CWB
Engineers, Inc.

Designing a Better Arkansas

March 19, 2015

Mr. Alan Anderson
Water Enforcement Branch
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Re: ***City Corporation – CAO***
Annual Report on Implementation of CMOM
NPDES Permit No. AR0021768
CAO LIS No. 09-146
AFIN 58-00105

Dear Mr. Anderson,

I am pleased to submit the enclosed Capacity, Management, Operation, and Maintenance (CMOM) program update on behalf of City Corporation. The CMOM submittal shall fulfill the requirements of the Consent Administrative Order and the Corrective Action Plan dated May 28, 2010. The enclosed document is the 2015 CMOM Update. Please review the document and respond to City Corporation or myself with any concerns or comments.

If you have any questions, you may contact me at email cwbengineers@yahoo.com or phone (501) 413-0861.

Sincerely,

Clint W. Bell

Clint W. Bell, P.E.
CWB Engineers, Inc.

Enclosure

CITY CORPORATION
2015-2016 BUDGET SCHEDULE

Departmental Planning:

Payroll Budget **due: February 13, 2015**

Payroll sheets will be sent out approx. Jan 19th. to the mgrs. and team leads. They will have all current staff positions on there by dept. as well as current hourly rate with a 2% COLA included. On top of that, the spreadsheet will add in a 3% raise on their respective anniversary. Please check and verify your staff needs for next year, make any adds/subtractions for staff, verify or adjust approximate overtime/holiday/premium pay hours and remit that adjusted spreadsheet back to Renee Baggett by Feb 6. Overtime/Holiday/Premium Pay hours are being initially loaded to match the hours that were budgeted for FY15

Months with 3 pay periods - July 2015, December 2015, June 2016

Operating Expense Budget (Mainframe Data Entered) **due: February 13, 2015**

Operating expenses will be handled fairly close to the way previous years were handled. We will pass out spreadsheets the same as before, with the only difference being that we have automatically filled in FY16 budgets with an exact copy of the FY15 figures. Anticipating that most of the budget items will be close if not the same as this year, we thought it easiest to prepopulate and let you simply worry about the items that are needing adjustment.
Secure Appropriate Approvals & Key Into Computer before due date
Initial reports should be distributed by Approximately January 19th

Proposed O & M Budget Review:

Larry Collins, Danny Teeter, Jonathan Shipley (WTP, Con Agra)
Larry Collins, Randy Bradley (LAB, WWTP & Maintenance)
Lance Bartlett (NOC, Const., Engineering)
Jeremy Myers (Business, Service)
Renae Taylor & Shawn Bishop (General Mgmt.)
Brenda Austin (Gen. Mgmt., Admin, Business Office, Acct., Revenues)

These will be set up to occur in early March.

Proposed Capital Budget Review: due: March 2, 2015

All capital requests should be submitted to Brenda A. by March 2 to allow time for budgets be pulled together and prepared for review. Please also include any prior year projects that will be left open and continue into FY16. Please note approx. FY16 amount for each.

Capital should be labeled either A or B for priority

A - will incur at current funding level
B - will incur if Bonds are obtained and/or rate plan is approved

Management will review & approve in late March or early April

Accounting Review with John Shoptaw: Early May 2015

Board of Directors Review: To be arranged

Distribute Proposed Budget to Board: May Board Meeting

Board of Directors Approval: June Board Meeting

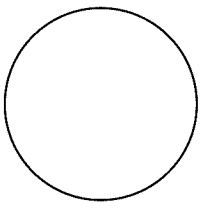
City Corporation
Russellville Water & Sewer System
RW&SS

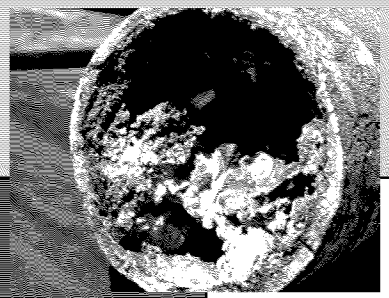
MANHOLE INSPECTION FORM

MANHOLE NUMBER: _____

DATE: _____ **TIME:** _____

CREW: _____

UNIT TYPE NON-STANDARD STANDARD (4ft) ***BARREL DIA (IN)*** _____	***LOCATION*** ALLY CURB REST ALRW DRRW STRW CLST GUTT UTRW COMM RESI	***SURFACE COVER*** ASPH CONC LAKE SOD BLDG CREE LNDS STRC BRSH DTCH MRSH WOOD BURD GRAV PAVED-DITCH	***PRECIPITATION*** HEAVY RAIN LIGHT RAIN SNOW NONE
COVER TYPE STLN BOLT OTHR STPH STLB LWC	***COVER CONDITION*** SOUND CRACKED BROKEN	***COVER /RIM FIT*** POOR FAIR SEALED	***COVER DIAMETER*** _____ ***# HOLES IN COVER*** _____
FRAME CONITION SOUND CRACKED BROKEN	***FRAME ADJUSTMENT*** BLOCK NONE POURED BRICK OTHER PRECAST	***FRAME TO CORBEL SEAL*** SOUND CRACKED NONE OFFSET DETERIORIATED	***EVIDENCE OF SURCH*** YES NO
STEP CONSTRUCTION CONC CIRN RBBR NONE	***STEP CONDITION*** SOUND LEAKING	***PONDING/SHEETING*** PONDING SHEETING NONE	***CONE CONSTRUCTION*** BRICK NONE CONC PCST GLAS UNKN
CONE CONDITION SOUND LEAKING DET CRACKED ROOTS MISSING BRICKS	***WALL CONSTRUCTION*** BRCK CLAY GLAS NONE PCST CIRN CONC UNKN	***WALL CONDITION*** SOUND INFILTRATION CRACKED ROOTS LEAKING JOINTS DET	***BENCH & CHANNEL CONSTRUCTION*** BRCK CONC PCST GLAS
BENCH & CHANNEL CONDITION SOUND CRACKED INFILTRATION DET UNFINISHED ROOTS		***COMMENTS:*** _____	



Clean and healthy creeks, rivers, bays and lakes are very important to Russellville City Corporation. (FOG) Fats, Oils and grease from food service facilities such as restaurants can cause sewer line blockages that may result in sewage overflow into your facility and/or into storm drains. Water in storm drains is not treated before entering our waterways and should never contain trash, grease or other materials that you wouldn't dump into your lake. To help prevent pollution of your waterways follow these Best Kitchen Practices:

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and /or out-of- pocket costs to reimburse the city or public agency for clean-up-efforts.

Here are the pertinent codes, fines and agency contact information that apply.

Report Sewage Spills!

Russellville City Corporation
1-479-968-2105

Pope County Health Department
1-479-968-6004

Code Enforcement
1-479-968-3232

Emergency Management
1-479-968-1800

Russellville City Corporation
P.O. Box 3186
Russellville, AR 72811
www.citycorporation.com

Help Prevent Pollution:

Tips for the Food Service Industry

City Corporation
RW&SS
Russellville Water & Sewer System

P revent rotect rolong rovide

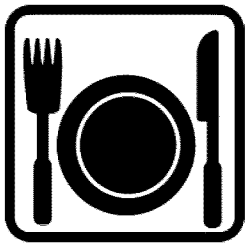
Best Kitchen Practices

Disposal of Grease & Oil

- Use grease storage containers or install a grease trap to contain your grease. Never put oil or grease down the drain.
- Never overfill your grease storage container or transport it without a cover.
- Grease control devices must be empted and cleaned by permitted companies.
- Keep maintenance records on site.

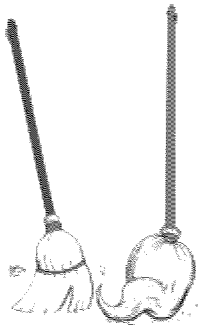
Disposal of Food Waste

- Scrape food waste off of plates, utensils, pots, food preparation and cooking areas and dispose of it in the trash.
- Food scraps often contain grease, which can clog sewer pipes and result in sewage backups and overflows. Never put food waste down the drain.



Minor Spill Cleanup

- Always use dry cleanup methods, such as a rag, damp mop or broom.
- Never wash a spill into the street, gutter or storm drain.

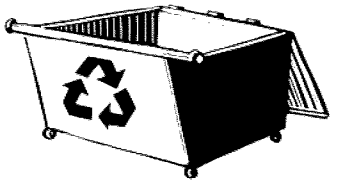


Major Spill Cleanup

- Immediately contain and clean the spill using dry methods.
- Have spill containment and cleanup kids readily available, and train all employees on how to use them.

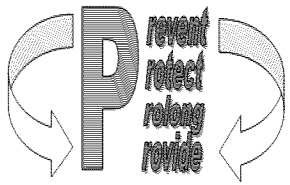
Dumpster Cleanup

- Always pick up loose debris around dumpster
- Always keep the lid closed
- Never pour liquids into the dumpster or hose it out.



Cleaning the Floor Mat

- When sweeping the floor maps, always discard the debris into the trash.
- Never hose off the mats in an area where the wastewater can flow to the street, gutter or storm drain.
- Dispose of wash water in an area with a floor drain.



Sewage Spill Regulatory Requirements

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and /or out-of- pocket costs to reimburse the city or public agency for clean-up-efforts.

Here are the pertinent codes, fines and agency contact information that apply.

Report Sewage Spills!

Russellville City Corporation
1-479-968-2105

City Health Department
1-479-968-6004

Code Enforcement
1-479-968-3232

Emergency Management
1-479-968-1800

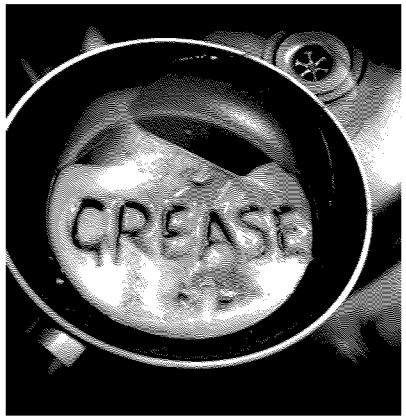
If You See a Sewage Spill occurring, Notify Your City Sewer/Public Works Department or Public Sewer District IMMEDIATELY!

How You Can Prevent Sewage Spills

1. Never put grease down garbage disposals, drains or toilets.

2. Perform periodic cleaning to eliminate grease, debris and roots in your service laterals.

3. Repair any structural problems in your sewer system and eliminate any rainwater infiltration/inflow leaks into your service laterals.



Russellville City Corporation

P.O. Box 3186
Russellville, AR 72811
www.citycorporation.com

Sewage Spill

Reference Guide

Your Responsibilities as a Private Property Owner

City Corporation
RW&SS
Russellville Water & Sewer System

Prevent Protect Prolong Provide

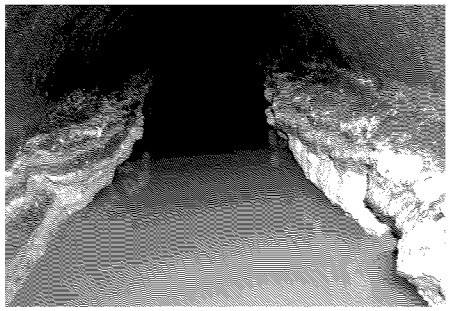
Russellville City Corporation

479-968-2105

Sewage Spill

What is a sewage spill?

Sewage spills occur when the wastewater being transported via underground pipes overflows through a manhole, cleanout or broken pipe. Sewage spills can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and lakes.



Common Causes of Sewage Spills

Grease builds up inside and eventually blocks sewer pipes. Grease get into the sewer from food establishments, household drains, as well as from poorly maintained commercial traps and interceptors.

Structure problems caused by tree roots in the lines, broken/cracked pipes, missing or broken cleanout caps or undersized sewers can cause blockages.

Infiltration and Inflow (I/I) impacts pipe capacity and is caused when groundwater or rainwater enters the sewer system through pipe defects and illegal connections.

You Could Be Liable

Allowing sewage from your home, business or property to discharge to a gutter or storm drain may subject you to penalties and /or out of pocket cost to reimburse the city or public agency for clean-up and enforcement efforts.

What to Look For

Sewage Spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted for wet areas. Look for:

- Drain backups inside the buildings
- Wet ground and water leaking around manhole lids onto your street
- Leaking water from cleanouts or outside drains
- Unusual odorous wet areas: sidewalks, external walls or ground/landscape around a building

Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

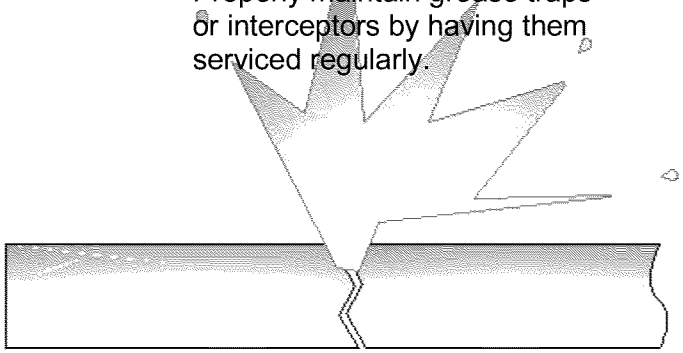
Preventing Grease Blockages

The drain is not a dump! Recycle or dispose of grease properly and never pour grease down the drain.

Homeowners should mix fats, oils and grease with absorbent waste materials such as paper, coffee grounds, or kitty litter and place it in the trash. Wipe food scraps from plates and pans and dump them in the trash.

Restaurants and commercial food service establishments should always use “Kitchen Best Management Practices: These include:

- Collecting all cooking grease and liquid oil from pots, pans and fryers in covered grease containers for recycling.
- Scraping or dry-wiping excess food and grease from dishes, pots, pans and fryers into the trash.
- Installing drain screens on all kitchen drains.
- Having spill kits readily available for cleaning up spills.
- Properly maintain grease traps or interceptors by having them serviced regularly.



Let's Tackle the Grease in This Kitchen!

