

Memorandum

To: Lee Ann Bunselmeyer, City of Corinth
From: Nelisa Heddin, Vice President, Water Resources Management, LLC
Date: March 4, 2011
Re: Water and Wastewater Rate Study Update

Introduction:

Water Resources Management, LLC (WRM) was retained by the City of Corinth (City) to perform a cost of service and rate design study for the City’s water and wastewater utility. The analysis examined the City’s historical expenditures and FYE 2011 budgeted expenditures and developed a three year projection of rates (FYE2012-FYE1014). The findings of the analysis are detailed below.

Methodology:

WRM worked closely with City staff to develop a revenue requirement that utilizes the City’s proposed FY 2010-11 budget as a basis of most expenditures. These budgeted expenditures were compared to the City’s actual historical expenses and were determined to represent the City’s historical test year data, which was adjusted for known and measurable changes. WRM then performed a variable cost analysis to determine projected water purchase and wastewater treatment costs for each utility. WRM utilized the City’s current debt funding plan for future CIP projects and incorporated the future debt service payments into the analysis. Revenue requirements for the Water and Wastewater utility are outlined below.

Table 1: Water Revenue Requirements

	2011	2012	2013	2014
\$	5,732,804	\$ 6,015,555	\$ 6,359,391	\$ 6,777,866

Table 2: Wastewater Revenue Requirements

	2011	2012	2013	2014
\$	4,124,629	\$ 4,313,655	\$ 4,496,188	\$ 4,751,457

WRM then allocated costs to customer classifications utilizing the base-extra capacity methodology to determine the total annual revenues to be recovered from each classification of customers through the study period.

Next, customer count and usage was projected based on recent trends in growth and consumption.

Findings:

Utilizing this analysis, it was determined that the City’s currently adopted residential water rates customers are slightly over-recovering the revenue requirements, whereby the City’s currently adopted commercial water rates are slightly under-recovering the revenue requirements. The City’s currently adopted wastewater rates are under-recovering the revenue requirements across all customer classes.

Recommendations:

WRM recommends that the City adopted rates that correct the above described over/under recovery among the water and wastewater utilities and the customer classes.

Water Rates

The City’s currently adopted minimum bill for water customers, by meter size are adequately recovering the City’s costs and should thus remain at the currently adopted level throughout the study period.

As previously described, the residential water rates are over-recovering revenue requirements and should consequently be reduced; commercial water rates are under-recovering revenue requirements and should therefore be increased. WRM has identified two options for making these adjustments:

1. Make an immediate adjustment downward in rates in 2011 to meet exactly the 2011 revenue requirements, and then adopted annual increases in rates each subsequent year of the study period. The impact of this is that the City would essentially reduce rates downward in 2011, and then adopt a tariff, which imposes annual increases each year following 2011. The rates associated with this scenario are presented on Tables 3 (residential) and 5 (commercial) below; the detailed analysis is provided as Schedules 1 and 3 attached. It must be noted that revenue recovery in 2011 would not match that projected by WRM as the analysis assumed a change in rates to be in effect the entire year.
2. Adopt a rate immediately that is an average between the rates in Scenario 1 for FYE2012 and FYE2013. The net impact of this scenario is that customers would see a slight reduction in rates, but not as large as that presented in scenario 1. However, they would not see a subsequent increase in 2012 and 2013. The City would essentially “over recover” in 2012 and “under recover” in 2013, leading to a net break-even for the two years. The rates associated with this scenario are presented on Tables 4 (residential) and 6 (commercial) below; the detailed analysis is provided as Schedules 2 and 4 attached. It must be noted that revenue recovery in 2011 would not match that projected by WRM as the analysis assumed a change in rates to be in effect the entire year.

