense addition that might be added now, or in the future, there must be a source of new revenue, a corresponding reduction in

current services or a reduction in the “rainy day fund” or some combination of all three options.

In the General fund, for 2015-16, there is a projected deficit of more than \$224,000 with no use of rainy day funds. The deficit increases to more than \$800,000 in 2016-17 with no use of rainy day funds. These numbers reflect the tax increases and funding reductions discussed earlier in this transmittal. The projected deficit for 2017-18 exceeds \$1,100,000.

The Water and Sewer funds are facing a significant rate increase to cover depreciation expense that must be funded. A proposed sewer rate increase of 35% has been spread over the three year operating budget. A proposed water rate increase of 14% has been spread over the three year operating budget. With depreciation actually funded, these funds would be available to do rehab work throughout the system without having to increase debt service for certain rehab projects.

This three year budget projection for operations is presented to bring to light the seriousness of the revenue and expenditure picture facing the City of Crossville. A more cost effective service delivery system and revenue program is needed. The City needs to review carefully any program or service that is provided and see if there are opportunities to increase revenue or reduce expenses. The City’s park and recreation program and fees for use of park facilities needs to undergo a thorough review and a new fee schedule needs to be implemented.

Proper financial planning with program and services review can keep the citizens of Crossville experiencing high levels of service at a reasonable cost.

**WATER AND WASTEWATER FINANCING BOARD**  
**Case Study**

**Case:** City of Luttrell  
**Mayor:** Johnny Merritt  
**Customers:** 943, sewer only

The City has had an operating loss for a minimum of 9 years, but grants and capital contributions have allowed them to be in financial compliance. The City received a total of \$474,820 in grant money during the 2015 fiscal year. The City is in compliance as of their FY 2015 audit. The grant money was used for upgrading the wastewater plant, adding a second clarifier, and replacing grinder pumps at certain residential properties.

While the City is in compliance for the 2015 fiscal year, the Mayor would still like to move forward with increasing rates and creating different customer classifications. Currently the City has one rate for all residential customers and a separate rate for the only industrial customer. There is an opportunity to charge the school system, one industrial customer, and customers outside of the corporate boundaries a different rate.

**CITY OF LUTTRELL  
HISTORY FILE**

	Audited	Audited	Audited	Audited	Audited	Audited	Audited	Audited	Audited
Fiscal Year 6/30	2007	2008	2009	2010	2011	2012	2013	2014	2015
Sewer revenues	\$ 243,728	\$ 271,514	\$ 276,044	\$ 275,465	\$ 337,351	\$ 367,614	\$ 367,301	\$ 336,696	\$ 353,692
Other revenues	\$ 64,937	\$ 29,419	\$ 22,523	\$ 56,773	\$ 11,556	\$ 25,956	\$ 17,585	\$ 25,969	\$ 41,887
Capital contributions				\$ 20,107	\$ 441,147	\$ 289,473	\$ 14,920	\$ 11,719	\$ 474,821
							\$ 53,793		
<b>Total Operating Revenues</b>	<b>\$ 308,665</b>	<b>\$ 300,933</b>	<b>\$ 298,567</b>	<b>\$ 352,345</b>	<b>\$ 790,054</b>	<b>\$ 683,043</b>	<b>\$ 453,599</b>	<b>\$ 374,384</b>	<b>\$ 870,400</b>
<b>Total Operating Expenses</b>	<b>\$ 517,293</b>	<b>\$ 490,656</b>	<b>\$ 526,477</b>	<b>\$ 530,026</b>	<b>\$ 526,045</b>	<b>\$ 563,658</b>	<b>\$ 588,150</b>	<b>\$ 575,379</b>	<b>\$ 551,080</b>
Operating Income	\$ (208,628)	\$ (189,723)	\$ (227,910)	\$ (177,681)	\$ 264,009	\$ 119,385	\$ (134,551)	\$ (200,995)	\$ 319,320
Interest Expense	\$ 16,838	\$ 16,145	\$ 15,654	\$ 15,211	\$ 14,712	\$ 14,159	\$ 7,543	\$ 12,021	\$ 11,537
Grants			\$ -						
<b>Change in Net Position</b>	<b>\$ (225,466)</b>	<b>\$ (205,868)</b>	<b>\$ (243,564)</b>	<b>\$ (192,892)</b>	<b>\$ 249,297</b>	<b>\$ 105,226</b>	<b>\$ (142,094)</b>	<b>\$ (213,016)</b>	<b>\$ 307,783</b>
<b>Operating Transfer</b>									
<u>Supplemental Information</u>									
Principal payment	\$ 6,538	\$ 7,327	\$ 7,760	\$ 8,218		\$ 9,217	\$ 8,218	\$ 11,355	\$ 11,839
Depreciation	\$ 218,420	\$ 216,211	\$ 213,403	\$ 213,286	\$ 221,088	\$ 217,478	\$ 213,286	\$ 205,306	\$ 189,148
<b><u>Sewer Rates</u></b>									
<b><u>Residential</u></b>						Sep-10			
0 - 3,000 gallons	\$ 17.00	\$ 17.00	\$ 17.00	\$ 17.00					
Per 1000 gallons for all over	\$ 4.25	\$ 4.25	\$ 4.25	\$ 4.25					
<b><u>Residential/commercial</u></b>									
0 - 2,000 gallons					\$ 20.25	\$ 20.25	\$ 20.25	\$ 20.25	\$ 20.25
All over					\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25	\$ 5.25
<b><u>Industrial</u></b>									
0 - 2,000 gallons					\$ 75.00				
All over					\$ 15.00				
Tap fee inside	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500	\$ 3,500
Tap fee outside	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800	\$ 3,800
Customers	810	837	933	961	961	961	960	939	943

**WATER AND WASTEWATER FINANCING BOARD  
Case Study**

<b>Case:</b>	<b>Town of Monterey</b>
<b>Mayor:</b>	<b>Bill Wiggins III</b>
<b>Water Customers:</b>	<b>1,853</b>
<b>Sewer Customers:</b>	<b>1,095</b>
<b>Validity Score:</b>	<b>82</b>
<b>Non-Revenue Water:</b>	<b>48.50%</b>

The Town of Monterey (Town) has been reported to the Water and Wastewater Financing Board (Board) as having two consecutive years with a negative net change in net position, in its water and sewer fund, as of June 30, 2015. The financial and rate history is attached.

The Town has had an operating loss for a **minimum** of 5 years, but grants and capital contributions have allowed them to be in financial compliance.

Staff spent two hours with Town officials working on ways to improve the financial stability of the water fund. We also recommended ways to better account for non-revenue water.

The Town raised rates on July 1, 2015, and has passed an ordinance to have automatic rate increases on July 1, 2016 and July 1, 2017.

**Staff Recommends the Board endorse, by formal order, the corrective action plan of the Town of Monterey.**

TOWN OF MONTEREY						
HISTORY FILE						
	Audited	Audited	Audited	Audited	Audited	Audited
Fiscal Year 6/30	2010	2011	2012	2013	2014	2015
Water/sewer revenues	\$ 1,536,054	\$ 1,570,736	\$ 1,471,864	\$ 1,632,785	\$ 1,607,776	\$ 1,685,498
Other revenues	\$ 36,016	\$ 31,161	\$ 28,319	\$ 20,000	\$ 23,552	\$ 19,827
Capital contributions			\$ 21,300	\$ 423,404	\$ 184,437	\$ -
<b>Total Operating Revenues</b>	<b>\$ 1,572,070</b>	<b>\$ 1,601,897</b>	<b>\$ 1,521,483</b>	<b>\$ 2,076,189</b>	<b>\$ 1,815,765</b>	<b>\$ 1,705,325</b>
<b>Total Operating Expenses</b>	<b>\$ 1,426,745</b>	<b>\$ 1,565,858</b>	<b>\$ 1,539,558</b>	<b>\$ 1,658,407</b>	<b>\$ 1,857,485</b>	<b>\$ 1,763,249</b>
Operating Income	\$ 145,325	\$ 36,039	\$ (18,075)	\$ 417,782	\$ (41,720)	\$ (57,924)
Interest Expense	\$ 80,851	\$ 65,306	\$ 89,135	\$ 77,779	\$ 109,293	\$ 87,521
In lieu of taxes	\$ 37,000			\$ 37,475	\$ 43,177	\$ 52,216
<b>Change in Net Position</b>	<b>\$ 27,474</b>	<b>\$ (29,267)</b>	<b>\$ (107,210)</b>	<b>\$ 302,528</b>	<b>\$ (194,190)</b>	<b>\$ (197,661)</b>
<u>Supplemental Information</u>						
Principal payment	\$ 200,621	\$ 196,867	\$ 126,099	\$ 135,764	\$ 77,095	\$ 1,669,758
Depreciation	\$ 396,684	\$ 400,476	\$ 406,510	\$ 426,817	\$ 441,115	\$ 480,613
<b>Water rates</b>						
<b>Inside</b>						
First 2,000 gallons	\$ 11.87	\$ 11.87	\$ 12.22	\$ 12.20	\$ 12.70	\$ 12.70
All over	\$ 3.43	\$ 3.43	\$ 3.53	\$ 3.81	\$ 3.67	\$ 3.67
<b>Outside</b>						
First 2,000 gallons	\$ 22.50	\$ 22.50	\$ 23.17	\$ 25.02	\$ 24.09	\$ 24.09
All over	\$ 7.95	\$ 7.95	\$ 8.18	\$ 7.58	\$ 8.50	\$ 8.50
<b>Sewer rates are 100% of water or \$7.50 if not a water customer</b>						
Water customers	1,821	1,829	1,830	1,830	1,847	1,853
Sewer customers	1,061	1,071	1,070	1,085	1,085	1,095
<b>Water loss</b>	<b>30%</b>	<b>30%</b>	<b>30%</b>			
<b>Non-revenue water</b>				<b>1.50%</b>	<b>46.20%</b>	<b>48.50%</b>
<b>Validity score</b>				<b>81</b>	<b>81</b>	<b>82</b>



Where Hilltops Kiss The Sky  
302 E. Commercial Avenue • P.O. Box 97  
Monterey, Tennessee 38574

Bill Wiggins III  
MAYOR

(931) 839-2323  
(931) 839-3770  
FAX  
(931) 839-3933

February 24, 2016

John Green, Utility Board Specialist  
State of Tennessee  
Water and Wastewater Financing Board  
James K Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243-1402

Dear Mr. Greer:

Monterey water/sewer rates went up on July 1, 2015 and are slated for other step increases on July 1<sup>st</sup> of 2016 and 2017 as authorized by Ordinance #15-523 (attached) which was enacted by the Board of Alderman on the third and final reading at the June 22, 2015 regular meeting.

We have implemented the recommendation to meter all city buildings and installations to expand water usage tracking. We have entered these readings in our software system, LGDPC, with the exception of the water treatment plant because a meter for that facility had to be ordered. That device was placed on a rush order on Feb. 4, 2016 along with an additional one to be used by the Monterey Volunteer Fire Department to record water usage during drills and demonstrations. Once the water treatment plant is installed Monterey will, then, be documenting water usage at eleven sites which had not been monitored, previously. We fully expect that the water treatment plant and waste water treatment plant will prove to be major users. Already we have discovered that the waste water treatment plant used 42,700 gallons in just seven days. With that kind of volume and the readings from the other ten locations, our unaccounted-for water usage is surely headed for a profound decline.

We are also examining time allocations for city employees who wear multiple hats by toiling in water/sewer, streets, sanitation and maintenance during a typical work day. In short, a few of these workers are paid totally out of water/sewer while performing assignments in other departments. Our remedy is to charge each department for hours spent by individual workers which will significantly lower costs to water/sewer. Our experience during the devastating Feb., 2015 ice storm illustrates just how remarkable the savings to water/sewer could be. We calculate that roughly \$129,470 should have been charged to the general fund rather than water/sewer because water/sewer paid workers were pressed into service during that desperate, trying time as they performed tasks in all departments while piling up excessive overtime.

We are committed to shrinking our unaccounted-for water usage and beg that our efforts be recognized, weighed and considered while conclusions and a determination are being drawn by the Financing Board.

Sincerely,

A handwritten signature in blue ink that reads "Bill Wiggins". The signature is written in a cursive, flowing style.

Bill Wiggins  
Mayor

attachments

## ORDINANCE NUMBER 15-523

AN ORDINANCE TO AMEND TITLE  
18 OF THE MONTEREY CITY CODE  
REGARDING WATER AND SEWER  
RATES

ORDINANCE NUMBER \_\_\_\_\_  
REQUESTED BY: Board of Mayor and  
Aldermen  
PREPARED BY: \_\_\_\_\_  
APPROVED FORM AND  
CORRECTNESS: \_\_\_\_\_  
PASSED 1ST READING: 05-04-15  
PASSED 2ND READING: 06-01-15  
PASSED 3RD READING: 06-22-15

BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF  
THE TOWN OF MONTEREY, TENNESSEE

Section 1: That the City Code, Title 18, Section 18-102 be amended as follows:

**18-102** Water and sewer monthly rates. The schedule of water and sewer rates shall be as follows:

**(a) Residential water monthly base facility charge (inside city).**

<u>Gallons Metered</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
0 - 2,000 gallons	\$14.00	\$15.25	\$16.50
2,000 + gallons (per 1,000 gallons)	4.00	4.75	5.50

**(b) Residential water monthly base facility charge (outside city).**

<u>Gallons Metered</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
0 - 2,000 gallons	\$24.25	\$24.75	\$25.00
2,000 + gallons (per 1,000 gallons)	8.50	8.50	8.50

**(c) Residential water monthly base facility charge (Phifer Mountain Service area-  
outside).**

<u>Gallons Metered</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
0 - 2000 gallons	\$28.11	\$28.11	\$28.11
2,000 + gallons (per 1,000 gallons)	8.50	8.50	8.50

**(d) Commercial, industrial, governmental entities and water districts shall be charged the following water monthly fee based on the size of the water service to the water user.**

<u>0 - 2,000 Gallons Metered</u>	<u>Service Size</u>	<u>Charge</u>
	3/4 inch	\$ 17.05
	1 inch	33.46
	2 inch	66.94
	3 inch	100.42
	4 inch	133.90
	6 inch	200.84
	8 inch	267.80
	10 inch	334.74

<u>Gallons Metered</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
2,000 + gallons (per 1,000 gallons)	\$3.00	\$3.25	\$3.50

Customers having more than one (1) dwelling unit per connection shall pay an additional fee of \$6.68 per dwelling unit per month for all dwelling units in excess of one dwelling unit per service.

**(e) Sewer rate.** The charge for sewer service will be an amount equal to 105% of the charges for water service (including commercial meter charges) whether inside or outside the City limits. Additionally, industrial customers, customers using the water for other than sanitary sewer purposes, shall be charged a sewer surcharge of \$0.51 per 1,000 gallons of water used.

**(f) Fire Hydrant rental.** Fire hydrant rental shall be \$6.68 per month.

**(g)** Customers that do not have a copy of their bill when paying shall be charged an administrative fee of \$2.00 per bill.

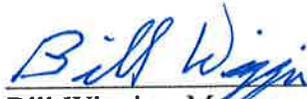
Single family residential customers which obtain sewage treatment from the Monterey Waterworks System, but obtain water, either in part or in whole, from a source other than the Monterey Waterworks System, will be billed for sewage treatment based on the same rates as residential customers who obtain water from the Monterey Waterworks System. The amount of sewage treated will be determined by an accurate metering device to meter water or sewer at the discretion of the Town of Monterey.

Commercial multiple dwelling units, and industrial and commercial customers which obtain sewage treatment from the Monterey Waterworks System, but obtain water, either in part or in whole, from a source other than the Monterey Waterworks System, will be billed for sewage treatment based on the same rate as those commercial and industrial customers who obtain water

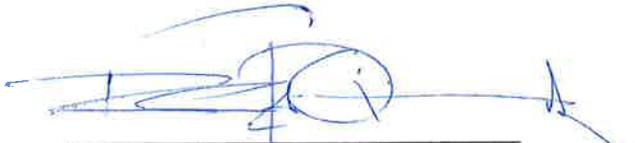
from the Monterey Waterworks System. The amount of sewage treated will be determined by an accurate metering device to meter water or sewer at the discretion of the Town of Monterey.

Section 2. This ordinance shall take effect fourteen (14) days from and after its passage, the public welfare requiring it.

THE BOARD OF MAYOR AND ALDERMAN  
OF MONTEREY, TENNESSEE

  
\_\_\_\_\_  
Bill Wiggins, Mayor

ATTEST:

  
\_\_\_\_\_  
Rebecca Iaquina, Vice-Mayor

**ORDINANCE NUMBER #13-514**

AN ORDINANCE TO AMEND TITLE  
18 OF THE MONTEREY CITY CODE  
REGARDING WATER AND SEWER  
RATES

ORDINANCE NUMBER #13-514  
REQUESTED BY: Board of  
Mayor and Aldermen  
PREPARED BY:  
APPROVED FORM AND  
CORRECTNESS: \_\_\_\_\_  
PASSED 1<sup>ST</sup> READING: 08-27-13  
PASSED 2<sup>ND</sup> READING: 09-03-13  
PASSED 3<sup>RD</sup> READING: 09-12-13

BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE  
TOWN OF MONTEREY, TENNESSEE

Section 1: That the City Code, Title 18, Section 18-102 be amended as follows:

18-102 Water and sewer monthly rates. The schedule of water and sewer rates shall be as follows:

(a) Residential monthly base facility charge (inside).

<u>GALLONS METERED</u>		<u>CHARGE</u>
<u>Over</u> -0- 2,000	<u>Not Over</u> 2,000	\$12.70 \$ 3.67 per thousand gallons

(b) Residential monthly base facility charge (outside)

<u>GALLONS METERED</u>		<u>CHARGE</u>
<u>Over</u> -0- 2,000	<u>Not Over</u> 2,000	\$24.09 \$ 8.50per thousand gallons

(c) Residential monthly base facility charge (Phifer Mountain Service area-outside)

<u>GALLONS METERED</u>		<u>CHARGE</u>
<u>Over</u> -0- 2,000	<u>Not Over</u> 2,000	\$28.11 \$ 8.50 per thousand gallons

(d) Commercial, industrial, governmental and water utility district water rates.

Commercial, industrial, government entities and water utility districts shall be charged the following monthly fee based on the size of the water service to the water user:

Service Size	Charge	
¾"	\$ 17.05	(for the first 2,000 gallons and \$2.89 per thousand gallons over 2,000 gallons)
1"	\$ 33.46	Plus \$2.89 per 1,000 gallons
2"	\$ 66.94	Plus \$2.89 per 1,000 gallons
3"	\$100.42	Plus \$2.89 per 1,000 gallons
4"	\$133.90	Plus \$2.89 per 1,000 gallons
6"	\$200.84	Plus \$2.89 per 1,000 gallons
8"	\$267.80	Plus \$2.89 per 1,000 gallons
10"	\$334.740	Plus \$2.89 per 1,000 gallons

Additionally, customers having more than 1 dwelling unit per connection shall pay an additional fee of \$6.68 per dwelling unit per month for all dwelling units in excess of 1 dwelling unit per service.

(e) Sewer rate. The charge for sewer service will be an amount equal to 100% of the charge for water service (including commercial meter charges) whether inside or outside the City limits. Additionally, industrial customers, customers using the water for other than sanitary sewer purposes, shall be charged a sewer surcharge of \$.51 per 1,000 gallons of water used.

(f) Fire hydrant rental. Fire hydrant rental shall be \$6.68 per month.

(g) Sewer customers not using town water

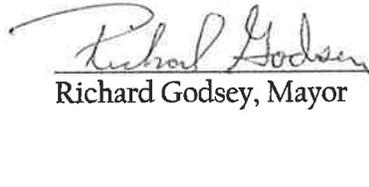
(h) Additionally, customers that do not have a bill when paying, shall be charged an administration fee of \$2.00 per bill

Single family residential customers which obtain sewage treatment from the Monterey Waterworks System, but obtain water, either in part or in whole, from a source other than the Monterey Waterworks System, will be billed for sewage treatment based on the same rates as residential customers who obtain water from the Monterey Waterworks System. The amount of sewage treated will be determined by an accurate metering device to meter water or sewer the discretion of the Town of Monterey.

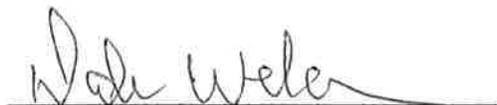
Commercial multiple dwelling units, and industrial and commercial customers which obtain sewage treatment from the Monterey Waterworks System, but obtain water, either in part or in whole, from a source other than the Monterey Waterworks System, will be billed for sewage treatment based on the same rates as those commercial and industrial customers who obtain water from the Monterey Waterworks System. The amount of sewage treated will be determined by an accurate metering device to meter water or sewer at the discretion of the Town of Monterey.

Section 2. This ordinance shall take effect fourteen (14) days from and after its passage, the public welfare requiring it.

THE BOARD OF MAYOR AND ALDERMEN  
OF MONTEREY, TENNESSEE

  
Richard Godsey, Mayor

ATTEST:

  
Dale Welch, Vice-Mayor



**STATE OF TENNESSEE  
COMPTROLLER OF THE TREASURY  
DEPARTMENT OF AUDIT  
DIVISION OF LOCAL GOVERNMENT AUDIT**

Justin P. Wilson  
Comptroller of the Treasury

**MEMORANDUM**

**TO:** Water and Wastewater Financing Board  
**FROM:** Division of Local Government Audit - Municipalities and Utility Districts  
**SUBJECT:** Division of Local Government Audit Referral Pursuant to TCA 68-221-1010(a)

In accordance with the requirements of Tennessee Code Annotated, we are hereby filing the following vendor with the board(s) noted above.

Record Number	Vendor Name				<input type="checkbox"/> Component Unit
6394	Watauga River Regional Water Authority				
Report Year	Utility Type	Date Received	Date Referred	Reviewer	Report Status
6/30/2015	Water	12/31/2015	1/12/2016	mlb	Not Yet Reviewed

**FINANCIAL DISTRESS**

**A** Has deficit net position for the fiscal year ended.

**B** Decrease in net position for two consecutive years.

Fiscal Year End	Decrease in NP
6/30/2015	(\$145,709.00)
6/30/2014	(\$146,349.00)

**C** Is in default on certain outstanding debt.

Holder of the Bonds, etc.	Principal	Interest

**WATER LOSS**

**D** Water Loss Referral

**AWWA water audit info**

<input type="checkbox"/> Water Loss Schedule - Status	<input type="checkbox"/> AWWA Excel File

**Validity score below the amount established by the board**

Validity Score  
82

**Excessive non-revenue water % as established by the board**  
(Non-Revenue Water as Percent by Cost of Operating System)

Non-Rev Water %  
0.8

Comments:



# Watauga River Water Authority

P.O. Box 908, Elizabethton, TN 37644

(423) 543-2700 (423) 543-2400 Fax (423) 543-8600

email: [neucwater@embarqmail.com](mailto:neucwater@embarqmail.com)

December 18, 2015

John Greer, Utilities Board Analyst  
James K. Polk State Office Building  
505 Deadrick Street, Suite 1500  
Nashville, TN 37243-1402

Re: **Watauga River Regional Water Authority  
2014 & 2015 Change in Net Position**

Dear Mr. Greer:

As you may or may not know, we have completed a regional water treatment plant in Carter County. The water plant and intake, located at Wilbur Lake, will be a tremendous asset for Elizabethton and Carter County for many years to come. It has taken tremendous effort to accomplish this goal. We have been providing water to Siam Utility, South Elizabethton Utility, North Elizabethton Water Co-Op and the City of Elizabethton since December 2013. As a start up utility we face many challenges, the biggest being fully funding depreciation and operating expenses while trying to maintain affordable rates for our customers.

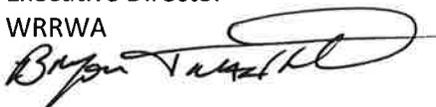
Mr. Greer, our 2013/2014 fiscal year audit reflected a negative change in net position. As expected, it appears our 2014/2015 will also show a negative change in net position. The purpose of this letter is to be proactive and provide you with our plan of action to resolve the deficit.

The Board of Directors of the Watauga River Regional Water Authority are appointed to their post and not elected, giving them freedom from political ties to adjust rates according to the financial needs of the system. In June of 2015 our Board of Directors voted to approve a six percent rate increase every year until the 2017/2018 fiscal year. Also, we have been awarded a \$525,000.00 CDBG grant that is being expensed in the current fiscal year. This capital contribution will offset any shortages not covered by the increased rate structure. I have enclosed the award letter from the First Tennessee Development District as well as a copy of the minutes from the June 2015 Board of Directors meeting.

Mr. Greer we feel confident that the CDBG grant and raised rates will keep us in compliance with the Comptroller of the Treasury. I look forward to your response and input. Please contact me at your convenience, [btrantham@wataugariver.org](mailto:btrantham@wataugariver.org).

Sincerely,

Bryon Trantham  
Executive Director  
WRRWA



Cc: Frank McDaniel, Independent Auditor  
Jack Buckles, Chairman of the Board, WRRWA



State of Tennessee  
Department of Economic and Community Development  
Office of Federal Programs  
William R. Snodgrass Tennessee Tower, 26<sup>th</sup> Floor  
312 Rosa L. Parks Avenue  
Nashville, Tennessee 37243-1102

September 3, 2014

The Honorable Leon Humphrey  
Mayor  
801 Elk Avenue, Suite 201  
Elizabethton, Tennessee 37643

RE: 2014 Carter County Water System Improvements Project CDBG

Dear Mayor Humphrey:

I am pleased to inform you that Governor Haslam has approved your 2014 CDBG application in the amount of \$525,000. As you know, CDBG funds cannot be released until a contract between the state and your community has been executed and contract conditions have been satisfied. A contract will be emailed to you in the coming days.

This letter will also serve as approval to use Lance Lowery of First Tennessee Development District as the administrator for this project and Edwin Deyton of Vaughn & Melton for the engineering services for this project.

Activities which you may begin to work on with receipt of this letter are the environmental review, administration and engineering design. Please note environmental review records are due to ECD within 90 days of the date of this letter. If there will be a delay, please contact ECD as soon as possible. There will be a training on the environmental review process in Nashville on September 29. We encourage you to send someone to that training.

Governor Haslam would also like to invite you to Nashville to the War Memorial Plaza on October 1, 2014 at 1:30 CDT for a photo and check presentation. Please RSVP to Lindsay Gainous at [lindsay.gainous@tn.gov](mailto:lindsay.gainous@tn.gov) if you plan to attend.

If you have any additional questions, please contact me at [brooxie.carlton@tn.gov](mailto:brooxie.carlton@tn.gov) or 615-741-8806. Congratulations on your award. We look forward to working with you on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Brooxie Carlton".

Brooxie Carlton  
Director

BC:lg

cc: Lance Lowery

Edwin Deyton

MINUTES  
WATAUGA RIVER REGIONAL WATER AUTHORITY  
BOARD OF DIRECTORS  
June 9, 2015

The Watauga River Regional Water Authority (WRRWA) Board of Directors met in regular session on June 9, 2015 at the WRRWA offices at 386 Highway 91, Suite 1, at 12:05 p.m. In attendance were Chairman Jack Buckles, representing North; Vice-Chairman Ardin Gentry, representing Siam; Jeff Chambers representing South; The Honorable Curt Alexander, Mayor of Elizabethton and The Honorable Leon Humphrey, County Mayor. Also present were: Bryon Trantham, Executive Director WRRWA and Amber Arnett.

**I. CALL TO ORDER**

Chairman Jack Buckles called the meeting to order at 12:05 p.m. with all members present.

**II. WELCOME VISTORS**

No visitors in attendance

**III. APPROVAL OF MINUTES OF THE MAY 12, 2015 BOARD MEETING**

Mayor Curt Alexander made a motion to approve the minutes of the May 12, 2015 meeting of the Board of Directors. Vice-Chairman Ardin Gentry seconded the motion and the minutes were unanimously approved by all present.

**IV. APPROVAL OF FINANCIAL STATEMENTS**

The May 12, 2015 financial statements for NEWC and WRRWA were unanimously approved by all members present with a roll call vote. Motion to approve all financials was made by Mayor Curt Alexander and seconded by Vice-Chairman Ardin Gentry.

**V. APPROVAL OF BUDGETS FOR WRRWA & NEWC**

After reviewing the budget and making some comparisons to last year's budget Mayor Curt Alexander made a motion to approve the budgets. The motion was seconded by Mayor Leon Humphrey and was approved on a roll call vote.

**VI. CONSIDERATION OF RATE INCREASE FOR FS/LM**

After some discussion Mayor Curt Alexander made a motion to approve the new rate structure for Fish Spring/Little Milligan. The new rate structure will be \$56.99 for the first 2,000 gallons and \$7.00 per 1,000 gallons after that. The motion was seconded by Vice-Chairman Ardin Gentry and approved by all on a roll call vote.