THE WRONG WAY
La Forma Incorrecta

1

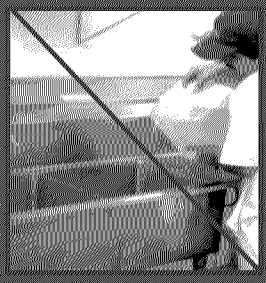
Do not pour cooking residue directly into the drain.

No vierta residuos de cocinar directamente en el desague.

2

Do not dispose of food waste into the garbage disposal.

No ponga desperdicios de comida en el triturador de comida.



3

Do not pour waste oil directly into the drain.

No ponga desperdicio de aceite directamente en el desague.

THE RIGHT WAY
La Forma Correcta

1

Wipe pots, pans, and work areas prior to washing.

Limpie con una toallita las ollas, cazuelas, y areas de trabajo antes de lavarlos.

2

Dispose of food waste directley into trash.

Deseche los desperdicios de comida en el bote de basura.

3

Collect waste oil and store for recycling.

Junte el desperdicio de aceite y guardelo para que sea reciclado.

City Corporation
Russellville Water & Sewer System
RW&SS

DATE:_____

NAME:_____

SEWER STREAM CROSSING INSPECTION

Evaluation of stream shall include stabilization of stream banks, bed, pipe supports, encasements, erosion, etc.

Upstream Manhole:_____

Downstream Manhole:_____

Stream Name:_____

Approx. LF from specified Manhole:_____

Crossing Condition

Excellent Good Fair Poor (Alert Maintenance)	Comments:

Type of Crossing

Aerial Exposed Below Creek Level Encased	Comments:

Debris

None Light Medium Heavy (Alert Maintenance)	Comments:

*ATTACH PHOTO

CITY CORPORATION

WATER & SEWER RATES

Monthly Water Meter Charge
Each customer shall pay a monthly charge based on the size of the customer's water meter, as follows:

5/8" Meter	$8.69	3" Meter	$49.20
1" Meter	$12.03	4" Meter	$157.48
1 ½" Meter	$22.86	6" Meter	$194.26
2" Meter	$29.99		

Monthly Charge for a meter larger than 6" will be based on the actual cost.
RESIDENTIAL, COMMERCIAL, INDUSTRIAL & PUBLIC AUTHORITY OUTSIDE CITY LIMITS ARE 1 1/2 TIMES FOR METER CHARGES.

Additional Charge for Water Usage
In addition to the monthly meter charge, each customer shall be required to pay for water usage in accordance with the following schedule:

	RESIDENTIAL		
Inside City Limits	$1.71/1,000 For First 2,000 Gallons $1.94/1,000 Over 2,000 Gallons	**COMMERCIAL**	$1.78 Per 1,000 Gallons
		INDUSTRIAL	$1.49 Per 1,000 Gallons
		PUBLIC AUTHORITY	$1.99 Per 1,000 Gallons
Outside City Limits	$3.52/1,000 For First 2,000 Gallons $3.90/1,000 Over 2,000 Gallons	**MUNICIPAL**	$1.53 Per 1,000 Gallons
		WHOLESALE	$1.14 Per 1,000 Gallons

Private Fire Protection (Fire Hydrants and Sprinkler Services)

Size of Service Connection	Net Annual Rates
6"	$378.68
8"	$674.21
10"	$1052.52

COMMERCIAL, INDUSTRIAL, PUBLIC AUTHORITY & PRIVATE FIRE outside the City Limits of Russellville shall be charged 1½ times the normal charges for water usage.

Surcharge for Customers Within City Limits
In addition to the monthly meter charge and the additional charge for water usage, each customer whose premises are located within the corporate limits of the City is required to pay a charge equal to 4½% of the monthly charge for the meter and the additional charge for water usage, which is a fee City Corporation pays to the City of Russellville, somewhat like a franchise fee for the use of City rights-of-way and their maintenance.

Taxes & Fees
Arkansas State Sales Tax 6%, City of Russellville 1 ½%, and Pope County Tax 1%.
Returned Checks $25.00, Late Fee $10.00, Collection Fee $10.00, Connection Fee $7.50, Service Calls (Re-reads, Turn-offs due to broken pipes, leak checks, pressure checks, etc.) $7.50, Meter Tests $20.00 - $50.00 (5/8" - 2" meter)

Sewer Service Charge
Monthly residential sewer service charge is computed on the average water used in the month of January, February, and March of each year. In general, these are the months when residential customers use the least amount of water and when water issued is going into sanitary sewer for treatment.

Charges for new domestic users will be based on the water consumption of a typical user of the same or similar class until a water use history is established and the average computed. Charges for all other classes of customers (commercial, industrial, etc.) are based on the same rate but are computed each month according to the amount of water used.

Charges for all classes of customers who are located outside the City Limits of Russellville are computed at 1 ½ the normal rate.
Charges are computed in compliance with city ordinances and rates as follows:

First 1,000 Gallons Per Month	$6.67 Per Month
Next 19,000 Gallons Per Month	$2.59 Per 1,000 Gallons
Over 20,000 Gallons Per month	$2.20 Per 1,000 Gallons

There will be an additional monthly charge of $5.00 to those customers who require a grinder pump. This charge is in addition to the initial purchase price of the grinder pump and normal installation cost.

CITY CORPORATION

CUSTOMER INFORMATION

Office Location
205 West 3rd Place
Russellville, AR 72801
Phone: (479)968-2105
Fax: (479)968-3265

Mailing Address
City Corporation
PO Box 3186
Russellville, AR 72811-3186

Office Hours
Lobby: 8:00 am – 4:30 pm
Extended Hours: 4:30 pm – 6:00 pm
*Drive Thru Payments & Telephone Service Only
Monday – Friday
Closed Holidays

Monthly Bills
Bills for service will be rendered monthly and are due in 20 days from the mailing of the invoice. The term "monthly" for billing purposes will mean the period between any two consecutive readings of the meters by City Corporation, such readings to be taken as nearly as practicable every 30 days. When City Corporation is unable to read a meter after reasonable effort, the customer will be billed on an estimated consumption based on the best available information.

Failure to receive bills in no way exempts a customer from payment of those bills.

Bills may be paid through the mail, through our website (www.citycorporation.com), or at the City Corporation Business Office located at 205 W 3rd Pl. For proper credit, always include the bottom portion of the bill with the payment. To aid in the processing of the payment and to insure proper credit, please write the account number on the check.

Delinquent Accounts
All City Corporation bills are due upon receipt. A bill becomes delinquent 20 days from the mail date. When the bill becomes delinquent, there is a $10.00 late fee billed on the next invoice. If payment of delinquent bill is not satisfied and City Corporation is forced to disconnect services, there will be a $10.00 shut-off processing fee and security deposit required to restore services. In the case of delinquency, we mail out shut-off notices and attempt to contact using an automated dialer; therefore, it is important that the customer supply City Corporation with an updated phone number for the account. The phone number is used in the case of delinquency or for any other billing problems on the account.

Obtaining Service
In order to obtain service where the facilities are already in place, contact City Corporation to arrange turn-ons and installation of meters. It is the policy of City Corporation to turn water service on only when someone is present or a verbal liability release has been given because of the potential for water damage due to damaged pipes or fixtures. As a matter of policy, City Corporation employees **DO NOT** enter the customer's home.

Customers are required to produce identification (such as Driver's License or State issued Identification Cards), Social Security Number, Rental/Lease Agreement or Settlement Statement (Title Papers, Acceptance Papers, etc.) if purchasing home, and a mailing address and telephone number so we can contact you when necessary. All customer billing information and records remain confidential and are encrypted for security.

Deposits
Rules and Regulations Regarding Deposits
City Corporation has the right to require a deposit equal to two and one-half (2 ½) times the average monthly bill for service rendered. City Corporation will refund said deposit on notice to disconnect service and after payment in full has been made for all service rendered. City Corporation will forward any deposit balance due customer to the forwarding address furnished by the customer. If this deposit balance is not deliverable because of the customer's failure to provide the Utility with a proper forwarding address, a second attempt will be made to refund the deposit. If the second attempt to forward this balance fails, then the deposit balance in the account will be assessed a $25.00 service charge. Twenty-five dollars will also be charged each time this process is repeated until the deposit is eliminated.

City Corporation may require a deposit from any existing customer:

- **a.** Who's service has been discontinued for non-payment of a delinquent account
- **b.** Who has given two (2) invalid checks in the past twelve (12) months
- **c.** Who has failed to pay his bill by the due date twice within the past twelve (12) months
- **d.** Who has misrepresented his identity for the purpose of obtaining service
- **e.** Who has turned his water on again after it has been turned off for any violation of rules, installed a jumper pipe to obtain service without having paid a deposit for service or failed to pay his delinquent bill

Deposit Refund
The deposit made by a customer may be refunded even though the customer remains a customer of City Corporation, provided that the customer has: 1) a five year historical record of prompt payment; 2) not violated any of City Corporation's rules and regulations. City Corporation shall have no obligation to pay interest on said deposit during the time it is held by City Corporation pursuant to the deposit agreement. The deposit refund will appear as a credit on the bill.

Deposits Unnecessary
There shall be no deposit necessary for any current customer in good standing merely because of a change of service address within the service area of City Corporation.

Helpful Hints on Finding a Leak
The most common water leak is the dripping faucet or toilet leak. To make a test, turn off all faucets and other water outlets. Find your water meter and keep watch on the leak detector (small red dial) and sweep hand on the face of the meter for ten to fifteen minutes. If the hand continues to move, then there is a leak. The size of the leak can be measured by timing the hand to see how long it takes to waste a given quantity. Dumping some laundry bluing into the tank of a toilet after it has filled and become quiet can make a quick check for a toilet leak. If the bluing appears in the bowl before flushing, a leak is present.

Permit Number: AR0021768
AFIN: 58-00105

AUTHORIZATION TO DISCHARGE WASTEWATER UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM AND THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.),

The applicant's mailing address is:

City Corporation - Russellville Water and Sewer System
P.O. Box 3186
Russellville, AR 72811

The facility address is:

City Corporation - Russellville Water and Sewer System
404 Jimmy Lile Road
Russellville, AR 72802

is authorized to discharge treated municipal wastewater from a facility located as follows: south of the city of Russellville, two miles south of Highway 64 in Pope County, Arkansas.

Latitude: 35° 14' 56"; Longitude: 93° 06' 58"

to receiving waters named:

Whig Creek thence to the Arkansas River in Segment 3F of the Arkansas River Basin.

The outfall is located at the following coordinates:

Outfall 001: Latitude: 35° 14' 50"; Longitude: 93° 06' 45"

Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. Per Part III.D.10, the permittee must re-apply on or before 180 days prior to expiration date for permit coverage past the expiration date.

Issue Date: September 30, 2010
Effective Date: October 1, 2010
Expiration Date: September 30, 2015

Steven L. Drown
Chief, Water Division
Arkansas Department of Environmental Quality

PART I
PERMIT REQUIREMENTS

SECTION A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal wastewater.

During the period beginning on the effective date and lasting 36 months after the effective date, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below from a treatment system consisting of three (3) aerated flow equalization basins, bar screens, grit removal, three (3) primary clarifiers, two (2) biotowers, one (1) intermediate clarifier, two (2) trickling rock filters, extended aeration activated sludge, two (2) final clarifiers, and two (2) chlorine contact basins with a design flow of 7.3 MGD.

Effluent Characteristics	**Discharge Limitations**			**Monitoring Requirements**	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	608.8	10.0	15.0	once/weekday	composite
(Nov-Apr)	913.2	15.0	22.5	once/weekday	composite
Total Suspended Solids (TSS)					
(May-Oct)	913.2	15.0	22.5	once/weekday	composite
(Nov-Apr)	1217.6	20.0	30.0	once/weekday	composite
Ammonia Nitrogen (NH3-N)					
(Apr-Oct)	133.9	2.2	5.6	once/weekday	composite
(Nov-March)	243.5	4.0	6.0	once/weekday	composite
Dissolved Oxygen (DO)	N/A	6.0, (Inst. Min.)		once/weekday	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	once/weekday	grab
Total Residual Chlorine (TRC)[1]	N/A	<0.1 mg/l (Inst. Max.)		once/weekday	grab
Total Phosphorus (TP)	Report	Report	Report	once/month	grab
Nitrates (NO3-N)	542.0	10.0	15.0	once/weekday	composite
Zinc, Total Recoverable[3]	5.2	85.5 µg/l	171.6 µg/l	once/month	composite
Copper, Total Recoverable[3]	0.45	9.2 µg/l	18.5 µg/l	once/month	composite
Mercury, Total Recoverable[3]	Report	Report µg/l	Report µg/l	once/month	composite
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday	grab
Chronic WET Testing[2]	N/A	Report		once/quarter	composite

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Pimephales promelas (Chronic)[2]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C		Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C		Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C		Report %		once/quarter	composite
Ceriodaphnia dubia (Chronic)[2]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B		Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B		Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B		Report %		once/quarter	composite

1 See Condition No. 11 of Part II. (TRC Condition)
2 See Condition No. 12 of Part II. (WET Testing Condition)
3 See Condition No. 10 of Part II. (Metals Condition)

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after final treatment at the effluent weir.

All and each unauthorized Sanitary Sewer Overflow (SSO) must be reported to ADEQ. See Condition No. 5 of Part II.

PART I
PERMIT REQUIREMENTS

SECTION B. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS: OUTFALL 001 - treated municipal wastewater.

During the period beginning 36 months after the effective date and lasting until the date of expiration, the permittee is authorized to discharge from Outfall 001. Such discharges shall be limited and monitored by the permittee as specified below from a treatment system consisting of three (3) aerated flow equalization basins, bar screens, grit removal, three (3) primary clarifiers, two (2) biotowers, one (1) intermediate clarifier, two (2) trickling rock filters, extended aeration activated sludge, two (2) final clarifiers, and two (2) chlorine contact basins with a design flow of 7.3 MGD.