Table 3: Scenario 1 Residential Water Rates

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 3.20	\$ 2.30	\$ 2.59	\$ 2.95	\$ 3.38
10,001-25,000	\$ 5.20	\$ 4.30	\$ 4.59	\$ 4.95	\$ 5.38
25,001-50,000	\$ 7.20	\$ 6.30	\$ 6.59	\$ 6.95	\$ 7.38

50,001-999,999,999,999	\$ 9.20	\$ 8.30	\$ 8.59	\$ 8.95	\$ 9.38
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Table 4: Scenario 2 Residential Water Rates

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 3.20	\$ 2.77	\$ 2.77	\$ 2.77	\$ 3.38
10,001-25,000	\$ 5.20	\$ 4.77	\$ 4.77	\$ 4.77	\$ 5.38
25,001-50,000	\$ 7.20	\$ 6.77	\$ 6.77	\$ 6.77	\$ 7.38
50,001-999,999,999,999	\$ 9.20	\$ 8.77	\$ 8.77	\$ 8.77	\$ 9.38

Table 5: Scenario 1 Commercial Water Rates

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 4.75	\$ 3.12	\$ 3.46	\$ 3.89	\$ 4.41
10,001-25,000	\$ 4.75	\$ 4.12	\$ 4.46	\$ 4.89	\$ 5.41
25,001-50,000	\$ 4.75	\$ 5.12	\$ 5.46	\$ 5.89	\$ 6.41
50,001-999,999,999,999	\$ 5.75	\$ 6.12	\$ 6.46	\$ 6.89	\$ 7.41

Table 6: Scenario 2 Commercial Water Rates

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 4.75	\$ 3.68	\$ 3.68	\$ 3.68	\$ 4.41
10,001-25,000	\$ 4.75	\$ 4.68	\$ 4.68	\$ 4.68	\$ 5.41
25,001-50,000	\$ 4.75	\$ 5.68	\$ 5.68	\$ 5.68	\$ 6.41
50,001-999,999,999,999	\$ 5.75	\$ 6.68	\$ 6.68	\$ 6.68	\$ 7.41

It must be noted that for the Commercial customer class, WRM has developed rates that add two additional rate tiers. Previously the Commercial customers were charged \$4.75 per thousand gallons for usage between 0-50,000 gallons and \$5.75 per thousand gallons for usage above 50,000 gallons. The recommended Scenarios include two additional rate tiers for consumption between 10,001 and 25,000 gallons and between 25,001 and 50,000 gallons. This is consistent with the rate tiers established for the City's residential customers and is also consistent with the City's water conservation plan. The impact of adding the two additional tiers is that commercial customers utilizing less than 25,000 gallons of water would see a decrease in their billing, while customers utilizing more than 25,000 gallons of water would see an increase in their bills.

Wastewater Rates

In evaluating the Wastewater utility, the City's currently adopted rates do not achieve the projected revenue requirements; as such, wastewater rate increases are necessary. WRM has presented two scenarios for establishing wastewater rates:

1. Increase in the volumetric rate, and
2. Increase in the minimum bill.

Both scenarios involve an immediate increase in rates that will stay in effect through FYE2013. Tables 7 and 8 present each scenario and Schedules 5 and 6 provide the detailed analysis.

Table 7: Scenario 1 Wastewater Rates

	2011	2012	2013	2014
Minimum Bill	\$ 21.39	\$ 21.39	\$ 21.39	\$ 21.39
Volumetric Rate	\$ 5.60	\$ 5.60	\$ 5.60	\$ 6.30

Table 8: Scenario 2 Wastewater Rates

	2011	2012	2013	2014
Minimum Bill	\$ 25.90	\$ 25.90	\$ 25.90	\$ 30.40
Volumetric Rate	\$ 4.89	\$ 4.89	\$ 4.89	\$ 4.89

It is important to note that WRM has developed inside-city customer rates and has not analyzed outside city rates.