## VII. NEW RATE STRUTURE FOR WRRWA

Bryon Trantham advised the board that we had taken a closer look at the rate structure needed to be net profitable. After plugging real numbers for O&M and water sales into the GAAP formula we derived the rate structure needed. After much discussion on the matter Mayor Curt Alexander made a motion to accept the proposed rate structure. The motion was seconded by Jeff Chambers and was approved by all on a roll call vote. The approved rate structure is as follows.

2015-2016	\$2.46
2016-2017	\$2.67
2017-2018	\$2.89

## VIII. PAYMENT OF BILLS

- a. Payment to Sam Snead for \$1,223.68 for invoice # 17808.
- b. Payment to Tropical Heat & Air for \$2,150.00 for invoice # 4851.
- c. Payment to Perkins Electric for \$2,450.00 for invoice #0000.
- d. Payment to Kevin Campbell for \$1,265.00 for material & labor of painting.
- e. Payment to The Top Shop \$3,882.00 for invoice # 2171.
- f. Payment to Keller Glasco, Inc. for \$1,396.00 for new single door and mail slot.
- g. Payment to Mission Communications, LLC for \$1,126.80 for invoice # 40030022.
- h. Payment to Brenntag Mid-South, Inc. for \$2,506.61 for invoice # BMS023646.
- i. Payment to ESC Lab Sciences for \$2,712.00 for invoice # 827464.
- j. Payment to LabtronX, Inc. for \$1,424.13 for invoice # AA0415071.
- k. Payment to First Bank Card for \$4,750.29 for account 4988 6591 3458 0480.
- l. Payment to Regions Bank for \$3,000.00 for invoice # 40873

## IX. ADJOURNMENT

With no further business, Chairman Jack Buckles adjourned the meeting to a close at 1:10 p.m.

Approval Secretary Gentry:



---

Status

Financial Distress

**WATER AND WASTEWATER FINANCING BOARD**  
**Case Study**

**Case:** Coffee County Sewer System  
**Mayor:** Gary Cordell  
**Customers:** 57

The Coffee County sewer system was referred for a negative change in net position for the last six fiscal years as of June 30, 2014. The County was in compliance as of June 30, 2015, but only because of a \$35,000 transfer from the general fund. The financial and rate history is attached.

Fifty-four customers pay \$54.46 per month, and three customers pay \$27.01 per month. The billing charges consist of \$27.01 to pay debt service on the loans, \$25.45 to cover operation and maintenance on the system, and \$2.00 to cover the billing costs. Hillsville Utility District provides the water service, mails bills, and collects on behalf of the County. The District charges \$2.00 per customer for the billing service.

On July 12, 2012, the Board voted to endorse the following plan of the County:

- **Coffee County will take over the debt of the sewer system.**
- **The County Infrastructure Improvement Fund will give the sewer system \$2,000 per month for repair or replacement of 54 pumps**
- **There will be a required connection of 34 additional homes never served by the system**
- **On July 1, 2012, rates will increase 15%, with an additional COLA annually. Rates will also increase each time Hillsville Utility District increases its rates.**
- **Compliance will be reached by June 30, 2013**

The County has not implemented the majority of the plan that the Board endorsed on July 12, 2102. Effective June 2015, rates were raised \$1.54, or 2%.

COFFEE COUNTY SEWER FUND								
HISTORY FILE								
	Audited	Audited	Audited	Audited	Audited	Audited	Audited	Audited
Fiscal Year ending 6/30	2008	2009	2010	2011	2012	2013	2014	2015
Sewer revenues	\$ 32,478	\$ 31,385	\$ 36,180	\$ 30,528	\$ 30,528	\$ 32,438	\$ 35,061	\$ 35,113
Other revenue		\$ 39						
Contributions	\$ 63,422							\$ 35,000
Transfers In(Out)				\$ 13,655		\$ 24,000		
<b>Total Operating Revenues</b>	<b>\$ 95,900</b>	<b>\$ 31,424</b>	<b>\$ 36,180</b>	<b>\$ 44,183</b>	<b>\$ 30,528</b>	<b>\$ 56,438</b>	<b>\$ 35,061</b>	<b>\$ 70,113</b>
<b>Total Operating Expenses</b>	<b>\$ 20,058</b>	<b>\$ 69,277</b>	<b>\$ 64,436</b>	<b>\$ 58,604</b>	<b>\$ 57,056</b>	<b>\$ 49,769</b>	<b>\$ 53,438</b>	<b>\$ 53,290</b>
Transfers In	\$ 28,919							
Operating Income	\$ 104,761	\$ (37,853)	\$ (28,256)	\$ (14,421)	\$ (26,528)	\$ 6,669	\$ (18,377)	\$ 16,823
Interest Expense	\$ 13,529	\$ 13,376	\$ 13,216	\$ 13,049	\$ 12,875	\$ 12,694	\$ 12,408	\$ 12,308
<b>Change in Net Position</b>	<b>\$ 91,232</b>	<b>\$ (51,229)</b>	<b>\$ (41,472)</b>	<b>\$ (27,470)</b>	<b>\$ (39,403)</b>	<b>\$ (6,025)</b>	<b>\$ (30,785)</b>	<b>\$ 4,515</b>
<u>Supplemental Information</u>								
Principal payment				\$ 4,063	\$ 4,237	\$ 4,418	\$ 4,704	\$ 4,804
Depreciation	\$ 11,731	\$ 35,428	\$ 35,475	\$ 35,475	\$ 35,475	\$ 26,952	\$ 26,951	\$ 26,951
<b><u>Sewer rates</u></b>								
<b><u>Residential</u></b>								
First 2,000 gallons								
all over								
<b><u>Commercial/Industrial</u></b>								
First 2,000 gallons								
all over								
Sewer customers								

# The Water & Wastewater Treatment Authority of Coffee County

1329 McArthur Street  
Suite 1  
Manchester, TN 37355



931-723-5100  
Fax 931-723-5152  
Email: [margaret@coffeecountytn.org](mailto:margaret@coffeecountytn.org)

October 27, 2015

Water and Wastewater Financing Board  
James K. Polk State Office Building, Suite 1500  
505 Deaderick St.  
Nashville, TN 37243-1402

Dear Utilities Board Chairman,

RE: Wayside Acres Sewer System

This letter is in response to June 24<sup>th</sup>, 2015 letter from your office asking for resolve and progress toward overcoming issues discussed in prior communications. Based on preliminary numbers our utility expects to operate with a positive net gain for the years 2015 and 2016. As you can see from the attached Water and Wastewater Financing Board Work Sheet the ending net position shows marked improvement in our efforts to correct the problems you have identified.

In order to achieve success on these issues the Coffee County Water and Wastewater Board has done the following:

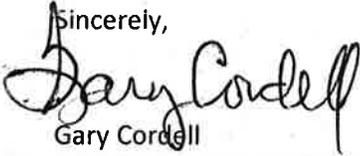
1. Increased the rates for users of the Wayside Acres Sewer System - This subdivision houses a majority of low middle income families who cannot afford 100% increase in rates as suggested by your Board; this subdivision was improperly permitted in the beginning by representatives of TDEC in the late 60's when it was very obvious(as it still is) this area was wetland with large gulleys for rain runoff; while we understand that's not the problem here, it cannot be ignored that were it not for the State permitting these homes, the County would not be in the Wastewater business but had no choice due to the mounting ENVIRONMENTAL issues. The building of the facility in 2005/2006 coincided with the rapid increase in oil prices which more than doubled the costs of materials, such as pipe, between the times we estimated costs of building the plant, applied for USDA loans and starting the project.
2. Adjusted operating procedure to maximize contributions from County Rural Projects Fund – The County Commission has been reluctant from the beginning of the Wayside Acres issues to fund this project, instead insisting that the residents utilizing the system pay the costs of the system. Funding has been strictly limited to resident fees until 2015.
3. Replaced equipment to minimize maintenance costs – The equipment replaced centered on the vault placements in the yards of the users ( "corners were cut" by the bidder who won the original bid to put in the vaults, the County had no way to know upon installation they would be faulty, to pinpoint the vault problem it took 2 years, rain and a very perceptive maintenance

technician to identify this); the plant itself has been a very efficient operation and few problems have occurred with the physical plant itself. The value of the plant cannot be underestimated when suggesting that we allow another utility to "assume" our plant to alleviate the financial problem.

Members of our Board will be prepared to answer any questions you may have at your hearing regarding this on January 14, 2016 at 10:00 am. If, per chance, this response would alleviate the need for the January hearing, we would appreciate that vote of confidence also.

Thank you for your assistance to help us correct these issues, we very much appreciate your patience and hope that we have begun to adequately resolve the issues identified while presenting a viable plan going forward.

Sincerely,

A handwritten signature in black ink that reads "Gary Cordell". The signature is written in a cursive style with a large, prominent initial "G".

Gary Cordell  
Coffee County Mayor

**Water and Wastewater Financing Board Work Sheet**

Circle Yes or No

**1. Has the municipality defaulted on any loan payments?**  
If yes, please detail on a separate sheet of paper.

Yes      No

**2. Has the municipality violated any loan covenants?**  
If yes, please detail on a separate sheet of paper.

Yes      No

**3. Change in Net Position**

	Actual FY 2014	Estimated FY 2015	Projected FY2016
Operating Revenues	\$ 35,061	\$ 35,113	\$ 37,512
Operating Expenses excluding Depreciation	<u>26,487</u>	<u>26,338</u>	<u>26,100</u>
Operating Inc Before Depreciation	\$ 8,574	\$ 8,775	\$ 11,412
Less: Depreciation	<u>26,951</u>	<u>26,951</u>	<u>26,951</u>
Operating Income	\$ (18,377)	\$ (18,176)	\$ (15,539)
Nonoperating Income	-	-	-
Nonoperating (Expense)	<u>(12,408)</u>	<u>(12,308)</u>	<u>(12,100)</u>
Income before Contributions	\$ (30,785)	\$ (30,484)	\$ (27,639)
Contributions	<u>-</u>	<u>35,000</u>	<u>35,000</u>
Change in Net Position	\$ (30,785)	\$ 4,516	\$ 7,361
Beginning Net Position	<u>-</u>	<u>-</u>	<u>-</u>
Ending Net Position	\$ (30,785)	\$ 4,516	\$ 7,361

**A utility with a negative change in net position for two consecutive years will fall under the authority of the WWFB.**

Does the FY 2016 budget produce a negative change in Net Position?

Yes      No

Do you project a negative change in Net Position for FY 2015?

Yes      No

Was there a negative change in Net Position in FY 2014?

Yes      No

Is Net Position negative?

Yes      No

**4. SRF Loan Sufficient Revenue Analysis (to be completed by municipalities with outstanding SRF loans)**

N/A

	Actual FY 2014	Estimated FY 2015	Projected FY2016
Operating Revenues	\$ -	\$ -	\$ -
Nonoperating Income	<u>-</u>	<u>-</u>	<u>-</u>
Revenues	\$ -	\$ -	\$ -
Less: Operating Expenses inc. Depreciation	<u>-</u>	<u>-</u>	<u>-</u>
Income before Nonoperating Expenses	\$ -	\$ -	\$ -
Less: Annual Debt Service	<u>-</u>	<u>-</u>	<u>-</u>
This should be greater than or equal \$0.	\$ -	\$ -	\$ -

**From:** [Tom Moss](#)  
**To:** [John Greer](#)  
**Cc:** [Betsy Knotts](#)  
**Subject:** RE: Coffee County Sewer  
**Date:** Thursday, February 25, 2016 9:05:06 AM  
**Attachments:** [image001.png](#)

---

Feedback from former Ground Water Protection Division Deputy Director: There is a long history on this subdivision. Not sure when the authority moved from the county health departments to the state. I suspect the subdivision was approved by the local health person in the 60s and actual septic system installation permits were issued based on that approval. Standards for subdivision evaluation and approval at that time were almost nonexistent.

Tom Moss, P.G.  
Compliance and Enforcement Unit  
Division of Water Resources  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
Nashville, TN 37243-1102  
(615) 532-0170  
[tom.moss@tn.gov](mailto:tom.moss@tn.gov)



Sign-up for the [TDEC E-Newsletter](#).  
Tell us how we're doing! Please take 5-10 minutes to complete [TDEC's Customer Service Survey](#).

---

**From:** John Greer [mailto:John.Greer@cot.tn.gov]  
**Sent:** Wednesday, February 24, 2016 10:34 AM  
**To:** Tom Moss  
**Cc:** Betsy Knotts  
**Subject:** Coffee County Sewer

Tom,

The Coffee County Sewer system is on the March 10 agenda. I have attached the information we have received from them, which mentions TDEC specifically.

Would you be able to look into their issues and provide us with information?

If you think it will be helpful to have someone from TDEC speak to the Board on this situation, please let us know who that would be.

**From:** [Tom Moss](#)  
**To:** [John Greer](#)  
**Cc:** [Betsy Knotts](#); [Sherry Glass](#)  
**Subject:** RE: Coffee County Sewer  
**Date:** Wednesday, February 24, 2016 2:11:01 PM  
**Attachments:** [image001.png](#)

---

TDEC did not exist in the 1960's and I am not sure what regulations would have kept those homes from being built – I guess he means they were permitted to have septic tanks in the 1960s. Those regulations would likely have been minimal at that time. There was really no wetland protection going on back then - EPA wasn't even established until December of 1970.

Tom Moss, P.G.  
Compliance and Enforcement Unit  
Division of Water Resources  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 11<sup>th</sup> Floor  
Nashville, TN 37243-1102  
(615) 532-0170  
[tom.moss@tn.gov](mailto:tom.moss@tn.gov)



Sign-up for the [TDEC E-Newsletter](#).  
Tell us how we're doing! Please take 5-10 minutes to complete [TDEC's Customer Service Survey](#).

---

**From:** John Greer [mailto:John.Greer@cot.tn.gov]  
**Sent:** Wednesday, February 24, 2016 10:34 AM  
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**Cc:** Betsy Knotts  
**Subject:** Coffee County Sewer

Tom,

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Would you be able to look into their issues and provide us with information?

If you think it will be helpful to have someone from TDEC speak to the Board on this situation, please let us know who that would be.

Thanks,

State Operating Permit Application  
For  
Wayside Acres Recirculating Sand Filter Treatment System

Permit Application Attachment

The attached permit application is for a recirculating sand filter treatment system and drip disposal field. The system is being installed to serve existing homes in the area of Wayside Acres Subdivision that have experienced failures of their existing septic systems. The system is being installed to serve 59 current residents who have signed up to be connected to the system. Following is a brief history and description of the issues that have led to this permit application:

History

Wayside Acres Subdivision in rural Coffee County near Manchester, Tennessee was established in 1968 by the recording of the deed in Trust Deed Book 129, Page 416 and recording of the plat in Plat Cabinet 245B in the Coffee County Register of Deeds office (Attachment A). The subdivision consists of 91 lots. Presently, there are approximately 60 lots developed within the subdivision. All houses have subsurface sewage disposal systems (septic tanks).

In the mid-1990's, a homeowner who had developed problems with his septic system contacted the local County and State health department officials for guidance to correct the problems. Modifications to the system were made without success. In the late-1990's, other residents who were also experiencing problems contacted the Tennessee Department of Environment and Conservation (TDEC) for assistance. A number of individual systems were tested with dye to observe directions of flow and to determine the function of piping that discharged to the drainage ditches in the subdivision. It was determined that a number of houses had overflow pipes connected to the field lines that discharged to the public drainage ditches. The failing septic systems and the discharge from the overflow piping presented health and safety concerns for residents.

In general, soil conditions of the subdivision area were determined unsuitable for the proper percolation of the standard septic systems that were installed. Various alternate system types for individual homes for treatment and discharge to subsurface have been assessed. Historically, the main roadblock to utilizing a treatment system solely for the subdivision was the lack of a Public Utility to operate and maintain a system in the rural part of the County. The Coffee County Board of Commissioners started researching the idea of forming a Water and Wastewater Authority in December of 2001. The formation of the Authority would allow the County to own and operate wastewater treatment systems within the rural areas of Coffee County. Through the months of research, other benefits of forming an Authority became apparent to County officials. Not only would

they have a means by which to correct existing health threats like the Wayside Acres Subdivision, but they would also have a means by which to develop parts of Coffee County that previously would not have been capable of supporting development due to poor soil conditions. In April of 2002, the Coffee County Board of Commissioners approved Resolution Number 2002-12 thereby creating the Coffee County Water and Wastewater Authority.

### Management and Operation

The Coffee County Water and Wastewater Authority will own and operate the treatment facility. The Authority will employ the services of St. John Engineering, LLC to assist with the operation and maintenance of the system until such time as their own maintenance personnel can become licensed to operate the system. The operator of the system will be Mr. Paul Coston, who is also the operator of the Manchester Wastewater Treatment Plant.



**STATE OF TENNESSEE  
COMPTROLLER OF THE TREASURY  
DEPARTMENT OF AUDIT  
DIVISION OF LOCAL GOVERNMENT AUDIT**

Justin P. Wilson  
Comptroller of the Treasury

**MEMORANDUM**

**TO:** Water and Wastewater Financing Board  
**FROM:** Division of Local Government Audit - Municipalities and Utility Districts  
**SUBJECT:** Division of Local Government Audit Referral Pursuant to TCA 68-221-1010(a)

In accordance with the requirements of Tennessee Code Annotated, we are hereby filing the following vendor with the board(s) noted above.

Record Number	Vendor Name			<input type="checkbox"/> Component Unit	
1793	Munford				
Report Year	Utility Type	Date Received	Date Referred	Reviewer	Report Status
6/30/2014	Water and Sewer	10/26/2015	10/27/2015	SRW	Not Yet Reviewed

**FINANCIAL DISTRESS**

**A** Has deficit net position for the fiscal year ended.

**B** Decrease in net position for two consecutive years.

Fiscal Year End	Decrease in NP
6/30/2014	(\$143,546.00)
6/30/2013	(\$141,451.00)

**C** Is in default on certain outstanding debt.

Holders of the Bonds, etc.	Principal	Interest

**WATER LOSS**

**D** Water Loss Referral

**AWWA water audit info**

Water Loss Schedule - Status   AWWA Excel File

**Validity score below the amount established by the board** Validity Score

**Excessive non-revenue water % as established by the board** Non-Rev Water %   
(Non-Revenue Water as Percent by Cost of Operating System)

Comments:

CITY OF MUNFORD						
HISTORY FILE						
	Audited	Audited	Audited	Audited	Audited	Audited
fiscal year ended 6/30	2009	2010	2011	2012	2013	2014
Water/sewer revenues	\$ 1,593,706	\$ 1,468,596	\$ 1,484,145	\$ 1,517,012	\$ 1,532,980	\$ 1,521,908
Other revenues	\$ 45,379	\$ 46,139	\$ 93,963	\$ 89,379	\$ 75,601	\$ 84,217
<b>Total Operating Revenues</b>	<b>\$ 1,639,085</b>	<b>\$ 1,514,735</b>	<b>\$ 1,578,108</b>	<b>\$ 1,606,391</b>	<b>\$ 1,608,581</b>	<b>\$ 1,606,125</b>
<b>Total Operating Expenses</b>	<b>\$ 1,513,353</b>	<b>\$ 1,477,892</b>	<b>\$ 1,568,156</b>	<b>\$ 1,569,642</b>	<b>\$ 1,605,047</b>	<b>\$ 1,596,152</b>
Operating Income	\$ 125,732	\$ 36,843	\$ 9,952	\$ 36,749	\$ 3,534	\$ 9,973
Interest Expense	\$ 124,686	\$ 100,261	\$ 92,660	\$ 84,540	\$ 91,985	\$ 101,519
Transfers out PILOT	\$ 50,000	\$ 49,000	\$ 55,000	\$ 56,000	\$ 53,000	\$ 52,000
Capital contributions		\$ 605,077	\$ 91,518	\$ 32,922		
<b>change in net assets</b>	<b>\$ (48,954)</b>	<b>\$ 492,659</b>	<b>\$ (46,190)</b>	<b>\$ (70,869)</b>	<b>\$ (141,451)</b>	<b>\$ (143,546)</b>
<u>Supplemental Information</u>						
Principal payment	\$ 421,163	\$ 466,034	\$ 540,201	\$ 212,953	\$ 230,588	\$ 294,310
Depreciation	\$ 411,791	\$ 414,969	\$ 453,175	\$ 503,551	\$ 505,638	\$ 512,694
<b><u>Water rates - inside</u></b>						
First 2,000 gallons	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00
All over	\$ 1.75	\$ 1.75	\$ 1.75	\$ 1.75	\$ 1.75	\$ 1.75
<b><u>Water rates - outside</u></b>						
First 2,000 gallons	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00	\$ 9.00
All over	\$ 2.40	\$ 2.40	\$ 2.40	\$ 2.40	\$ 2.40	\$ 2.40
Atoka	\$ 1.20	\$ 1.87	\$ 1.87	\$ 1.87	\$ 1.87	\$ 1.87
Water customers	3,134	3,136	3,118	3,135		3,152
<b><u>Sewer rates - inside</u></b>						
Base Charge	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00	\$ 6.00
First 2,000 gallons	\$ 2.80	\$ 2.80	\$ 2.80	\$ 2.80	\$ 2.80	\$ 2.80
2,001 - 4,000 gallons	\$ 3.15	\$ 3.15	\$ 3.15	\$ 3.15	\$ 3.15	\$ 3.15
All over	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50	\$ 3.50
<b><u>Sewer rates - outside</u></b>						
Base Charge	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00
First 2,000 gallons	\$ 3.20	\$ 3.20	\$ 3.20	\$ 3.20	\$ 3.20	\$ 3.20
2,001 - 4,000 gallons	\$ 3.60	\$ 3.60	\$ 3.60	\$ 3.60	\$ 3.60	\$ 3.60
All over	\$ 4.00	\$ 4.00	\$ 4.00	\$ 4.00	\$ 4.00	\$ 4.00
Sewer customers	1,934	1,937	1,921	1,929		1,948
<b>Water loss</b>	<b>15.900%</b>	<b>17.800%</b>	<b>13.870%</b>			
<b>Validity Score</b>				<b>69</b>	<b>71</b>	<b>71</b>
<b>Non-revenue water as % of operating</b>				<b>3.90%</b>	<b>3.80%</b>	<b>2.10%</b>

**From:** [Sherry Yelvington](#)  
**To:** [John Greer](#); [Peter Colin](#)  
**Subject:** RE: City of Munford Water & Wastewater System  
**Date:** Wednesday, January 06, 2016 3:14:55 PM  
**Attachments:** [ORDINANCE 2014-03-02 Water-Sewer Rates.pdf](#)

---

Please see attached ORDINANCE 2014-03-02 in regard to change in water-sewer rates.  
Thank you again for your time and consideration. We will be in touch soon.

Thank you,  
Sherry Yelvington

Sherry Yelvington  
City Recorder/Treasurer  
City of Munford  
1397 Munford Avenue  
Munford, Tn 38058  
901-837-5955

-----Original Message-----

From: John Greer [<mailto:John.Greer@cot.tn.gov>]  
Sent: Tuesday, January 05, 2016 3:23 PM  
To: Peter Colin <[pcolin@munford.com](mailto:pcolin@munford.com)>  
Cc: Sherry Yelvington <[syelvington@munford.com](mailto:syelvington@munford.com)>  
Subject: RE: City of Munford Water & Wastewater System

It is on my schedule. Please call me at 615-401-7879.

Thanks!

-----Original Message-----

From: Peter Colin [<mailto:pcolin@munford.com>]  
Sent: Tuesday, January 05, 2016 3:23 PM  
To: John Greer <[John.Greer@cot.tn.gov](mailto:John.Greer@cot.tn.gov)>  
Cc: Sherry Yelvington <[syelvington@munford.com](mailto:syelvington@munford.com)>  
Subject: RE: City of Munford Water & Wastewater System

John -- I'd like to suggest 3pm CST tomorrow, Wednesday Jan 6, 2016. Does that work for you? Pete

-----Original Message-----

From: John Greer [<mailto:John.Greer@cot.tn.gov>]  
Sent: Tuesday, January 05, 2016 3:20 PM  
To: Peter Colin <[pcolin@munford.com](mailto:pcolin@munford.com)>  
Subject: RE: City of Munford Water & Wastewater System

Peter,

I am free to speak after lunch tomorrow; would you like to schedule a specific time?

You should be receiving a letter stating that the meeting has been moved from January 14th to March 10th due to a small case load.

Thanks,

John

-----Original Message-----

From: Peter Colin [<mailto:pcolin@munford.com>]

Sent: Tuesday, January 05, 2016 3:16 PM

To: John Greer <John.Greer@cot.tn.gov>

Cc: Sherry Yelvington <[syelvington@munford.com](mailto:syelvington@munford.com)>; Dwayne Cole <[dcole@munford.com](mailto:dcole@munford.com)>

Subject: RE: City of Munford Water & Wastewater System

John -- I'm just following up my 11/29/15 email to you and your letter scheduling a meeting in Nashville on Jan 14th. Sherry Yelvington (our Finance Director/City Recorder) and I would like to call you this week. Are you available tomorrow afternoon, Wednesday Jan 6th? If not, can you suggest a better day/time this week? Thanks very much. Pete

Peter Colin, City Manager

City of Munford

1397 Munford Ave.

Munford, TN 38058

Office: 901-837-5953

Mobile: 901-488-6434

-----Original Message-----

From: Peter Colin

Sent: Thursday, November 19, 2015 3:57 PM

To: 'john.greer@cot.tn.gov' <[john.greer@cot.tn.gov](mailto:john.greer@cot.tn.gov)>

Cc: Sherry Yelvington <[syelvington@munford.com](mailto:syelvington@munford.com)>; 'dcole@munford.com' <[dcole@munford.com](mailto:dcole@munford.com)>

Subject: City of Munford Water & Wastewater System

John - I'm following up my voicemail in response to your letter dated Nov 11, 2015. Attached my April 2014 letter to Joyce Welborn at the Tennessee Water and Wastewater Finance Board, including these attachments:

1. City of Munford Ordinance 2014-03-02 where we increased our water/wastewater rates -- to take effect in July 2014, and
2. The MTAS rate study on which we based these rate increases. That rate study was performed by Steve Wyatt with MTAS.

I will ask our Sherry Yelvington (Munford City Recorder) to send you our Water/Wastewater financial summary for FY 14-15 showing a positive change in net assets for the fiscal year ending June 30, 2015. Happy to discuss at your convenience. Thanks very much and best regards,

Peter Colin, City Manager

City of Munford

1397 Munford Ave.

Munford, TN 38058

Office: 901-837-5953

Mobile: 901-488-6434

## **ORDINANCE NO. 2014-03-02**

### **AN ORDINANCE TO AMEND TITLE 18 SECTION: SCHEDULE OF RATES AND FEES, ORDINANCE NO. 2006-06-01 OF THE CITY OF MUNFORD CODE**

WHEREAS, Tennessee Law mandates that a municipal utility shall operate its system so that sufficient rates are charged necessary to recover all costs of the system; and

WHEREAS, The Board of Mayor and Aldermen of the City of Munford, after analyzing its water and sewer rates have determined that an increase is necessary; and

### **NOW, THEREFORE: BE IT ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE CITY OF MUNFORD, TENNESSEE, AS FOLLOWS:**

The Munford Board of Mayor and Aldermen hereby adopt the following monthly rate schedules applicable to all customers inside the city limits and outside the city limits, exclusive of state and local taxes:

#### **Water Rates: Inside Munford City Limits**

\$7.14 minimum up to 1,000 Gallons, plus an additional charge of \$2.08 per 1,000 gallons over the 1,000 gallon minimum

#### **Water Rates: Outside Munford City Limits**

\$10.71 minimum up to 1,000 Gallons, plus an additional charge of \$2.86 per 1,000 gallons over the 1,000 gallon minimum

#### **Sewer Rates: Inside Munford City Limits**

\$7.14 minimum plus usage charges as per following:

\$3.33 per 1,000 Gallons up to 2,000 Gallons

\$3.75 per 1,000 Gallons from 2,001 Gallons to 4,000 Gallons

\$4.17 per 1,000 Gallons over 4,000 Gallons

These increased rates shall apply to all users on the Munford water system and to all users on the Munford sewer system; and

WHEREAS, These rates and fees shall become effective on the July 2014 meter reading (July bills for the period from June 15, 2014 to July 15, 2014); and

WHEREAS,

The Board of Mayor and Aldermen of the City of Munford shall have the option, but not the obligation, to make automatic adjustments of Rates to Reflect the Cost of Living: The minimum charge and cost per 1,000 gallons as set out in the schedule of rates shall be adjusted on an annual basis in an amount equal to the percentage change in the Consumer Price Index for Urban Areas (CPI B U, US City Average, All Items) for the prior calendar year as determined by the U. S. Department of Labor. Said annual adjustments shall be effective with the July Billing Cycle each year. The Board of Mayor and Aldermen may reject the automatic adjustment by passage of a resolution.