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Maximum)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	608.8	10.0	15.0	once/weekday	composite
(Nov-Apr)	913.2	15.0	22.5	once/weekday	composite
Total Suspended Solids (TSS)					
(May-Oct)	913.2	15.0	22.5	once/weekday	composite
(Nov-Apr)	1217.6	20.0	30.0	once/weekday	composite
Ammonia Nitrogen (NH3-N)					
(Apr-Oct)	133.9	2.2	5.6	once/weekday	composite
(Nov-March)	243.5	4.0	6.0	once/weekday	composite
Dissolved Oxygen (DO)	N/A	6.0, (Inst. Min.)		once/weekday	grab
Fecal Coliform Bacteria (FCB)		(colonies/100ml)			
	N/A	1000	2000	once/weekday	grab
Total Residual Chlorine (TRC)[1]	N/A	<0.1 mg/l (Inst. Max.)		once/weekday	grab
Total Phosphorus (TP)	Report	Report	Report	once/month	grab
Nitrates (NO3-N)	542.0	10.0	15.0	once/weekday	composite
Zinc, Total Recoverable[3]	5.2	85.5 µg/l	171.6 µg/l	once/month	composite
Copper, Total Recoverable[3]	0.45	9.2 µg/l	18.5 µg/l	once/month	composite
Mercury, Total Recoverable[3]	0.00082	0.0134 µg/l	0.0269 µg/l	once/month	composite
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday	grab
Chronic WET Testing[2]	N/A	Report		once/quarter	composite

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Pimephales promelas (Chronic)[2]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C		Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C		Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C		Report %		once/quarter	composite
Ceriodaphnia dubia (Chronic)[2]		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B		Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B		Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B		Report %		once/quarter	composite

1 See Condition No. 11 of Part II. (TRC Condition)
2 See Condition No. 12 of Part II. (WET Testing Condition)
3 See Condition No. 10 of Part II. (Metals Condition)

There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen as defined in Part IV of this permit.

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. Samples shall be taken after final treatment at the effluent weir.

All and each unauthorized Sanitary Sewer Overflow (SSO) must be reported to ADEQ. See Condition No. 5 of Part II.

SECTION B. PERMIT COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Compliance is required on the effective date of the permit for all parameters except for Mercury. Final limits for Mercury become effective three (3) years after the effective date of the permit.

The permittee shall submit progress reports addressing the progress towards attaining the final effluent limits for Mercury according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	One (1) year after effective date
Progress Report	Two (2) years after effective date

The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment must be approved and construction approval granted prior to final installation.

PART II
OTHER CONDITIONS

1. The operator of this wastewater treatment facility shall be licensed as Class IV by the State of Arkansas in accordance with APCEC Regulation No. 3.

2. For publicly owned treatment works, the 30-day average percent removal for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR Part 133.102, as adopted by reference in APCEC Regulation No. 6.

3. In accordance with 40 CFR Parts 122.62 (a)(2) and 124.5, this permit may be reopened for modification or revocation and/or reissuance to require additional monitoring and/or effluent limitations when new information is received that actual or potential exceedance of State water quality criteria and/or narrative criteria are determined to be the result of the permittee's discharge(s) to a relevant water body or a Total Maximum Daily Load (TMDL) is established or revised for the water body that was not available at the time of the permit issuance that would have justified the application of different permit conditions at the time of permit issuance.

4. Other Specified Monitoring Requirements

   The permittee may use alternative appropriate monitoring methods and analytical instruments other than as specified in Part I Section A of the permit without a major permit modification under the following conditions:

   - The monitoring and analytical instruments are consistent with accepted scientific practices;
   - The requests shall be submitted in writing to the Permits Section of the Water Division of the ADEQ for use of the alternate method or instrument.
   - The method and/or instrument is in compliance with 40 CFR Part 136 or acceptable to the Director; and
   - All associated devices are installed, calibrated, and maintained to insure the accuracy of the measurements and are consistent with the accepted capability of that type of device. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Control/Quality Assurance program.

   Upon written approval of the alternative monitoring method and/or analytical instruments, these methods or instruments must be consistently utilized throughout the monitoring period. ADEQ must be notified in writing and the permittee must receive written approval from ADEQ if the permittee decides to return to the original permit monitoring requirements.

5. Sanitary Sewer Overflow (SSO):

   A. An overflow is any spill, release or diversion of sewage from a sanitary sewer collection system, including:

      1. An overflow that results in a discharge to waters of the state; and

      2. An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the state.

   B. Immediate Reporting

      All overflows shall be reported to the Enforcement Branch of the Water Division by telephone (501-682-0638), facsimile (501-682-0910), or by using the Department web site at waterenfsso@adeq.state.ar.us within 24 hours from the time the permittee becomes aware of the circumstance.

      At a minimum the report shall identify:

      1. The location(s) of overflow;
      2. The receiving water (If there is one);
      3. The duration of overflow;
      4. Cause of overflow; and
      5. The estimated volume of overflow (MG).

   C. Discharge Monitoring Reports (DMRs)

      The permittee shall report every month all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format with the minimum following information. The permittee may use the ADEQ Forms which may be obtained from the following web sites:
      http://www.adeq.state.ar.us/water/branch_permits/pdfs_forms/sso_tabular_report.pdf
      or http://www.adeq.state.ar.us/water/branch_enforcement/forms/sso_report.asp

      1. The location(s) of overflow;
      2. The receiving water (If there is one);
      3. The duration of overflow;
      4. Cause of overflow;
      5. The estimated volume of overflow (MG);
      6. A description of the sewer system component from which the release occurred (e.g., manhole, constructed overflow pipe, crack in pipe);
      7. The estimated date and time when the overflow began and stopped or will be stopped;
      8. The cause or suspected cause of the overflow;
      9. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;

10. If reasonably made, an estimate of the number of persons who came into contact with wastewater from the overflow; and
11. Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps.

6. Best Management Practices (BMPs) are activities, practices, maintenance procedures, and other management practices designed to prevent or reduce the pollution of waters of the State. BMPs also include treatment technologies, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw sewage. BMPs may include structural devices or nonstructural practices.

7. Biosolids practices.

   The biosolids produced at the treatment plant is aerobically digested and land applied on permitted sites.

8. Approval to land apply biosolids under this permit is limited to a maximum of one (1) year after this permit's effective date. A separate permit must be obtained within this time period or land application of biosolids must cease. Reporting requirements of this permit continue for the term of this permit unless they are superseded by similar conditions in one or more separate land application permits.

9. Biosolids Land Application Conditions

   A. The waste disposal system shall be operated in accordance with the Waste Management Plan (WMP) approved by the Department.

   B. Plant Available Nitrogen (PAN) shall not be applied at a rate exceeding the annual nitrogen uptake of the crop or allowed to exceed the site specific rate approved by the Department. The PAN shall be calculated using the following equations:

   Surface applied waste: $PAN = 0.3(TKN - NH_3) + 0.5NH_3 + NO_3 + NO_2$
   Incorporated waste: $PAN = 0.3(TKN - NH_3) + NH_3 + NO_3 + NO_2$

   C. Land application sites are as follows:

Name	Field ID	Section	Township	Range	Acreage	Latitude	Longitude
City Corp	1	22	7 North	20 West	49	35° 14' 36" N	93° 6' 39" W
Baker	2	21	7 North	20 West	67.5	35° 14' 35" N	93° 7' 25" W
Old Pope County Landfill	3	21	7 North	20 West	76	35° 14' 44" N	93° 7' 40" W

   D. The biosolids generator must issue a signed certification stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met. The State requirements on Pathogen Reduction, Vector Attraction Reduction, and

Pollutant Concentration Limits are the same as those listed in 40 CFR Part 503. All the above information must be made available to the land-applicator before the biosolids materials are delivered. Concurrently, a signed copy of each certification must be also submitted to the ADEQ Water Division.

E. Biosolids can only be stored in accordance with the permit and the approved waste management plan, if provisions are made in the plan for that purpose. The utilization of improvised field storage sites or any other site not approved by the Department is prohibited.

F. Transportation of the biosolids must be such that will prevent the attraction, harborage or breeding of insects or rodents. It must not produce conditions harmful to public health, the environment, odors, unsightliness, nuisances, or safety hazards.

G. The containers used for the transportation of the biosolids must be of the closed type. Transportation equipment must be leak-proof and kept in sanitary condition at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances.

H. The permittee shall be responsible for assuring that the landowner, and the waste applicator (if different from the permittee) abide by the conditions of this permit.

I. Waste shall be land applied by subsoil injection to a depth of 6 - 8 inches or surface applied. Surface applied waste must be evenly distributed over the entire application area.

J. Waste shall not be applied to slopes with a gradient greater than 12%; or to soils that are saturated, frozen or covered with snow, and during rain or when precipitation is imminent, meaning a substantial natural occurrence of precipitation that could cause significant damage to property or threaten human life in the near future.

K. Disposal of waste in a flood plain shall not restrict the flow of the base flood, reduce the temporary storage capacity of the flood plain, or result in a washout of solid waste, so as to pose a hazard to human life, wildlife or land and water uses.

L. Waste shall not be spread within; 50 feet of property lines and rock outcrops; 100 feet of lakes, ponds, springs, wetlands, streams, and sinkholes; 200 feet of drinking water wells; 300 feet of occupied buildings or bodies of water classified as an "extraordinary resource body of water."

M. The soil pH of the sludge application sites must be adjusted with lime in accordance with the University of Arkansas Cooperative Extension Service. Representative soil samples must be taken in accordance with Condition Number 14. If the resulting pH is 5.7 or lower, lime must be applied in accordance with the soil test recommendations. Soil pH is to be monitored in an annual basis and adjusted, if necessary, to the above requirements.

N. The permittee is responsible for the biosolids analyses, soil analyses, and reporting schedule in accordance with the requirements in the following tables.

TABLE I

Waste Analysis, Reporting, and Record Keeping

Parameter	Ceiling Concentrations (mg/kg)	Cumulative Pollutant Loading Rate (lb/ac)	Monitoring Frequency	Reporting
Arsenic	75	37	Quarterly	Annually by May 1
Cadmium	85	35	Quarterly	Annually by May 1
Copper	4300	1350	Quarterly	Annually by May 1
Lead	840	270	Quarterly	Annually by May 1
Mercury	57	15	Quarterly	Annually by May 1
Molybdenum	75	Report	Quarterly	Annually by May 1
Nickel	420	378	Quarterly	Annually by May 1
Selenium	100	90	Quarterly	Annually by May 1
Zinc	7500	2520	Quarterly	Annually by May 1
Chromium	Report	Report	Quarterly	Annually by May 1
Polychlorinated Biphenyls (PCB's)	50	N/A	Quarterly	Annually by May 1

TABLE II

Waste Analysis, Reporting, and Record Keeping

Parameter	Maximum Limit	Reporting Units	Monitoring Frequency	Reporting
Total Solids	Report	Percentage (%)	Quarterly	Annually by May 1
Nitrate Nitrogen	Report	mg/kg	Quarterly	Annually by May 1
Nitrite Nitrogen	Report	mg/kg	Quarterly	Annually by May 1
Ammonia Nitrogen	Report	mg/kg	Quarterly	Annually by May 1
Total Kjeldahl Nitrogen	Report	mg/kg	Quarterly	Annually by May 1
Total Phosphorus	Report	mg/kg	Quarterly	Annually by May 1
Total Potassium	Report	mg/kg	Quarterly	Annually by May 1
Total Volume Applied	Report	Gallons	Each land application event	Annually by May 1
Application Rate	Nitrogen Uptake of Cover Crop	lb/ac	Prior to land application	Maintain for records

TABLE III			
Soils			
Parameter	**Reporting Units**	**Monitoring Frequency**	**Reporting**
Conductivity	µmhos/cm	Prior to application	Annually by May 1
Cation Exchange Capacity	meq/100g	Prior to application	Annually by May 1
Nitrate-Nitrogen	mg/kg	Prior to application	Annually by May 1
Phosphorus	mg/kg	Prior to application	Annually by May 1
pH	S.U.	Prior to application	Annually by May 1
Potassium	mg/kg	Prior to application	Annually by May 1
Magnesium	mg/kg	Prior to application	Annually by May 1
Arsenic	mg/kg	Annually	By May 1 of the reporting year
Cadmium	mg/kg	Annually	By May 1 of the reporting year
Chromium	mg/kg	Annually	By May 1 of the reporting year
Copper	mg/kg	Annually	By May 1 of the reporting year
Lead	mg/kg	Annually	By May 1 of the reporting year
Mercury	mg/kg	Annually	By May 1 of the reporting year
Molybdenum	mg/kg	Annually	By May 1 of the reporting year
Nickel	mg/kg	Annually	By May 1 of the reporting year
Selenium	mg/kg	Annually	By May 1 of the reporting year
Zinc	mg/kg	Annually	By May 1 of the reporting year

O. Annual reports must be sent to the Department and to the owner of the land receiving biosolids prior to May 1, which must include the following:

The biosolids and soil analyses conducted under Condition No. 9.N. above (including a statement that the analyses were performed in accordance with EPA Document SW-846, "Test Methods for Evaluation of Solid Wastes" or other approved procedures by the Department), application dates, and locations, quantities of biosolids applied in dry tons per acre per year and in gallons per acre per year, methods of disposal, amounts of nutrients applied, total elements added (in that particular year) in lbs per acre, total elements applied to date, and copies of soil analyses.

P. The Permittee shall maintain complete copies of all the reports including the waste and soil analysis as listed in Condition No. 9.O. above for Department personnel review. In addition, the permittee must keep the land application log that includes records of waste source, waste type, field name or number (locations), application date, volumes of waste applied (in dry tons/acre-year or gallons/acre-year of waste), methods of disposal, identity of hauler, and type of crop grown for Department personnel review.

Q. The permittee must also maintain copies of the above records for Department personnel review at the biosolids generating facility for a period of three (3) years.