City of Corinth
Water and Wastewater
Cost of Service and Rate Design Study

Schedule 1
Determination of Residential Volumetric Rates
Annual Adjustments to Rates

Consumption	2011	2012	2013	2014
0-10,000 (adjusted for senior discount)	293,676,264	293,676,264	293,676,264	293,676,264
10,001-25,000	440,821,872	440,821,872	440,821,872	440,821,872
25,001-50,000	20,517,881	20,517,881	20,517,881	20,517,881
50,001-999,999,999,999	687,559	687,559	687,559	687,559
	755,703,576	755,703,576	755,703,576	755,703,576

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 3.20	\$ 2.30	\$ 2.59	\$ 2.95	\$ 3.38
10,001-25,000	\$ 5.20	\$ 4.30	\$ 4.59	\$ 4.95	\$ 5.38
25,001-50,000	\$ 7.20	\$ 6.30	\$ 6.59	\$ 6.95	\$ 7.38
50,001-999,999,999,999	\$ 9.20	\$ 8.30	\$ 8.59	\$ 8.95	\$ 9.38

Revenue Recovery from Rates	2011	2012	2013	2014
0-10,000	\$ 674,771	\$ 761,232	\$ 865,923	\$ 993,144
10,001-25,000	1,894,506	2,024,288	2,181,435	2,372,399
25,001-50,000	129,215	135,255	142,570	151,458
50,001-999,999,999,999	5,705	5,908	6,153	6,451
	\$ 2,704,197	\$ 2,926,683	\$ 3,196,081	\$ 3,523,452

Revenue Requirement from Volumetric Rate	2011	2012	2013	2014
Revenue Requirement from Volumetric Rate	\$ 2,704,197	\$ 2,926,683	\$ 3,196,081	\$ 3,523,452
Revenue Recovery	2,704,197	2,926,683	3,196,081	3,523,452
Over/(Under)	\$ -	\$ -	\$ -	\$ 0

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the en

City of Corinth
 Water and Wastewater
 Cost of Service and Rate Design Study

Schedule 2
 Determination of Residential Volumetric Rates
 | Rate Adjustment

Consumption	2011	2012	2013	2014
0-10,000 (adjusted for senior discount)	293,676,264	293,676,264	293,676,264	293,676,264
10,001-25,000	440,821,872	440,821,872	440,821,872	440,821,872
25,001-50,000	20,517,881	20,517,881	20,517,881	20,517,881
50,001-999,999,999,999	687,559	687,559	687,559	687,559
	755,703,576	755,703,576	755,703,576	755,703,576

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 3.20	\$ 2.77	\$ 2.77	\$ 2.77	\$ 3.38
10,001-25,000	\$ 5.20	\$ 4.77	\$ 4.77	\$ 4.77	\$ 5.38
25,001-50,000	\$ 7.20	\$ 6.77	\$ 6.77	\$ 6.77	\$ 7.38
50,001-999,999,999,999	\$ 9.20	\$ 8.77	\$ 8.77	\$ 8.77	\$ 9.38

Revenue Recovery from Rates	2011	2012	2013	2014
0-10,000	\$ 813,578	\$ 813,578	\$ 813,578	\$ 993,144
10,001-25,000	2,102,862	2,102,862	2,102,862	2,372,399
25,001-50,000	138,913	138,913	138,913	151,458
50,001-999,999,999,999	6,030	6,030	6,030	6,451
	\$ 3,061,382	\$ 3,061,382	\$ 3,061,382	\$ 3,523,452

	2011	2012	2013	2014
Revenue Requirement from Volumetric Rate	\$ 2,704,197	\$ 2,926,683	\$ 3,196,081	\$ 3,523,452
Revenue Recovery	3,061,382	3,061,382	3,061,382	3,523,452
Over/(Under)	\$ 357,185	\$ 134,699	\$ (134,699)	\$ 0

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the entire 2011 year.