**THIS ORDINANCE SHALL TAKE EFFECT FROM AND AFTER ITS PASSAGE, THE WELFARE OF THE CITY REQUIRING IT.**

**Severability:** Should any section, paragraph, sentence, clause or phrase of this ordinance or its application to any person or circumstance be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be pre-empted by State or Federal law or regulation, such decision or legislation shall not affect the validity of the remaining portions of this ordinance or its applications to other persons or circumstances.

**Repealer:** All ordinances and parts of ordinances which are inconsistent with the provisions of this ordinance are hereby repealed to the extent of such inconsistency.

Passed on 1<sup>st</sup> reading: March 24, 2014

Passed on 2<sup>nd</sup> reading: April 28, 2014

  
\_\_\_\_\_

Mayor

  
\_\_\_\_\_

City Recorder

**City of Munford, Tennessee**  
**Statement of Net Position - Proprietary Funds**  
**June 30, 2015**

	Water and Sewer Fund	Gas Fund	Total
<b>Assets</b>			
<b>Current assets</b>			
Cash	\$ 231,368	\$ 2,802,708	\$ 3,034,076
Investments - certificates of deposit	206,062	2,204,879	2,410,941
Inventory	-	147,715	147,715
Due from other funds	27,623	2,199,710	2,227,333
Due from other governments	448	205	653
Accounts receivable, net	128,205	115,363	243,568
Unbilled receivables	76,494	48,690	125,184
Total current unrestricted assets	670,200	7,519,270	8,189,470
Restricted cash for construction project	471,206	-	471,206
<b>Total current assets</b>	<b>1,141,406</b>	<b>7,519,270</b>	<b>8,660,676</b>
<b>Noncurrent assets</b>			
<b>Capital assets</b>			
Land	873,021	215,019	1,088,040
Construction in progress	-	13,799	13,799
Intangibles	-	12,107	12,107
Buildings and improvements	323,343	689,623	1,012,966
Vehicles and equipment	1,771,078	2,973,359	4,744,437
Utility plant in service	14,314,943	5,647,198	19,962,141
Less accumulated depreciation	(7,943,502)	(5,554,724)	(13,498,226)
<b>Net capital assets</b>	<b>9,338,883</b>	<b>3,996,381</b>	<b>13,335,264</b>
Net pension asset	16,690	23,598	40,288
<b>Total noncurrent assets</b>	<b>9,355,573</b>	<b>4,019,979</b>	<b>13,375,552</b>
<b>Total assets</b>	<b>10,496,979</b>	<b>11,539,249</b>	<b>22,036,228</b>
<b>Deferred outflows of resources</b>			
Pension contributions subsequent to measurement date	19,468	27,524	46,992
Unamortized loss on refunding of bonds	19,071	-	19,071
<b>Total deferred outflows of resources</b>	<b>38,539</b>	<b>27,524</b>	<b>66,063</b>
<b>Total assets and deferred outflows of resources</b>	<b>\$ 10,535,518</b>	<b>\$ 11,566,773</b>	<b>\$ 22,102,291</b>
<b>Liabilities and net position</b>			
<b>Current liabilities</b>			
Accounts payable	\$ 30,980	\$ 80,686	\$ 111,666
Accrued expenses	29,910	15,063	44,973
Accrued interest payable	7,267	-	7,267
Current portion of revenue bonds payable	314,988	53,395	368,383
Customer deposits	47,450	89,832	137,282
Due to other funds	105,214	-	105,214
Unearned Revenue	1,000	2,000	3,000
<b>Total current liabilities</b>	<b>536,809</b>	<b>240,976</b>	<b>777,785</b>
<b>Noncurrent liabilities</b>			
Long term revenue bonds, less current portion	3,090,609	586,580	3,677,189
Deposits payable from restricted assets	110,286	-	110,286
<b>Total noncurrent liabilities</b>	<b>3,200,895</b>	<b>586,580</b>	<b>3,787,475</b>
<b>Total liabilities</b>	<b>3,737,704</b>	<b>827,556</b>	<b>4,565,260</b>
<b>Deferred inflows of resources</b>			
Actuarial gains - pension	59,153	83,631	142,784
<b>Net position</b>			
Net investment in capital assets	5,952,357	3,356,406	9,308,763
Restricted			
Utility development	471,206	-	471,206
Unrestricted	315,098	7,299,180	7,614,278
<b>Total net position</b>	<b>6,738,661</b>	<b>10,655,586</b>	<b>17,394,247</b>
<b>Total liabilities, deferred inflows of resources, and net position</b>	<b>\$ 10,535,518</b>	<b>\$ 11,566,773</b>	<b>\$ 22,102,291</b>

**City of Munford, Tennessee**  
**Statement of Revenues, Expenses, and Changes in Net Position - Proprietary Funds**  
**Year Ended June 30, 2015**

	Water and Sewer Fund	Gas Fund	Total
<b>Operating revenues</b>			
Metered sales	\$ 1,716,860	\$ 4,323,987	\$ 6,040,847
Other sales	90,221	36,928	127,149
Fees	49,093	36,190	85,283
Penalties	96,657	69,678	166,335
Miscellaneous	63,677	85,445	149,122
<b>Total operating revenues</b>	<u>2,016,508</u>	<u>4,552,228</u>	<u>6,568,736</u>
<b>Operating expenses</b>			
Operating and transmission salaries	401,262	576,736	977,998
Fringes	112,048	127,348	239,396
Maintenance services and fuel charges	157,842	116,988	274,830
Gas purchased	-	2,404,100	2,404,100
Office supplies	10,470	22,397	32,867
Uniforms	3,351	4,101	7,452
Utilities	236,093	42,124	278,217
Insurance	75,070	28,608	103,678
Depreciation	522,445	415,510	937,955
Chemicals	30,003	-	30,003
Contractual services	106,668	183,927	290,595
Bad debt expense	25,491	22,252	47,743
Miscellaneous	42,371	26,133	68,504
<b>Total operating expenses</b>	<u>1,723,114</u>	<u>3,970,224</u>	<u>5,693,338</u>
<b>Operating income</b>	293,394	582,004	875,398
<b>Non-operating revenues (expenses)</b>			
Interest income	12,575	6,397	18,972
Interest expense	(93,891)	(5,735)	(99,626)
Loss on disposal of capital assets	(17,671)	-	(17,671)
<b>Total non-operating revenues (expenses)</b>	<u>(98,987)</u>	<u>662</u>	<u>(98,325)</u>
<b>Income before transfers</b>	<u>194,407</u>	<u>582,666</u>	<u>777,073</u>
<b>Transfers</b>			
Transfers out - payment in lieu of taxes	(52,789)	(96,184)	(148,973)
<b>Change in net position</b>	141,618	486,482	628,100
<b>Net position</b>			
Balance at July 1, 2014, as previously reported	6,478,422	10,178,341	16,656,763
Restatement adjustments (Note 2)	118,621	(9,237)	109,384
Balance at July 1, 2014, as restated	<u>6,597,043</u>	<u>10,169,104</u>	<u>16,766,147</u>
Balance at June 30, 2015	<u>\$ 6,738,661</u>	<u>\$ 10,655,586</u>	<u>\$ 17,394,247</u>

**City of Munford, Tennessee**  
**Statement of Cash Flows - Proprietary Funds**  
**Year Ended June 30, 2015**

	Water and Sewer Fund	Gas Fund	Total
<b>Cash flows from operating activities</b>			
Cash received from customers	\$ 2,077,113	\$ 4,553,661	\$ 6,630,774
Cash payments to suppliers	(628,608)	(2,893,741)	(3,522,349)
Cash payments to employees for services	(540,606)	(760,292)	(1,300,898)
Other cash payments	(62,788)	(18,055)	(80,843)
Net cash provided by operating activities	<u>845,111</u>	<u>881,573</u>	<u>1,726,684</u>
<b>Cash flows from noncapital financing activities</b>			
Decrease in due to/from other funds	<u>(217,093)</u>	<u>(1,545,043)</u>	<u>(1,762,136)</u>
Net cash used by noncapital financing activities	<u>(217,093)</u>	<u>(1,545,043)</u>	<u>(1,762,136)</u>
<b>Cash flows from capital and related related financing activities</b>			
Purchase of capital assets	(224,166)	(177,760)	(401,926)
Payments on principal of long-term debt	(304,638)	(51,321)	(355,959)
Desposits paid to restricted cash	34,985	-	34,985
Interest and fee payments on long-term debt	<u>(85,199)</u>	<u>(5,821)</u>	<u>(91,020)</u>
Net cash used by capital and related financing activities	<u>(579,018)</u>	<u>(234,902)</u>	<u>(813,920)</u>
<b>Cash flows from investing activities</b>			
Purchases of investments	(34,606)	-	(34,606)
Interest received	<u>12,264</u>	<u>4,862</u>	<u>17,126</u>
Net cash provided (used) by investing activities	<u>(22,342)</u>	<u>4,862</u>	<u>(17,480)</u>
<b>Net change in cash</b>	26,658	(893,510)	(866,852)
Cash - July 1, 2014	<u>675,916</u>	<u>3,696,218</u>	<u>4,372,134</u>
Cash - June 30, 2015	<u>\$ 702,574</u>	<u>\$ 2,802,708</u>	<u>\$ 3,505,282</u>

**City of Munford, Tennessee**  
**Statement of Cash Flows - Proprietary Funds (Continued)**  
**Year Ended June 30, 2015**

	Water and Sewer Fund	Gas Fund	Total
<b>Reconciliation of ending cash to line items in statement of net position</b>			
Unrestricted cash	\$ 231,368	\$ 2,802,708	\$ 3,034,076
Restricted cash	471,206	-	471,206
Total cash	<u>\$ 702,574</u>	<u>\$ 2,802,708</u>	<u>\$ 3,505,282</u>
<b>Reconciliation of operating income to net cash provided by operating activities</b>			
Operating income	\$ 293,394	\$ 582,004	875,398
Adjustments to reconcile operating income to net cash provided by operating activities			
Depreciation	522,445	415,510	937,955
Change in assets and liabilities			
(Increase) decrease in assets:			
Accounts receivable	63,363	4,970	68,333
Inventory	-	(13,378)	(13,378)
Due from other governments	(448)	-	(448)
Increase (decrease) in liabilities:			
Accounts payable	(5,439)	(53,582)	(59,021)
Accrued expenses	(7,918)	(24,723)	(32,641)
Customer deposits	(3,310)	(5,810)	(9,120)
Net pension liability and related deferred inflows/ outflows of resources	(17,976)	(25,418)	(43,394)
Other	1,000	2,000	3,000
Total adjustments	<u>551,717</u>	<u>299,569</u>	<u>851,286</u>
Net cash provided by operating activities	<u>\$ 845,111</u>	<u>\$ 881,573</u>	<u>\$ 1,726,684</u>
<b>Supplemental schedule of noncash capital and related financing activities:</b>			
Interest expense for amortization of deferred outflows of resources for loss on refunding of debt	<u>\$ 9,535</u>	<u>\$ -</u>	<u>\$ 9,535</u>



STATE OF TENNESSEE  
**WATER AND WASTEWATER FINANCING BOARD**  
505 DEADERICK STREET, SUITE 1700  
JAMES K. POLK STATE OFFICE BUILDING  
NASHVILLE, TENNESSEE 37243-1402  
PHONE (615) 401-7879  
FAX (615) 741-1551

December 21, 2015

Mayor Irene Wells  
City of Bluff City  
P. O. Box 70  
Bluff City, TN 37618-0070

Dear Mayor Wells:

Please see the attached Order related to the financially distressed status of the City of Bluff City's water and sewer systems. If you have any questions, please contact me at (615) 401-7954 or [Betsy.Knotts@cot.tn.gov](mailto:Betsy.Knotts@cot.tn.gov). You may also contact John Greer at (615) 401-7879 or [John.Greer@cot.tn.gov](mailto:John.Greer@cot.tn.gov).

Very truly yours

A handwritten signature in cursive script, appearing to read "Betsy Knotts".

Betsy Knotts  
Counsel to the Board



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**BEFORE THE TENNESSEE WATER AND WASTEWATER FINANCING BOARD**

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**IN THE MATTER OF:**

**T.C.A. § 68-221-1010—FINANCIAL DISTRESS  
CITY OF BLUFF CITY WATER AND SEWER**

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**ORDER**

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Pursuant to T.C.A. § 68-221-1010, the Tennessee Water and Wastewater Financing Board (the "Board") reviewed on December 3, 2015 the financially distressed status of the City of Bluff City's (the "City") water and sewer systems. Based on the deficiencies in the City's water and sewer fund, the Board directs the City to submit the following to the Board by February 24, 2016, in order for the Board to properly review this matter at its meeting on March 10, 2016, at 10 a.m., Legislative Plaza Room 31, Nashville, Tennessee:

1. Revised water audit;
2. Revised financials that include depreciation and the repayment of certain interfund transfers; and
3. Corrective action plan.

Entered this <sup>3<sup>rd</sup></sup> day of December, 2015.

Ann V. Butterworth, Chair  
Water and Wastewater Financing Board



# City of Bluff City

4391 Bluff City Highway • Bluff City, TN 37618  
Telephone: (423) 538-7144 • Fax: (423) 538-7138  
Email: bluffcitycityof@aol.com

Mailing Address:  
P.O. Box 70  
Bluff City, Tennessee 37618



February 23, 2016

To: John Greer, Utilities Board Specialist

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Reference: The Tennessee Water and Wastewater Financing Board  
Dated: December 3, 2015

In the Matter Of: Financial Distress  
City of Bluff City Water and Sewer

Corrective Action:

1. Revised Water Audit
2. Revised Projected Bluff City Water and Sewer Fund Balance  
Includes Resolution No. 2016-002
3. Corrective action plan  
Ordinance No. 2016-001 and Ordinance No. 2016-002



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
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- Click to access definition
- Click to add a comment

Water Audit Report for: **City of Bluff City (0000061)**  
Reporting Year: **6-30-15**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

<----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="7"/>	69.240	MG/Yr
Water imported:	<input type="button" value="+"/> <input type="button" value="8"/>	30.360	MG/Yr
Water exported:	<input type="button" value="+"/> <input type="button" value="n/a"/>	0.000	MG/Yr

### Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="+"/> <input type="button" value="5"/>	<input type="radio"/> <input type="radio"/>	Value:	<input type="text" value=""/>	MG/Yr
	<input type="button" value="+"/> <input type="button" value="3"/>	<input checked="" type="radio"/> <input type="radio"/>	1.25%	<input type="text" value=""/>	MG/Yr
	<input type="button" value="+"/> <input type="button" value=""/>	<input type="radio"/> <input type="radio"/>		<input type="text" value=""/>	MG/Yr

**WATER SUPPLIED:**  MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="9"/>	50.420	MG/Yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="n/a"/>	0.000	MG/Yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="9"/>	2.225	MG/Yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="8"/>	0.750	MG/Yr

Click here:   
for help using option buttons below

Pcnt:	<input type="radio"/> <input checked="" type="radio"/>	Value:	<input type="text" value="0.750"/>	MG/Yr
-------	--	--------	------------------------------------	-------

Use buttons to select percentage of water supplied OR value

**AUTHORIZED CONSUMPTION:**  MG/Yr

### WATER LOSSES (Water Supplied - Authorized Consumption)

**45.830** MG/Yr

#### Apparent Losses

Unauthorized consumption:	<input type="button" value="+"/> <input type="button" value="7"/>	0.248	MG/Yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed			
Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="7"/>	0.802	MG/Yr
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="7"/>	0.126	MG/Yr
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed			
<b>Apparent Losses:</b>	<input type="button" value="1.176"/>	<b>1.176</b>	MG/Yr

Pcnt:	<input type="radio"/> <input checked="" type="radio"/>	Value:	<input type="text" value="0.25%"/>	MG/Yr
-------	--	--------	------------------------------------	-------

<input type="radio"/> <input checked="" type="radio"/>	<input type="radio"/> <input type="radio"/>	MG/Yr
1.50%	<input type="radio"/> <input type="radio"/>	MG/Yr
0.25%	<input type="radio"/> <input type="radio"/>	MG/Yr

### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:  MG/Yr

**WATER LOSSES:**  MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**  MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="7"/>	34.1	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/> <input type="button" value="8"/>	1,130	
Service connection density:	<input type="button" value="33"/>	33	conn./mile main

Are customer meters typically located at the curbside or property line?

Average length of customer service line:    ft (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average operating pressure:    psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="8"/>	\$523,513	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="8"/>	\$18.79	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="8"/>	\$168.60	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

**\*\*\* YOUR SCORE IS: 75 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Unauthorized consumption
- 3: Systematic data handling errors



# AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association  
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Water Audit Report for:   
Reporting Year:

**\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 75 out of 100 \*\*\***

**System Attributes:**

Apparent Losses:	1.176	MG/Yr
+	Real Losses:	44.654
=	<b>Water Losses:</b>	<b>45.830</b>
		MG/Yr

? Unavoidable Annual Real Losses (UARL):  MG/Yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:

Valued at **Variable Production Cost**  
Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="49.2%"/>	
		Non-revenue water as percent by cost of operating system:	<input type="text" value="5.8%"/>	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	<input type="text" value="2.85"/>	gallons/connection/day
		Real Losses per service connection per day:	<input type="text" value="108.27"/>	gallons/connection/day
		Real Losses per length of main per day*:	<input type="text" value="N/A"/>	
		Real Losses per service connection per day per psi pressure:	<input type="text" value="1.55"/>	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL):  million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



## AWWA Free Water Audit Software: User Comments

WAS v5.0

American Water Works Association  
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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

<b>General Comment:</b>	2014/2015 Year Financial and Billing/Meter Information provide to me by Bluff City office personnel and Auditor. Bluff City is tracking water items better.
-------------------------	---

Audit Item	Comment
<a href="#">Volume from own sources:</a>	
<a href="#">Vol. from own sources: Master meter error adjustment:</a>	
<a href="#">Water imported:</a>	Water Storage Tank down for major maintenance, had to purchase all water from Bristol Bluff City during 3+ months renovation. Normally Bluff City uses less than 10% of purchased water.
<a href="#">Water imported: master meter error adjustment:</a>	Bristol Bluff preforms calibration annually
<a href="#">Water exported:</a>	n/a
<a href="#">Water exported: master meter error adjustment:</a>	n/a
<a href="#">Billed metered:</a>	
<a href="#">Billed unmetered:</a>	
<a href="#">Unbilled metered:</a>	Due to written agreement with specific customers in early years - easements were exchanged for free water - unlimited.

Audit Item	Comment
<u>Unbilled unmetered:</u>	n/a
<u>Unauthorized consumption:</u>	very little is taken without notification.
<u>Customer metering inaccuracies:</u>	
<u>Systematic data handling errors:</u>	
<u>Length of mains:</u>	Measured on the distribution map all length of line.
<u>Number of active AND inactive service connections:</u>	Office personnel provided this information from water billing
<u>Average length of customer service line:</u>	20' is the average distance , steps are being taken to change these out ( As budget permits)
<u>Average operating pressure:</u>	70 psi
<u>Total annual cost of operating water system:</u>	523,513
<u>Customer retail unit cost (applied to Apparent Losses):</u>	Sewer rates were not added last few years, this year it was added making the total higher. 5.45+8.16=13.61 9.47+14.49=23.96 13.81+23.96=37.57 / 2 = \$18.79
<u>Variable production cost (applied to Real Losses):</u>	1) 345.94x56=19372.64 2) 3392.6x44=149230.7 total 168603.04/1000 = 168.60

**PROJECTED BLUFF CITY WATER AND SEWER FUND BALANCE TO 2027-2028**

2/19/16

	ESTIMATED EXPENSES	REVISED EXPENSES	ESTIMATED INCOME	REVISED INCOME	EST. BALANCE	FUND BALANCE	RATE ACTION <sup>1</sup>
2014-2015	\$ 673,459.20	\$ 777,176.36 <sup>2</sup>	\$ 701,599.11	\$ 706,009.12 <sup>3</sup>	\$ (71,167.24) <sup>4</sup>	\$ (225,402.24) <sup>4A</sup>	15.0% INCREASE
2015-2016	\$ 676,512.31	\$ 756,708.55 <sup>5</sup>	\$ 762,489.85 <sup>6</sup>	N/A	\$ 5,781.30	\$ (219,620.94)	8.0% INCREASE
2016-2017	\$ 711,427.10	\$ 739,923.65 <sup>7</sup>	\$ 847,736.21 <sup>8</sup>	N/A	\$ 107,812.56	\$ (111,808.38)	9.0% INCREASE
2017-2018	\$ 921,345.13 <sup>9</sup>	N/A	\$ 970,234.10 <sup>10</sup>	N/A	\$ 48,888.97	\$ (62,919.41)	9.0% INCREASE
2018-2019	\$ 939,772.03 <sup>9</sup>	N/A	\$ 1,069,683.09 <sup>10</sup>	N/A	\$ 129,911.06	\$ 66,991.65	5.0% INCREASE
2019-2020	\$ 958,567.47 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 111,115.62	\$ 178,107.27	0.0%
2020-2021	\$ 963,603.41 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 106,079.69	\$ 284,186.96	0.0%
2021-2022	\$ 982,875.47 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 86,807.62	\$ 370,994.58	0.0%
2022-2023	\$ 1,002,532.98 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 67,150.11	\$ 438,144.69	0.0%
2023-2024	\$ 1,022,583.64 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 47,099.45	\$ 485,244.14	0.0%
2024-2025	\$ 1,043,035.32 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 26,647.78	\$ 511,891.92	0.0%
2025-2026	\$ 1,063,896.02 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ 5,787.07	\$ 517,678.99	0.0%
2026-2027	\$ 1,085,173.94 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ (15,490.85)	\$ 502,188.14	0.0%
2027-2028	\$ 1,106,877.42 <sup>9</sup>	N/A	\$ 1,069,683.09	N/A	\$ (37,194.33)	\$ 464,993.81	0.0%

**NOTES**

<sup>1</sup> RATE ACTION INDICATED EQUATES TO EFFECTIVE 54.9% INCREASE OVER FIVE-YEAR PERIOD IN LIEU OF THE 15%/15%/15% (52.1%) INCREASE OVER THREE YEARS PREVIOUSLY PROPOSED

<sup>2</sup> REVISED EXPENSES FOR 2014-2015 ARE \$777,176.36 ACCORDING TO AUDIT.

<sup>3</sup> REVISED INCOME FOR 2014-2015 IS \$706,009.12 ACCORDING TO AUDIT.

<sup>4</sup> (\$71,167) DEFICIT INCLUDES AUDITORS ACCOUNTING OF BAD DEBT FROM PREVIOUS YEARS OF \$45,470 AND ONE-TIME WATER PURCHASE OF \$68,459

<sup>4A</sup> FUND BALANCE IS BASED UPON FINAL 2014 AUDITED AMOUNT OF (\$154,235)

<sup>5</sup> REVISED EXPENSES BASED UPON 2% INFLATION OF ESTIMATED EXPENSE AND INCLUDES A 1/3 LOAN REPAY OF \$44,444; AND ADDITIONAL \$22,222 ANNUAL REPAYMENT

<sup>6</sup> ESTIMATED INCOME REFLECTS RATE INCREASE

<sup>7</sup> REVISED EXPENSES ARE INFLATED 2% AND INCLUDE A LOAN REPAY (\$22,222); AND A 1/4 INTERFUND TRANSFERS REPAYMENT (\$13,858.25)

<sup>8</sup> ESTIMATED INCOME REFLECTS RATE INCREASE AND A 2% PRODUCTIVITY GAIN FROM NEW PROJECT

<sup>9</sup> ESTIMATED EXPENSES INFLATED 2% AND INCLUDE NEW PROJECT DEBT SERVICE (\$131,530) AND ASSET DEPRECIATION (\$35,093); LOAN REPAY (\$22,222); AND 1/4 INTERFUND TRANSFERS (\$13,858.25)

<sup>10</sup> ESTIMATED INCOME REFLECTS RATE INCREASE AND A 5% PRODUCTIVITY GAIN FROM NEW PROJECT

**RESOLUTION NUMBER 2016-002**

**RESOLUTION OF THE GOVERNING BODY OF  
BLUFF CITY, TENNESSEE,  
AUTHORIZING THE RETROACTIVE EXTENSION AND PAYMENT OF THE  
TOWN OF BLUFF CITY WATER AND SEWER INTERFUND LOAN CAPITAL OUTLAY  
EXTENSION NOTES, SERIES 2014  
NOT TO EXCEED \$133,334**

WHEREAS, pursuant to Title 9, Chapter 21, Tennessee Code Annotated, Parts I, IV, VI, the Governing Body of Bluff City, Tennessee, (the "Local Government") duly adopted a Resolution on October 13, 2011, authorizing the issuance of inter-fund capital outlay notes (the "Original Notes") not to exceed Two Hundred Thousand Dollars (\$200,000) to finance the cost of the Project referenced therein, (the "Resolution") approved by the Comptroller or Comptroller's Designee on October 28, 2011; and

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WHEREAS, Two Hundred Thousand Dollars (\$200,000) of the Original Notes have been issued, sold, and dated December 3, 2011; and

WHEREAS, Title 9, Chapter 21, Tennessee Code Annotated provides that local governments in Tennessee are authorized to extend or renew the maturity date of capital outlay notes upon the approval of the Comptroller or Comptroller's Designee; and

WHEREAS, under the provisions of Tennessee Code Annotated §9-21-408, Local Governments in Tennessee are authorized to make inter-fund loans in accordance with procedures for the issuance of capital outlay notes set forth in Tennessee Code Annotated §9-21-604; and

WHEREAS, the Governing Body recognizes that the Local Government issued a note or promise to repay money contrary to the requirements of Parts I, IV, and VI of Title 9 Chapter 21 Tennessee Code Annotated and wishes to take action to obtain conformity with the requirements precedent to the issuance of notes as permitted by Tennessee Code Annotated §9-21-406; and

WHEREAS, the Governing Body determined that extending or renewing the Original Notes was necessary and desirable and issued an inter-fund loan in the amount of \$133,334 from the General Fund to the Water & Sewer Fund on December 3, 2014, without meeting the requirements precedent to the issuance of notes required for the authority to issue inter-fund capital outlay extension notes; and

WHEREAS, the Governing Body recognizes that the Local Government issued a note or promise to repay money contrary to the requirements of Parts I, IV, and VI of Title 9 Chapter 21 Tennessee Code Annotated and wishes to take action to obtain conformity with the requirements precedent to the issuance of notes as permitted by Tennessee Code Annotated §9-21-406; and

WHEREAS, the Governing Body finds that it is advantageous to the Local Government to retroactively authorize the issuance and sale of capital outlay extension notes to extend and

renew One Hundred Thirty-Three Thousand Three Hundred Thirty-Four Dollars (\$133,334) of the Original Notes maturing on December 3, 2014, in conformity with the requirements for the issuance of notes;

NOW THEREFORE, BE IT RESOLVED, by the Governing Body of Bluff City, Tennessee, as follows:

Section 1. That, for the purpose of providing funds to retire the outstanding Original Notes, the Chief Executive Officer of the Local Government is hereby authorized in accordance with the terms of this Resolution, and upon approval of the Comptroller or Comptroller's Designee, to retroactively issue and sell capital outlay extension notes in the principal amount not to exceed One Hundred Thirty-Three Thousand Three Hundred Thirty-Four Dollars (\$133,334) (the "Extension Notes") from the General Fund to the Water & Sewer Fund upon approval of the Comptroller or Comptroller's Designee pursuant to meeting the terms, provisions, and conditions permitted by law. The Extension Notes shall be designated "Water & Sewer Inter-fund Capital Outlay Extension Notes, Series 2014"; shall be numbered serially from 1 upwards; shall be dated as of the date of issuance of December 3, 2014; shall be in denomination(s) as agreed upon with the purchaser; shall be sold at not less than 99% of par value and accrued interest; shall bear interest at a rate or rates not to exceed zero per cent (0.00%) per annum, and in no event shall the rate exceed the legal limit provided by law.

Section 2. That, the Extension Notes shall mature not later than three years after the final maturity date of the Original Notes. Extension Notes and any further extension or renewal notes, in combination, shall not exceed the reasonably expected economic life of the Project, as certified by the Governing Body in the Resolution, provided, however, that unless otherwise approved by the Comptroller or Comptroller's Designee, each year the Extension Notes are outstanding not less than one-ninth (1/9), of the principal amount of the Original Notes shall mature without renewal but subject to prior redemption.

Section 3. That, the Extension Notes shall be subject to redemption at the option of the Local Government, in whole or in part, at any time, at the principal amount and accrued interest to the date of redemption, without a premium, or, if sold at par, with or without a premium of not exceeding one percent (1%) of the principal amount.

Section 4. That, the Notes shall be direct general obligations of the Local Government, for which the punctual payment of the principal and interest on the notes, the full faith and credit of the Local Government is irrevocably pledged and the Local Government hereby pledges its taxing power as to all taxable property in the Local Government for the purpose of providing funds for the payment of principal of and interest on the Notes. The Governing Body of the Local Government hereby authorizes the levy and collection of a special tax on all taxable property of the Local government over and above all other taxes authorized by the Local government to create a sinking fund to retire the Notes with interest as they mature in an amount necessary for that purpose.