10. The permittee may use any EPA approved method based on 40 CFR Part 136 provided the MQL for the chosen method is equal to or less than what has been specified in chart below:

Pollutant	MQL (µg/l)
Copper, Total Recoverable	0.5
Zinc, Total Recoverable	20
Mercury, Total Recoverable	0.005

The permittee may develop a matrix specific method detection limit (MDL) in accordance with Appendix B of 40 CFR Part 136. For any pollutant for which the permittee determines a site specific MDL, the permittee shall send to ADEQ, NPDES Permits Branch, a report containing QA/QC documentation, analytical results, and calculations necessary to demonstrate that a site specific MDL was correctly calculated. A site specific minimum quantification level (MQL) shall be determined in accordance with the following calculation:

MQL = 3.3 X MDL

Upon written approval by Permits Branch, the site specific MQL may be utilized by the permittee for all future Discharge Monitoring Report (DMR) calculations and reporting requirements.

11. Prior to final disposal, the effluent shall contain NO MEASURABLE TRC at any time. NO MEASURABLE will be defined as no detectable concentration of TRC as determined

by any approved method established in 40 CFR Part 136 as less than 0.1 mg/l. Thus, the "no measurable TRC concentration" for chlorine becomes the permit limit. The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.

12. WHOLE EFFLUENT TOXICITY TESTING (7-DAY CHRONIC NOEC FRESHWATER)

1. SCOPE AND METHODOLOGY

a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section.

APPLICABLE TO FINAL OUTFALL(S):	001
REPORTED ON DMR AS FINAL OUTFALL:	001
CRITICAL DILUTION (%):	100%
EFFLUENT DILUTION SERIES (%):	32%, 42%, 56%, 75%, 100%
TESTING FREQUENCY	Once/quarter
COMPOSITE SAMPLE TYPE:	Defined at PART I
TEST SPECIES/METHODS:	40 CFR Part 136

Ceriodaphnia dubia chronic static renewal survival and reproduction test, Method 1002.0, EPA-821-R-02-013, or the most recent update thereof. This test should be terminated when 60% of the surviving females in the control produce three broods or at the end of eight days, whichever comes first.

Pimephales promelas (Fathead minnow) chronic static renewal 7-day larval survival and growth test, Method 1000.0, EPA-821-R-02-013, or the most recent update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

b. The NOEC (No Observed Effect Concentration) is herein defined as the greatest effluent dilution at and below which toxicity (lethal or sub-lethal) that is statistically different from the control (0% effluent) at the 95% confidence level does not occur. Chronic lethal test failure is defined as a demonstration of a statistically significant lethal effect at test completion to a test species at or below the critical dilution. Chronic sub-lethal test failure is defined as a demonstration of a statistically significant sub-lethal

effect (i.e., growth or reproduction) at test completion to a test species at or below the critical dilution.

c. This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

2. PERSISTENT LETHAL and/or SUB-LETHAL EFFECTS

The requirements of this subsection apply only when a toxicity test demonstrates significant lethal and/or sub-lethal effects at or below the critical dilution. The purpose of additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result.

If a frequency reduction, as specified in Item 6, has been granted and any subsequent valid test demonstrates significant lethal or sub-lethal effects to a test species at or below the critical dilution, the frequency of testing for that species is automatically increased to once per quarter for the life of the permit. In addition:

a. Part I Testing Frequency Other Than Monthly

i. The permittee shall conduct a total of three (3) additional tests for any species that demonstrates significant toxic effects at or below the critical dilution. The additional tests shall be conducted monthly during the next three consecutive months. If testing on a quarterly basis, the permittee may substitute one of the additional tests in lieu of one routine toxicity test. A full report shall be prepared for each test required by this section in accordance with procedures outlined in Item 4 of this section and submitted with the period discharge monitoring report (DMR) to the permitting authority for review.

ii. IF LETHAL EFFECTS HAVE BEEN DEMONSTRATED If any of the additional tests demonstrates significant lethal effects at or below the critical dilution, the permittee shall initiate Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the TRE initiation date will be the test completion date of the first failed retest. A TRE may also be required due to a demonstration of-intermittent lethal effects at or below the critical dilution, or for failure to perform the required retests. A TRE required based on lethal effects should consider any sub-lethal effects as well.

iii. IF SUB-LETHAL EFFECTS ONLY HAVE BEEN DEMONSTRATED If any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower, the permittee shall initiate the Sub-Lethal Toxicity Reduction Evaluation (TRE_{SL}) requirements as specified in Item 5 of this section. The permittee shall notify ADEQ in writing within 5 days of the failure of any retest, and the Sub-Lethal Effects TRE initiation date will be the test completion date of the first failed retest. A TRE may be also be required for failure to perform the required retests.

iv. The provisions of Item 2.a.i. are suspended upon submittal of the TRE Action Plan.

b. Part I Testing Frequency of Monthly

The permittee shall initiate the Toxicity Reduction Evaluation (TRE) requirements as specified in Item 5 of this section when any two of three consecutive monthly toxicity tests exhibit significant toxic effects at or below the critical dilution. A TRE may also be required due to a demonstration of intermittent lethal and/or sub-lethal effects at or below the critical dilution, or for failure to perform the required retests.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

i. The toxicity test control (0% effluent) must have survival equal to or greater than 80%.

ii. The mean number of Ceriodaphnia dubia neonates produced per surviving female in the control (0% effluent) must be 15 or more.

iii. 60% of the surviving control females must produce three broods. The mean dry weight of surviving Fathead minnow larvae at the end of the 7 days in the control (0% effluent) must be 0.25 mg per larva or greater.

iv. The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for: the young of surviving

females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

v. The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethal or sub-lethal effects are exhibited for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test.

vi. If a test passes, yet the percent coefficient of variation between replicates is greater than 40% in the control (0% effluent) and/or in the critical dilution for: the young of surviving females in the Ceriodaphnia dubia reproduction test; the growth and survival endpoints of the Fathead minnow test, the test is determined to be invalid. A repeat test shall be conducted within the required reporting period of any test determined to be invalid.

vii. If a test fails, test failure may not be construed or reported as invalid due to a coefficient of variation value of greater than 40%.

viii. A Percent Minimum Significant Difference (PMSD) range of 13 - 47 for Ceriodaphnia dubia reproduction;

ix. A PMSD range of 12 - 30 for Fathead minnow growth.

b. Statistical Interpretation

i. For the Ceriodaphnia dubia survival test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be Fisher's Exact Test as described in EPA/821/R-02-013 or the most recent update thereof.

ii. For the Ceriodaphnia dubia reproduction test and the Fathead minnow larval survival and growth test, the statistical analyses used to determine if there is a significant difference between the control and the critical dilution shall be in accordance with the methods for determining the No Observed Effect Concentration (NOEC) as described in EPA/821/R-02-013 or the most recent update thereof.

iii. If the conditions of Test Acceptability are met in Item 3.a above and the percent survival of the test organism is equal to or greater than 80% in the critical dilution concentration and all lower dilution concentrations, the test shall be considered to be a passing test, and the permittee shall report a survival NOEC of not less

than the critical dilution for the DMR reporting requirements found in Item 4 below.

c. Dilution Water

i. Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness, and alkalinity to the closest downstream perennial water for;

(A) toxicity tests conducted on effluent discharges to receiving water classified as intermittent streams; and

(B) toxicity tests conducted on effluent discharges where no receiving water is available due to zero flow conditions.

ii. If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

(A) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a was run concurrently with the receiving water control;

(B) the test indicating receiving water toxicity has been carried out to completion (i.e., 7 days);

(C) the permittee includes all test results indicating receiving water toxicity with the full report and information required by Item 4 below; and

(D) the synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

i. The permittee shall collect a minimum of three flow-weighted composite samples from the outfall(s) listed at Item 1.a above. Unless otherwise stated in this section, a composite sample for

WET shall consist of a minimum of 12 subsamples gathered at equal time intervals during a 24-hour period.

ii. The permittee shall collect second and third composite samples for use during 24-hour renewals of each dilution concentration for each test. The permittee must collect the composite samples such that the effluent samples, on use, are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on a regular or intermittent basis.

iii. The permittee must collect all three flow-weighted composite samples within the monitoring period. Second and/or third composite samples shall not be collected into the next monitoring period; such tests will be determined to be invalid. Monitoring period definitions are listed in Part IV.

iv. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 6 degrees Centigrade during collection, shipping, and/or storage.

v. If the flow from the outfall(s) being tested ceases during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum number of effluent portions and the sample holding time are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume during the period of discharge that is sufficient to complete the required toxicity tests with daily renewal of effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report required in Item 4 of this section.

vi. MULTIPLE OUTFALLS: If the provisions of this section are applicable to multiple outfalls, the permittee shall combine the composite effluent samples in proportion to the average flow from the outfalls listed in item 1.a. above for the day the sample was collected. The permittee shall perform the toxicity test on the flow-weighted composite of the outfall samples.

vii. If chlorination is part of the treatment process, the permittee shall not allow the sample to be dechlorinated at the laboratory. At the

time of sample collection the permittee shall measure the TRC of the effluent. The measured concentration of TRC for each sample shall be included in the lab report submitted by the permittee.

4. REPORTING

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA/821/R-02-013, or the most current publication, for every valid or invalid toxicity test initiated whether carried to completion or not. The permittee shall retain each full report pursuant to the provisions of PART III.C.7 of this permit. The permittee shall submit full reports. For any test which fails, is considered invalid or which is terminated early for any reason, the full report must be submitted for agency review.

b. A valid test for each species must be reported on the DMR during each reporting period specified in PART I of this permit unless the permittee is performing a TRE which may increase the frequency of testing and reporting. Only ONE set of WET test data for each species is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sub-lethal effects results for each species during the reporting period. The full reports for all invalid tests, repeat tests (for invalid tests), and retests (for tests previously failed) performed during the reporting period must be attached to the DMR for Agency review.

c. The permittee shall submit the results of each valid toxicity test on the subsequent monthly DMR for that reporting period in accordance with PART III.D.4 of this permit, as follows below. Submit retest information clearly marked as such with the following month's DMR. Only results of valid tests are to be reported on the DMR.

i. Pimephales promelas (Fathead minnow)

(A) If the No Observed Effect Concentration (NOEC) for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TLP6C

(B) Report the NOEC value for survival, Parameter No. TOP6C

(C) Report the NOEC value for growth, Parameter No. TPP6C

(D) If the NOEC for growth is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP6C

(E) Report the highest (critical dilution or control) Coefficient of Variation for growth, Parameter No. TQP6C

ii. Ceriodaphnia dubia

(A) If the NOEC for survival is less than the critical dilution, enter a '1'; otherwise, enter a '0'C for Parameter No. TLP3B

(B) Report the NOEC value for survival, Parameter No. TOP3B

(C) Report the NOEC value for reproduction, Parameter No. TPP3B

(D) If the NOEC for reproduction is less than the critical dilution, enter a '1'; otherwise, enter a '0' for Parameter No. TGP3B

(E) Report the higher (critical dilution or control) Coefficient of Variation for reproduction, Parameter No. TQP3B

5. TOXICITY REDUCTION EVALUATIONS (TREs)

TREs for lethal and sub-lethal effects are performed in a very similar manner. EPA Region 6 is currently addressing TREs as follows: a sub-lethal TRE (TRE_{SL}) is triggered based on three sub-lethal test failures while a lethal effects TRE (TRE_L) is triggered based on only two test failures for lethality. In addition, EPA Region 6 will consider the magnitude of toxicity and use flexibility when considering a TRE_{SL} where there are no effects at effluent dilutions of less than 76% effluent.

a. Within ninety (90) days of confirming persistent toxicity, the permittee shall submit a Toxicity Reduction Evaluation (TRE) Action Plan and Schedule for conducting a TRE. The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The goal of the TRE is to maximally reduce the toxic effects of effluent at the critical dilution and includes the following:

i. Specific Activities. The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures the permittee shall perform multiple characterizations and follow the procedures specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures' (EPA-600/6-91/003) and 'Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I' (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents 'Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity'C (EPA/600/R-92/080) and 'Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity' (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at (703) 487-4650, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

ii. Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified;

Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise the permittee may substitute a composite sample,

comprised of equal portions of the individual composite samples, for the chemical specific analysis;

iii. Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.); and

iv. Project Organization (e.g., project staff, project manager, consulting services, etc.).

b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

c. The permittee shall submit a quarterly TRE Activities Report, with the Discharge Monitoring Report in the months of January, April, July and October, containing information on toxicity reduction evaluation activities including:

i. any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

ii. any studies/evaluations and results on the treatability of the facility's effluent toxicity; and

iii. any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at the critical dilution.

iv. A copy of the TRE Activities Report shall also be submitted to the state agency.

d. The permittee shall submit a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming toxicity in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to no significant toxicity at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.

A copy of the Final Report on Toxicity Reduction Evaluation Activities shall also be submitted to the state agency.

e. Quarterly testing during the TRE is a minimum monitoring requirement. EPA recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional screening tests be performed to capture toxic samples for identification of

toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity limits per federal regulations at 40 CFR 122.44(d)(1)(v).

6. MONITORING FREQUENCY REDUCTION

a. The permittee may apply for a testing frequency reduction upon the successful completion of the first four consecutive quarters or first twelve consecutive months (in accordance with Item 1.a.) of testing for one or both test species, with no lethal or sub-lethal effects demonstrated at or below the critical dilution. If granted, the monitoring frequency for that test species may be reduced to not less than once per year for the less sensitive species (usually the Fathead minnow) and not less than twice per year for the more sensitive test species (usually the Ceriodaphnia dubia).

b. CERTIFICATION - The permittee must certify in writing that no test failures have occurred and that all tests meet all test acceptability criteria in item 3.a. above. In addition the permittee must provide a list with each test performed including test initiation date, species, NOECs for lethal and sub-lethal effects and the maximum coefficient of variation for the controls. Upon review and acceptance of this information the agency will issue a letter of confirmation of the monitoring frequency reduction. A copy of the letter will be forwarded to the agency's Permit Compliance System section to update the permit reporting requirements.

c. SUB-LETHAL OR SURVIVAL FAILURES - If any test fails the survival or sub-lethal endpoint at any time during the life of this permit, three monthly retests are required and the monitoring frequency for the affected test species shall be increased to once per quarter until the permit is re-issued. Monthly retesting is not required if the permittee is performing a TRE.