City of Corinth
 Water and Wastewater
 Cost of Service and Rate Design Study

Schedule 3
 Determination of Commercial Volumetric Rates
 Annual Increases

Consumption		2011	2012	2013	2014
0-10,000		4,864,834	4,864,834	4,864,834	4,864,834
10,001-25,000		21,350,596	21,350,596	21,350,596	21,350,596
25,001-50,000		26,320,556	26,320,556	26,320,556	26,320,556
50,001-999,999,999,999		121,695,460	121,695,460	121,695,460	121,695,460
		174,231,446	174,231,446	174,231,446	174,231,446
		TRUE	TRUE	TRUE	TRUE

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 4.75	\$ 3.12	\$ 3.46	\$ 3.89	\$ 4.41
10,001-25,000	\$ 4.75	\$ 4.12	\$ 4.46	\$ 4.89	\$ 5.41
25,001-50,000	\$ 4.75	\$ 5.12	\$ 5.46	\$ 5.89	\$ 6.41
50,001-999,999,999,999	\$ 5.75	\$ 6.12	\$ 6.46	\$ 6.89	\$ 7.41

Revenue Recovery from Rates		2011	2012	2013	2014
0-10,000		\$ 15,168	\$ 16,851	\$ 18,929	\$ 21,473
10,001-25,000		87,920	95,305	104,427	115,591
25,001-50,000		134,707	143,810	155,056	168,818
50,001-999,999,999,999		744,523	786,616	838,609	902,243
		\$ 982,318	\$ 1,042,582	\$ 1,117,020	\$ 1,208,125

		2011	2012	2013	2014
Revenue Requirement from Volumetric Rate		\$ 982,318	\$ 1,042,582	\$ 1,117,020	\$ 1,208,125
Revenue Recovery		982,318	1,042,582	1,117,020	1,208,125
Over/(Under)		\$ -	\$ -	\$ -	\$ -

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the entire 2011 year.

City of Corinth
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Schedule 4
 Determination of Commercial Volumetric Rates
 Levelized Increase in 2011

Consumption		2011	2012	2013	2014
0-10,000		4,864,834	4,864,834	4,864,834	4,864,834
10,001-25,000		21,350,596	21,350,596	21,350,596	21,350,596
25,001-50,000		26,320,556	26,320,556	26,320,556	26,320,556
50,001-999,999,999,999		121,695,460	121,695,460	121,695,460	121,695,460
		174,231,446	174,231,446	174,231,446	174,231,446
		TRUE	TRUE	TRUE	TRUE

Volumetric Rate	Current Rates	2011	2012	2013	2014
0-10,000	\$ 4.75	\$ 3.68	\$ 3.68	\$ 3.68	\$ 4.41
10,001-25,000	\$ 4.75	\$ 4.68	\$ 4.68	\$ 4.68	\$ 5.41
25,001-50,000	\$ 4.75	\$ 5.68	\$ 5.68	\$ 5.68	\$ 6.41
50,001-999,999,999,999	\$ 5.75	\$ 6.68	\$ 6.68	\$ 6.68	\$ 7.41

Revenue Recovery from Rates		2011	2012	2013	2014
0-10,000		\$ 17,890	\$ 17,890	\$ 17,890	\$ 21,473
10,001-25,000		99,866	99,866	99,866	115,591
25,001-50,000		149,433	149,433	149,433	168,818
50,001-999,999,999,999		812,612	812,612	812,612	902,243
		\$ 1,079,801	\$ 1,079,801	\$ 1,079,801	\$ 1,208,125

		2011	2012	2013	2014
Revenue Requirement from Volumetric Rate		\$ 982,318	\$ 1,042,582	\$ 1,117,020	\$ 1,208,125
Revenue Recovery		1,079,801	1,079,801	1,079,801	1,208,125
Over/(Under)		\$ 97,483	\$ 37,219	\$ (37,219)	\$ -

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the entire 2011 year.