The Extension Notes shall be further secured by the revenues of the Local Government's Water & Sewer Utility.

Section 5. That, the Extension Notes shall be executed in the name of the Local Government and bear the manual signature of the chief executive officer of the Local Government and the manual signature of the City Recorder with the Local Government seal affixed thereon; and shall be payable as to principal and interest at the office of the City Recorder of the Local Government or the paying agent duly appointed by the Local Government. Proceeds of the Notes shall be deposited with the City Recorder of the Local Government and shall be paid out for the purpose of financing the Project pursuant to this Resolution and as required by law.

Section 6. That, the Extension Notes will be issued in fully registered form and that at all times during which any Extension Note remains outstanding and unpaid, the Local Government or its agent shall keep or cause to be kept at its office a note register for the registration, exchange or transfer of the Extension Notes. The note transfer, if held by an agent of the Local Government, shall at all times be open for inspection by the Local Government or any duly authorized officer of the Local Government. Each Extension Note shall have the qualities and incidents of a negotiable instrument and shall be transferable only upon the note register kept by the Local Government or its agent, by the registered owner of the Extension Note in person or by the registered owner's attorney duly authorized in writing, upon presentation and surrender to the Local Government or its agent together with a written instruction of transfer satisfactory to the Local Government duly executed by the registered owner or the registered owner's duly authorized attorney. Upon the transfer of any such Extension Note, the Local Government shall issue in the name of the transferee a new registered note or notes of the same aggregate principal amount and maturity as the surrendered Extension Note. The Local Government shall not be obligated to make any such Extension Note transfer during the fifteen (15) days next preceding an interest payment date on the Extension Notes, or in the case of any redemption of Extension Notes, during the forty-five (45) days next preceding the date of redemption.

Section 7. That the Notes shall be in substantially the form authorized by the Comptroller of the Treasury or Comptroller's Designee and shall recite that the Notes are issued pursuant to Title 9, Chapter 21, Tennessee Code Annotated which is attached to this Resolution as attachment 1.

Section 8. That, the Extension Notes shall be considered to have been sold on the date of issuance of December 3, 2014 (three years from the date of the issuance of the Original Notes), after the receipt of the written approval of the Comptroller or Comptroller's Designee for the sale of the Extension Notes.

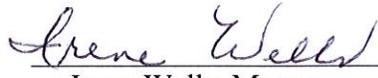
Section 9. That, after the sale of the Extension Notes, and for each year that any of the notes are outstanding, the Local Government shall prepare an annual budget in a form consistent with accepted governmental standards and as approved by the Comptroller or Comptroller's Designee of Local Finance (the "Comptroller or Comptroller's Designee".) The budget shall be kept balanced during the life of the notes. The annual budget shall be submitted to the Comptroller or Comptroller's Designee immediately upon its adoption; however, it shall not become the official budget for the fiscal year until such budget is approved by the Comptroller or Comptroller's Designee in accordance with Title 9, Chapter 21, Tennessee Code Annotated (the "Statutes".) If the Comptroller or Comptroller's Designee determines that the budget does not comply with the Statutes, the Governing Body shall adjust its estimates or make additional tax

levies sufficient to comply with the Statutes, or as directed by the Comptroller or Comptroller's Designee.

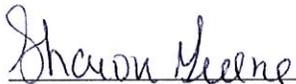
Section 10. That, if any of the Extension Notes shall remain unpaid at the end of three (3) years from the issue date, then the unpaid Extension Notes shall be renewed or extended as permitted by law or retired from the funds of the Local Government or be converted into bonds pursuant to Chapter 11 of Title 9 of the Tennessee Code Annotated, or any other law, or be otherwise liquidated as approved by the State Comptroller or Comptroller's Designee of Local Finance.

Section 11. That, all orders or Resolutions in conflict with this Resolution are hereby repealed insofar as such conflict exists and this Resolution shall become effective immediately upon its passage.

Duly passed and approved this 22<sup>nd</sup> day of February, 2016.

  
\_\_\_\_\_  
Irene Wells, Mayor

ATTESTED:

  
\_\_\_\_\_  
Sharon Greene, City Recorder

Attachment 1

CAPITAL OUTLAY NOTE FORM

Registered Note #: 1	City of Bluff City Of the State of Tennessee Water and Sewer Inter-fund Capital Outlay Extension Notes, Series 2014	Registered \$133,134.00
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DATED	INTEREST RATE	MATURITY DATE
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December 3, 2014	<u>0.00%</u>	December 3, 2017
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Registered Owner:	City of Bluff City General Fund
Principal Sum: \$	133,134.00

The Board of Mayor and Aldermen (Governing Body) of Bluff City, Tennessee (the Local Government) hereby acknowledges itself indebted, and for value received hereby promises to pay to the Registered Owner hereof (named above), or registered assigns, the Principal Sum specified above on the Maturity Date specified above or according to an amortization schedule attached hereto (unless this note shall have been duly called for prior redemption and payment of the redemption price shall have been duly made or provided for), upon presentation and surrender to the Local Government or its agent, and to pay interest on the Principal Sum on N/A and thereafter on \_\_\_\_\_ of each year at the Interest Rate per annum specified above or according to an amortization schedule attached hereto, by check, draft, or warrant mailed to the Registered Owner at the address of the Registered Owner as it appears on the fifteenth (15th) calendar day of the month next preceding the applicable payment date in the note register maintained by or on behalf of the Local Government. Both principal of and interest on this note are payable at the office of the City Recorder of the Local Government or a paying agent duly appointed by the Local Government in lawful money of the United States of America.

This note is a direct obligation of the Local Government for the payment of which as to both principal and interest the full faith and credit of the Local Government is pledged.

This note is subject to redemption prior to its stated maturity in whole or in part at any time at the option of the Local Government upon payment of the principal amount of the note together with the interest accrued thereon to the date of redemption with a premium of \_\_\_\_\_ % of par value.

This note is issued under the authority of Parts I, IV, and VI of Title 9, Chapter 21, Tennessee Code Annotated, and a Resolution duly adopted by the Governing Body of the Local Government meeting in session on the 22<sup>nd</sup> day of February, 2016 (the "Resolution") to provide funds to finance the cost of public works projects referenced in the Resolution.

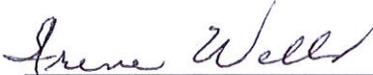
This note shall have the qualities and incidents of a negotiable instrument and shall be transferable only upon the note register kept by the Local Government or its agent, by the Registered Owner of the note in person or by the Registered Owner's attorney duly authorized in writing, upon presentation and surrender to the Local Government or its agent of the note together with a written instrument of transfer satisfactory to the Local Government duly executed by the Registered Owner or the Registered Owner's duly authorized attorney but only in the manner as provided in the Resolution of the Local Government authorizing the issuance of this note and upon surrender hereof for cancellation. Upon the transfer of any such note, the Local Government or its agent shall issue in the name of the transferee a new registered note or notes of the same aggregate principal amount and maturity as the surrendered note. The Local Government shall not be obligated to make any such Note transfer during the fifteen (15) days next preceding an interest payment date on the Notes or, in the case of any redemption of the Notes, during the forty-five (45) days next preceding the date of redemption.

Title 9, Chapter 21, Section 117, Tennessee Code Annotated provides that this note and interest thereon are exempt from taxation by the State of Tennessee or by any county, municipality or taxing district of the State, except for inheritance, transfer and estate taxes and except as otherwise provided under the laws of the State of Tennessee.

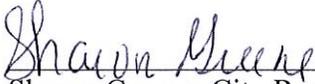
IT IS HEREBY CERTIFIED, RECITED AND DECLARED that all acts, conditions and things required to exist, happen and be performed precedent to and

in the issuance of this note exist, have happened and have been performed in due time, form and manner as required by the Constitution and laws of the State of Tennessee, and that the amount of this note, together with all other indebtedness of the Local Government, does not exceed any constitutional or statutory limitation thereon, and that this note is within every constitutional and statutory limitation.

IN WITNESS WHEREOF, the Governing Body of the Local Government has caused this note to be executed in the name of the Local Government by the manual signature of the Mayor, and countersigned and attested by the manual signature of the City Recorder with the Seal of the Local Government affixed hereto or imprinted hereon, and this note to be dated as of the 22<sup>nd</sup> day of February, 2016.

  
\_\_\_\_\_  
Irene Wells, Mayor

ATTESTED:  
SEAL

  
\_\_\_\_\_  
Sharon Greene, City Recorder

**ASSIGNMENT**

**Note No. R-** \_\_\_\_\_.

**Amount: \$ 133,134.00** \_\_\_\_\_.

**For value received, the undersigned hereby sells, assigns and transfers unto Bluff City General Fund**

(Name and address of assignee)

**620676548**

(Please indicate social security or other tax identifying number of assignee)

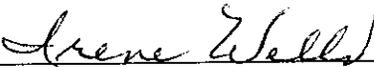
The within-mentioned note and hereby irrevocably constitutes and appoints J. Paul Frye, attorney-in-fact, to transfer the same on the note register in the office of the City Recorder or the agent of the Local Government with full power of substitution in the premises.

Date: February 22, 2016

Assignor: Bluff City Water Fund

Address: P.O Box 70

Bluff City, TN 37618

Signature Guaranteed by:   
Irene Wells, Mayor

NOTE: The signature as to this assignment must correspond with the name as written on the face of the within note in every particular, without alteration, enlargement or any change whatsoever.

**ORDINANCE NO. 2016-002**

**AN ORDINANCE SETTING SEWER RATES  
FOR CUSTOMERS INSIDE AND OUTSIDE  
THE CORPORATE LIMITS  
OF THE TOWN OF BLUFF CITY, TENNESSEE**

WHEREAS, State Law requires that the Board of Mayor and Aldermen for the Town of Bluff City set sewer user rates in order to provide revenue with which to satisfactorily operate and maintain the Town's sewer system; and,

**BE IT THEREFORE ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF  
THE TOWN OF BLUFF CITY, TENNESSEE:**

1. That inside and outside sewer user rate schedules for the sewer system which have been established in prior ordinances and/or resolutions are hereby revoked and the following rates set out in this ordinance are hereby adopted. This revocation is effective July 1, 2016.

2. Customers inside the corporate limits shall be charged twenty dollars and ninety-one cents (\$20.91) for the first two thousand (2,000) gallons and shall be charged eleven dollars and fifteen cents (\$11.15) for each one thousand (1,000) gallons used in excess of two thousand (2,000) gallons.

3. Customers outside the corporate limits shall be charged thirty-one dollars and sixty-four cents (\$31.64) for the first two thousand (2,000) gallons and shall be charged sixteen dollars and eighty-two cents (\$16.82) for each one thousand (1,000) gallons used in excess of two thousand (2,000) gallons.

4. The rates mentioned in 2. and 3. above will be effective July 1, 2016. Those rates mentioned hereinbelow will become effective on the dates stated therein.

5. Effective July 1, 2017  
2,000 gallons \$22.79  
Over 2,000 gallons \$12.15 per 1,000 gallons

Outside

- 2,000 gallons \$34.49  
Over 2,000 gallons \$18.33 per 1,000 gallons

5. Effective July 1, 2018

Inside

- 2,000 gallons \$23.93  
Over 2,000 gallons \$12.76 per 1,000 gallons

Outside

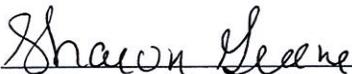
- 2,000 gallons \$36.21  
Over 2,000 gallons \$19.25 per 1,000 gallons

6. This represents a 9% increase, each of the years, 2016, 2017 and a 5% increase in 2018.

7. This ordinance shall take effect from and after its final passage, the public welfare requiring it.



Irene Wells, Mayor

Attested:   
Sharon Greene, City Recorder

Approved  
as to form:   
J. Paul Frye, City Attorney

Passed on First Reading: 2/22/16  
Passed on Second Reading: 3/3/16  
Public Hearing: 3/3/16

**ORDINANCE NO. 2016-001**

**AN ORDINANCE SETTING USER RATES  
FOR CUSTOMERS INSIDE AND OUTSIDE  
THE CORPORATE LIMITS  
OF THE TOWN OF BLUFF CITY, TENNESSEE**

WHEREAS, State Law requires that the Board of Mayor and Aldermen for the Town of Bluff City set water user rates in order to provide revenue with which to satisfactorily operate and maintain the Town's water system; and,

**BE IT THEREFORE ORDAINED BY THE BOARD OF MAYOR AND ALDERMEN OF THE TOWN OF BLUFF CITY, TENNESSEE:**

1. That inside and outside water user rate schedules for the water system which have been established in prior ordinances and/or resolutions are hereby revoked and the following rates set out in this ordinance are hereby adopted. This revocation is effective July 1, 2016.

2. Customers inside the corporate limits shall be charged sixteen dollars and forty-eight cents (\$16.48) for the first two thousand (2,000) gallons of water used and shall be charged six dollars and forty-two cents (\$6.42) for each one thousand (1,000) gallons of water used in excess of two thousand (2,000) gallons.

3. Customers outside the corporate limits shall be charged twenty-nine dollars and ninety-three cents (\$29.93) for the first two thousand (2,000) gallons of water used and shall be charged nine dollars and sixty cents (\$9.60) for each one thousand (1,000) gallons of water used in excess of two thousand (2,000) gallons.

4. The rates mentioned in 2. and 3. above will be effective July 1, 2016. Those rates mentioned hereinbelow will become effective on the dates stated therein.

5. Effective July 1, 2017

Inside

2,000 gallons \$17.96

Over 2,000 gallons \$7.00 per 1,000 gallons

Outside

2,000 gallons \$32.62

Over 2,000 gallons \$10.46 per 1,000 gallons

6. Effective July 1, 2018

Inside

2,000 gallons \$18.86

Over 2,000 gallons \$7.35 per 1,000 gallons

Outside

2,000 gallons \$34.25

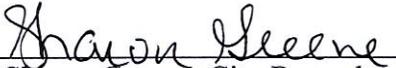
Over 2,000 gallons \$10.98 per 1,000 gallons

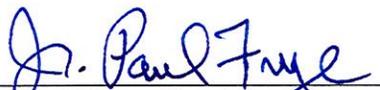
7. This represents a 9% increase, each of the years 2016, 2017 and a 5% increase in 2018.

8. This ordinance shall take effect from and after its final passage, the public welfare requiring it.



Irene Wells, Mayor

Attested:   
Sharon Greene, City Recorder

Approved  
as to form:   
J. Paul Frye, City Attorney

Passed on First Reading: 2/22/16  
Passed on Second Reading: 3/3/16  
Public Hearing: 3/3/16

February 18, 2016

Information Outline for Resolution No. 2016-002 and Inter-fund transfers.  
Prepared by: Sharon Greene, City Recorder

2014-2015 Audit Balance – Due to Gen. Fund from W/S Fund		\$ 233,125.00
Capital Outlay Note Dec. 3, 2011	\$177,778.00	
(Credit from 2011 Note Payment) Less	(86.00)	
Transfer from Gen. Fund to W/S Fund	55,433.00	
(Payroll taxes 2014-2015)		

The following note was issued in 2011. To date, only one payment has been made.

Capital Outlay Note (3 year loan from General Fund to W/S Fund)		\$ 200,000.00
Dated: Dec. 3, 2011	Maturity Date: Dec. 3, 2014	
2012 Payment – W/S credit applied	\$ 22,222.00	
2013 – Past due payment	22,222.00	
2014 – Past due Payment	22,222.00	
Dec. 31, 2014 Balance (only 1 payment applied)		177,778.00

Compliance mandated by the TN Comptroller's office:		
Pay Past due payments 2013 & 2014	\$ 44,444.00	
(Pay NOW)		

Balance of the original note dated Dec. 3, 2011 \$ 133,334.00  
Capital Outlay Note Dated: Dec. 31, 2014 (3 year extension)  
Resolution No 2016-002

Dec. 3, 2015 Payment (pay by 6-30-16)	\$ 22,222.00	
Dec. 3, 2016 Payment	22,222.00	
Dec. 3, 2017 Payment	22,222.00	
Balance Dec. 3, 2017		\$ 66,666.00
(Will have option: 3 year extension)		

Inter-funds transfers (payroll taxes 2014 & 2015)		\$ 55,432.95
4 year payment plan – annual payment	\$ 13,858.25	
Beginning 2016-2017 (footnote7 on Projection Report)		

NOTE: To date the TN Comptroller's office has not notified me whether the W/S Fund will have to pay this back to Gen. Fund or an adjusting entry to clear.



STATE OF TENNESSEE  
**WATER AND WASTEWATER FINANCING BOARD**  
505 DEADERICK STREET, SUITE 1700  
JAMES K. POLK STATE OFFICE BUILDING  
NASHVILLE, TENNESSEE 37243-1402  
PHONE (615) 401-7879  
FAX (615) 741-1551

December 21, 2015

Mayor Michael Lovely  
City of Rocky Top  
P. O. Box 66  
Rocky Top, TN 37769

Dear Mayor Lovely:

Please see the attached Order related to the financially distressed status of the City of Rocky Top's water and sewer systems. If you have any questions, please contact me at (615) 401-7954 or [Betsy.Knotts@cot.tn.gov](mailto:Betsy.Knotts@cot.tn.gov). You may also contact John Greer at (615) 401-7879 or [John.Greer@cot.tn.gov](mailto:John.Greer@cot.tn.gov).

Very truly yours

A handwritten signature in cursive script, appearing to read "Betsy Knotts".

Betsy Knotts  
Counsel to the Board



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**BEFORE THE TENNESSEE WATER AND WASTEWATER FINANCING BOARD**

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**IN THE MATTER OF:**

**T.C.A. § 68-221-1010—FINANCIAL DISTRESS  
CITY OF ROCKY TOP WATER AND SEWER**

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**ORDER**

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Pursuant to T.C.A. § 68-221-1010, the Tennessee Water and Wastewater Financing Board (the "Board") on December 3, 2015 reviewed the financially distressed status of the City of Rocky Top (the "City") water and sewer systems. Based on the deficiencies in the City's water and sewer fund, the Board directs the City to submit a corrective action plan to the Board by February 24, 2016, and to appear before the Board at its next meeting on March 10, 2016, at 10 a. m., Legislative Plaza Room 31, Nashville, Tennessee. The Board expects the City to take the following into account when determining its corrective action plan:

1. Thorough evaluation of a current rate study prepared for the City by MTAS;
2. Finalized financing from the Community Development Block Grant Program; and
3. Possible merger or consolidation with Anderson County Water Authority.

Entered this 3<sup>rd</sup> day of December, 2015.

  
Ann V. Butterworth, Chair  
Water and Wastewater Financing Board

# ROCKY TOP WATER AND SEWER DEPARTMENT

195 South Main Street

Post Office Box 66

Rocky Top, Tennessee 37769

Telephone: 865.426.2838

Fax: 865.426.8990

# CORRECTIVE PLAN OF ACTION

*FEBRUARY 23, 2016*

## Contents

- I. MTAS Rate Study
  - a. Appendix I – MTAS Rate Study
- II. 2014 Community Development Block Grant
- III. Ordinance 490
  - a. Appendix II – Ordinance 490
- IV. City of Rocky Top/Anderson County Water Authority Possible Merger
  - a. Appendix III – Resolution 517
- V. Community Development Block Grant 2016
  - a. Appendix IV – Resolution 518

**I. MTAS RATE STUDY**

As discussed at the December 3, 2015, Tennessee Water and Wastewater Board meeting, a rate study would be conducted by MTAS. The rate study includes actual and projected revenues and expenses, with and without rate increases. Our governing body understands that the Rocky Top Water and Sewer must operate at a profit. We understand that a rate increase is needed and a rate increase will be recommended to the Rocky Top City Council from the Rocky Top Water and Sewer Board.

Please see Appendix I for the MTAS Rate Study as prepared by Alan Major, MTAS consultant.

**City of Rocky Top  
Water and Sewer Fund  
Financial Projections With No Rate Increases  
Schedule A-1c**

2/15/2016

	FISCAL YEAR 2011-2012 AUDITED	FISCAL YEAR 2012-2013 AUDITED	FISCAL YEAR 2013-2014 AUDITED	FISCAL YEAR 2014-2015 AUDITED	FISCAL YEAR 2015-2016 6 Mth Actual	FISCAL YEAR 2015-2016 PROJECTED	FISCAL YEAR 2016-2017 PROJECTED	FISCAL YEAR 2017-2018 PROJECTED
<b>OPERATING REVENUES</b>								
Charges for Services	\$ 786,149	\$ 793,928	\$ 764,842	\$ 857,253	\$ 395,239	\$ 840,000	\$ 840,000	\$ 840,000
Other operating revenues	35,749	32,252	36,642	31,620	6,938	25,000	25,000	25,000
Total Operating Revenues	821,898	826,180	801,484	888,873	402,177	865,000	865,000	865,000
<b>OPERATING EXPENSES</b>								
Water Transmission and Distribution								
Water Purchased	138,100	148,190	155,130	173,506	117,161	190,000	175,000	175,000
Salaries	107,359	116,478	101,462	78,676	41,321	82,642	84,000	87,000
Retirement	-	-	2,696	-	381	762	765	765
Training	4,439	3,708	3,978	6,326	51	102	102	102
Dues and Subscriptions	2,358	500	1,583	1,872	2,131	2,500	2,500	2,500
Health Insurance	217	25	-	-	-	-	-	-
Equipment	5,965	436	2,144	-	7,845	15,690	3,000	3,000
Supplies	26,919	54,689	34,932	26,187	24,274	48,548	40,000	40,000
Telephone	-	65	447	45	-	45	45	45
Uniforms	901	8,254	1,526	1,746	1,456	2,000	2,000	2,000
Gas and Oil	8,356	12,200	10,743	5,923	2,065	4,130	5,000	6,000
Capital and Reservoir Maint. Repairs and maintenance	3,664	4,492	2,708	36,293	138,014	3,000	3,000	3,000
Total Water Operating Costs	298,278	349,037	317,349	330,574	334,699	349,419	315,412	319,412
Sewer Collection Lines					11,461	12,000	12,000	12,000
Sewer Treatment								
Salaries	54,078	60,447	80,011	123,824	64,601	129,202	132,000	135,000
Training	2,279	4,583	228	-	322	644	644	650
Retirement	-	-	-	-	827	1,654	1,700	1,750
Dues and Subscriptions	4,900	2,055	5,824	5,961	956	1,912	1,950	2,000
Utilities	65,485	67,998	60,190	64,912	32,123	64,246	64,500	65,000
Telephone	2,151	3,897	4,173	5,576	2,965	5,930	5,930	6,000
Repairs and maintenance	78,215	39,177	85,920	116,789	12,733	40,000	55,000	65,000
Landfill	13,752	13,192	12,448	7,538	6,533	13,066	13,000	14,000
Office supplies	253	59	275	160	-	160	160	160
Equipment	1,353	320	6,497	-	-	-	-	-
Operating supplies	16,920	19,787	19,527	33,830	12,692	25,384	26,000	27,000
Uniforms	837	162	1,307	1,177	510	1,020	1,200	1,200
Gas and Oil	377	1,622	1,502	773	-	-	-	-
Total Sewer Treatment Costs	240,600	213,299	277,902	360,540	134,262	283,218	302,084	317,760
Administrative and general	137,065	164,480	126,091	112,441	103,555	207,110	208,000	210,000
Laboratory and Testing					58,558	-	-	-
Customer Accounting	43,890	32,505	50,772	47,564	23,758	47,516	48,000	49,500
Depreciation expense	284,395	285,483	288,464	291,159	300,000	310,000	310,000	310,000
Total Operating Expenses	1,004,228	1,044,804	1,060,578	1,142,278	966,293	1,209,263	1,195,496	1,218,672
OPERATING INCOME (LOSS)	(\$182,330)	(\$218,624)	(\$259,094)	(\$253,405)	(\$564,116)	(\$344,263)	(\$330,496)	(\$353,672)
<b>NONOPERATING REVENUES (EXPENSES)</b>								
Interest expense	(23,783)	(17,442)	(17,857)	(22,320)	(15,500)	(22,320)	(22,320)	(22,320)
Interest income	2,191	794	1,993	528	8	16	16	16
Total Nonoperating Rev. (Exp.)	(21,592)	(16,648)	(15,864)	(21,792)	(15,492)	(22,304)	(22,304)	(22,304)
NET INCOME (LOSS)	(\$203,922)	(\$235,272)	(\$274,958)	(\$275,197)	(\$579,608)	(\$366,567)	(\$352,800)	(\$375,976)
Grants	209,720	0	0	150,643	121,053	121,053	0	0
CHANGE IN NET ASSETS	\$5,798	(\$235,272)	(\$274,958)	(\$124,554)	(\$458,555)	(\$245,514)	(\$352,800)	(\$375,976)

**City of Rocky Top  
Water and Sewer Fund**

**Projections - With One 25%, One 20% Annual Rate Increases, and 1% Annually Thereafter**

**Schedule A-3c**

	FISCAL YEAR 2014-2015 AUDITED	FISCAL YEAR 2015-2016 PROJECTED	FISCAL YEAR 2016-2017 PROJECTED	FISCAL YEAR 2017-2018 PROJECTED	FISCAL YEAR 2018-2019 PROJECTED
<b>OPERATING REVENUES</b>					
Metered water and sewer sales	\$ 857,253	\$ 840,000	\$ 840,000	\$ 840,000	\$ 840,000
Other operating revenues	<u>31,620</u>	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>
<b>25% Rate Increase on 7/01/2016</b>	0	0	210,000	210,000	210,000
<b>20% Rate Increase on 7/01/2017</b>	0	0	0	210,000	210,000
<b>1% Rate Adjustment on 7/01/2018</b>	0	0	0	0	<u>12,600</u>
	888,873	865,000	1,075,000	1,285,000	1,297,600
 Total Operating Expenses	 <u>1,142,278</u>	 <u>1,209,263</u>	 <u>1,195,496</u>	 <u>1,218,672</u>	 <u>1,230,859</u>
 OPERATING INCOME (LOSS)	 (253,405)	 (344,263)	 (120,496)	 66,328	 66,741
<b>NONOPERATING REVENUES (EXPENSES)</b>					
Interest expense	(22,320)	(21,874)	(21,436)	(21,007)	(20,587)
Interest income	<u>528</u>	<u>16</u>	<u>1,000</u>	<u>2,000</u>	<u>2,000</u>
Total Nonoperating Rev. (Exp.)	<u>(21,792)</u>	<u>(21,858)</u>	<u>(20,436)</u>	<u>(19,007)</u>	<u>(18,587)</u>
 NET INCOME (LOSS)	 (\$275,197)	 (\$366,121)	 (\$140,932)	 \$47,321	 \$48,154
Grants	150,643	121,053	0	0	0
CHANGE IN NET ASSETS	<u>(\$124,554)</u>	<u>(\$245,068)</u>	<u>(\$140,932)</u>	<u>\$47,321</u>	<u>\$48,154</u>

## **II. 2014 COMMUNITY DEVELOPMENT BLOCK GRANT**

In November 2014, The City of Rocky Top began working with Mitch Loomis, Community Development Manager, East Tennessee Development District (ETDD), John Burris, GRW Engineers, and American Utility Contractors to initiate and complete a meter replacement project.

Rocky Top Water and Sewer Department worked alongside American Utility Contractors to replace a combined total of 910 residential and commercial meters.

The City was able to purchase leak detection equipment with the remaining funds of the Community Development Block Grant (CDBG). The leak detection equipment will reduce the City's response time of finding and fixing leaks. Through the leak detection process there were twenty leaks that were found and fixed. This has reduced the City's estimated water loss by 875,000 gallons per month and because the City purchases water from Anderson County Water Authority (ACWA) we have seen a cost saving in our water purchased.

The 2014 CDBG project closed in February 2016.

### **III. Ordinance 490**

The City Council passed Ordinance 490 in order to implement a deposit for tenants who rent, to increase the tap fees, and to implement a policy to ensure compensation for any and all water department property in the event of tampering and/or damaging meters. This ordinance was passed to ensure a lower outstanding debt, eliminate loss due to property damages and also efficiently carry out our duties without a loss, when taps were needed.

Please see Appendix II for Ordinance 490.

ORDINANCE NO. 490

AN ORDINANCE TO AMEND THE LAKE CITY MUNICIPAL CODE BY REVISING WATER AND SEWERS TITLE 18, SECTION 18-103, SECTION 18-104, AND SECTION 18-105 EFFECTIVE DECEMBER 1, 2015.

BE IT ENACTED by the Board of Mayor and Council of the City of Rocky Top, Tennessee, that:

**Title 18, Chapter 1, Section 18-103 is repealed in its entirety and replaced with the following:**

**18-103. Connection fees, reconnection fees, tap fees, cleaning fees; disconnect notice fee, reread fee, extension policy, permit and inspection requirements.**

Any person, firm, corporation, or institution, inside the city limits, requesting water services of the city of Rocky Top shall be required to pay a nonrefundable connection fee as follows:

Single Residential	\$100.00 (One Hundred Dollars)
All Other Users	\$150.00 (One Hundred Fifty Dollars)

All residential renters must pay a refundable \$100 (one hundred dollar) deposit fee in addition to the \$100 (one hundred dollars) connection fee.