Any monitoring frequency reduction granted applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to once per quarter until the permit is re-issued.

13. CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

A. The permittee shall operate an industrial pretreatment program in accordance with Section 402(b)(8) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved POTW pretreatment program submitted by the permittee. The pretreatment program was approved on January 13, 1984 and modified on March 10, 1992. The Sewer Use Ordinance and the Pretreatment Program have not been modified to come into compliance with the current 40 CFR 403 regulations. The permittee shall submit all necessary proposed modifications to ADEQ. The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

(1) Industrial user information shall be updated at a frequency adequate to ensure that all IUs are properly characterized at all times;

(2) The frequency and nature of industrial user compliance monitoring activities by the permittee shall be commensurate with the character, consistency and volume of waste. The permittee must inspect and sample the effluent from each Significant Industrial User in accordance with 40 CFR 403.8(f)(2)(v). This is in addition to any industrial self-monitoring activities;

(3) The permittee shall enforce and obtain remedies for noncompliance by any industrial users with applicable pretreatment standards and requirements;

(4) The permittee shall control through permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users identified as significant under 40 CFR 403.3 (v), this control shall be achieved through individual or general control mechanisms, in accordance with 40 CFR 403.8(f)(1)(iii). Both individual and general control mechanisms must be enforceable and contain, at a minimum, the following conditions:

1. Statement of duration (in no case more than five years);

2. Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;

3. Effluent limits, including Best Management Practices, based on applicable general Pretreatment Standards, categorical Pretreatment Standards, local limits, and State and local law;

4. Self-monitoring, sampling, reporting, notification and recordkeeping requirements, including an identification of the pollutants to be monitored (including the process for seeking a waiver for a pollutant neither present nor expected to be present in the Discharge in accordance with § 403.12(e)(2), or a

specific waiver for a pollutant in the case of an individual control mechanism), sampling location, sampling frequency, and sample type, based on the applicable general Pretreatment Standards in 40 CFR 403, categorical Pretreatment Standards, local limits, and State and local law;

5. Statement of applicable civil and criminal penalties for violation of Pretreatment Standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and

6. Requirements to control slug discharges, if determined by the POTW to be necessary.

(5) The permittee shall evaluate, whether each Significant Industrial User needs a plan or other action to control slug discharges, in accordance with 40 CFR 403.8(f)(2)(vi);

(6) The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and

(7) The approved program shall not be modified by the permittee without the prior approval of ADEQ.

B. The permittee shall establish and enforce specific limits to implement the provisions of 40 CFR Parts 403.5(a) and (b), as required by 40 CFR Part 403.5(c). POTWs may develop Best Management Practices (BMPs) to implement paragraphs 40 CFR 403.5 (c)(1) and (c)(2). Such BMPs shall be considered local limits and Pretreatment Standards. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits.

The permittee shall submit, within sixty (60) days of the effective date of this permit, (1) a **WRITTEN CERTIFICATION** that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination, **OR** (2) a **WRITTEN NOTIFICATION** that a technical evaluation revising the current TBLL and a draft sewer use ordinance which incorporates such revisions will be submitted within 12 months of the effective date of this permit.

All specific prohibitions or limits developed under this requirement are deemed to be conditions of this permit. The specific prohibitions set out in 40 CFR Part 403.5(b) shall be enforced by the permittee unless modified under this provision.

C. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table II at least once/year and the toxic pollutants in Table III at least 4 times/year in each quarter (Jan-Mar, Apr-Jun, Jul-Sep & Oct-Dec).. If, based upon information available to the permittee, there is reason to suspect the presence of any toxic

or hazardous pollutant listed in Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least 4 times/year in each quarter on both the influent and the effluent.

The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR 136. Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least 4 grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

D. The permittee shall prepare annually a list of Industrial Users which during the preceding twelve months were in significant noncompliance with applicable pretreatment requirements. For the purposes of this Part, significant noncompliance shall be determined based upon the more stringent of either criteria established at 40 CFR Part 403.8(f)(2)(viii) [rev. 10/14/05] or criteria established in the approved POTW pretreatment program. This list is to be published annually in the newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW during the month of February.

In addition, during the month of February the permittee shall submit an updated pretreatment program status report to the ADEQ containing the following information:

(1) An updated list of all significant industrial users and identify which Industrial Users are Non-Significant Categorical Industrial Users (NSCIUs) or Middle Tier CIUs. The list must also identify:

(a) Industrial Users subject to categorical Pretreatment Standards that are subject to reduced monitoring and reporting requirements under 40 CFR 403.12(e)(2) & (3),

(b) Industrial Users subject to the following categorical Pretreatment Standards [Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) (40 CFR Part 414), Petroleum Refining (40 CFR Part 419), and Pesticide Chemicals (40 CFR Part 455)] and for which the Control Authority has chosen to use the concentration-based standards rather than converting them to flow-based mass standards as allowed at 40 CFR 403.6(c)(6).

(c) Categorical Industrial Users subject to concentration-based standards for which the Control Authority has chosen to convert the concentration-based standards to equivalent mass limits, as allowed at 40 CFR 403.6(c)(5).

(d) General Control Mechanisms used for similar groups of SIUs along with the substantially similar types of operations and the types of wastes that are the same,

for each separate General Control Mechanism, as allowed at 40 CFR 403.8(f)(1)(iii).

(e) Best Management Practices or Pollution Prevention alternatives required by a categorical Pretreatment Standard or as a local limit requirement that are implemented and documentation to demonstrate compliance, as required at 40 CFR 403 (b), (e) and (h).

(2) For each industrial user listed the following information shall be included:

(a) Standard Industrial Classification (SIC) and NAICS code and categorical determination;

(b) Control document status. Whether the user has an effective control document, and the date such document was last issued, reissued, or modified, (indicate which industrial users were added to the system (or newly identified) within the previous 12 months);

(c) A summary of all monitoring activities performed within the previous 12 months. The following information shall be reported:

* total number of inspections performed;
* total number of sampling visits made;

(d) Status of compliance with both effluent limitations and reporting requirements. Compliance status shall be defined as follows:

* Compliant (C) - no violations during the previous 12 month period;
* Non-compliant (NC) - one or more violations during the previous 12 months but does not meet the criteria for significantly noncompliant industrial users;
* Significant Noncompliance (SNC) - in accordance with requirements described in d. above; and

(e) For significantly noncompliant industrial users, indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If ANY industrial user was on a schedule to attain compliance with effluent limits, indicate the date the schedule was issued and the date compliance is to be attained;

(3) A list of all significant industrial users whose authorization to discharge was terminated or revoked during the preceding 12 month period and the reason for termination;

(4) A report on any interference, pass through, upset or POTW permit violations known or suspected to be caused by industrial contributors and actions taken by the permittee

in response;

(5) The results of all influent and effluent analyses performed pursuant to paragraph (c) above;

(6) A copy of the newspaper publication of the significantly noncompliant industrial users giving the name of the newspaper and the date published;

(7) The information requested may be submitted in tabular form as per the example tables provided for your convenience (See Attachment A, B and C); and

(8) The monthly average water quality based effluent concentration necessary to meet the state water quality standards as developed in the approved technically based local limits.

E. The permittee shall provide adequate notice of the following:

(1) Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Act if it were directly discharging those pollutants; and

(2) Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

Adequate notice shall include information on (i) the quality and quantity of effluent to be introduced into the treatment works, and (ii) any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

PART III
STANDARD CONDITIONS

SECTION A – GENERAL CONDITIONS

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Water Act and the Arkansas Water and Air Pollution Control Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; and/or for denial of a permit renewal application. **Any values reported in the required Discharge Monitoring Report (DMR) which are in excess of an effluent limitation specified in Part I shall constitute evidence of violation of such effluent limitation and of this permit.**

2. Penalties for Violations of Permit Conditions

The Arkansas Water and Air Pollution Control Act provides that any person who violates any provisions of a permit issued under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year, or a fine of not more than twenty-five thousand dollars ($25,000) or by both such fine and imprisonment for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars ($10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

3. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

A. Violation of any terms or conditions of this permit; or
B. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
C. A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
D. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination.
E. Failure of the permittee to comply with the provisions of APCEC Regulation No. 9 (Permit fees) as required by Part III.A.10. herein.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

4. Toxic Pollutants

Notwithstanding Part III.A.3., if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under APCEC Regulation No. 2, as amended, or Section 307(a) of the Clean Water Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitations on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standards or prohibition and the permittee so notified.

The permittee shall comply with effluent standards, narrative criteria, or prohibitions established under APCEC Regulation No. 2, as amended, or Section 307 (a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Civil and Criminal Liability

Except as provided in permit conditions on "Bypassing" (Part III.B.4.a.), and "Upsets" (Part III.B.5.b), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state and federal statues or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

8. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

9. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Applicable Federal, State or Local Requirements

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal such as endangered species, state or local statute, ordinance or regulation.

11. Permit Fees

The permittee shall comply with all applicable permit fee requirements for wastewater discharge permits as described in APCEC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to terminate this permit under the provisions of 40 CFR Parts 122.64 and 124.5 (d), as adopted in APCEC Regulation No. 6 and the provisions of APCEC Regulation No. 8.

SECTION B – OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

A. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate operating staff which is duly qualified to carryout operation, maintenance, and testing functions required to insure compliance with the conditions of this permit.

2. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production or discharges or both until the facility is restored or an alternative method of

treatment is provided. This requirement applies, for example, when the primary source of power for the treatment facility is reduced, is lost, or alternate power supply fails.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment or the water receiving the discharge.

4. Bypass of Treatment Facilities

A. Bypass not exceeding limitation

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts III.B.4.b. and 4.c.

B. Notice

1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part III.D.6. (24-hour notice).

C. Prohibition of bypass

1. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless:

   (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
   (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if the permittee could have installed adequate backup equipment to prevent a bypass which occurred during normal or preventive maintenance; and
   (c) The permittee submitted notices as required by Part III.B.4.b.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part III.B.4.c.(1).

5. Upset Conditions

A. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part III.B.5.b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

B. Conditions necessary for demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   1. An upset occurred and that the permittee can identify the specific cause(s) of the upset;
   2. The permitted facility was at the time being properly operated.
   3. The permittee submitted notice of the upset as required by Part III.D.6.; and
   4. The permittee complied with any remedial measures required by Part III.B.3.

C. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

6. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State. Written approval must be obtained from the ADEQ prior to removal of substances. Additionally, the permittee shall give at least 120 days prior notice to the Director of any change planned in the permittee's sludge disposal practice or land use applications, including types of crops grown (if applicable). Produced sludge shall be disposed of by land application only when meeting the following criteria:

A. Sewage sludge from treatment works treating domestic sewage (TWTDS) must meet the applicable provisions of 40 CFR Part 503; and
B. The sewage sludge has not been classified as a hazardous waste under state or federal regulations.

7. Power Failure

The permittee is responsible for maintaining adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failure either by means of alternate power sources, standby generators, or retention of inadequately treated effluent.

SECTION C – MONITORING AND RECORDS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge during the entire monitoring period. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Director. Intermittent discharges shall be monitored.

2. Flow Measurement

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to insure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than +/- 10% from true discharge rates throughout the range of expected discharge volumes and shall be installed at the monitoring point of the discharge.

Calculated Flow Measurement

For calculated flow measurements that are performed in accordance with either the permit requirements or a Department approved method (i.e., as allowed under Part II.4), the +/- 10% accuracy requirement described above is waived. This waiver is only applicable when the method used for calculation of the flow has been reviewed and approved by the Department.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals frequent enough to insure accuracy of measurements and shall insure that both calibration and maintenance activities will be conducted. An adequate analytical quality control program, including the analysis of sufficient standards, spikes, and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory. At a minimum, spikes and duplicate samples are to be analyzed on 10% of the samples.

4. Penalties for Tampering

The Arkansas Water and Air Pollution Control Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

5. Reporting of Monitoring Results

Monitoring results must be reported on a Discharge Monitoring Report (DMR) form provided by the Department or other form/method approved in writing by the Department (e.g., electronic submittal of DMR once approved). Monitoring results obtained during the previous monitoring period shall be summarized and reported on a DMR form postmarked no later than the 25th day of the month or submitted electronically by 6:00 p.m. of the 25th (after NETDMR is approved), following the completed reporting period beginning on the effective date of the permit. When mailing the DMRs, duplicate copies of the forms signed and certified as required by Part III.D.11 and all other reports required by Part III.D, shall be submitted to the Director at the following address:

Enforcement Branch
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

If permittee uses outside laboratory facilities for sampling and/or analysis, the name and address of the contract laboratory shall be included on the DMR.

6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated on the DMR.

7. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

8. Record Contents

Records and monitoring information shall include:

A. The date, exact place, time and methods of sampling or measurements, and preservatives used, if any;
B. The individuals(s) who performed the sampling or measurements;
C. The date(s) and time analyses were performed;
D. The individual(s) who performed the analyses;
E. The analytical techniques or methods used; and
F. The measurements and results of such analyses.

9. Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION D – REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give notice within 180 days and provide plans and specification (if applicable) to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility. In no case are any new connections, increased flows, removal of substances, or significant changes in influent quality permitted that cause violation of the effluent limitations specified herein.

2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3. Transfers

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4. Monitoring Reports

Monitoring results shall be reported at the intervals and in the form specified in Part III.C.5. **Discharge Monitoring Reports must be submitted even when no discharge occurs during the reporting period.**

5. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

6. Twenty-four Hour Report

A. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain the following information:
   1. a description of the noncompliance and its cause;
   2. the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and
   3. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

B. The following shall be included as information which must be reported within 24 hours:
   1. Any unanticipated bypass which exceeds any effluent limitation in the permit;
   2. Any upset which exceeds any effluent limitation in the permit and
   3. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in Part I of the permit to be reported within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

C. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours to the Enforcement Section of the Water Division of the ADEQ.