City of Corinth
Water and Wastewater Department
Cost of Service and Rate Design Study

Schedule 5
Wastewater Rate Analysis
Increases Made to Volumetric Rate

	2011	2012	2013	2014
Determination of Revenue from Minimum Bill				
Customer Count	6,426	6,426	6,426	6,426
Monthly Minimum Bill	\$ 21.39	\$ 21.39	\$ 21.39	\$ 21.39
Annual Revenues from Minimum Bill	\$ 1,649,426	\$ 1,649,426	\$ 1,649,426	\$ 1,649,426

	2011	2012	2013	2014
Determination of Revenue to be Collected From Volumetric Rate				
Total Revenue Requirement	\$ 4,124,629	\$ 4,313,655	\$ 4,496,188	\$ 4,751,457
Less Revenues Collected from Minimum Bill	(1,649,426)	(1,649,426)	(1,649,426)	(1,649,426)
Balance to be Recovered from Volumetric Rate	\$ 2,475,203	\$ 2,664,229	\$ 2,846,762	\$ 3,102,031

	2011	2012	2013	2014
Determination of Volumetric Rate				
Balance to be Recovered from Volumetric Rate	\$ 2,475,203	\$ 2,664,229	\$ 2,846,762	\$ 3,102,031
Total Projected Consumption(Adjusted for senior discount)	492,346,525	492,346,525	492,346,525	492,346,525
Required Volumetric Rate (per thousand gallons)	\$ 5.03	\$ 5.41	\$ 5.78	\$ 6.30

	2011	2012	2013	2014
Levelized Increase				
Recommended Increase	\$ 5.60	\$ 5.60	\$ 5.60	\$ 6.30
Over/(Under) Recovery	280,292.76	91,266.48	(91,266.48)	-

	2011	2012	2013	2014
Current Rates				
Minimum Bill	\$ 21.39	\$ 21.39	\$ 21.39	\$ 21.39
Volumetric Rate	4.89	5.60	5.60	6.30

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the entire 2011 year.

City of Corinth
 Water and Wastewater Department
 Cost of Service and Rate Design Study

Schedule 6
 Wastewater Rate Analysis
 Increases Made to Base Rate

Determination of Revenue from Minimum Bill	2011	2012	2013	2014
Customer Count	6,426	6,426	6,426	6,426
Monthly Minimum Bill	\$ 22.27	\$ 24.72	\$ 27.09	\$ 30.40
Annual Revenues from Minimum Bill	\$ 1,717,054	\$ 1,906,080	\$ 2,088,613	\$ 2,343,883

Determination of Revenue to be Collected From Volumetric Rate	2011	2012	2013	2014
Total Revenue Requirement	\$ 4,124,629	\$ 4,313,655	\$ 4,496,188	\$ 4,751,457
Less Revenues Collected from Minimum Bill	(1,717,054)	(1,906,080)	(2,088,613)	(2,343,883)
Balance to be Recovered from Volumetric Rate	\$ 2,407,575	\$ 2,407,575	\$ 2,407,575	\$ 2,407,575

	2011	2012	2013	2014
Balance to be Recovered from Volumetric Rate	\$ 2,407,575	\$ 2,407,575	\$ 2,407,575	\$ 2,407,575
Total Projected Consumption(Adjusted for senior discount)	492,346,525	492,346,525	492,346,525	492,346,525
Current Volumetric Rate	\$ 4.89	\$ 4.89	\$ 4.89	\$ 4.89

Levelized Increase	2011	2012	2013	2014
Recommended Increase	\$ 25.90	\$ 25.90	\$ 25.90	\$ 30.40
Over/(Under) Recovery	280,292.76	91,266.48	(91,266.48)	-

Current Rates	2011	2012	2013	2014
Minimum Bill	21.89	25.90	25.90	30.40
Volumetric Rate	4.89	4.89	4.89	4.89

Note: 2011 revenue recovery achieved by the City will not be as indicated in this analysis as the change in rates won't be implemented for the entire 2011 year.