Any person, firm, corporation, or institution, inside the city limits, requesting reconnection of their City of Rocky Top water services shall be required to pay a nonrefundable reconnection fee as follows:

Single Residential	\$100.00 (One Hundred Dollars)
All Other Users	\$150.00 (One Hundred Fifty Dollars)

Water deposits currently being held on all water and sewer customers shall be returned to the person making the deposit at the time services are discontinued, after any amount due for services has been deducted.

Any person, firm, corporation, or institution, inside the city limits, requesting water and sewer on for cleaning only, will be charged a non-refundable cleaning fee of \$50.00 (fifty dollar) for 5 days.

Any person, firm, corporation, or institution that receives a twenty-four hour disconnect notice tag at their service address for failure to pay water and sewer bill will receive a \$25 (twenty-five dollar) fee added to their bill.

Any person, firm, corporation, or institution that request a reread of their meter will receive one reread per calendar year at no cost. All additional rereads of the meter will cost \$25 (twenty-five dollar) per reread if the reread validates the original reading. If the original reading was inaccurate the customer will not be assessed a charge for the reread.

**Water Tap Fees are as Follows:**

For every water tap made on a main water line, inside the city limits of the City of Rocky Top, the person having said tap shall pay to the Water and Sewer Department the following:

Three-quarter (3/4") inch tap	\$650.00 (Six Hundred Fifty Dollars)
One (1") inch tap	\$850.00 (Eight Hundred Fifty Dollars)
Two (2") inch tap	\$1150.00 (One Thousand One Hundred Fifty Dollars)
Six (6") inch tap	Cost of contractor plus 10%

**Sewer Tap Fees are as Follows:**

For every sewer tap made on a main sewer line inside the city limits of the City of Rocky Top, the person having the said tap shall pay to the Water and Sewer Department the following:

Four (4") inch tap	\$750.00 (Seven Hundred Fifty Dollars)
Six (6") inch tap	\$1600.00 (One Thousand Six Hundred Dollars)
Eight (8") inch tap	Cost of contractor plus 10%

All customers applying for water services after August 1, 2002, where private fire hydrants and fire sprinkler piping are required shall be metered along with other potable water. The meter, location of the meter, and the installation shall be approved by the City.

After August 1, 2002, customers who are served by private fire hydrants and fire sprinklers piping, and who found using unmetered water, shall be required to provide and install a city approved meter for such service as a condition for further service, pay the city for estimated water loss, and may be subject to criminal prosecution. (Order #354, July 1995, as amended by Ordinance #364, March 1997, and Ordinance #406, August 2002.)

**18-104 Tampering with or damaging facilities**

It shall be unlawful for any person to tamper with a water meter, water or sewer line, or to in any manner damage same, or cut on or cut off the supply of water from the premises without proper authority or reason. It shall also be unlawful for any person to do any act determined to be destructive or damaging to the water and sewer system or to hamper its operation, and any person convicted of same shall be fined under the general penalty for this code. (1968 Code, 13-104)

There shall be a penalty for meter tampering, damage or theft in the amount of \$550.00 (Five Hundred Fifty Dollars) plus the amount of any water used by such tampering, damage or theft.

Second offense will be punishable by law enforcement.

**Title 18, Chapter 1, Section 18-105 of the Rocky Top Municipal Code is revised in its entirety to read as follows:**

**18-105. Water and sewer services outside corporate limits.**

Any person, firm, corporation or institution, living outside the corporate limits requesting water and sewer services of the City of Rocky Top shall be required to pay a nonrefundable connection fee as follows:

Single Residential	\$100.00 (One Hundred Dollars)
All Other Users	\$150.00 (One Hundred Fifty Dollars)

Any person, firm, corporation, or institution, living outside the corporate limits, requesting water services of the city of Rocky Top that rents the property shall be required to pay a deposit fee as follows:

Residential	\$100.00 (One Hundred Dollars)
-------------	--------------------------------

Any person, firm, corporation, or institution, living outside the corporate limits, requesting reconnection of their City of Rocky Top water services shall be required to pay a nonrefundable reconnection fee as follows:

Single Residential	\$100.00 (One Hundred Dollars)
All Other Users	\$150.00 (One Hundred Fifty Dollars)

For every water tap made on a main water line to outside users, the customers having said tap made shall pay to the Rocky Top Water and Sewer Department the following:

Three-quarter (3/4") inch tap	\$750.00 (Seven Hundred Fifty Dollars)
One (1") inch tap	\$950.00 (Nine Hundred Fifty Dollars)
Two (2") inch tap	\$1500.00 (One Thousand Five Hundred Dollars)
Taps over Two (2") inch	Cost of contractor plus 20%

For any water tap in excess of two inches (2") the person having tap made shall pay the two inch (2") tap fee of \$1500.00 (One Thousand Five Hundred Dollars) and the cost of the installation. The superintendent of the department shall estimate the costs of the water tap installation, and said estimated amount shall be paid prior to installation of the water tap.

The rates of the usage of water and or sewer services by single residential users outside the corporate limits are as follows:

First 1,500 gallons (Minimum)	\$24.73 minimum monthly bill
All over 1,500 gallons	9.20 per thousand gallons and proportionally for fraction parts thereof.

The rates of the usage of water and sewer services by all other users (Non-Metered) outside the corporate limits are as follows:

First 1,500 gallons (Minimum)	\$24.73 minimum monthly bill
All over 1,500 gallons	\$10.00 per thousand gallons and proportionally for fraction parts thereof.

Where sanitary sewer services are used by the outside water customers, they shall pay a sewer charge of the rate of 100% of the net water bill. All amounts are based on water consumption as read from water meters owned and maintained by the City of Rocky Top or various water owners.

Any single residential customer living outside the corporate limits requesting sewer services of the City of Rocky Top shall be required to pay the Water and Sewer Department the following sewer tap fee:

Four (4") inch tap	\$950.00 (Nine Hundred Fifty Dollars)
Six (6") inch tap	\$1800.00 (One Thousand Eight Hundred Dollars)
Eight (8") inch tap	Cost of Contractor plus 20%

No more than two (2) dwellings can be on a four (4") inch tap.

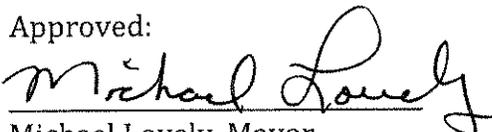
Tap on fees and sewer rates for **public institution, large commercial users, and industries** could be negotiated according to their type and amount of discharge but in no event can the rate be lower than what is set out above.

If for any reason a residential user is not being metered, then his sewer rate will be \$24.73 (twenty-four dollars and seventy-three cents) per month and all other users would be \$25.00 (twenty-five dollars) per month.

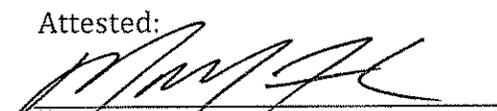
All other laws or ordinances set by the Board of Mayor and Council of the City of Rocky Top relative to the Rocky Top Water Department other than those above shall apply to these outside users.

First Reading: November 3, 2015  
Public Hearing: November 19, 2015 - 6:30 pm  
Second Reading: November 19, 2015

Approved:

  
Michael Lovely, Mayor

Attested:

  
Michael Y. Foster, City Recorder

#### **IV. Discussions with Anderson County Water Authority Underway**

As discussed at the previous Tennessee Water and Wastewater Board meeting in December, the City of Rocky Top and ACWA are discussing a possible merger. The discussions are ongoing and City officials have met with the ACWA Board on multiple occasions to continue the steps of a possible merger. ACWA has requested the City's 2015 audit, maps of the City's water and sewer lines and the MTAS Rate Study.

The City and ACWA are working together to share the cost of an assessment of the City's system. The City and ACWA understand that a merger is a lengthy process that takes time. The City will continue to work to improve their system and financial situation until a possible merger is complete and the City will continue working with ACWA on a possible merger.

Please see Appendix III for Resolution 517.

**RESOLUTION NO. 517**

**A RESOLUTION TO AUTHORIZE THE ANDERSON COUNTY WATER  
AUTHORITY TO CONSIDER ABSORBING ROCKY TOP WATER AND SEWER.**

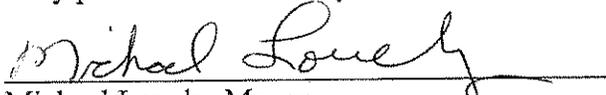
**WHEREAS**, the City of Rocky Top operates Rocky Top Water and Sewer and

**WHEREAS**, the Anderson County Water Authority is their own utility district and has the ability to merge with other utility districts;

**WHEREAS**, the Anderson County Water Authority must conduct a rate study and examine the feasibility of absorbing any utility;

**NOW, THEREFORE, BE IT RESOLVED** by the Board of Mayor and Council of the City of Rocky Top, Tennessee request the Anderson County Water Authority Board of Directors examine the possibility of absorbing Rocky Top Water and Sewer in to their operations.

Duly passed on this 3<sup>rd</sup> day of November 2015.

  
Michael Lovely, Mayor

Attest:

  
Michael Y. Foster, City Recorder

**V. 2016 COMMUNITY DEVELOPMENT BLOCK GRANT**

The City of Rocky Top is working with Mitch Loomis, with ETDD to apply for the 2016 CDBG in the amount of \$525,000. The money will be used for waterline replacement with a match of 39,516.00. The CDBG is a great opportunity for the City to complete needed infrastructure repairs and updates at a low cost for the City.

The Rocky Top City Council passed a resolution on December 17, 2015 to apply for the 2016 CDBG and designate the required matching funds.

Please see Appendix IV Resolution 518.

Resolution 518

**A RESOLUTION AUTHORIZING THE CITY OF ROCKY TOP TO MAKE AN APPLICATION FOR A 2016 COMMUNITY DEVELOPMENT BLOCK GRANT**

**WHEREAS,** the Community Development Block Grant (CDBG) Program as administered by the State of Tennessee offers grants to local jurisdictions to fund sewer and waterline extensions, sewer and water system upgrades, as well as community livability projects, and

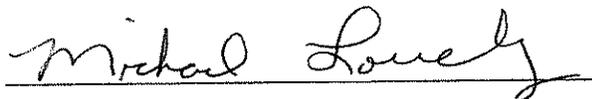
**WHEREAS,** the match for the 2016 CDBG for the City of Rocky Top is 11% and with Three Star incentive 7% or \$39,516.00 based on grant funds of \$525,000.00 for a community livability project, and

**NOW, THEREFORE, BE IT RESOLVED,** that the City of Rocky Top Council hereby commits to applying for a Community Development Block Grant funds, not to exceed \$525,000.00 the submission of the 2016 application, and

**BE IT FURTHER RESOLVED,** the City of Rocky Top Council will commit to provide matching funds in the amount not to exceed \$39,516.00 of the total eligible project costs. The total CDBG grant application will not exceed the amount of \$564,516.00

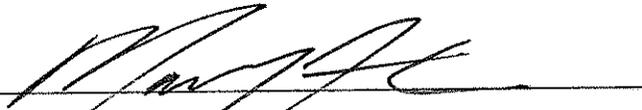
Duly passed and approved this 17th day of December, 2015

APPROVED: \_\_\_\_\_



Michael Lovely, Mayor

ATTEST: \_\_\_\_\_



Michael Y. Foster, City Recorder

**WATER AND WASTEWATER FINANCING BOARD**  
**Status Update**

**Case:**                    **City of Sunbright**  
**Mayor:**                **Teresa Ryon**  
**Customers:**         **72, Sewer**

The City of Sunbright has been referred for a negative change in net position for the last four consecutive fiscal years as of June 30, 2014. The financial and rate history are attached, along with staff's projections.

Effective February 22, 2016, the City increased rates 5%. Staff is projecting the City will need an additional 60% rate increase to reach financial stability. The City Council has voted not to initiate consolidation negotiations with Plateau Utility District.

CITY OF SUNBRIGHT						
HISTORY FILE						
	Audited	Audited	Audited	Audited	Audited	Audited
Fiscal Year 6/30	2009	2010	2011	2012	2013	2014
Sewer revenues	\$ 32,462	\$ 33,848	\$ 30,414	\$ 33,743	\$ 25,057	\$ 34,051
Other revenues				\$ -	\$ -	\$ -
Capital Contributions	\$ 48,630	\$ 411,713	\$ 20,000			
<b>Total Operating Revenues</b>	<b>\$ 81,092</b>	<b>\$ 445,561</b>	<b>\$ 50,414</b>	<b>\$ 33,743</b>	<b>\$ 25,057</b>	<b>\$ 34,051</b>
<b>Operating Expenses</b>	<b>\$ 51,569</b>	<b>\$ 46,154</b>	<b>\$ 52,433</b>	<b>\$ 48,649</b>	<b>\$ 37,217</b>	<b>\$ 37,780</b>
Operating Income	\$ 29,523	\$ 399,407	\$ (2,019)	\$ (14,906)	\$ (12,160)	\$ (3,729)
Interest Expense	\$ 456	\$ 360	\$ 276	\$ 192	\$ 96	\$ 12
Transfer in(out)	\$ 10,000					\$ (10,000)
<b>Change in Net Assets</b>	<b>\$ 39,067</b>	<b>\$ 399,047</b>	<b>\$ (2,295)</b>	<b>\$ (15,098)</b>	<b>\$ (12,256)</b>	<b>\$ (13,741)</b>
<u>Supplemental Information</u>						
Principal payment		\$ 6,300	\$ 6,384	\$ 6,468	\$ 6,603	\$ 3,305
Depreciation	\$ 16,879	\$ 17,289	\$ 30,135	\$ 27,489	\$ 27,093	\$ 27,364
<u>Sewer rates</u>						
<u>Residential</u>						
First 2,000 gallons	\$ 23.00	\$ 23.00	\$ 23.00	\$ 23.00	\$ 23.00	\$ 23.00
All over	\$ 5.15	\$ 5.15	\$ 5.15	\$ 5.15	\$ 5.15	\$ 5.15
<u>Commercial</u>						
First 2,000 gallons	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00
All over	\$ 3.90	\$ 3.90	\$ 3.90	\$ 3.90	\$ 3.90	\$ 3.90
Tap fee	\$ 400.00	\$ 400.00	\$ 400.00	\$ 400.00		
Customers	70	75	75	72	72	72

**City of Sunbright  
Projections**

			0%	<i>Growth rate Projection</i>	<i>Growth rate Projection</i>	<i>Growth rate Projection</i>	<i>Growth rate Projection</i>
<b>Fiscal Year 6/30</b>	<b>Audited 2014</b>	<b>Projected 2015</b>		<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Sewer revenues	\$ 34,051	\$ 33,743		\$ 33,743	\$ 33,743	\$ 33,743	\$ 33,743
Other revenues	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -
Projected additional revenue			<b>65%</b>	\$ 21,933	\$ 21,933	\$ 21,933	\$ 21,933
<b>Total Operating Revenues</b>	<b>\$ 34,051</b>	<b>\$ 33,743</b>		<b>\$ 55,676</b>	<b>\$ 55,676</b>	<b>\$ 55,676</b>	<b>\$ 55,676</b>
<b>Operating Expenses</b>	<b>\$ 37,780</b>	<b>\$ 49,622</b>	<b>3%</b>	<b>\$ 51,111</b>	<b>\$ 52,644</b>	<b>\$ 54,223</b>	<b>\$ 55,850</b>
Operating Income	\$ (3,729)	\$ (15,879)		\$ 4,565	\$ 3,032	\$ 1,453	\$ (174)
Interest Expense	\$ 12						
Transfer in(out)	\$ (10,000)						
<b>Change in Net Assets</b>	<b>\$ (13,741)</b>	<b>\$ (15,879)</b>		<b>\$ 4,565</b>	<b>\$ 3,032</b>	<b>\$ 1,453</b>	<b>\$ (174)</b>
<u>Supplemental Information</u>							
Principal payment	\$ 3,305						
Depreciation	\$ 27,364	\$ 27,364		\$ 27,364	\$ 27,364	\$ 27,364	\$ 27,364
<u>Sewer rates</u>							
<u>Residential</u>							
First 2,000 gallons	\$ 23.00						
All over	\$ 5.15						
<u>Commercial</u>							
First 2,000 gallons	\$ 30.00						
All over	\$ 3.90						
Customers	72						



# CITY OF SUNBRIGHT

120 MELTON DRIVE • P.O. BOX 188  
SUNBRIGHT, TENNESSEE 37872 • (423) 628-5260

## FAX:

DATE: 2/22/16

TO: John Greer

FAX: 1-615-741-1551

FROM: Stephanie Sexton

COMMENTS: Letter from Vice Mayor Ryan  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PAGES (Includes Cover Sheet) 2

(FAX: 423-628-2832)



# *CITY OF SUNBRIGHT*

120 MELTON DRIVE • P.O. BOX 188  
SUNBRIGHT, TENNESSEE 37872 • (423) 628-5260

State of Tennessee  
Comptroller of the Treasury  
John Greer  
Utilities Board Specialist  
Suite 1700 James K Polk Building  
505 Deaderick Street  
Nashville, TN 37243-1402

February 22, 2016

The City of Sunbright voted to raise sewage rates 5% at our February meeting to help with the depreciation value. We understand this is not as much as predictions were called for but we are a very small and distressed area. The City is also in the process of gathering info to apply for a CDBG to help with Wastewater Systems.

We ask that you accept our decision for showing some cooperation.

Respectfully,

Teresa Ryon  
Vice Mayor

Cases

Water Loss

**SWEETWATER UTILITIES BOARD**  
**WATER AND SEWER DEPARTMENT**  
 Schedule of Unaccounted for Water - Unaudited  
 Year Ended June 30, 2015

**AWWA Free Water Audit Software:**  
**Reporting Worksheet**

WAS v5.0  
 American Water Works Association.  
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? Click to access definition

+ Click to add a comment

**Water Audit Report for:** Sweetwater Utilities Board

**Reporting Year:** 2015 / 7/2014 - 6/2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

---

**WATER SUPPLIED**

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	+	?	9	345.874	MG/Yr
Water imported:	+	?	8	92.256	MG/Yr
Water exported:	+	?	n/a		MG/Yr

---

**WATER SUPPLIED:** 441.509 MG/Yr

**Master Meter and Supply Error Adjustments**

Pcnt:	+	?	9	-5.188	MG/Yr
Value:	+	?	8	2.00%	MG/Yr
	+	?	n/a		MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

---

**AUTHORIZED CONSUMPTION**

Billed metered:	+	?	8	328.351	MG/Yr
Billed unmetered:	+	?	5	0.405	MG/Yr
Unbilled metered:	+	?	8	0.000	MG/Yr
Unbilled unmetered:	+	?	n/a	5.519	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

---

**AUTHORIZED CONSUMPTION:** 334.275 MG/Yr

Click here: ? for help using option buttons below

Pcnt:	+	?	8	1.25%	MG/Yr
Value:	+	?	n/a		MG/Yr

Use buttons to select percentage of water supplied OR value

---

**WATER LOSSES (Water Supplied - Authorized Consumption)**

**107.234** MG/Yr

**Apparent Losses**

Unauthorized consumption:	+	?	n/a	1.104	MG/Yr
---------------------------	---	---	-----	-------	-------

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+	?	8	10.155	MG/Yr
Systematic data handling errors:	+	?	n/a	0.821	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** 12.080 MG/Yr

Pcnt:	+	?	n/a	0.25%	MG/Yr
Value:	+	?	n/a		MG/Yr

---

Pcnt:	+	?	n/a	3.00%	MG/Yr
Value:	+	?	n/a	0.25%	MG/Yr

---

**Real Losses (Current Annual Real Losses or CARL)**

**Real Losses = Water Losses - Apparent Losses:** 95.154 MG/Yr

---

**WATER LOSSES:** 107.234 MG/Yr

---

**NON-REVENUE WATER**

**NON-REVENUE WATER:** 112.753 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

---

**SYSTEM DATA**

Length of mains:	+	?	10	132.0	miles
Number of <u>active AND inactive</u> service connections:	+	?	7	4,794	
Service connection density:	?	n/a	n/a	36	conn./mile main

Are customer meters typically located at the curbside or property line? Yes (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: ? **Average length of customer service line has been set to zero and a data grading score of 10 has been applied**

Average operating pressure:	+	?	9	70.0	psi
-----------------------------	---	---	---	------	-----

---

**COST DATA**

Total annual cost of operating water system:	+	?	9	\$1,503,812	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	10	\$5.92	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	+	?	9	\$722.90	\$/Million gallons

Use Customer Retail Unit Cost to value real

---

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 81 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Billed unmetered

2: Volume from own sources

3: Unauthorized consumption

**SWEETWATER UTILITIES BOARD**  
**WATER AND SEWER DEPARTMENT**  
 Schedule of Unaccounted for Water - Unaudited  
 Year Ended June 30, 2015



**AWWA Free Water Audit Software:**  
**System Attributes and Performance Indicators**

WAS v5.0  
 American Water Works Association.  
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Water Audit Report for: Sweetwater Utilities Board

Reporting Year: 2015 / 7/2014 - 6/2015

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 81 out of 100 \*\*\*

**System Attributes:**

	Apparent Losses:	<span style="border: 1px solid black; padding: 2px;">12.080</span>	MG/Yr
	+ Real Losses:	<span style="border: 1px solid black; padding: 2px;">95.154</span>	MG/Yr
	= <b>Water Losses:</b>	<span style="border: 1px solid black; padding: 2px;">107.234</span>	MG/Yr
<div style="display: flex; align-items: center;"> <span style="border: 1px solid black; padding: 2px; margin-right: 5px;">?</span> <span>Unavoidable Annual Real Losses (UARL):</span> <span style="border: 1px solid black; padding: 2px; margin-left: 10px;">36.62</span> <span>MG/Yr</span> </div>			
	Annual cost of Apparent Losses:	<span style="border: 1px solid black; padding: 2px;">\$71,513</span>	
	Annual cost of Real Losses:	<span style="border: 1px solid black; padding: 2px;">\$563,314</span>	Valued at <b>Customer Retail Unit Cost</b>
			Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied: <span style="border: 1px solid black; padding: 2px;">25.5%</span> Non-revenue water as percent by cost of operating system: <span style="border: 1px solid black; padding: 2px;">44.4%</span>	Real Losses valued at Customer Retail Unit Cost
Operational Efficiency:	{	Apparent Losses per service connection per day: <span style="border: 1px solid black; padding: 2px;">6.90</span> gallons/connection/day Real Losses per service connection per day: <span style="border: 1px solid black; padding: 2px;">54.38</span> gallons/connection/day Real Losses per length of main per day*: <span style="border: 1px solid black; padding: 2px;">N/A</span> Real Losses per service connection per day per psi pressure: <span style="border: 1px solid black; padding: 2px;">0.78</span> gallons/connection/day/psi	
		From Above, Real Losses = Current Annual Real Losses (CARL): <span style="border: 1px solid black; padding: 2px;">95.15</span> million gallons/year	
		<span style="border: 1px solid black; padding: 2px;">?</span> Infrastructure Leakage Index (ILI) [CARL/UARL]: <span style="border: 1px solid black; padding: 2px;">2.60</span>	

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

**From:** [Jan Broyles](#)  
**To:** [John Greer](#)  
**Subject:** corrected report  
**Date:** Monday, November 09, 2015 1:44:19 PM  
**Attachments:** [FY2015.xlsm](#)

---

John,

Attached is the corrected AWWA Reporting Worksheet for Sweetwater Utilities Board.

I unchecked the box "Use Customer Retail Unit cost to value real losses" and that changes the Non-revenue water as percent by cost of operating system to 9.7% instead of 44.8%.

If you need any additional information, please do not hesitate to contact me.

Thanks,

**Jan J. Broyles**  
**Accounting Manager**

Sweetwater Utilities Board  
P.O. Box 191  
Sweetwater, TN 37874  
(423) 337-5081

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# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0

American Water Works Association

Water Audit Report for: **Sweetwater Utilities Board**  
Reporting Year: **2015** / **7/2014 - 6/2015**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

		Enter grading in column 'E' and 'J'				Master Meter and Supply Error Adjustments		
				Pcnt:		Value:		
Volume from own sources:	<input type="button" value="+"/> <input type="button" value="9"/>	<input type="button" value="9"/>	345.874	MG/Yr	<input type="button" value="+"/> <input type="button" value="9"/>	<input type="radio"/> <input checked="" type="radio"/>	-5.188	MG/Yr
Water imported:	<input type="button" value="+"/> <input type="button" value="8"/>	<input type="button" value="8"/>	92.256	MG/Yr	<input type="button" value="+"/> <input type="button" value="8"/>	2.00% <input checked="" type="radio"/> <input type="radio"/>		MG/Yr
Water exported:	<input type="button" value="+"/> <input type="button" value="n/a"/>	<input type="button" value="n/a"/>		MG/Yr	<input type="button" value="+"/> <input type="button" value="9"/>	<input type="radio"/> <input checked="" type="radio"/>		MG/Yr

**WATER SUPPLIED:** 441.509 MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="8"/>	<input type="button" value="8"/>	328.351	MG/Yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="5"/>	<input type="button" value="5"/>	0.405	MG/Yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="8"/>	<input type="button" value="8"/>	0.000	MG/Yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="5"/>	<input type="button" value="5"/>	5.519	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:** 334.275 MG/Yr

Click here:  for help using option buttons below  
Pcnt: 1.25%   Value:  MG/Yr

Use buttons to select percentage of water supplied OR value

Pcnt: 0.25%   Value:  MG/Yr

3.00%    MG/Yr  
0.25%    MG/Yr

### WATER LOSSES (Water Supplied - Authorized Consumption)

#### Apparent Losses

Unauthorized consumption:   1.104 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:   10.155 MG/Yr

Systematic data handling errors:   0.821 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** 12.080 MG/Yr

#### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:  95.154 MG/Yr

**WATER LOSSES:** 107.234 MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**  112.753 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="10"/>	<input type="button" value="10"/>	132.0	miles
Number of active AND inactive service connections:	<input type="button" value="+"/> <input type="button" value="7"/>	<input type="button" value="7"/>	4,794	
Service connection density:	<input type="button" value="9"/>	<input type="button" value="9"/>	36	conn./mile main

Are customer meters typically located at the curbside or property line?  Yes

Average length of customer service line:   10 (length of service line, beyond the property boundary, that is the responsibility of the utility)  
Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:   70.0 psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="9"/>	<input type="button" value="9"/>	\$1,488,807	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="10"/>	<input type="button" value="10"/>	\$5.92	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="9"/>	<input type="button" value="9"/>	\$722.90	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 81 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Billed unmetered

2: Volume from own sources

3: Unauthorized consumption



## AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association

Water Audit Report for: **Sweetwater Utilities Board**  
 Reporting Year: **2015**    **7/2014 - 6/2015**

**\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 81 out of 100 \*\*\***

**System Attributes:**

Apparent Losses:	12.080	MG/Yr
+	Real Losses:	95.154 MG/Yr
=	<b>Water Losses:</b>	<b>107.234</b> MG/Yr
<span style="background-color: #ccccff; padding: 2px;">?</span> Unavoidable Annual Real Losses (UARL):	36.62	MG/Yr
Annual cost of Apparent Losses:	\$71,513	
Annual cost of Real Losses:	\$68,787	Valued at <b>Variable Production Cost</b>

Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	25.5%	
		Non-revenue water as percent by cost of operating system:	9.7%	Real Losses valued at Variable Production Cost
Operational Efficiency:	{	Apparent Losses per service connection per day:	6.90	gallons/connection/day
		Real Losses per service connection per day:	54.38	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	0.78	gallons/connection/day/psi
		From Above, Real Losses = Current Annual Real Losses (CARL):	95.15	million gallons/year
		<span style="background-color: #ccccff; padding: 2px;">?</span> Infrastructure Leakage Index (ILI) [CARL/UARL]:	2.60	

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
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Click to access definition  
 Click to add a comment

Water Audit Report for: **City of Copperhill (00136)**  
Reporting Year: **2014** **7/2013 - 6/2014**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

		Enter grading in column 'E' and 'J'				Master Meter and Supply Error Adjustments	
		Grading	Value	Grading	Value	Pcnt:	Value:
Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> n/a		0.000 MG/Yr	<input type="button" value="+"/> <input type="button" value="?"/> 1		<input type="radio"/> <input type="radio"/>	
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> 7		32.415 MG/Yr	<input type="button" value="+"/> <input type="button" value="?"/> 2	1.00%	<input checked="" type="radio"/> <input type="radio"/>	
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a		0.000 MG/Yr	<input type="button" value="+"/> <input type="button" value="?"/> 1		<input type="radio"/> <input type="radio"/>	

**WATER SUPPLIED:** **32.094** MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 6	12.890 MG/Yr	Click here: <input type="button" value="?"/> for help using option buttons below Pcnt: <input type="text" value="1.25%"/> <input checked="" type="radio"/> <input type="radio"/> Value: <input type="text"/> Use buttons to select percentage of water supplied OR value
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000 MG/Yr	
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> 6	0.050 MG/Yr	
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> 5	0.401 MG/Yr	

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:** **13.341** MG/Yr

### WATER LOSSES (Water Supplied - Authorized Consumption)

#### Apparent Losses

Unauthorized consumption:	<input type="button" value="+"/> <input type="button" value="?"/> 5	0.080 MG/Yr	Pcnt: <input type="text" value="0.25%"/> <input checked="" type="radio"/> <input type="radio"/> Value: <input type="text"/>
Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="?"/> 7	1.280 MG/Yr	<input type="text" value="9.00%"/> <input checked="" type="radio"/> <input type="radio"/>
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="?"/> 5	0.032 MG/Yr	<input type="text" value="0.25%"/> <input checked="" type="radio"/> <input type="radio"/>

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** **1.392** MG/Yr

#### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **17.361** MG/Yr

**WATER LOSSES:** **18.753** MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:** **19.204** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/> 5	22.0 miles
Number of active AND inactive service connections:	<input type="button" value="+"/> <input type="button" value="?"/> 6	478
Service connection density:	<input type="button" value="?"/> 22	conn./mile main

Are customer meters typically located at the curbstop or property line?  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:   7 80.0 psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/> 10	\$187,197 \$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 10	\$7.64 \$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 10	\$4,359.16 \$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

**\*\*\* YOUR SCORE IS: 73 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

**1: Water imported**

**2: Billed metered**

**3: Unbilled metered**

See the accompanying independent accountants' report.