7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Parts III.D.4., 5., and 6., at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.D.6.

8. Changes in Discharge of Toxic Substances for Industrial Dischargers

The permittee shall notify the Director as soon as he/she knows or has reason to believe:

A. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(1); or

B. That any activity has occurred or will occur which would result in any discharge on a non-routine or infrequent basis of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" described in 40 CFR Part 122.42(a)(2).

9. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

10. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated in APCEC Regulation No. 6.

11. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified as follows:

A. All **permit applications** shall be signed as follows:

1. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
   (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
   (b) The manager of one or more manufacturing, production, or operation facilities, provided: the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating

and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or
3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
   (a) The chief executive officer of the agency, or
   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All **reports** required by the permit and **other information** requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   1. The authorization is made in writing by a person described above.
   2. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
   3. The written authorization is submitted to the Director.

C. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2 and APCEC Regulation No. 6, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

13. Penalties for Falsification of Reports

The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties specified in Part III.A.2. and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

14. Applicable Federal, State or Local Requirements

Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable federal, state, or local statute, ordinance, policy, or regulation.

PART IV
DEFINITIONS

All definitions contained in Section 502 of the Clean Water Act and 40 CFR 122.2 shall apply to this permit and are incorporated herein by reference. Additional definitions of words or phrases used in this permit are as follows:

1. **"Act"** means the Clean Water Act, Public Law 95-217 (33.U.S.C. 1251 et seq.) as amended.
2. **"Administrator"** means the Administrator of the U.S. Environmental Protection Agency.
3. **"APCEC"** means the Arkansas Pollution Control and Ecology Commission.
4. **"Applicable effluent standards and limitations"** means all State and Federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
5. **"Applicable water quality standards"** means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303(a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under (APCEC) Regulation No. 2, as amended.
6. **"Bypass"** As defined at 122.41(m).
7. **"Composite sample"** is a mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of 4 effluent portions collected at equal time intervals (but not closer than one hour apart) during operational hours, within the 24-hour period, and combined proportional to flow or a sample collected at more frequent intervals proportional to flow over the 24-hour period.
8. **Daily Discharge"** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
   A. **Mass Calculations**: For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of pollutant discharged over the sampling day.
   B. **Concentration Calculations**: For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
8. **Daily Maximum"** discharge limitation means the highest allowable "daily discharge" during the calendar month. The 7-day average for Fecal Coliform Bacteria (FCB) or E-Coli is the geometric mean of the values of all effluent samples collected during the calendar week in colonies per 100 ml.
9. **"Department"** means the Arkansas Department of Environmental Quality (**ADEQ**).
10. **"Director"** means the Director of the Arkansas Department of Environmental Quality.
11. **"Dissolved oxygen limit"**, shall be defined as follows:
    A. When limited in the permit as a minimum monthly average, shall mean the lowest acceptable monthly average value, determined by averaging all samples taken during the calendar month;
    B. When limited in the permit as an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.

12. **"E-Coli"** a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For E-Coli, report the monthly average as a 30-day geometric mean in colonies per 100 ml.
13. **"Fecal Coliform Bacteria (FCB)"**a sample consists of one effluent grab portion collected during a 24-hour period at peak loads. For Fecal Coliform Bacteria (FCB) report the monthly average as a 30-day geometric mean in colonies per 100 ml.
14. **"Grab sample"** means an individual sample collected in less than 15 minutes in conjunction with an instantaneous flow measurement.
15. **"Industrial User"** means a nondomestic discharger, as identified in 40 CFR Part 403, introducing pollutants to a POTW.
16. **"Instantaneous Maximum"** when limited in the permit as an instantaneous maximum value, shall mean that no value measured during the reporting period may fall above the stated value.
17. **"Instantaneous Minimum"** an instantaneous minimum value, shall mean that no value measured during the reporting period may fall below the stated value.
18. **"Monthly average"** means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. For Fecal Coliform Bacteria (FCB) or E-Coli, report the monthly average, (see 30-day average below).
19. **"National Pollutant Discharge Elimination System"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under Sections 307, 402, 318, and 405 of the Clean Water Act.
20. **"POTW"** means a Publicly Owned Treatment Works.
21. **"Severe property damage"** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in products.
22. **"Sewage sludge"** means the solids, residues, and precipitate separated from or created in sewage by the unit processes at a POTW. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and stormwater runoff that are discharged to or otherwise enter a POTW.
23. **"7-day average"** Also known as Average weekly. means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.
24. **"Treatment works"** means any devices and systems used in storage, treatment, recycling, and reclamation of municipal sewage and industrial wastes, of a liquid nature to implement section 201 of the Act, or necessary to recycle reuse water at the most economic cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities, and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatment.
25. **"Upset"** means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond

the reasonable control of the permittee. Any upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless of improper operations.

26. **"Visible sheen"** means the presence of a film or sheen upon or a discoloration of the surface of the discharge. A sheen can also be from a thin glistening layer of oil on the surface of the discharge.
27. **"MGD"** shall mean million gallons per day.
28. **"mg/l** "shall mean milligrams per liter or parts per million (ppm).
29. **"µg/l"** shall mean micrograms per liter or parts per billion (ppb).
30. **"cfs"** shall mean cubic feet per second.
31. **"ppm"** shall mean parts per million.
32. **"s.u."** shall mean standard units.
33. **"Weekday"** means Monday – Friday.
34. **Monitoring and Reporting:**

When a permit becomes effective, monitoring requirements are of the immediate period of the permit effective date. Where the monitoring requirement for an effluent characteristic is monthly or more frequently, the Discharge Monitoring Report (DMR) shall be submitted by the 25th of the month following the sampling. Where the monitoring requirement for an effluent characteristic is Quarterly, Semi-Annual, Annual, or Yearly, the DMR shall be submitted by the 25th of the month following the monitoring period end date.

A. **MONTHLY:**
is defined as a calendar month or any portion of a calendar month for monitoring requirement frequency of once/month or more frequently.

B. **BI-MONTHLY:**
is defined as two (2) calendar months or any portion of 2 calendar months for monitoring requirement frequency of once/2 months or more frequently.

C. **QUARTERLY:**
1. is defined as a **fixed calendar quarter** or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December; or
2. is defined as a **fixed three month period** (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not coincide with the fixed calendar quarter. Seasonal calendar quarters are: May through July, August through October, November through January, and February through April.

D. **SEMI-ANNUAL:**
is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

E. **ANNUAL or YEARLY:**
is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

Final Fact Sheet

This Fact Sheet is for information and justification of the permit limits only. Please note that it is not enforceable. This final permitting decision is for renewal of the discharge Permit Number AR0021768 with Arkansas Department of Environmental Quality (ADEQ) Facility Identification Number (AFIN) 58-00105 to discharge to Waters of the State.

1. **PERMITTING AUTHORITY.**

   The issuing office is:

   Arkansas Department of Environmental Quality
   5301 Northshore Drive
   North Little Rock, Arkansas 72118-5317

2. **APPLICANT.**

   The applicant's mailing address is:

   City Corporation - Russellville Water and Sewer System
   P.O. Box 3186
   Russellville, AR 72811

   The facility address is:

   City Corporation - Russellville Water and Sewer System
   404 Jimmy Lile Road
   Russellville, AR 72802

3. **PREPARED BY.**

   The permit was prepared by:

   Shane Byrum
   Staff Engineer
   Discharge Permits Section, Water Division
   (501) 682-0618
   E-mail: byrum@adeq.state.ar.us

4. PERMIT ACTIVITY.

Previous Permit Effective Date: 4/1/2005
Previous Permit Expiration Date: 3/31/2010

The permittee submitted a permit renewal application on 9/28/2009. The discharge permit is being reissued for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a).

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

BAT - best available technology economically achievable
BCT - best conventional pollutant control technology
BMP - best management plan
BOD_5 - five-day biochemical oxygen demand
BPJ - best professional judgment
BPT - best practicable control technology currently available
$CBOD_5$ - carbonaceous biochemical oxygen demand
CD - critical dilution
CFR - Code of Federal Regulations
cfs - cubic feet per second
COD - chemical oxygen demand
COE - United States Corp of Engineers
CPP - continuing planning process
CWA - Clean Water Act
DMR - discharge monitoring report
DO - dissolved oxygen
ELG - effluent limitation guidelines
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FCB - fecal coliform bacteria
gpm - gallons per minute
MGD - million gallons per day
MQL - minimum quantification level
NAICS - North American Industry Classification System
NH3-N - ammonia nitrogen
NO3-N - nitrates
$NO_3 + NO_2$-N - nitrate + nitrite nitrogen
NPDES - National Pollutant Discharge Elimination System
O&G - oil and grease
Reg. 2 - APCEC Regulation No. 2
Reg. 6 - APCEC Regulation No. 6
Reg. 8 - APCEC Regulation No. 8
Reg. 9 - APCEC Regulation No. 9

RP - reasonable potential
SIC - standard industrial classification
TDS - total dissolved solids
TMDL - total maximum daily load
TP - total phosphorus
TRC - total residual chlorine
TSS - total suspended solids
UAA - use attainability analysis
USFWS - United States Fish and Wildlife Service
WET - Whole effluent toxicity
WQMP - water quality management plan
WQS - Water Quality standards
WWTP - wastewater treatment plant

DMR Review:

The Discharge Monitoring Reports (DMR's) for the last three years (December 2006 – December 2009) were reviewed during the permit renewal process. The violations listed in the following table were noted. A consent administrative order (CAO) was issued in response to these violations. The CAO is discussed in more detail in the next section.

CBOD5	TSS	DO	TRC	FCB	Zinc	Copper	Nitrates
	DEC06						
	JAN07				JAN07		
	FEB07						
	DEC07						
	FEB08						
MAR08	MAR08	MAR08		MAR08			
	APR08	APR08	APR08				
			MAY08			MAY08	
			JUN08			JUN08	
			JUL08			JUL08	JUL08
			AUG08				AUG08
			SEP08				
			OCT08				OCT08
			NOV08				NOV08
	DEC08		DEC08				DEC08
	JAN09		JAN09				JAN09
	FEB09		FEB09				FEB09
	MAR09		MAR09				
	APR09		APR09	APR09	APR09	APR09	
			MAY09				
			JUN09				JUN09
			JUL09			JUL09	JUL09
			AUG09				AUG09

CBOD5	TSS	DO	TRC	FCB	Zinc	Copper	Nitrates
			SEP09				SEP09
		OCT09	OCT09				
			NOV09				
	DEC09		DEC09				DEC09

Legal Order Review:

The facility is currently under a Consent Administrative Order (CAO) (LIS No. 09-146) which was signed by the Director on 11/06/2009. This order required the facility to submit a Corrective Action Plan (CAP) to address the permit limit violations. The CAP was submitted and approved on 06/01/2010.

Inspection

A routine compliance inspection was performed by ADEQ on 4/22/2009 which revealed the following violations:

1. For soil and sludge analysis, pH is not being reported.
2. Influent samples are not flow composited.
3. Flow meter error is greater than 10% of actual calculated flow.
4. Weir plates on effluent weir are not beveled as required for plates thicker than ¼ inch.

A response to these violations was received from the permittee in a letter dated 5/21/2009. The Department responded by letter dated 6/16/2009 which states that the permittee's response letter adequately addressed the violations identified during the inspection.

Site Visit

A routine site visit was conducted on 3/23/2010. Several photos of the treatment process were taken. Coordinates were collected by a handheld GPS for the outfall and sampling location at the effluent weir. The major proposed changes to the permit were discussed including the revised NH3-N limits and new proposed Mercury limits. The facility was given the opportunity to collect additional mercury data for re-evaluation of the reasonable potential calculations.

5. SIGNIFICANT CHANGES FROM THE PREVIOUSLY ISSUED PERMIT.

The permittee is responsible for carefully reading the permit in detail and becoming familiar with all of the changes therein:

1. Limits for CBOD5, TSS, NH3-N, and NO3-N are now expressed to the nearest tenth for accuracy reporting purposes.
2. Ammonia-Nitrogen limits have changed for April - October based on toxicity standards in Reg. 2.512.

3. Final Mercury limits have been added which become effective three years after the effective date.
4. Interim Mercury monitor and report requirement was added for first three years of the permit.
5. A three year compliance schedule is included for Mercury.
6. Monitor and report requirement for Total Phosphorus was added to the permit in accordance with the CPP.

6. RECEIVING STREAM SEGMENT AND DISCHARGE LOCATION.

The outfall is located at the following coordinates based on a Garmin GPS unit.

Latitude: 35° 14' 50" Longitude: 93° 06' 45"

The receiving waters named:

Whig Creek thence to the Arkansas River in Segment 3F of the Arkansas River Basin. The receiving stream with USGS Hydrologic Unit Code (H.U.C) of 11110203 and reach # 931 is a Water of the State classified for secondary contact recreation, raw water source for domestic (public and private), industrial, and agricultural water supplies, propagation of desirable species of fish and other aquatic life, and other compatible uses.

7. 303(d) LIST, ENDANGERED SPECIES, AND ANTI-DEGRADATION CONSIDERATIONS.

A. 303(d) List:

The receiving stream (Whig Creek) is listed on the 2008 303d list for Nitrates. A TMDL for Nitrates dated December 2000 specifies a wasteload allocation of 542 lb/day of nitrates from this point source.

The receiving stream (Whig Creek) is listed on the 2008 303d list for Copper. A TMDL for Copper dated November 2003 specifies a wasteload allocation of 0.188 lb/day of dissolved copper from this point source. Since metal limits in NPDES permits must be expressed in terms of total metal, the dissolved copper mass was converted to a total copper mass permit limit using the translator procedure given in the CPP.

B. Endangered Species:

No comments on the application were received from the U.S. Fish and Wildlife Service (USF&WS). The draft permit and Fact Sheet were sent to the USF&WS for their review and no comments were received.