**AWWA Free Water Audit Software:  
System Attributes and Performance Indicators**

WAS v5.0  
American Water Works Association  
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Water Audit Report for:   
Reporting Year:

**\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 73 out of 100 \*\*\***

**System Attributes:**

Apparent Losses:	<input type="text" value="1.392"/>	MG/Yr
+ Real Losses:	<input type="text" value="17.361"/>	MG/Yr
= <b>Water Losses:</b>	<input type="text" value="18.753"/>	MG/Yr

Unavoidable Annual Real Losses (UARL):  MG/Yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:

Valued at **Variable Production Cost**  
Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial: { Non-revenue water as percent by volume of Water Supplied:   
Non-revenue water as percent by cost of operating system:  Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day:  gallons/connection/day  
Real Losses per service connection per day:  gallons/connection/day  
Real Losses per length of main per day\*:  gallons/mile/day  
Real Losses per service connection per day per psi pressure:  gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL):  million gallons/year

Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

See the accompanying independent accountants' audit report.

Water and Wastewater Financing Board  
505 Deadrick Street, STE 1500  
Nashville, TN 37243-1402

**RECEIVED**

**FEB 17 2016**

**DEPT: COMPTROLLER  
OFFICE OF ADMINISTRATION**

Enclosed is the City of Copperhill Water Survey Questionnaire from:

Amber Bledsoe  
City Clerk

City of Copperhill, TN  
P.O. Box 640  
160 Main Street  
Copperhill, TN 37317

Phone: 423-496-5141  
Fax: 423-496-3617

## Initial Check list for Addressing Water Loss

1. Are you billing for all general government water use? Examples: City Hall, Parks, Community Centers, etc. - *NO*
2. Are you accounting for the water used by the water and/or sewer department? - *NO*
3. Do you periodically check or inspect all 2" and larger meters? - *YES*
4. Do you have a recalibration policy and procedure in place? - *NO*
5. Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons? - *Yes, when they no longer work*
6. Do you have a process to inspect for unauthorized consumption? What are the consequences if unauthorized consumption is discovered? - *Yes, send certified letter*
7. Do you have a leak detection program currently in place? - *NO*
8. Do you have written policies, including a policy for billing adjustments? Are the written policies followed correctly by all levels of staff? - *Yes*
9. Do you have authorized non-customer users (volunteer fire departments, etc)? Do you account for the use? Do you have a method for the user to report water usage? - *Yes*
10. Is your system "zoned" to isolate water loss? - *Yes*
11. Do you search for leaks at night when there is little traffic or small household usage? - *NO*
12. Do you or can you control pressure surges? - *Yes*
13. Do you have or have access to leak detection equipment? - *NO*
14. What is your policy for notifying customers they have a leak? - *Phone call or in person*
15. Do you have a public relations program to encourage citizens to report leaks? - *Yes*
16. Do you have a policy to prosecute water theft or meter tampering/damage? - *Yes*
17. What is the monetary value of the lost water?
18. Is the cost to repair the leak justified based on the amount of water being lost? - *Yes*

CITY OF COWAN  
OTHER SUPPLEMENTARY INFORMATION  
June 30, 2015

REPORTING WORKSHEET - UNAUDITED

AWWA Free Water Audit Software: Reporting Worksheet				WAS v5.0 <small>American Water Works Association. Copyright © 2014. All Rights Reserved.</small>
<input type="button" value="Click to access definition"/> <input type="button" value="Click to add a comment"/>		Water Audit Report for: <b>Cowan Board of Public Utilities (0000146)</b> Reporting Year: <b>2015</b> / 7/2014 - 6/2015		
Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (rule or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades				
All volumes to be entered as: MILLION GALLONS (US) PER YEAR				
To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.				
<b>WATER SUPPLIED</b>		Master Meter and Supply Error Adjustments		
		← Enter grading in column 'E' and 'J' →		
Volume from own sources:	<input type="button" value="7"/>	<input type="text" value="101.620"/>	MG/Yr	<input type="button" value="5"/>
Water imported:	<input type="button" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr	<input type="button" value="0"/>
Water exported:	<input type="button" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr	<input type="button" value="0"/>
<b>WATER SUPPLIED:</b>		<b>101.620</b>	MG/Yr	
Enter negative % or value for under-registration Enter positive % or value for over-registration				
<b>AUTHORIZED CONSUMPTION</b>				
Billed metered:	<input type="button" value="7"/>	<input type="text" value="40.947"/>	MG/Yr	
Billed unmetered:	<input type="button" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr	
Unbilled metered:	<input type="button" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr	
Unbilled unmetered:	<input type="button" value="7"/>	<input type="text" value="6.200"/>	MG/Yr	
Unbilled Unmetered volume entered is greater than the recommended default value				
<b>AUTHORIZED CONSUMPTION:</b>		<b>47.147</b>	MG/Yr	
Click here: <input type="button" value="P"/> for help using option buttons below				
<b>WATER LOSSES (Water Supplied - Authorized Consumption)</b>		<b>54.473</b>	MG/Yr	
<b>Apparent Losses</b>				
Unauthorized consumption:	<input type="button" value="5"/>	<input type="text" value="0.254"/>	MG/Yr	
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed				
Customer metering inaccuracies:	<input type="button" value="6"/>	<input type="text" value="3.561"/>	MG/Yr	
Systematic data handling errors:	<input type="button" value="5"/>	<input type="text" value="0.102"/>	MG/Yr	
Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed				
<b>Apparent Losses:</b>		<b>3.917</b>	MG/Yr	
<b>Real Losses (Current Annual Real Losses or CARL)</b>				
Real Losses = Water Losses - Apparent Losses:		<input type="button" value="7"/>	<input type="text" value="50.556"/>	MG/Yr
<b>WATER LOSSES:</b>		<b>54.473</b>	MG/Yr	
<b>NON-REVENUE WATER</b>		<input type="button" value="7"/>	<input type="text" value="60.673"/>	MG/Yr
= Water Losses + Unbilled Metered + Unbilled Unmetered				
<b>SYSTEM DATA</b>				
Length of mains:	<input type="button" value="7"/>	<input type="text" value="35.0"/>	miles	
Number of active AND inactive service connections:	<input type="button" value="7"/>	<input type="text" value="1,250"/>		
Service connection density:	<input type="button" value="7"/>	<input type="text" value="36"/>	conn./mile main	
Are customer meters typically located at the curbside or property line? <input type="button" value="Yes"/> (length of service line, beyond the property boundary, that is the responsibility of the utility)				
Average length of customer service line has been set to zero and a data grading score of 10 has been applied				
Average operating pressure:	<input type="button" value="7"/>	<input type="text" value="60.0"/>	psi	
<b>COST DATA</b>				
Total annual cost of operating water system:	<input type="button" value="10"/>	<input type="text" value="\$373,986"/>	\$/Year	
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="9"/>	<input type="text" value="\$6.97"/>	\$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	<input type="button" value="10"/>	<input type="text" value="\$1,775.12"/>	\$/Million gallons	<input type="checkbox"/> Use Customer Retail Unit Cost to value real losses
<b>WATER AUDIT DATA VALIDITY SCORE:</b>				
<b>*** YOUR SCORE IS: 74 out of 100 ***</b>				
A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score				
<b>PRIORITY AREAS FOR ATTENTION:</b>				
Based on the information provided, audit accuracy can be improved by addressing the following components:				
1: Volume from own sources				
2: Billed metered				
3: Customer metering inaccuracies				

See Accompanying Independent Auditors' Report.

CITY OF COWAN  
 OTHER SUPPLEMENTARY INFORMATION  
 June 30, 2015

PERFORMANCE INDICATORS - UNAUDITED

AWWA Free Water Audit Software: System Attributes and Performance Indicators		WAS v5.0 American Water Works Association Copyright © 2014, All Rights Reserved.												
Water Audit Report for: <input type="text" value="Cowan Board of Public Utilities (0000146)"/>														
Reporting Year: <input type="text" value="2015"/> <input type="text" value="7/2014 - 6/2015"/>														
*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 74 out of 100 ***														
<b>System Attributes:</b>														
	Apparent Losses:	<input type="text" value="3.917"/> MG/Yr												
	+ Real Losses:	<input type="text" value="50.556"/> MG/Yr												
	= <b>Water Losses:</b>	<input type="text" value="54.473"/> MG/Yr												
	? Unavoidable Annual Real Losses (UARL):	<input type="text" value="See limits in definition"/> MG/Yr												
	Annual cost of Apparent Losses:	<input type="text" value="\$27,302"/>												
	Annual cost of Real Losses:	<input type="text" value="\$89,743"/> Valued at <b>Variable Production Cost</b>												
		Return to Reporting Worksheet to change this assumption												
<b>Performance Indicators:</b>														
Financial:	{	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Non-revenue water as percent by volume of Water Supplied:</td> <td style="width: 10%;"><input type="text" value="59.7%"/></td> <td style="width: 10%;"></td> </tr> <tr> <td>Non-revenue water as percent by cost of operating system:</td> <td><input type="text" value="34.2%"/></td> <td>Real Losses valued at Variable Production Cost</td> </tr> </table>	Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="59.7%"/>		Non-revenue water as percent by cost of operating system:	<input type="text" value="34.2%"/>	Real Losses valued at Variable Production Cost						
Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="59.7%"/>													
Non-revenue water as percent by cost of operating system:	<input type="text" value="34.2%"/>	Real Losses valued at Variable Production Cost												
Operational Efficiency:	{	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Apparent Losses per service connection per day:</td> <td style="width: 10%;"><input type="text" value="8.59"/></td> <td style="width: 10%;">gallons/connection/day</td> </tr> <tr> <td>Real Losses per service connection per day:</td> <td><input type="text" value="110.81"/></td> <td>gallons/connection/day</td> </tr> <tr> <td>Real Losses per length of main per day*:</td> <td><input type="text" value="N/A"/></td> <td></td> </tr> <tr> <td>Real Losses per service connection per day per psi pressure:</td> <td><input type="text" value="1.85"/></td> <td>gallons/connection/day/psi</td> </tr> </table>	Apparent Losses per service connection per day:	<input type="text" value="8.59"/>	gallons/connection/day	Real Losses per service connection per day:	<input type="text" value="110.81"/>	gallons/connection/day	Real Losses per length of main per day*:	<input type="text" value="N/A"/>		Real Losses per service connection per day per psi pressure:	<input type="text" value="1.85"/>	gallons/connection/day/psi
Apparent Losses per service connection per day:	<input type="text" value="8.59"/>	gallons/connection/day												
Real Losses per service connection per day:	<input type="text" value="110.81"/>	gallons/connection/day												
Real Losses per length of main per day*:	<input type="text" value="N/A"/>													
Real Losses per service connection per day per psi pressure:	<input type="text" value="1.85"/>	gallons/connection/day/psi												
		From Above, Real Losses = Current Annual Real Losses (CARL): <input type="text" value="50.56"/> million gallons/year												
		? Infrastructure Leakage Index (ILI) [CARL/UARL]: <input type="text"/>												
* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline														

**MAYOR**  
Joyce Brown

**COUNCIL**  
Steven Clark  
Ransom Green  
Tom McGee  
Adam Nelson  
Price Tucker

**WATER/WASTEWATER  
SUPERINTENDENT**  
Matt Farris

# City of Cowan

P.O. BOX 338  
COWAN, TENNESSEE 37318  
Office: (931) 967-7318  
Fax: (931) 967-7990  
recordersherman@comcast.net

**CITY RECORDER**  
Becky Sherman, CMFO, CMC

**CHIEF OF POLICE**  
Allen Edwards

**STREET/SANITATION  
SUPERINTENDENT**  
Steve Wilkinson

**FIRE CHIEF**  
Tommy Myers

**BUILDING INSPECTOR**  
Tommy Cohenour

February 8, 2016

Mr. John Greer  
Utilities Board Specialist  
State of Tennessee  
Water and Wastewater Financing Board  
James K. Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243-1402

Dear Mr. Greer:

In response to your letter to Mayor Joyce Brown dated January 12, 2016, regarding the Cowan Board of Public Utilities' excessive non-revenue water, I respectfully submit the following:

1. Response to the "Initial Checklist for Addressing Water Loss".
2. Summary of efforts being made to bring the Cowan Board of Public Utilities into compliance with water loss and finance regulations.
3. Financial statements for the Cowan Board of Public Utilities as of January 31, 2016.
4. Water loss for FY 2016 calculated for 7/1/15-1/31/16 using AWWA water audit software.

I have attempted to address the issues which contributed to the excessive non-revenue water noted in your letter. Please know that we are constantly making diligent efforts to bring out utility system into compliance with state regulations. Should you need anything else before your meeting with the Board, please do not hesitate to contact me.

Sincerely,



Joyce Brown  
Mayor, City of Cowan, Tennessee

## **CITY OF COWAN RESPONSE TO “INITIAL CHECK LIST FOR ADDRESSING WATER LOSS”**

1. Yes, we are billing for all general government water use—city hall, parks, community center, maintenance shop and garage, police department, and all other city use.
2. Yes, we are accounting for water used by the water and wastewater departments.
3. Yes. We are currently in the process of inspecting our 2” and larger meters to insure that we have the correct meters in place to pick up both high and low flow water usage.
4. We do not have a formal recalibration policy or procedure in place. However, in November we did have the raw and finish meters at the water plant calibrated; at that time, a new finish water meter was installed.
5. We do have a meter replacement policy. All meters that read over one million (1,000,000) gallons are systematically being replaced. To date, 240 meters out of 920 in use have been replaced. In addition, meters that we find that are stopped are replaced, as well as any damaged meters.
6. We do not have a formal process to check for unauthorized consumption. However, we still use handheld readers to read our meters, so the lid is pulled off monthly for every meter in use for reading. Meters that are supposed to be locked off are checked periodically for unauthorized usage.
7. Yes, we do currently have a leak detection program in place. In fiscal year 2015, we suffered very high water loss due to service lines being torn out by the contractor who was replacing water lines on a rehab project funded by a grant. In addition, during the construction period, we had several main lines that blew out. We also had a hidden leak that was flowing into a creek at the rate of approximately 90,000 gallons per day. We hired someone to help us find that leak and then successfully repaired the leak. We also suffered a big water loss when a line at the bottom of one of our water tanks blew and we lost almost the whole tank of water before we found that broken line.
8. Yes we do have written policies for billing adjustments and those policies are strictly followed by all staff at all levels. Customers must sign a leak adjustment form; the mayor also signs the form before any adjustment is made. Our policy is to adjust sewer charges only if the water does not go into the sewer system. We never adjust water except in cases of misread meters or if a bill is generated on an account that should have been inactive.
9. Yes, we do have authorized non-customers users (volunteer fire department, etc) for whom we account for usage. We do have a method to report non-customer usage.
10. No, our system is not “zoned” to isolate water loss.

11. No, we do not search for leaks at night but rather during the day and early in the morning on weekends.
12. No, we cannot control pressure surges; our system is gravity fed.
13. Yes, we do have access to leak detection equipment; we purchased a new leak detector when we were having so many leaks in the past fiscal year. Since we acquired the leak detector, our water and wastewater superintendant has searched the entire water system for leaks. He found numerous leaks and the department has replaced over one hundred (100) service lines from corp to meter.
14. We leave door hangers, conduct knock and talks, and make phone calls. When meter readings are downloaded each month, they are reviewed and any reading that looks unusually high (or low) is rechecked for reading errors or leaks via a list generated by the water clerk when she downloads the meter readings into her computer billing system.
15. We do not have a formal public relations program to encourage citizens to report leaks. However, because we are such a small town and water system, our citizens do not hesitate to let us know when they see water pooling or running down the road.
16. Yes, we do have a policy to prosecute water theft or meter tampering/damage.
17. The monetary value of the lost water for FY 2015 is approximately \$100,000.
18. The cost to repair a leak is not always justified based on the amount of water being lost. We have detected numerous small leaks in roads and intersections. The cost to cut and repair the road to gain access to repair these small leaks is often greater than the cost of the lost water. As a small system, we are looking for less than fifty (50) gallons per minute leaking to get our water loss down to 0%. It is very cost prohibitive to search out these small leaks, tear up the roads, repair the leaks, and repave the roads for less than fifty (50) gallons a minute of water.

## **Summary of efforts made to bring Cowan Board of Public Utilities into compliance with water loss and finance regulations.**

- In May 2015, we hired Dan Weaver Services to perform leak detecting services in our system. Mr. Weaver found a huge hidden leak (it was running into a creek) while working with our water department supervisor. The leak was immediately repaired. This leak contributed significantly to our water loss for FY 2015.
- As of January 31, 2016, the Board of Public Utilities financial statements show a “positive change in net assets” of \$107,819.30 with an operating profit of \$112,106.98.
- We have just completed a water line replacement project funded through the South Central Tennessee Development District and are in the process of applying for another grant. The grant enabled us to replace old asbestos lines that had a tendency to break. If we are successful in our application for the current round of grants, we will continue replacing asbestos lines and lines with a history of breaks and leaks.
- The city council has adopted a meter replacement program; the object of this program is to replace all meters which are reading 1,000,000 and up. This program is ongoing; to date 240 meters with readings over 1,000,000 have been replaced. In addition, we replace broken, damaged, and stopped meters as they are reported or discovered.
- Our water superintendent has leak detected the entire water system since we purchased a new leak detector 2015 and has replaced in excess of 100 service lines which he found to be leaking.
- We plan to continue looking for leaks, working the entire system at least semi-annually and more frequently if we see a significant increase in the amount of water produced.
- Year to date in FY 2016, we are seeing a steady decrease in our water loss percentage and continue to look for and repairs leaks as we find them.
- The City of Cowan and the Cowan Board of Public Utilities continue to work with both MTAS and TAUD to assist us in identifying areas which still need to be assessed for water losses.

# Cowan Board of Public Utilities

P. O. Box 338  
Cowan, TN 37318

## Balance Sheet

As of January 2016

2/9/2016  
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<b>Assets</b>			
Cash			
Petty Cash	\$50.00		
Change Fund	\$100.00		
Total Cash		\$150.00	
Checking			
2013 CDBG Water Proj -3006616	\$100.00		
2013 SRLF WWTP Proj.-3006624	\$14,938.20		
2013 WWTP-Contr. Esc. 3006632	\$100.27		
FCUB-GF3003613	\$150,043.64		
FCUB Payroll 3003621	\$184.06		
Total Checking		\$165,366.17	
Savings			
FCUB CD #8058687	\$315,482.79		
FCUB MM#3004223	\$326,029.81		
Total Savings		\$641,512.60	
Accounts Receivable			
AR--Water Bills	\$61,513.55		
Total Accounts Receivable		\$61,513.55	
Other Assets			
Utility Plant in Service	\$6,400,140.57		
Accumulated Depreciation	(\$3,130,989.03)		
Due from City General	\$1,033.19		
Inventory	\$30,955.65		
Prepaid Insurance	\$11,803.00		
Fixed Assets	\$51,354.25		
Construction in Progress	\$400,881.35		
Total Other Assets		\$3,765,178.98	
Net Pension Asset Accounting		\$165,186.00	
<b>Total Assets</b>			<b><u>\$4,798,907.30</u></b>
 <b>Liabilities</b>			
General			
Accounts Payable	\$1,904.04		
Sales Tax Payable	\$1,919.41		
Customer Deposits	\$19,550.00		
Total General		\$23,373.45	
Inter-Fund Payables			
Due To General Fund	\$3,943.82		
Due To Sanitation	\$34,340.00		
Payroll Deductions			
Uniforms	\$167.84		
Total Payroll Deductions		\$167.84	
Other Liabilities			
Series 2008 Bond Issue	\$149,942.80		
Series 2009 Bond Issue	\$109,627.99		
2013 SRLF Loan	\$296,589.60		
Total Other Liabilities		\$556,160.39	
Pension Acctg			
Def. Inflows re: Pension Acctg	\$45,307.00		
<b>Total Liabilities</b>			<b>\$663,292.50</b>
 <b>Equity</b>			
Prior Years Fund Balance		\$307,041.95	
Fund Balance		\$309,369.09	

# Cowan Board of Public Utilities

## Profit & Loss Statement

July 2015 through January 2016

2/9/2016

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Equipment Oper./Maint.	\$4,597.00		
Water Plant Electricity	\$9,481.63		
Water Salaries	\$48,258.91		
Water Shop & Maintenance	\$96.14		
Water Lab & Testing	\$4,812.39		
Water Trans./Distr.	\$2,053.88		
State Maintenance Fee-WTP	\$1,566.70		
Total Water Dept Expense		\$77,383.90	
Utilities			
Electricity-City Hall	\$1,446.24		
Telephone	\$1,712.56		
Total Utilities		\$3,158.80	
Total Expenses			\$358,038.67
Operating Profit			\$109,903.67
Other Income			
Interest Income		\$1,956.10	
Contractor's Escrow Acct Int.		\$0.03	
Total Other Income			\$1,956.13
Other Expenses			
Interest on State Loan		\$156.15	
Bond Series 2008-Interest Exp.		\$3,913.35	
Bond Series 2009- Interest Exp		\$2,097.80	
Total Other Expenses			\$6,167.30
Net Profit / (Loss)			\$105,692.50

# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
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Water Audit Report for: **Cowan Board of Public Utilities**  
 Reporting Year: **2016**      **7/2015 - 1/2016**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

← Enter grading in column 'E' and 'J' →

Volume from own sources:	<input type="button" value="7"/>	44.351	MG/Yr
Water imported:	<input type="button" value="n/a"/>	0.000	MG/Yr
Water exported:	<input type="button" value="n/a"/>	0.000	MG/Yr

### Master Meter and Supply Error Adjustments

Pcrt:	<input type="button" value="1.25%"/>	Value:	<input type="button" value=""/>	MG/Yr
	<input type="button" value=""/>		<input type="button" value=""/>	MG/Yr
	<input type="button" value=""/>		<input type="button" value=""/>	MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:**      **44.351** MG/Yr

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="7"/>	23.055	MG/Yr
Billed unmetered:	<input type="button" value="n/a"/>	0.000	MG/Yr
Unbilled metered:	<input type="button" value="n/a"/>	0.000	MG/Yr
Unbilled unmetered:	<input type="button" value="7"/>	0.554	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:**      **23.609** MG/Yr

Click here:  for help using option buttons below

Pcrt:  Value:  MG/Yr

Use buttons to select percentage of water supplied OR value

### WATER LOSSES (Water Supplied - Authorized Consumption)

**20.742** MG/Yr

#### Apparent Losses

Unauthorized consumption:       0.111 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="6"/>	0.000	MG/Yr
Systematic data handling errors:	<input type="button" value="7"/>	0.058	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:**      **0.169** MG/Yr

Pcrt:  Value:  MG/Yr

#### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:       **20.573** MG/Yr

**WATER LOSSES:**      **20.742** MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**      **21.296** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="7"/>	35.0	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="7"/>	1,250	
Service connection density:	<input type="button" value="7"/>	36	conn./mile main

Are customer meters typically located at the curbside or property line?  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line  Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:       60.0 psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="10"/>	\$204,790	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="9"/>	\$7.15	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="button" value="10"/>	\$2,164.68	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 74 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Billed metered
- 3: Customer metering inaccuracies



City of Springfield, Tennessee  
 Schedule of Unaccounted for Water (Continued)  
 (Unaudited)  
 June 30, 2015

SCHEDULE OF UNACCOUNTED FOR WATER (Continued)



**AWWA Free Water Audit Software:**  
**System Attributes and Performance Indicators**

WAS v5.0  
 American Water Works Association.  
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Water Audit Report for: Springfield Water and Wastewater Department (TN0000666)

Reporting Year: 2015 7/2014 - 6/2015

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 70 out of 100 \*\*\*

**System Attributes:**

	Apparent Losses:	55.654	MG/Yr
	+ Real Losses:	452.699	MG/Yr
	= <b>Water Losses:</b>	<b>508.353</b>	MG/Yr
<div style="display: flex; align-items: center;"> <span style="background-color: #e0e0e0; padding: 2px 5px; margin-right: 5px;">?</span>           Unavoidable Annual Real Losses (UARL):           <span style="border: 1px solid black; padding: 2px 10px; margin-left: 10px;">117.70</span> <span style="margin-left: 10px;">MG/Yr</span> </div>			
	Annual cost of Apparent Losses:	\$336,149	
	Annual cost of Real Losses:	\$473,170	Valued at <b>Variable Production Cost</b>
			Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	35.8%	
		Non-revenue water as percent by cost of operating system:	10.6%	Real Losses valued at Variable Production Cost
Operational Efficiency:	{	Apparent Losses per service connection per day:	10.58	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	2,743.96	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi
		From Above, Real Losses = Current Annual Real Losses (CARL):	452.70	million gallons/year
		<span style="background-color: #e0e0e0; padding: 2px 5px; margin-right: 5px;">?</span> Infrastructure Leakage Index (ILI) [CARL/UARL]:	3.85	

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



**CITY OF SPRINGFIELD**  
Water/Wastewater Department



February 18, 2016

Mr. John Greer  
Utilities Board Specialist  
Water and Wastewater Financing Board  
James K. Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243-1402

**RECEIVED**

FEB 19 2016

DEPT: COMPTROLLER  
OFFICE OF ADMINISTRATION

Re: Response to Questionnaire  
Water and Wastewater Financing Board  
Springfield Water System

Dear Mr. Greer:

Receipt is acknowledged of your letter dated January 14, 2016, in which you informed the City of Springfield that, due to a water audit validity score of 70, the Water and Wastewater Financing Board had requested information on actions the City of Springfield is doing and will do to increase the validity score. As Director of the Springfield Water and Wastewater Department (SWWD), I have been requested to provide you with a response on current and proposed actions that the City of Springfield is taking and will take to increase the validity score. These answers are numbered to correspond to the items in the check list that was attached to your letter.

1. As far as we know, all city government buildings that have water service are equipped with water meters. Remote facilities that have water service, such as water and wastewater pumping stations, city electrical substations, park irrigation facilities, etc., also have water meters.
2. Until about three years ago, the main office of the SWWD did not have water meters on its two separate water service lines. Two water meters have been installed and they are read at the same time that electric and gas meters are read. Internal water usage at both the water treatment plant and the wastewater treatment plant are also metered.
3. The SWWD does not regularly check or inspect all 2" and larger meters. However, all meters are read on a monthly basis and the meter readers notify the SWWD if there is an issue that needs to be addressed. See No. 4, below, for additional pertinent information.
4. There is no formal calibration policy. Each year, the SWWD budget contains funding to hire a company to calibrate the main Venturi meter at the water treatment plant. Larger meters; i.e., 4" and 6" and the newer 2" meters, usually have "ports" that can be used to calibrate the accuracy of the meters. However, the meters must be appropriately plumbed in an adequately sized meter box for any particular meter to be calibrated. The SWWD does have a calibration meter that can be used and the system's 2", 4" and 6" meter set-ups are being modified, as necessary, so that those larger meters can be calibrated on an annual basis. The SWWD Operations Superintendent

has been charged with setting up a protocol that will insure that all large meters will be calibrated on a yearly basis.

5. The SWWD does have a meter replacement program. Currently, there are approximately 12,400 active accounts and, beginning in 2011, the SWWD began to replace residential meters; i.e., ¾" meters, that were fifteen years old and older. The following is a summary, by fiscal year, of the approximate numbers of meters that have been changed out:

FY11-12	1,970
FY12-13	1,565
FY13-14	1,012
FY14-15	none
FY15-16	645 (to date)

Additionally, there are approximately 140 2" meters in the city's water system. Over the past several years, the SWWD has evaluated the usages of these meters and several of them have been downsized because of the meter was oversized. However, there are some instances where a 2" meter has a small usage but the plumbing in the building incorporates "flush valves" in commodes and urinals. A "flush valve" uses a gallon or two in a few seconds to flush the device. The instantaneous water demand exceeds the maximum capacity of a ¾" meter and a larger meter is needed. In those cases, a 2" meter cannot be downsized; however the water usage of a low-flow device such as a drinking fountain may not be measured. The SWWD is investigating the latest generation of 2" meters, to determine if the low-flow measuring capabilities of those meters have been enhanced.

6. There is no formal process to inspect for unauthorized consumption. Rather, our detection of unauthorized consumption comes from city personnel who become aware of that type of usage while they are in the process of performing their normal duties. For example, a meter reader (an employee of the Department of Finance) might observe such an activity and would report that activity to the SWWD. The SWWD would investigate and, if necessary, would take appropriate action.
7. The SWWD does not have a formal, in-house, on-going leak detection program. We have discovered that the general public is a very good source of information regarding leaks. Further, there is funding in the current budget for a limited amount of formal leak detection. It is our intention to contract with a private company to do an intensive evaluation of a specific pressure zone of our system. Future budgets will likely include additional funding for this type of evaluation in other pressure zones.
8. There is a formal policy on billing adjustments and those adjustments are performed by personnel in the Department of Finance. My discussions with Department of Finance personnel has revealed that all employees in that department follow the policy.
9. There is, indeed, a number of authorized non-customer users. In addition to the Springfield Fire Department, there are at least four volunteer fire departments that have service areas that overlap, to some extent, the City of Springfield water service area. The Springfield Fire Department keeps records of estimated water usage when fighting fires. Further, the Springfield Fire Department tests each fire hydrant that is inside the city limits in April of each year. That

information is also maintained and a report is given to the SWWD each year. To date, the SWWD has not implemented a program that would require the volunteer fire departments to either keep track of water that is used to fight fires or to test fire hydrants in their service area. Because of the nature of those entities, the SWWD would be skeptical of the accuracy of the information that would be submitted. The SWWD Operations Superintendent has been tasked with the responsibility of contacting outside fire departments and to have them report water usages on a regular basis. Further, if those outside fire departments perform fire hydrant flow testing, that information is also to be reported to the SWWD. All other fire hydrants will be tested on an annual basis by SWWD personnel.

10. There are four different pressure zones in the city's water system. One system is quite large and is so interconnected that the SWWD would encounter many difficulties in closing valves to divide it into smaller pressure zones. The other pressure zones are smaller and, as a result, are more easily manageable regarding metered water going into those zones and comparing that volume against the combined water usages for all customers in that pressure zone.
11. As a general practice, the SWWD does not "search" for leaks at night. However, if we know that a certain water line is leaking a significant amount of water, we will perform searches after normal working hours, if necessary, in an effort to find the leak. One thing to bear in mind is that the soils in Robertson County are generally underlain by a Karst topography. That type of underlying limestone rock formation is susceptible to erosion and, as a result, there are many sink holes and depressions in the city's water service area. In some instances, water leaks do not surface; instead, the water finds a crevice in the limestone rock structure and the water simply disappears. In several instances, the SWWD has found, quite by accident, leaks that have probably been active for years and never surfaced.
12. Pressure surges generally occur downstream from pump stations and, in many cases, those surges can be minimized if the pump station is equipped with variable frequency drives (VFDs). The East Hillcrest pump station provides water to two different pressure zones (one of which is the largest pressure zone) and all pumps for those two zones are equipped with VFDs. However, the other four pump stations are not equipped with VFDs. Plans are being developed to replace the Mt. Denson pump station and the new pump station will have VFDs.
13. The SWWD has a basic inventory of leak detection equipment which is limited to a sonic system that includes a ground microphone and a touch microphone, the signals from which are amplified and the user wears a headset to detect the amplified signal. The Springfield water distribution system consists mostly of polyvinyl chloride (PVC) pipe, with small amounts of cast iron and ductile iron pipes. A leak in a metal pipe will make a sound that can be likened to that of steam escaping from a boiling tea kettle. A similar leak in a PVC pipe will also make a sound; however, that sound is not nearly as loud and distinct as the sound from a metal pipe. As a result, locating a leak in a PVC pipe, by listening for the sound of escaping water, is not nearly as effective as is locating a leak in a metal pipe. An intensive leak detection survey can only be performed by contracting with a company that has the equipment and expertise in this area.
14. Customer leaks are usually detected when a meter reader takes a regular meter reading and the city's billing software compares the current reading with previous readings. If the current reading is higher, by a certain percentage, than previous readings, the meter reader will return to the site and leave a notice at the location, informing the customer of the increase in water usage.

15. There is no formal public relations program to encourage citizens to report leaks. For the most part, as indicated in No. 7, above, the general public is a very good source of information regarding leaks.
16. The city does have policies regarding prosecution of water theft or meter tampering. In many instances, theft of water, especially from remote fire hydrants, is difficult to prosecute. In those cases where the perpetrator is known, the city will attempt to recover the cost of water that has been taken, along with associated penalties. Several years ago, the SWWD installed locking operating nuts on remote fire hydrants that were deemed to be susceptible to water theft.
17. The value of "lost" water can be approximated in several different manners. The cost of non-revenue water from authorized uses, such as flushing fire hydrants, disinfecting and then flushing new water lines, etc., would be determined by calculating the cost to produce potable water at the water treatment plant and then multiplying that dollar value by the volumes of water that have been used. However, for large leaks that have existed for an extended time, SWWD personnel can only guess at the amount of water that is actually "lost". For water meters that under-report water usage, the cost of non-revenue water would be the amount of revenue that the city did not collect by the water that was not measured. In this situation, the cost of the non-measured water would be determined by multiplying the volume of non-measured water by the applicable customer water payment rate. Since we do not have a good handle on the amount of water that falls into either category, an accurate monetary value of "lost" water would be difficult, if not impossible, to calculate. The non-revenue water calculator that has been developed by the American Water Works Association (AWWA) contains a procedure for attempting to develop costs; however, that information is of limited real value.

Further, the city has a "minimum usage" category, where there is a flat rate for any usage under 2,000 gallons per month and the dollar value of under-reported and unmeasured water would be difficult to calculate. For example, if a customer regularly uses about 1,000 gallons per month and the water meter has a measuring accuracy of only 75%, replacing the inaccurate meter with a new meter would then accurately report usage as being 1,333 gallons; however, there would be no increase in revenue.

18. Usually, when the SWWD becomes aware of a leak, the leak is repaired, regardless of the size of the leak. In some instances, a small leak might result in a soggy spot in a property owner's site and that soggy area interferes with lawn mowing. While the dollar value of the leak might be small, good public relations dictate that the leak be repaired. Further, just about any leak repair can be "justified". For example, the SWWD cost to repair a 100 gallon per minute (gpm) leak may have a "pay back" period of three years. Similarly, the repair of a 10 gpm leak may have a "pay back" period of 20 years and, extending this example, the repair of a 1 gpm leak may have a "pay back" period in excess of 50 years.

In a directly related matter, a panel of city officials is being set up to address the issue of non-revenue water. The panel, to be chaired by the City Engineer, will include the SWWD Systems Engineer, the Chief of the Springfield Fire Department, and me, as the Director of the SWWD. The primary directive of the panel will be to develop protocols that will be used by the SWWD to identify sources of non-revenue water and to reduce or eliminate those sources, as follows:

- Locate leaks so that SWWD personnel can repair them.
- More accurately determine volumes of authorized non-revenue water usage.
- Insure that water that is metered is accurately measured.
- Identify and minimize unauthorized water usage

In addition to drawing on past experiences of the members of the panel, resources such as AWWA Manual of Water Supply Practices (MOWSP) 22—Sizing Water Service Lines and Meters; 36—Water Audits and Loss Control Programs; and 56—Water Conservation Programs-A Planning Manual, will be used. Additionally, the AWWA Water Audit software: Reporting Worksheet will be evaluated to determine if that program appropriately represents the City of Springfield water system.

I trust that the information contained above satisfactorily addresses the items in the check list. If you have any questions, please do not hesitate to contact me at 615-382-1600 or by e-mail at [rlemasters@springfield-tn.org](mailto:rlemasters@springfield-tn.org).

Sincerely,



Roger D. Lemasters, P.E.

Director

Springfield Water and Wastewater Department

cc: The Honorable Billy P. Carneal; Mayor  
Paul J. Nutting; City Manager

Status

Water Loss



# AWWA Free Water Audit Software Reporting Worksheet

WAS v6.0  
American Water Works Association  
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Click to access definition  
 Click to add a comment

Water Audit Report for: **Town of Chapel Hill Utility**  
Reporting Year: **2014** / **7/2013 - 6/2014**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

Volume from own sources:    8 63.848 MG/Yr  
Water imported:    0.000 MG/Yr  
Water exported:    MG/Yr

### Master Meter and Supply Error Adjustments

Enter grading in column 'E' and 'J' <-----> Pcnt: Value:  
   MG/Yr  
   MG/Yr  
   MG/Yr

**WATER SUPPLIED:** **63.848** MG/Yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

### AUTHORIZED CONSUMPTION

Billed metered:    7 40.352 MG/Yr  
Billed unmetered:    0.000 MG/Yr  
Unbilled metered:    3 0.269 MG/Yr  
Unbilled unmetered:    3 0.331 MG/Yr

Click here:  for help using option buttons below

Pcnt: Value: 0.331 MG/Yr

**AUTHORIZED CONSUMPTION:** **40.952** MG/Yr

Use buttons to select percentage of water supplied OR value

### WATER LOSSES (Water Supplied - Authorized Consumption)

**22.896** MG/Yr

#### Apparent Losses

Unauthorized consumption:    0.160 MG/Yr  
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:    3 3.532 MG/Yr  
Systematic data handling errors:    6 0.010 MG/Yr

Pcnt: Value: 0.25% MG/Yr

8.00%   0.010 MG/Yr

**Apparent Losses:** **3.702** MG/Yr

#### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:  **19.194** MG/Yr

**WATER LOSSES:** **22.896** MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:** **23.496** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:    7 14.9 miles  
Number of active AND inactive service connections:    7 619  
Service connection density:    42 conn./mile main

Are customer meters typically located at the curbstop or property line?  Yes (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line:    Average length of customer service line has been set to zero and a data grading score of 10 has been applied  
Average operating pressure:    7 60.0 psi

### COST DATA

Total annual cost of operating water system:    8 \$345,463 \$/Year  
Customer retail unit cost (applied to Apparent Losses):    8 \$12.60 \$/1000 gallons (US)  
Variable production cost (applied to Real Losses):    8 \$1,051.03 \$/Million gallons  Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 68 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Unbilled metered
- 3: Customer metering inaccuracies



## AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association  
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Water Audit Report for: Town of Chapel Hill Utility  
 Reporting Year: 2014 | 7/2013 - 6/2014

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 68 out of 100 \*\*\*

**System Attributes:**

	Apparent Losses:	3.702	MG/Yr
+	Real Losses:	19.194	MG/Yr
=	<b>Water Losses:</b>	<b>22.896</b>	MG/Yr

? Unavoidable Annual Real Losses (UARL): See limits in definition MG/Yr

Annual cost of Apparent Losses: \$46,643

Annual cost of Real Losses: \$20,174 Valued at **Variable Production Cost**  
 Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial: { Non-revenue water as percent by volume of Water Supplied: 36.8%  
 Non-revenue water as percent by cost of operating system: 19.5% Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day: 16.38 gallons/connection/day  
 Real Losses per service connection per day: 84.95 gallons/connection/day  
 Real Losses per length of main per day\*: N/A  
 Real Losses per service connection per day per psi pressure: 1.42 gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 19.19 million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

**From:** [Town Administrator](#)  
**To:** [John Greer](#)  
**Subject:** RE: John Greer Contact Information for Mark Graves  
**Date:** Wednesday, January 20, 2016 2:42:06 PM  
**Attachments:** [Response to Water Loss 2.docx](#)  
[Resolution 16-1 to finance meter replacement.docx](#)  
[A Resolution to Accept Bid for ARM System.docx](#)

---

Mr. Greer,

I have attached a document addressing the questions sent in the letter to the Mayor, and a copy of the resolution passed last month to change out meters. I would be glad to come to the meeting in March to address issues. Thank you.

Mark Graves  
Town Administrator  
Town of Chapel Hill  
931-628-2391 (m)

---

**From:** John Greer [mailto:John.Greer@cot.tn.gov]  
**Sent:** Tuesday, January 19, 2016 11:33 AM  
**To:** cityofch@united.net  
**Subject:** John Greer Contact Information for Mark Graves

John Greer  
Utilities Board Specialist  
Suite 1700, James K. Polk Building  
505 Deaderick St.  
Nashville, TN 37243-1402

Phone: (615) 401-7879  
Fax: (615) 741-1551

**TOWN OF CHAPEL HILL, TENNESSEE**

RESOLUTION NO. 15-24

**A Resolution to Accept Bid for ARM System**

**WHEREAS**, The Town of Chapel Hill provided for an auto-read meter system in its FY 2015-2016 budget, and

**WHEREAS**, the Town of Chapel Hill has implied its intent to the State of Tennessee to replace old meters as part of its solution to water loss shown by the annual audit, and

**WHEREAS**, having an auto-read meter system in place would create many efficiencies and potentially enhance revenue, and

**WHEREAS**, invitations to bid the project has been properly advertised, and the following bids were received;

RG3 Meter Company	\$146,675.00
West Plains, MO	

**NOW THEREFORE BE IT RESOLVED BY THE GOVERNING BODY OF THE TOWN OF CHAPEL HILL, TENNESSEE** the following:

That the bid from RG3 Meter Company be accepted as the lowest and/or best bid, and that this resolution become effective immediately upon passage.

Resolved this 14<sup>th</sup> day of December, 2015.

\_\_\_\_\_  
Mayor

\_\_\_\_\_  
ATTEST: Town Recorder

## Initial Check list for Addressing Water Loss

1. Are you billing for all general government water use? Examples: City Hall, Parks, Community Centers, etc.

Yes. All Town owned facilities are accounted for.

2. Are you accounting for the water used by the water and/or sewer department?

Yes. All Town owned facilities are accounted for.

3. Do you periodically check or inspect all 2" and larger meters?

Yes. We have recently inspected all large meters.

4. Do you have a recalibration policy and procedure in place?

No. However, we are currently under contract to replace all meters.

5. Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons?

No. However, we are currently under contract to replace all meters.

6. Do you have a process to inspect for unauthorized consumption?

Yes. Billing statements are reviewed monthly for discrepancies.

What are the consequences if unauthorized consumption is discovered?

The local police department will investigate to determine if theft of services has occurred and the proper civil process follows.

7. Do you have a leak detection program currently in place?

No.

8. Do you have written policies, including a policy for billing adjustments? No. Are the written policies followed correctly by all levels of staff? This is one of the many policies that reside on my list of things to implement. I would welcome suggestions and sample policies that have worked in other places.

9. Do you have authorized non-customer users (volunteer fire departments, etc.)?

Yes.

Do you account for the use?

Yes.

Do you have a method for the user to report water usage?

Yes. The Fire Chief reports usage to the clerk.

10. Is your system "zoned" to isolate water loss?

No.

11. Do you search for leaks at night when there is little traffic or small household usage?

No.

12. Do you or can you control pressure surges?

There are no pressure surges. It is a gravity system.

13. Do you have or have access to leak detection equipment?

Yes, although it is old and outdated.

14. What is your policy for notifying customers they have a leak?

We call them.

15. Do you have a public relations program to encourage citizens to report leaks?

No.

16. Do you have a policy to prosecute water theft or meter tampering/damage?

No.

17. What is the monetary value of the lost water?

I do not feel comfortable answering that question at this point. I am still trying to make sure that all costs associated with water loss have been accounted for correctly.

18. Is the cost to repair the leak justified based on the amount of water being lost?

This type of in depth cost analysis has not been performed at this point.

# TOWN OF CHAPEL HILL, TENNESSEE

RESOLUTION NO. 16-1

## **A RESOLUTION REGARDING A CONTRACT FOR THE PURPOSE OF FINANCING A "WATER METER PROJECT"**

WHEREAS, Town of Chapel Hill (the "Issuer") desires to enter into that certain Finance Contract, by and between the Issuer and Government Capital Corporation ("GCC") for the purpose of financing a "WATER METER PROJECT". The Issuer desires to designate this Finance Contract as a "qualified tax exempt obligation" of the Issuer for the purposes of Section 265 (b) (3) of the Internal Revenue Code of 1986, as amended.

NOW THEREFORE, BE IT RESOLVED BY TOWN OF CHAPEL HILL:

Section 1. That the Issuer will enter into a Finance Contract with GCC for the purpose of financing a "WATER METER PROJECT".

Section 2. That the Finance Contract dated as of January 11, 2016, by and between Town of Chapel Hill and GCC is designated by the Issuer as a "qualified tax exempt obligation" for the purposes of Section 265 (b) (3) of the Internal Revenue Code of 1986, as amended.

Section 3. That the Issuer will designate Danny Bingham, Mayor, as an authorized signer of the Finance Contract dated as of January 11, 2016, by and between Town of Chapel Hill and GCC.

Resolved by the Board of Mayor and Aldermen of the Town of Chapel Hill in a meeting held on the 11<sup>th</sup> day of January, 2016.

**Issuer:** Town of Chapel Hill

Witness Signature

\_\_\_\_\_  
Danny Bingham, Mayor

\_\_\_\_\_  
Jack King, City Clerk



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
Copyright © 2014. All Rights Reserved.

Water Audit Report for: **Collinwood Water Department**  
Reporting Year: **2014** / **7/2013 - 6/2014**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

<----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/> <input type="button" value="?"/> 8	83.539	MG/Yr
Water imported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	MG/Yr
Water exported:	<input type="button" value="+"/> <input type="button" value="?"/> n/a	0.000	MG/Yr

### Master Meter and Supply Error Adjustments

Pcnt:	Value:	MG/Yr
<input type="button" value="+"/> <input type="button" value="?"/> 3	3.00% <input checked="" type="radio"/> <input type="radio"/>	
<input type="button" value="+"/> <input type="button" value="?"/>	<input type="radio"/> <input checked="" type="radio"/>	
<input type="button" value="+"/> <input type="button" value="?"/>	<input type="radio"/> <input type="radio"/>	

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:** **81.106** MG/Yr

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/> <input type="button" value="?"/> 7	39.840	MG/Yr
Billed unmetered:	<input type="button" value="+"/> <input type="button" value="?"/> 3	0.025	MG/Yr
Unbilled metered:	<input type="button" value="+"/> <input type="button" value="?"/> 8	0.260	MG/Yr
Unbilled unmetered:	<input type="button" value="+"/> <input type="button" value="?"/>	1.014	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:** **41.139** MG/Yr

Click here:  for help using option buttons below

Pcnt:	Value:	MG/Yr
1.25% <input checked="" type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	

Use buttons to select percentage of water supplied OR value

Pcnt:	Value:	MG/Yr
0.25% <input checked="" type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	

9.90% <input checked="" type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	MG/Yr
0.25% <input checked="" type="radio"/> <input type="radio"/>	<input type="radio"/> <input type="radio"/>	MG/Yr

### WATER LOSSES (Water Supplied - Authorized Consumption)

**39.967** MG/Yr

#### Apparent Losses

Unauthorized consumption:   0.203 MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="button" value="+"/> <input type="button" value="?"/> 4	4.406	MG/Yr
Systematic data handling errors:	<input type="button" value="+"/> <input type="button" value="?"/>	0.100	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** **4.708** MG/Yr

#### Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses:  **35.259** MG/Yr

**WATER LOSSES:** **39.967** MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**  **41.241** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="button" value="+"/> <input type="button" value="?"/> 5	40.0	miles
Number of active AND inactive service connections:	<input type="button" value="+"/> <input type="button" value="?"/> 8	719	
Service connection density:	<input type="button" value="?"/>	18	conn./mile main

Are customer meters typically located at the curbside or property line?  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line:   6 **15.0** ft

Average operating pressure:   5 **60.0** psi

### COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/> <input type="button" value="?"/> 9	\$362,807	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 9	\$7.64	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/> <input type="button" value="?"/> 5	\$1,080.00	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 68 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Billed unmetered
- 3: Customer metering inaccuracies



## AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association.  
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Water Audit Report for:	Collinwood Water Department	
Reporting Year:	2014	7/2013 - 6/2014

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 68 out of 100 \*\*\*

**System Attributes:**

	Apparent Losses:	4.708	MG/Yr
	+ Real Losses:	35.259	MG/Yr
	= <b>Water Losses:</b>	<b>39.967</b>	MG/Yr
? Unavoidable Annual Real Losses (UARL):	See limits in definition		MG/Yr
Annual cost of Apparent Losses:	\$35,973		
Annual cost of Real Losses:	\$269,375	Valued at <b>Customer Retail Unit Cost</b>	
			Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	50.8%	
		Non-revenue water as percent by cost of operating system:	86.8%	Real Losses valued at Customer Retail Unit Cost
Operational Efficiency:	{	Apparent Losses per service connection per day:	17.94	gallons/connection/day
		Real Losses per service connection per day:	N/A	gallons/connection/day
		Real Losses per length of main per day*:	2,414.97	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	N/A	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 35.26 million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]:  

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

## Initial Checklist for Addressing Water Loss

1. Are you billing for all general government water use? Examples: City Hall, Parks, Community Centers, etc. Yes
2. Are you accounting for the water used by the water and/or sewer department? Yes
3. Do you periodically check or inspect all 2" and larger meters? Yes
4. Do you have a recalibration policy and procedure in place? Yes
5. Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons? No...we replace meters as they wear out, cause problems, etc., but we have no set replacement policy in place at this time.
6. Do you have a process to inspect for unauthorized consumption? What are the consequences if unauthorized consumption is discovered? We manually read our meters at this time, as such, we conduct a monthly inspection of all meters for unauthorized use. If caught, their meter is turned off and locked until all charges are paid in full.
7. Do you have a leak detection program currently in place? No
8. Do you have written policies, including a policy for billing adjustments? Are the written policies followed correctly by all levels of staff? Yes and Yes
9. Do you have authorized non-customer users (volunteer fire departments, etc)? Do you account for the use? Do you have a method for the user to report water usage? Yes, Yes, they have a form which they are to fill out and send in to us with an explanation of what water was used for.
10. Is your "system" zoned to isolate water loss? No
11. Do you search for leaks at night when there is little traffic or small household usage? No
12. Do you or can you control pressure surges? We are gravity flow
13. Do you have or have access to leak detection equipment? Yes
14. What is your policy for notifying customers they have leak? Knock on door/ phone call
15. Do you have a public relations program to encourage citizens to report leaks? No
16. Do you have a policy to prosecute water theft or meter tampering/damage? Yes
17. What is the monetary value of the lost water? \$35,973
18. Is the cost to repair the leak justified based on the amount of water being lost? We repair leaks as they are found. Some are more significant than others, but we do try to find and repair all that we have time and money to.

CITY OF DUNLAP, TENNESSEE  
 Schedule of Unaccounted for Water  
 June 30, 2014

**AWWA Free Water Audit Software:  
 Reporting Worksheet**

Water Audit Report for: Dunlap Water System (0000205)  
 Reporting Year: 2014 7/2013 - 6/2014

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

**WATER SUPPLIED**

Volume from own sources: 4 282.668 MG/Yr  
 Water imported: n/a 0.000 MG/Yr  
 Water exported: 4 6.200 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	MG/Yr

Enter negative % or value for under-registration  
 Enter positive % or value for over-registration

**WATER SUPPLIED:** 276.466 MG/Yr

**AUTHORIZED CONSUMPTION**

Billed metered: 5 183.637 MG/Yr  
 Billed unmetered: n/a 0.000 MG/Yr  
 Unbilled metered: 10 14.668 MG/Yr  
 Unbilled unmetered: 3 3.456 MG/Yr

Pcnt:	Value:	MG/Yr
<u>1.25%</u>		

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:** 201.761 MG/Yr

**WATER LOSSES (Water Supplied - Authorized Consumption)**

74.705 MG/Yr

**Apparent Losses**

Unauthorized consumption: 9 0.050 MG/Yr

Pcnt:	Value:	MG/Yr
<u>0.25%</u>	<u>0.050</u>	

Customer metering inaccuracies: 4 0.000 MG/Yr  
 Systematic data handling errors: 6 0.459 MG/Yr

Pcnt:	Value:	MG/Yr
<u>0.25%</u>		

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** 0.509 MG/Yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses: 74.196 MG/Yr

**WATER LOSSES:** 74.705 MG/Yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:** 92.829 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains: 7 195.0 miles  
 Number of active AND inactive service connections: 7 2,732  
 Service connection density: 14 conn./mile main

Are customer meters typically located at the curbside or property line? Yes

Average length of customer service line: 10 ft

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 3 95.0 psi

**COST DATA**

Total annual cost of operating water system:	<u>10</u>	<u>\$1,031,419</u>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<u>10</u>	<u>\$7.01</u>	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<u>10</u>	<u>\$2.80</u>	\$/Million gallons

**WATER AUDIT DATA VALIDITY SCORE:**

**\*\*\* YOUR SCORE IS: 64 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Billed metered
- 3: Customer metering inaccuracies

CITY OF DUNLAP, TENNESSEE  
 Schedule of Unaccounted for Water (Continued)  
 June 30, 2014

**AWWA Free Water Audit Software:**

Water Audit Report for: << Please enter system details and contact information on the Instructions tab >>

Reporting Year:

**\*\*\* DATA GRADING MUST BE COMPLETED ON THE REPORTING WORKSHEET BEFORE PERFORMANCE INDICATORS CAN BE DISPLAYED \*\***

**System Attributes:**

Apparent Losses:		<input type="text" value="0.509"/>	MG/Yr
+ Real Losses:		<input type="text" value="74.196"/>	MG/Yr
= <b>Water Losses:</b>		<input type="text" value="74.705"/>	MG/Yr
Unavoidable Annual Real Losses (UARL):		<input type="text" value="50.79"/>	MG/Yr
Annual cost of Apparent Losses:		<input type="text" value="\$3,569"/>	
Annual cost of Real Losses:		<input type="text" value="\$208"/>	

Valued at **Variable Production Cost**  
 Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Non-revenue water as percent by volume of Water Supplied:		<input type="text" value="32.5%"/>	
Non-revenue water as percent by cost of operating system:		<input type="text" value="0.4%"/>	Real Losses valued at Variable Production Cost
Operational	Apparent Losses per service connection per day:	<input type="text" value="0.51"/>	gallons/connection/day
	Real Losses per service connection per day:	<input type="text" value="N/A"/>	gallons/connection/day
	Real Losses per length of main per day*:	<input type="text" value="1,042.45"/>	gallons/mile/day
	Real Losses per service connection per day per meter (head) pressure:	<input type="text" value="N/A"/>	gallons/connection/day/psi
	From Above, Real Losses = Current Annual Real Losses (CARL):	<input type="text" value="74.20"/>	million gallons/year
	Infrastructure Leakage Index (ILI) [CARL/UARL]:	<input type="text" value="1.46"/>	

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



DWAIN LAND  
Mayor

Telephone 423-949-2115  
Fax 423-949-3359  
Email: [cityofdunlap@bledsoe.net](mailto:cityofdunlap@bledsoe.net)

**THE CITY OF  
DUNLAP, TENNESSEE**

15595 Rankin Avenue  
P.O. Box 546  
Dunlap, Tennessee 37327

Commissioners

JEFF HARMON  
JEFF JOHNSON  
ALLEN JONES  
JUDY H. LAYNE

**RECEIVED**

FEB 16 2016

COMPTROLLER  
OFFICE OF GENERAL COUNSEL

February 11, 2016

John Greer, Utilities Board Specialist  
Water and Wastewater Financing Board  
James K Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243

Dear Mr. Greer,

Attached is the requested questionnaire with answers as requested by you for the City of Dunlap Water and Sewer System.

I apologize for the late return of this information.

We expect our score to be substantially higher with the report being submitted for the fiscal year ending June 30, 2015. Our auditors are expected to release the report by the end of the month.

The water system has made some changes to its program and is now recalibrating the plant master meter and its larger meters. The changes made should increase our score for the 2015 report.

If you have any questions please contact myself or Clayton Smith, Public Works Director at (423) 949-2115 or email me at [nhatfield@cityofdunlap.com](mailto:nhatfield@cityofdunlap.com).