C. **Anti-Degradation**:

The limitations and requirements set forth in this permit for discharge into waters of the State are consistent with the Antidegradation Policy and all other applicable water quality standards found in APC&EC Regulation No. 2.

8. OUTFALL AND TREATMENT PROCESS DESCRIPTION.

The following is a description of the facility described in the application:

A. Design Flow: 7.3 MGD

B. Type of Treatment: three (3) aerated flow equalization basins, bar screens, grit removal, three (3) primary clarifiers, two (2) biotowers, one (1) intermediate clarifier, two (2) trickling rock filters, two (2) extended aeration activated sludge basins, two (2) final clarifiers, and two (2) chlorine contact basins.

C. Discharge Description: treated municipal wastewater

D. Facility Status: This facility is classified as a major municipal since the design flow of the facility of 7.3 MGD is greater than 1.0 MGD.

9. ACTIVITY.

Under the Standard Industrial Classification (SIC) code of 4952 or North American Industry Classification System (NAICS) code of 221320, the applicant's activities are the operation of a sewage treatment plant.

10. INDUSTRIAL WASTEWATER CONTRIBUTIONS.

City Corporation receives industrial process wastewater. The pretreatment program was approved on January 13, 1984 and modified on March 10, 1992. The Sewer Use Ordinance and the Pretreatment Program have not been modified to come into compliance with the current 40 CFR 403 regulations. City Corporation has submitted both a draft ordinance and draft local limit development. The Department is currently reviewing both submittals.

11. SEWAGE SLUDGE PRACTICES.

The sludge produced at the treatment plant is aerobically disgested on site and land applied at agronomic rates at the following locations:

Name	Field ID	Section	Township	Range	Acreage	Latitude	Longitude
City Corp	1	22	7 North	20 West	49	35° 14' 36" N	93° 6' 39" W
Baker	2	21	7 North	20 West	67.5	35° 14' 35" N	93° 7' 25" W
Old Pope County Landfill	3	21	7 North	20 West	76	35° 14' 44" N	93° 7' 40" W

Approval to land apply biosolids pursuant to this permit is limited to a maximum of one (1) year after the effective date of this permit. A separate permit must be obtained within this time period or land application of biosolids must cease. The permittee was notified of this requirement at the site visit conducted on 3/23/2010 and again at a meeting at ADEQ on 5/13/2010. Reporting requirements of this permit continue for the term of this permit until they are superseded by similar conditions in a separate land application permit.

12. PERMIT CONDITIONS.

The Arkansas Department of Environmental Quality has made a determination to issue a final permit for the discharge described in the application. Permit requirements are based on federal regulations (40 CFR Parts 122, 124, and Subchapter N), the National Pretreatment Regulation in 40 CFR Part 403 and regulations promulgated pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. 8-4-101 et. seq.).

A. Interim Effluent Limitations

Outfall 001- treated municipal wastewater

1. Conventional and/or Toxic Pollutants

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	608.8	10.0	15.0	once/weekday	composite
(Nov-Apr)	913.2	15.0	22.5	once/weekday	composite
Total Suspended Solids (TSS)					
(May-Oct)	913.2	15.0	22.5	once/weekday	composite
(Nov-Apr)	1217.6	20.0	30.0	once/weekday	composite
Ammonia Nitrogen (NH3-N)					
(April -October)	133.9	2.2	5.6	once/weekday	composite
(November - March)	243.5	4.0	6.0	once/weekday	composite
Dissolved Oxygen (DO)	N/A	6.0 (Inst. Min.)		once/weekday	grab
Fecal Coliform Bacteria (FCB)		(colonies/100 ml)			
	N/A	1000	2000	once/weekday	grab
Total Residual Chlorine (TRC)	N/A	<0.1 mg/l (Inst. Max.)		once/weekday	grab
Total Phosphorus (TP)	Report	Report	Report	once/month	grab
Nitrates (NO3-N)	542.0	10.0	15.0	once/weekday	grab
Zinc, Total Recoverable	5.2	85.5 µg/l	171.6 µg/l	once/month	composite
Copper, Total Recoverable	0.45	9.2 µg/l	18.5 µg/l	once/month	composite
Mercury, Total Recoverable	Report	Report µg/l	Report µg/l	once/month	composite
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday	grab
Chronic WET Testing	N/A	Report		once/quarter	composite
Pimephales promelas (Chronic)		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C		Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C		Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C		Report %		once/quarter	composite

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Ceriodaphnia dubia (Chronic)		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B		Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B		Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B		Report %		once/quarter	composite

2. **Solids, Foam, and Free Oil:** There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

B. Final Effluent Limitations

Outfall 001- treated municipal wastewater

1. Conventional and/or Toxic Pollutants

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Flow	N/A	Report, MGD	Report, MGD (Daily Max.)	once/day	totalizing meter
Carbonaceous Biochemical Oxygen Demand (CBOD5)					
(May-Oct)	608.8	10.0	15.0	once/weekday	composite
(Nov-Apr)	913.2	15.0	22.5	once/weekday	composite
Total Suspended Solids (TSS)					
(May-Oct)	913.2	15.0	22.5	once/weekday	composite
(Nov-Apr)	1217.6	20.0	30.0	once/weekday	composite
Ammonia Nitrogen (NH3-N)					
(April -October)	133.9	2.2	5.6	once/weekday	composite
(November - March)	243.5	4.0	6.0	once/weekday	composite
Dissolved Oxygen (DO)	N/A	6.0 (Inst. Min.)		once/weekday	grab
Fecal Coliform Bacteria (FCB)		(colonies/100 ml)			
	N/A	1000	2000	once/weekday	grab
Total Residual Chlorine (TRC)	N/A	<0.1 mg/l (Inst. Max.)		once/weekday	grab
Total Phosphorus (TP)	Report	Report	Report	once/month	grab
Nitrates (NO3-N)	542.0	10.0	15.0	once/weekday	grab
Zinc, Total Recoverable	5.2	85.5 µg/l	171.6 µg/l	once/month	composite
Copper, Total Recoverable	0.45	9.2 µg/l	18.5 µg/l	once/month	composite
Mercury, Total Recoverable	0.00082	0.0134 µg/l	0.0269 µg/l	once/month	composite
pH	N/A	Minimum 6.0 s.u.	Maximum 9.0 s.u.	once/weekday	grab
Chronic WET Testing	N/A	Report		once/quarter	composite
Pimephales promelas (Chronic)		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail Growth (7-day NOEC)TGP6C		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP6C		Report %		once/quarter	composite
Coefficient of Variation (Growth) TQP6C		Report %		once/quarter	composite
Growth (7-day NOEC) TPP6C		Report %		once/quarter	composite

Effluent Characteristics	Discharge Limitations			Monitoring Requirements	
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/l, unless otherwise specified)		Frequency	Sample Type
	Monthly Avg.	Monthly Avg.	7-Day Avg.		
Ceriodaphnia dubia (Chronic)		7-Day Average			
Pass/Fail Lethality (7-day NOEC) TLP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Pass/Fail production (7-day NOEC)TGP3B		Report (Pass=0/Fail=1)		once/quarter	composite
Survival (7-day NOEC) TOP3B		Report %		once/quarter	composite
Coefficient of Variation (Reproduction) TQP3B		Report %		once/quarter	composite
Reproduction (7-day NOEC) TPP3B		Report %		once/quarter	composite

2. **Solids, Foam, and Free Oil:** There shall be no discharge of distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slime, bottom deposits, or sludge banks. There shall be no visible sheen due to the presence of oil (Sheen means an iridescent appearance on the surface of the water).

13. BASIS FOR PERMIT CONDITIONS.

The following is an explanation of the derivation of the conditions of the final permit and the reasons for them or, in the case of notices of intent to deny or terminate, reasons suggesting the decisions as required under 40 CFR Part 124.7.

Technology-Based Versus Water Quality-Based Effluent Limitations And Conditions

Following regulations promulgated at 40 CFR Part 122.44, the final permit limits are based on either technology-based effluent limits pursuant to 40 CFR Part 122.44 (a) or on State water quality standards and requirements pursuant to 40 CFR Part 122.44 (d), whichever are more stringent as follows:

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous Permit		Permit Limit	
	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l
CBOD5								
(May-Oct)	10.0	15.0	25	40	10	15	10.0	15.0
(Nov-Apr)	15.0	22.5	25	40	15	23	15.0	22.5
TSS								
(May-Oct)	N/A	N/A	30	45	15	23	15.0	22.5
(Nov-Apr)	N/A	N/A	30	45	20	30	20.0	30.0
NH3-N								
(Apr-Oct)*	2.2	5.6	N/A	N/A	4	6	2.2	5.6
(Nov-March)	4.0	6.0	N/A	N/A	4	6	4.0	6.0
DO	6.0 (Inst. Min.)		N/A		6.0 (Inst. Min.)		6.0 (Inst. Min.)	
FCB (col/100 ml)	1000	2000	N/A	N/A	1000	2000	1000	2000
TRC (Inst. Max)	N/A		< 0.1 mg/l		<0.1 mg/l		<0.1 mg/l	
Total Phosphorus	N/A	N/A	Report	Report	N/A	N/A	Report	Report
Nitrates	10.0	15.0	N/A	N/A	10	15	10.0	15.0
Total Zinc	85.5 µg/l	171.6 µg/l	N/A	N/A	86 µg/l	172 µg/l	85.5 µg/l	171.6 µg/l
Total Copper	9.2 µg/l	18.5 µg/l	N/A	N/A	9.2 µg/l	18.5 µg/l	9.2 µg/l	18.5 µg/l

Parameter	Water Quality-Based		Technology-Based/BPJ		Previous Permit		Permit Limit	
	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l	Monthly Avg. mg/l	7-day Avg. mg/l
Total Mercury	0.0134 µg/l	0.0269 µg/l	N/A	N/A	N/A	N/A	0.0134 µg/l	0.0269 µg/l
pH	6.0-9.0 s.u.		6.0-9.0 s.u.		6.0 -9.0 s.u.		6.0-9.0 s.u.	

*Compliance schedule was not deemed necessary by the permit writer because a review of the DMR data from December 2006 to December 2009 indicate that the facility is currently capable of meeting the more stringent revised NH3-N limits.

A. **Justification for Limitations and Conditions of the final permit:**

Parameter	Water Quality or Technology	Justification
CBOD5	Water Quality	MultiSMP Model dated 9/27/2004
TSS[1]	Technology	CPP
NH3-N	Water Quality	Reg. 2.512 / MultiSMP Model dated 9/27/2004
DO	Water Quality	Reg. 2.505 / MultiSMP Model dated 9/27/2004
Fecal Coliform Bacteria	Water Quality	Reg. 2.507
TRC[2]	Water Quality	Reg. 2.409 and CPP
Total Phosphorus[3]	Technology	CPP
Nitrates	Water Quality	December 2000 TMDL report
Total Copper	Water Quality	November 2003 TMDL report and Reg. 2.508
Total Zinc	Water Quality	Reg. 2.508 and CPP
Total Mercury	Water Quality	Reg. 2.508 and CPP
pH	Water Quality	Reg. 2.504
WET Testing	Water Quality	CPP

1 The CPP states that TSS limits for domestic wastewater discharges are typically between 1-3 times the BOD5/CBOD5 limit.

2 Average TRC measured in the effluent from August 2007 to August 2009 was 0.5 mg/l. This is higher than EPA's toxicity criteria of 0.011 mg/l. Therefore, the TRC limit is being continued from the previous permit since the data shows reasonable potential to exceed the toxicity criteria at the edge of the mixing zone.

3 In order to establish a database of point source loadings of nutrients to waters of the state, Total Phosphorus monitoring and reporting is included in the permit.

B. Anti-backsliding

The final permit is consistent with the requirements to meet Anti-backsliding provisions of the Clean Water Act (CWA), Section 402(o) [40 CFR 122.44(l)]. The final effluent limitations for reissuance permits must be as stringent as those in the previous permit, unless the less stringent limitations can be justified using exceptions listed in 40 CFR 122.44 (l)(2)(i).

The final permit maintains the requirements of the previous permit.

C. Limits Calculations

1. Mass limits:

   In accordance with 40 CFR 122.45(f)(1), all pollutants limited in permits shall have limitations expressed in terms of mass if feasible. 40 CFR 122.45(f)(2) allows for pollutants which are limited in terms of mass to also be limited in terms of other units of measurement.

   The calculation of the loadings (lbs per day) for CBOD5, TSS, NH3-N, Zinc, and Mercury uses a design flow of 7.3 MGD and the following equation:

   lbs/day = Concentration (mg/l) X Flow (MGD) X 8.34

   The mass load limits for Nitrates and Total Copper were taken from the wasteload allocation assigned to this point source specified in the TMDL reports for Nitrates and Copper. The previous permit contained mass limits for Nitrates and Copper based on the design flow of 7.3 MGD. In accordance with 40 CFR 122.44(d)(1)(vii)(B), the limits in the permit must be consistent with the wasteload allocations specified in the TMDL report. Therefore, the mass limits for Nitrates and Total Copper were revised to be consistent with the wasteload allocation (WLA) set forth in the TMDL reports.

2. 7-day Average Limits:

   The 7-day average limits for NH3-N (May through October) as well as CBOD5 and TSS are based on Section 5.4.2 of the Technical Support Document for Water Quality-Based Toxics Control.

   7-day average limits = Monthly average limits X 1.5 – 2

   The 7-day average NH3-N limits for the months of November through April are based on the requirements of Reg. 2.512.

   The 7-day average limits for FCB are based on Reg. 2.507.

The 7-day average concentration limits for Copper, Zinc, and Mercury are based on the CPP.

3. Ammonia-Nitrogen (NH3-N):

   The water quality effluent limitations for Ammonia are based either on DO-based effluent limits or on toxicity-based standards, whichever are more stringent. The toxicity-based effluent limitations are based on Reg. 2.512 and the CPP.