Sincerely,

Norman D. Hatfield  
Finance Director & City Recorder

Cc: Dwain Land, Mayor  
Clayton Smith, Director of Public Works

City of Dunlap, TN  
Responses to State of Tennessee Comptroller's Office  
Initial Check List for Addressing Water Loss and  
Water Loss Reduction Plan  
February 11, 2016

1. Are you billing for all general government water use: Examples: City Hall, Parks, Community Centers, etc.?

Yes. The City is billing the following – City of Dunlap City Hall, Operation Center, City of Dunlap Natural Gas Office, Dunlap Justice Center, City of Dunlap Municipal Building, Dunlap Natural Gas System, Harris Park Office, City of Dunlap Park Building, City of Dunlap Operations Center.

2. Are you accounting for the water used by the water and/or sewer department?

Water used for routine flushing of water lines is accounted for. This is accomplished by a combination of metering flushing volumes (fire-hydrant meters) and estimating flushing volumes using the AWWA Method that considers the diameter of the pipe being flushed and the height and distance of the water stream. The City has found that using a fire hydrant meter is sometimes difficult because of clogging of the meter. Water used internally at the Water and Wastewater Plants is currently accounted for using water meters.

3. Do you periodically check or inspect all 2" and larger meters?

All 2" and larger meters are read monthly. At that time they are checked to make sure they are operating. 2" meters are to be replaced with AMR meters after the residential meter change outs are completed.

4. Do you have a recalibration policy and procedure in place?

Yes – The Water System contracted with an engineering firm in the spring of 2015 to perform a calibration of the water plant master meter. The meter will currently be recalibrated on an annual basis. The 2" meters are to be converted to AMR meters and when changed, a calibration port will be added to the meter base so that recalibration can

be performed on a scheduled basis. Once all meters have been replaced with AMR meters, the water system will begin a random selection of meters to be recalibrated.

5. Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons?

The City's meter replacement program is replacing all meters with AMR meters by the end of 2016. By the end of the January 2016 fiscal year the City will have replaced approximately 2,262 of their 2,751 meters. Two (2) inch meters are scheduled to be replaced with AMR meters after the residential meters are replaced.

6. Do you have a process to inspect for unauthorized consumption? What are the consequences if unauthorized consumption is discovered?

The City's current process is to turn off and lock meters for non-payment. After meters are locked, an employee inspects the meters every 3 to 5 days to make sure meters have not been tampered with. If a meter has been tampered with, a penalty fee of \$100.00 is charged to the customer's bill. Unauthorized use of fire hydrants also carries a fine of \$100 plus the cost of the water utilized.

7. Do you have a leak detection program currently in place?

Water Department staff currently monitors tank levels, distribution system pressures, investigates water quality/quantity complaints, and looks out for obvious signs of leakage such as water running on the surface, unusually green vegetation, etc. in order to determine if there are leaks in the system.

8. Do you have written policies, including a policy for billing adjustments? Are the written policies followed correctly by all levels of staff?

The City has a written policy in the form of Resolution No. 248. A resolution establishing a water and sewer adjustment policy. Water leak adjustment – this adjustment may be taken once per person per location. Three (3) bills prior to or after the leak are used to get an average on usage. The bill amount minus the average determines the amount of the leak. We then divide the leak amount by two (2). The customer pays half leak cost plus average bill. The remaining half of the leak is adjusted off. All leak repairs must be verified by water/sewer personnel and the person requesting the

adjustment must sign the proper forms to receive the adjustment. All leaks must be repaired in a timely fashion (three (3) months or less). If not repaired within the three (3) month timeframe, adjustments beyond that timeframe will not be allowed.

The staff is trained on this policy and the policy is followed in-house up to a \$500.00 limit. Over \$500.00 the adjustment is presented to the Mayor and board of commissioners.

9. Do you have authorized non-customer users (volunteer fire departments, etc.)? Do you account for the use? Do you have a method for the user to report water usage?

We do have a volunteer fire department (VFD) that only uses our water for firefighting and training. The municipal volunteer fire department now reports estimated water usage on a monthly basis. Their usage consists of filling tanker trucks from fire hydrants and transporting that water to the fire or training event.

10. Is your system “zoned” to isolate water loss?

The system is divided into pressure zones by closed valves and water storage tanks. There is no metering process to know how much water goes into each zone. However, a SCADA system is used to monitor tank volumes 24 hours per day. The tank level records are reviewed daily to ensure there are no unusual drops in tank level which would indicate a water leak.

The City has been seeking grants to assist with its water loss program. Grant applications have been submitted to assist with the purchase and installation of master meters at each water tank, zone meters throughout the water system and contracted leak detection.

11. Do you search for leaks at night when there is little traffic or small household usage?

There is no night time leak detection currently in place. Tank levels are monitored 24 hours per day and recorded using the SCADA system at the Water Plant. The tank level records are reviewed daily to ensure there are no unusual drops in tank level which would indicate a water leak.

12. Do you or can you control pressure surges?

Soft starts are installed on pump stations to reduce pressure surge. Soft starts are also used at the Water Filtration Plant. There have been no complaints and no known problems due to pressure surges in the water distribution system.

13. Do you have or have access to leak detection equipment?

The City owns leak detection equipment and has historically used it to find leaks on an as needed basis.

14. What is your policy for notifying customers they have a leak?

The City's policy is to notify the customer as soon as the City becomes aware of the leak. The customer is notified by the quickest means available determined by whatever customer information is on file. This generally includes telephone calls and door hangers.

15. Do you have a public relations program to encourage citizens to report leaks?

We have information on the customer monthly bill to encourage customers to report leaks. Customers routinely report unusual water appearing on the surface of the ground, whether it is a leak or not.

16. Do you have a policy to prosecute water theft or meter tampering/damage?

The City's current process is to turn off and lock meters for non-payment. After meters are locked, an employee inspects the meters every 3 to 5 days to make sure meters have not been tampered with. If a meter has been tampered with, a penalty fee of \$100.00 is charged to the customer's bill. Unauthorized use of fire hydrants also carries a fine of \$100 plus the cost of the water utilized.

17. What is the monetary value of the lost water?

The Variable Production Cost of water at the Water Filtration Plant is \$420 per million gallons. This number is calculated by adding up the expenses that vary with water production such as chemical cost, electricity, other materials, overtime resulting from

high demand, etc. Based on the AWWA Water Loss Spreadsheet results, the monetary cost of lost water is  $\$420/\text{million gallons} \times 75.263 \text{ million gallons} = \$31,610.04$

18. Is the cost to repair the leak justified based on the amount of water being lost?

The cost to repair leaks is considered to be justified based on the amount of water that is being lost. All known leaks are repaired as quickly as possible to prevent the leak from getting worse over time or to prevent other damage due to soil erosion or subsidence or other property damage.

**TOWN OF TIPTONVILLE, TENNESSEE**  
**UNAUDITED WATER LOSS SCHEDULE - AWWA REPORTING MODEL**  
 For the Year Ended June 30, 2015



**AWWA Free Water Audit Software:**  
**Reporting Worksheet**

WAS v5.0  
 American Water Works Association,  
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?	C lick to access definition
+	C lick to add a comment

Water Audit Report for: **Tiptonville Water System (0000700)**  
 Reporting Year: **2015**      **7/2014 - 6/2015**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

**All volumes to be entered as: MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

**WATER SUPPLIED**

----- Enter grading in column 'E' and 'J' -----

Volume from own sources:	+ ?	3	253.634	MG/Yr	+ ?	3	-2.00%	<input checked="" type="radio"/>	<input type="radio"/>		MG/Yr
Water imported:	+ ?	n/a	0.000	MG/Yr	+ ?			<input checked="" type="radio"/>	<input type="radio"/>		MG/Yr
Water exported:	+ ?	n/a	0.000	MG/Yr	+ ?			<input checked="" type="radio"/>	<input type="radio"/>		MG/Yr
<b>WATER SUPPLIED:</b>			<b>258.810</b>	MG/Yr							

**Master Meter and Supply Error Adjustments**

Enter negative % or value for under-registration  
 Enter positive % or value for over-registration

**AUTHORIZED CONSUMPTION**

Billed metered:	+ ?	9	193.863	MG/Yr
Billed unmetered:	+ ?	n/a	0.000	MG/Yr
Unbilled metered:	+ ?	n/a	0.000	MG/Yr
Unbilled unmetered:	+ ?		<b>3.235</b>	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:** ? **197.098** MG/Yr

C lick here: ?  
 for help using option buttons below

Pcnt: 1.25%   Value: MG/Yr

Use buttons to select percentage of water supplied OR value

**WATER LOSSES (Water Supplied - Authorized Consumption)**

**61.712** MG/Yr

**Apparent Losses**

Unauthorized consumption: + ? **0.647** MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+ ?	7	5.996	MG/Yr
Systematic data handling errors:	+ ?		0.485	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** ? **7.127** MG/Yr

Pcnt: 0.25%   Value: MG/Yr

3.00%   MG/Yr

0.25%   MG/Yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses: ? **54.585** MG/Yr

**WATER LOSSES:** **61.712** MG/Yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:** ? **64.947** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains:	+ ?	7	49.0	miles
Number of <u>active AND inactive</u> service connections:	+ ?	7	1,028	
Service connection density:	?		<b>21</b>	conn./mile main

Are customer meters typically located at the curbside or property line?  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 7 50.0 psi

**COST DATA**

Total annual cost of operating water system:	+ ?	9	\$879,104	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	7	\$6.72	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	+ ?	7	\$868.05	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

**\*\*\* YOUR SCORE IS: 58 out of 100 \*\*\***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Unauthorized consumption
- 3: Systematic data handling errors

**TOWN OF TIPTONVILLE, TENNESSEE**  
**UNAUDITED WATER LOSS SCHEDULE - AWWA REPORTING MODEL**  
**For the Year Ended June 30, 2015**

**AWWA Free Water Audit Software:**  
**System Attributes and Performance Indicators**

WAS v5.0

American Water Works Association.  
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Water Audit Report for: **Tiptonville Water System (0000700)**

Reporting Year: **2015**      **7/2014 - 6/2015**

**\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 58 out of 100 \*\*\***

**System Attributes:**

	Apparent Losses:	<b>7.127</b>	MG/Yr
+	Real Losses:	<b>54.585</b>	MG/Yr
=	<b>Water Losses:</b>	<b>61.712</b>	MG/Yr

**?** Unavoidable Annual Real Losses (UARL): **See limits in definition** MG/Yr

Annual cost of Apparent Losses: **\$47,896**

Annual cost of Real Losses: **\$47,382** Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

**Performance Indicators:**

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	<b>25.1%</b>	
		Non-revenue water as percent by cost of operating system:	<b>11.2%</b>	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	<b>19.00</b>	gallons/connection/day
		Real Losses per service connection per day:	<b>N/A</b>	gallons/connection/day
		Real Losses per length of main per day*:	<b>3,051.98</b>	gallons/mile/day
		Real Losses per service connection per day per psi pressure:	<b>N/A</b>	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): **54.58** million gallons/year

**?** Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



# CITY OF TIPTONVILLE

130 S. Court St.  
Tiptonville, TN 38079  
(731) 253-9922 Fax (731) 253-9923  
*Reid Yates, Mayor*

Aldermen:  
Cliff Berry  
Drew Cook  
Dewayne Haggard  
Daisy Parks  
Mallory Sumara  
Sarah J. Woods

Fran Hearn, City Treasurer

February 15, 2016

Mr. John Greer, Utilities Board Specialist  
State of Tennessee  
Water & Wastewater Financing Board  
James K. Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, TN 37243-1402

Re: Town of Tiptonville Water Loss

Dear Mr. Greer:

1. *Are you billing for all general government water use? Examples: City Hall, Parks, Community Centers, etc.*

Tiptonville installed water meters at all general government locations during September 2011. As of this writing the Ball Field and the Water Plant remain unmetered. The meter serving the Ball Field will be installed during April 2016. Tiptonville obtained funding from USDA Rural Development during late 2015 to install raw, finished, and backwash water meters at the water treatment plant as part of a comprehensive water plant improvements project. The meters at the water plant will be installed no later than August 2016.

2. *Are you accounting for the water used by the water and/or sewer department?*

Tiptonville does not adequately account for the water used at the water treatment plant. In order to account for water used and produced at the water plant, magnetic meters will be on a 10" raw water main, a 12" sludge discharge main, a 14" backwash water main and a 10" finished water main. Estimated cost of installation of metering equipment is \$30,000.00. Funds are in hand and the design of the project is underway with a bid opening scheduled for June 2016. Water used at sewer lagoon lab building is metered and is not used in significant volumes.

3. *Do you periodically check or inspect all 2" and larger meters?*

The 2" and larger meters are read monthly but not specifically checked or inspected regularly at present.

4. *Do you have a recalibration policy and procedure in place?*

Not at present. Tiptonville should undertake the recalibration of the 6" meter serving the Northwest Tennessee Corrections Facility in the near short term.

5. *Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons?*

During 2011 Tiptonville received EECBG funds for the purchase of 498 new radio-read (AMR) meters. Installation of these meters was completed in October 2011. Tiptonville received CDBG funds for the replacement of the remainder of its meters in 2015. The 436 additional meters have been delivered and are currently being installed by City personnel.

When installation is complete, Tiptonville will have replaced 100% of its water meters over the last four years.

The benefits of the installation of the 934 new AMR meters have not been realized as of this writing and is expected to result in a significant increase in revenue from water sales and a corresponding reduction in water loss, as well as fuel, vehicle expense, and manpower savings resulting from the automation of the meter reading process.

6. *Do you have a process to inspect for unauthorized consumption? What are the consequences if unauthorized consumption is discovered?*

Tiptonville's meter readers occasionally uncover unauthorized consumption via illegal jumpers or connections at locked out meters and act to remedy same. More significant is the suspected loss of water in the rural areas to farmers filling water trailers from flush hydrants for agricultural use. Since these areas are somewhat remote, these events are difficult to detect and the losses difficult to prevent. Hydrants in the rural areas have been locked out in recent years.

7. *Do you have a leak detection program currently in place?*

Tiptonville primarily relies on its personnel to watch for leaks and its citizens to report leaks.

8. *Do you have written policies, including a policy for billing adjustments? Are the written policies followed correctly by all levels of staff?*

Yes. The policy allows for one water bill adjustment per year subject to approval by the Board of Aldermen. No adjustments are granted for water only on sewer.

9. *Do you have authorized non-customer users (volunteer fire departments, etc)? Do you account for the use? Do you have a method for the user to report water usage?*

The Fire Department estimates and reports the volume of water used for fire-fighting. Tiptonville requires the Fire Department to report water usage after each fire event. All volumes are estimated.

10. *Is your system "zoned" to isolate water loss?*

Not at present. Most of the leaks are known to occur in the oldest part of the system which is the downtown water system. Since the downtown system loops across several city blocks running both north and south and east and west, sub-metering inside the downtown area is impractical.

11. *Do you search for leaks at night when there is little traffic or small household usage?*

Leaks are generally spotted visually during daylight hours.

12. *Do you or can you control pressure surges?*

No. Due to the design and layout of the system, pressure surges are not a significant problem contributing to breaks and water loss. Surges are adequately buffered by the 500,000 water storage tank located immediately adjacent to the high service pumps at the water treatment plant.

13. *Do you have or have access to leak detection equipment?*

Tiptonville currently has no ready access to leak detection equipment.

14. *What is your policy for notifying customers they have a leak?*

The Billing Clerk contacts the customer by phone as soon as a household leak is noticed. When efforts to reach the customer by phone fail, a door hanger is placed at the property notifying the resident of a probably leak and instructing that they contact City Hall.

*15. Do you have a public relations program to encourage citizens to report leaks?*

Yes. Employees at City Hall duly note reports of leaks from the public and take the time to thank those persons reporting them. Tiptonville is a small community and the public does an effective job of reporting leaks.

*16. Do you have a policy to prosecute water theft or meter tampering/damage?*

The Board of Aldermen decides these matters; historically no prosecutions have been undertaken in recent memory.

*17. What is the monetary value of the lost water?*

If the AWWA Water Audit Software has been properly completed and interpreted, the spreadsheet indicates Tiptonville's monetary value of lost water as \$95,278.00 per year.

*18. Is the cost to repair the leak justified based on the amount of water being lost?*

We agree that diligent effort must be made to reduce water loss and efforts are currently ongoing. Some efforts will be more cost effective than others, but Tiptonville will seek to reduce water loss in any manner practical. Based on the age and condition of the distribution system serving the downtown area, Tiptonville will continue to undertake replacement of aging downtown water mains and service connections inside the city limits.

The most immediate reduction in Tiptonville's losses will be realized from the ongoing replacement of the residential water meters. This activity will result in a corresponding increase in revenues from water and sewer sales. The meters have been delivered and installation is under way.

Tiptonville recently completed 2014 and 2016 CDBG Block Grants focus on water loss remediation. The projects focused on replacement of the worst and most critical elements of the downtown water system. A significant number of leaks were uncovered and remedied incidental to these projects.

The next most cost effective endeavor to reduce losses and increase revenues is an inspection and evaluation of Tiptonville's larger commercial meters and calibration of same if warranted. The greatest impact might possibly be derived from a re-calibration of the meters at the Northwest Regional Correction Facility and the Reelfoot Manor Nursing Home.

Installation of metering at the water plant is warranted from an operational standpoint. Metering of finished water is necessary to accurately determine overall system losses. Metering of process water will measure water "metered but not billed" and will afford no increase in revenues. Funds are in hand for this purpose.

In closing, Tiptonville recognizes that it suffers an excessive water loss. Tiptonville wants to assure the Board that we continue to place a high priority on reducing water loss. We have ongoing activities aimed at this goal and will continue to implement actions to reduce our water losses on a daily basis.

Respectfully,

TOWN OF TIPTONVILLE, TN



Reid Yates, Mayor



# AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0  
American Water Works Association  
Copyright © 2014. All Rights Reserved

Click to access definition  
 Click to add a comment

Water Audit Report for: **City of Erin, Tennessee**  
Reporting Year: **2015**    **7/2014 - 6/2015**

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: **MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

### WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="text" value="9"/>	<input type="text" value="317.049"/>	MG/Yr
Water imported:	<input type="text" value="7"/>	<input type="text" value="0.598"/>	MG/Yr
Water exported:	<input type="text" value="n/a"/>	<input type="text"/>	MG/Yr

### Master Meter and Supply Error Adjustments

Pcnt:	<input type="text"/>	Value:	<input type="text"/>	MG/Yr
	<input type="radio"/>		<input type="radio"/>	
	<input type="radio"/>		<input type="radio"/>	
	<input type="radio"/>		<input type="radio"/>	

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:**  MG/Yr

### AUTHORIZED CONSUMPTION

Billed metered:	<input type="text" value="9"/>	<input type="text" value="179.839"/>	MG/Yr
Billed unmetered:	<input type="text" value="9"/>	<input type="text" value="0.150"/>	MG/Yr
Unbilled metered:	<input type="text" value="9"/>	<input type="text" value="0.801"/>	MG/Yr
Unbilled unmetered:	<input type="text" value="2"/>	<input type="text" value="3.971"/>	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

**AUTHORIZED CONSUMPTION:**  MG/Yr

Click here: for help using option buttons below

Pcnt:	<input type="text" value="1.25%"/>	Value:	<input type="text"/>	MG/Yr
	<input checked="" type="radio"/>		<input type="radio"/>	

Use buttons to select percentage of water supplied OR value

Pcnt:	<input type="text" value="0.25%"/>	Value:	<input type="text"/>	MG/Yr
	<input checked="" type="radio"/>		<input type="radio"/>	

	<input type="radio"/>		<input type="radio"/>	
	<input checked="" type="radio"/>		<input type="radio"/>	
	<input type="radio"/>		<input type="radio"/>	

**WATER LOSSES (Water Supplied - Authorized Consumption)**  MG/Yr

### Apparent Losses

Unauthorized consumption:  MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	<input type="text" value="5"/>	<input type="text" value="1.825"/>	MG/Yr
Systematic data handling errors:	<input type="text" value="2"/>	<input type="text" value="0.450"/>	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:**  MG/Yr

### Real Losses (Current Annual Real Losses or CARL)

**Real Losses = Water Losses - Apparent Losses:**  MG/Yr

**WATER LOSSES:**  MG/Yr

### NON-REVENUE WATER

**NON-REVENUE WATER:**  MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### SYSTEM DATA

Length of mains:	<input type="text" value="9"/>	<input type="text" value="140.0"/>	miles
Number of active AND inactive service connections:	<input type="text" value="8"/>	<input type="text" value="2,800"/>	
Service connection density:	<input type="text" value="20"/>	<input type="text"/>	conn./mile main

Are customer meters typically located at the curbstop or property line?

Average length of customer service line:  (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:   psi

### COST DATA

Total annual cost of operating water system:	<input type="text" value="9"/>	<input type="text" value="\$1,197,816"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="text" value="10"/>	<input type="text" value="\$7.25"/>	\$/1000 gallons (US)
Variable production cost (applied to Real Losses):	<input type="text" value="8"/>	<input type="text" value="\$2,175.00"/>	\$/Million gallons <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

### WATER AUDIT DATA VALIDITY SCORE:

\*\*\* YOUR SCORE IS: 83 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

### PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Unauthorized consumption

**AWWA Free Water Audit Software:  
System Attributes and Performance Indicators**

WAS v5.0

American Water Works Association  
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Water Audit Report for:   
Reporting Year:

\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 83 out of 100 \*\*\*

System Attributes:

Apparent Losses:	<input type="text" value="3.068"/>	MG/Yr
+ Real Losses:	<input type="text" value="129.818"/>	MG/Yr
= <b>Water Losses:</b>	<input type="text" value="132.886"/>	MG/Yr

Unavoidable Annual Real Losses (UARL):  MG/Yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:  Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial: { Non-revenue water as percent by volume of Water Supplied:   
Non-revenue water as percent by cost of operating system:  Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day:  gallons/connection/day  
Real Losses per service connection per day:  gallons/connection/day  
Real Losses per length of main per day\*:  gallons/mile/day  
Real Losses per service connection per day per psi pressure:  gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL):  million gallons/year

Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline



City of Erin  
P.O. BOX 270  
ERIN, TENNESSEE 37061



Paul Bailey, Mayor  
erincitymayor@peoplestel.net  
Cell: 931-627-9144  
Office: 931-289-4108  
Fax: 931-289-5436

February 8, 2016

State of Tennessee  
Water and Wastewater Financing Board  
James K. Polk State Office Building  
505 Deaderick Street, Suite 1700  
Nashville, Tennessee 37243-1402

**RECEIVED**

FEB 17 2016

DEPT: COMPTROLLER  
OFFICE OF ADMINISTRATION

RE: Initial Check List for Addressing Water Loss

Mr. Greer:

In response to your letter dated January 14, 2016, we have attached an updated check list for addressing the issue of water loss. Our policies and procedures have not changed since the last questionnaire in February 2015.

In comparison of the 2014 and the 2015 Audit Report Schedule of Revenues and Expenses, Revenue decreased by \$10,732 and the Total Operating Expenses decreased by \$47,656. We expect to see an increase in Revenue on June 30, 2016 as a result of increased water rates, which were effective July 1, 2015.

Non-revenue water as percent by volume of Water Supplied was shown at 49.7% in the 2014 Audit and has decreased to 43.3% for the 2105 Audit. The Non-revenue water as percent by cost of operating system was shown at 35.1% in the 2014 Audit and has decreased to 26.3% for the 2015 Audit.

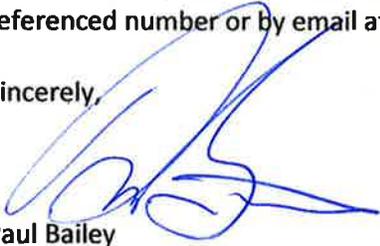
The Meter Change-Out Project, which is funded through USDA is in the Engineering stages at the present time. We anticipate a projected Bid date in the next few weeks. This project will consist of replacement of all water meters with digital read meters and 4 master meters, which will be used to "zone" our system, thus making leak detection more efficient. Also included will be the SCADA system, which will include tank level monitoring devices that will be installed on each water storage tank. This system should reduce the number of overflows at the tank sites.

Last year's questionnaire made reference to a discrepancy in the master meters at the Water Treatment Plant where the intake meter registers lower than the meter leaving the plant. At that time, the thought process was to lay a portion of straight line in front of the finished water meter. After much discussion, it has been decided to install VFD's (Variable Frequency Drives) which will allow us to regulate the speed of the pumps, which will allow us to run the discharge valve in the fully open position which will eliminate the turbulence inside the pipe which caused the meter to read inaccurately. This will also save on electrical expenses.

With the improvements to our water system and the additional rate increase, we feel these steps will bring us below the 25% level the Water and Wastewater Financing Board has established for year ending 2016.

If there is any further information needed or questions, please contact the office at the above referenced number or by email at [lperin@peoplestel.net](mailto:lperin@peoplestel.net).

Sincerely,

A handwritten signature in blue ink, appearing to be 'Paul Bailey', written over a white background.

Paul Bailey  
Mayor

### Initial Check list for addressing Water Loss

1. Are you billing for all general government water use? *City of Erin and Houston County operated facilities are billed for water use. We do however have public restrooms located in the park that are not metered. We are in the construction phase of an Enhancement grant that will require us to expose the water line at the most frequently used restroom. The City will install a meter at that location at this time.*
2. Are you accounting for the water used by the water and/or sewer department? *Water used at our Water and Wastewater Treatment Plants are metered and billed with the exception of the filter backwashing process at the Water Treatment Plant. Backwashed water is periodically calculated within the clearwell to determine total gallons used in this process and recorded appropriately.*
3. Do you periodically check or inspect all 2" and large meters? *Yes, we check and inspect all 2" and larger meters monthly and record the readings for billing purposes.*
4. Do you have a recalibration policy and procedure in place? *The City of Erin adopted a recalibration policy in 2012.*
5. Do you have a meter replacement policy? Is the trigger based on age (length of time in service) or on gallons? *The City adopted a meter replacement policy triggered by the age of a meter and gallons by gallons. However, a large portion of our meters have been in use more than 11 years. We are in the Engineering phase of a Meter Change-Out Program which will replace existing meters with radio read meters. Funding is secured by USDA/Rural Development.*
6. Do you have a process to inspect for unauthorized consumption? What are the consequences if unauthorized consumptions discovered? *Meter readers periodically inspect residences with the status of "Closed Account" for unauthorized water use. In the event unauthorized water usage is discovered, the meter reader will notify the main office at which time the resident is notified in writing that they must open and account and pay the appropriate fees. If the resident does not comply, the water meter is shut off and locked. If the unauthorized consumption is caused by intentional theft, criminal charges will be filed against the tenant.*
7. Do you have a leak detection program currently in place? *The City of Erin has a leak detection program in place. City personnel also preform leak detection training periodically.*
8. Do you have written policies, including a policy for billing adjustments? Are the written policies followed correctly by all levels of staff? *The City policy is one adjustment per calendar year and the usage has to be 20,000 gallons above the average bill. The office staff has a calculation form to insure all adjustment is following procedure.*
9. Do you have authorized non-customer users (volunteer fire departments, etc.)? Do you account for the use? Do you have a method for the user to report water usage? *The City of Erin occasionally sells potable water at a bulk rate to contractors. The water is metered from a hydrant and charged at a wholesale water rate. The City of Erin Fire Department and the Houston County Fire Department report all usage to the City Recorder for proper recording.*

10. Is your system "zoned" to isolate water loss? *The City of Erin is in the Engineering stage of a Meter Change-out program which will include setting master meters to provide 4 separate zones to enable isolation of water loss.*
11. Do you search for leaks at night when there is little traffic or small household usage? *City of Erin personnel occasionally searches for leaks at night. City personnel perform this work when it is suspected the system is experiencing unusually high water demand.*
12. Do you or can you control pressure surges? *At this time we are controlling pressure surges at our newest pumping station and have a surge controlling device at the water plant which provides a degree of buffering from the water tanks. SCADA system devices for the water tanks are included with the Meter Change-Out Project currently in the Engineering stages. This new system will be able to "ramp" pumps rather than at full speed at start up as we do now.*
13. Do you have or have access to leak detection equipment? *The City has leak detection equipment and has trained employees on its use.*
14. What is your policy for notifying customers they have a leak? *Office staff will phone the customer once the meter reader turns in the readings. In cases of extremely high consumption the meter reader will notify customer on site and/or shut the water off until repairs can be made.*
15. Do you have a public relations program to encourage citizens to report leaks? *The City does not have a department solely for public relations. We do however periodically print notices on the billing to encourage residents to report leaks.*
16. Do you have a policy to prosecute water theft or meter tampering/damage? *The City has adopted policies to prosecute water theft and meter tampering/damage.*
17. What is the monetary value of the lost water? *Annual cost of Apparent Losses per Audit June 30, 2015 is \$22,246*
18. Is the cost to repair the leak justified based on the amount of water being lost? *It is our goal to repair leaks as they are reported. However, if the leak is minimal, we try to hold off until such a time other work is needed in the area.*

# Miscellaneous

1. Conflict of Interest
2. AWWA File Discussion
3. Water Loss Discussion
4. Compliance Reports
5. Oversight List
6. Next Meeting

# Next Meeting

May 12, 2016

10:00 AM

LP 31