D. 208 Plan (Water Quality Management Plan)

The 208 Plan, developed by the ADEQ under provisions of Section 208 of the federal Clean Water Act, is a comprehensive program to work toward achieving federal water goals in Arkansas. The initial 208 Plan, adopted in 1979, provides for annual updates, but can be revised more often if necessary. The 208 Plan has been revised to include a wasteload allocation of 0.45 lb/day for Total Copper which is derived from the Dissolved Copper wasteload allocation as specified in the TMDL report dated November 2003. The 208 Plan has also been updated to revise the NH3-N limit from 4.0 mg/l to 2.2 mg/l for April–October based on toxicity standards in Reg. 2.512.

E. Priority Pollutant Scan (PPS)

ADEQ has reviewed and evaluated the effluent in accordance with the potential toxicity of each analyzed pollutant using the procedures outlined in the Continuing Planning Process (CPP).

The concentration of each pollutant after mixing with the receiving stream was compared to the applicable water quality standards as established in the Arkansas Water Quality Standards (AWQS), Regulation No. 2 (Reg. 2.508) and criteria obtained from the "Quality Criteria for Water, 1986 (Gold Book)".

Under Federal Regulation 40 CFR Part 122.44(d), as adopted by Regulation No. 6, if a discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard, the permit must contain an effluent limitation for that pollutant. Effluent limitations for the toxicants listed below have been derived in a manner consistent with the Technical Support Document (TSD) for Water Quality-based Toxics Control (EPA, March 1991), the CPP, and 40 CFR Part 122.45(c).

The following items were used in calculations:

Flow = Q	7.3 MGD = 11.28 cfs	Application
7Q10	0 cfs	U.S.G.S.
TSS	3.0 mg/l	CPP
Hardness as CaCO3	25.0 mg/l	CPP
pH	7.68 s.u.	ARK0067

The following pollutants were reported above the required MQL:

Pollutant	Concentration Reported, µg/l	MQL, µg/l
Total Copper	39 (highest value of 24 values)	0.5
Total Lead	0.858 (geometric mean of 4 values)	0.5
Total Mercury	0.0115 (geometric mean of 8 values)	0.005
Total Nickel	6.553 (geometric mean of 4 values)	0.5
Total Silver	0.4827 (geometric mean of 4 values)	0.5
Total Zinc	118 (highest value of 60 values)	20
Total Phenols	5.57 (single value reported)	5

ADEQ has determined from the submitted information that the discharge poses the reasonable potential to cause or contribute to an exceedance above a water quality standard as follows:

(a) **Aquatic Toxicity**

Substance	Concentration (C_e) µg/l	C_e X 2.13 (for less than 20 values)	IWC µg/l	Water Quality Standards (WQS)	
				Acute, µg/l	Chronic, µg/l
Total Copper	39	39	39	10.99	8.28
Total Zinc	118	118	118	96.81	88.40
Total Mercury	0.0115	0.0245	0.0245	7.11	0.012

Instream Waste Concentrations (IWC's) have been calculated in the manner described in the CPP.

As can be seen in the table above, the calculated level for the following pollutants are sufficiently higher than the water quality standards. Therefore, the limits for those pollutants are calculated in the manner described in the CPP and are included in the permit as follows:

Final Limits		
Substance	AML, µg/l	DML, µg/l
Total Copper	9.2	18.5
Total Zinc	85.5	171.6
Total Mercury	0.0134	0.0269

14. TOTAL RESIDUAL CHLORINE (TRC) REQUIREMENTS.

Prior to final disposal, the effluent shall contain NO MEASURABLE TRC at any time. NO MEASURABLE will be defined as no detectable concentration of TRC as determined by any approved method established in 40 CFR Part 136 as less than 0.1 mg/l. Thus, the "no measurable TRC concentration" for chlorine becomes the permit limit. The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. TRC shall be measured within fifteen (15) minutes of sampling.

15. WHOLE EFFLUENT TOXICITY.

Section 101(a)(3) of the Clean Water Act states that ".....it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited." In addition, ADEQ is required under 40 CFR Part 122.44(d)(1), adopted by reference in Regulation 6, to include conditions as necessary to achieve water quality standards as established under Section 303 of the Clean Water Act. Arkansas has established a narrative criteria which states "toxic materials shall not be present in receiving waters in such quantities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation, growth and survival of aquatic biota."

Whole effluent toxicity (WET) testing is the most direct measure of potential toxicity which incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. It is the national policy of EPA to use bioassays as a measure of toxicity to allow evaluation of the effects of a discharge upon a receiving water (49 Federal Register 9016-9019, March 9, 1984). EPA Region 6 and the State of Arkansas are now implementing the Post Third Round Policy and Strategy established on September 9, 1992, and EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies, revised March 13, 2000. Whole effluent toxicity testing of the effluent is thereby required as a condition of this permit to assess potential toxicity. The whole effluent toxicity testing procedures stipulated as a condition of this permit are as follows:

TOXICITY TESTS	**FREQUENCY**
Chronic WET	Once/quarter

Requirements for measurement frequency are based on the CPP.

Since 7Q10 is less than 100 cfs (ft^3/sec) and dilution ratio is less than 100:1, chronic WET testing requirements will be included in the permit.

The calculations for dilution used for chronic WET testing are as follows:

Critical dilution (CD) = (Qd/(Qd + Qb)) X 100

Qd = Design flow = 7.3 MGD = 11.3 cfs
7Q10 = 0 Cfs
Qb = Background flow = (0.67) X 7Q10 = 0 cfs
CD = (11.3) / (11.3 + 0) X 100 = 100%

Toxicity tests shall be performed in accordance with protocols described in "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA/600/4-91/002, July 1994. A minimum of five effluent dilutions in addition to an appropriate control (0%) are to be used in the toxicity tests. These additional effluent concentrations are 32%, 42%, 56%, 75%, and 100% (See the CPP). The low-flow effluent concentration (critical dilution) is defined as 100% effluent. The requirement for chronic WET tests is based on the magnitude of the facility's discharge with respect to receiving stream flow. The stipulated test species, *Ceriodaphnia dubia* and the Fathead minnow (*Pimephales promelas*) are indigenous to the geographic area of the facility; the use of these is consistent with the requirements of the State water quality standards. The WET testing frequency has been established to provide data representative of the toxic potential of the facility's discharge, in accordance with the regulations promulgated at 40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen conductivity, and alkalinity shall be reported according to EPA/600/4-91/002, July 1994 and shall be submitted as an attachment to the Discharge Monitoring Report (DMR).

This permit may be reopened to require further WET testing studies, Toxicity Reduction Evaluation (TRE) and/or effluent limits if WET testing data submitted to the Department shows toxicity in the permittee's discharge. Modification or revocation of this permit is subject to the provisions of 40 CFR 122.62, as adopted by reference in ADEQ Regulation No. 6. Increased or intensified toxicity testing may also be required in accordance with Section 308 of the Clean Water Act and Section 8-4-201 of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

Administrative Records

The following information summarized toxicity test submitted by the permittee during the term of the current permit at outfall 001:

Permit Number: AR0021768 AFIN: 58-00105 Outfall Number: 001
Date of Review: 3/9/2010 Reviewer: M. Barnett
Facility Name: City Corporation - Russellville Water and Sewer System
Previous Dilution series: 32,42,56,75,100 Proposed Dilution Series: 32,42,56,75,100
Previous Critical Dilution 100 Proposed Critical Dilution: 100
Previous TRE activities: None

Frequency recommendation by species
Pimephales promelas (Fathead minnow): once/quarter
Ceriodaphnia dubia (water flea): once/quarter

TEST DATA SUMMARY

TEST DATE	Vertebrate		Invertebrate	
	Lethal NOEC	Sub-Lethal NOEC	Lethal NOEC	Sub-Lethal NOEC
Jun-05	100	100	100	100
Sep-05	100	100	100	100
Dec-05	100	31*	100	100
Mar-06	100	100	100	100
Jun-06	100	100	100	100
Sep-06	100	100	100	100
Dec-06	100	100	100	100
Mar-07	100	**42**	100	100
Mar-07	100	100		
Jun-07	100	75*	100	100
Sep-07	100	100	100	100
Dec-07	100	100	100	100
Mar-08	100	100	100	100
Jun-08	100	100	100	100
Sep-08	100	100	100	100
Dec-08	100	100	100	100
Mar-09	100	100	100	100
Jun-09	100	100	100	100
Sep-09	100	100	100	100
Dec-09	100	100	100	100
Mar-10	100	100	100	100

*Pp test passes due to low PMSD
Failures are noted in BOLD

REASONABLE POTENTIAL CALCULATIONS

	Vertebrate Lethal	Vertebrate Sub-Lethal	Invertebrate Lethal	Invertebrate Sub-Lethal
Min NOEC Observed	100	42	100	100
TU at Min Observed	1.00	2.38	1.00	1.00
Count	21	21	20	20
Failure Count	0	1	0	0
Mean	1.000	1.066	1.000	1.000
Std. Dev.	0.000	0.301	0.000	0.000
CV	0	0.3	0	0
RPMF	#N/A	1.2	#N/A	#N/A
Reasonable Potential	#N/A	2.857	#N/A	#N/A

PERMIT ACTION

There have been no lethal or sub-lethal failures for *C. dubia* during the past five five years, therefore WET limits are not required.

There have been no lethal failures for *P. promelas* during the past five five years, therefore WET limits are not required.

Although there has been one *P. promelas* sub-lethal WET test below the critical dilution, there is insufficient evidence to support the inclusion of a sub-lethal limit. Additional data is needed to confirm the necessity for a sub-lethal limit, therefore it is not required at this time.

The inclusion of requirements for retests for sub-lethal failures will provide sufficient documentation concerning the necessity for a TRE, and the potential for inclusion of sub-lethal WET limits if appropriate.

P. promelas lethal - WET Monitoring
P. promelas sub-lethal - WET Monitoring
C. dubia lethal - WET Monitoring
C. dubia sub-lethal - WET Monitoring

16. SAMPLE TYPE AND FREQUENCY.

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [40 CFR Part 122.48(b)] and to ensure compliance with permit limitations [40 CFR Part 122.44(i)(l)].

Requirements for sample type and sampling frequency have been based on the current discharge permit. Sample frequency for the new phosphorus and mercury reporting requirements was set at the same frequency as the existing copper and zinc frequency. The 24-hr composite sample types for CBOD5, TSS, NH3-N, Nitrates, Zinc, and Copper in the previous permit are being changed to composite sample type in this permit to provide the facility more flexibility in gathering a representative composite sample.

Parameter	Previous Permit		Final Permit	
	Frequency of Sample	Sample Type	Frequency of Sample	Sample Type
Flow	once/day	totalizing meter	once/day	totalizing meter
CBOD5	once/weekday	24-hr composite	once/weekday	composite
TSS	once/weekday	24-hr composite	once/weekday	composite
NH3-N	once/weekday	24-hr composite	once/weekday	composite
DO	once/weekday	grab	once/weekday	grab
FCB	once/weekday	grab	once/weekday	grab
TRC	once/weekday	grab	once/weekday	grab
TP	n/a	n/a	once/month	grab
NO_3 - N	once/weekday	24-hr composite	once/weekday	composite
Zinc	once/month	24-hr composite	once/month	composite
Copper	once/month	24-hr composite	once/month	composite
Mercury	n/a	n/a	once/month	composite
pH	once/weekday	grab	once/weekday	grab

17. STORMWATER REQUIREMENTS

The facility currently has an active industrial stormwater permit (ARR000104) which covers all stormwater runoff at this facility.

18. PERMIT COMPLIANCE.

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule:

Compliance is required on the effective date of the permit for all parameters except for Mercury. Final limits for Mercury become effective three (3) years after the effective date of the permit.

The permittee shall submit progress reports addressing the progress towards attaining the final effluent limits for Mercury according to the following schedule:

ACTIVITY	DUE DATE
Progress Report	One (1) year from effective date
Progress Report	Two (2) years from effective date

The permittee has the option to undertake any study deemed necessary to meet the final limitations during the interim period. Any additional treatment must be approved and construction approval granted prior to final installation.

19. MONITORING AND REPORTING.

The applicant is at all times required to monitor the discharge on a regular basis and report the results monthly. The monitoring results will be available to the public.

20. SOURCES.

The following sources were used to prepare the permit:

A. Application No. AR0021768 received 9/28/2009.
B. Arkansas Water Quality Management Plan (WQMP).
C. APCEC Regulation No. 2.
D. APCEC Regulation No. 3.
E. APCEC Regulation No. 6.
F. 40 CFR Parts 122, 125, 133 and 403.
G. Discharge permit file AR0021768.
H. Discharge Monitoring Reports (DMRs).
I. "Arkansas Water Quality Inventory Report 2008 (305B)", ADEQ.
J. "Low-Flow Characteristics and Regionalization of Low-Flow Characteristics for Selected Streams in Arkansas", 2008, USGS.

K. Continuing Planning Process (CPP).
L. Technical Support Document For Water Quality-based Toxic Control.
M. Region 6 Implementation Guidance for Arkansas Water Quality Standards promulgated at 40 CFR Part 131.36.
N. Inspection Report dated 4/22/2009.
O. Consent Administrative Order LIS No. 09-146, effective 12/25/2009.
P. "Whig Creek Basin TMDL for Copper", November 2003, Parsons.
Q. "Whig Creek TMDL for Nitrate", December 2000, USEPA.
R. Site visit conducted on 3/23/2010.

21. POINT OF CONTACT.

For additional information, contact:

Shane Byrum
Permits Branch, Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317
Telephone: (501) 682-0618

CREEK CROSSINGS

	LOCATION	MH	MH	PIPE SIZE	COMMENTS	CONDITION
1	EAST "L" & UNIVERSITY	1673	1671	8	DUCTILE IRON EXPOSED ABOVE CREEK	GOOD
2	2ND ST. & PHEONIX	1095	1108	8	REPLACED WITH DUCTILE IRON WHEN PHEONIX WAS WIDENED	GOOD
3	EAST CIRCLE DRIVE	1130	1129	12	REPLACED	GOOD
4	400 SOUTH JONESBORO	1159	1151	10	REPLACED WITH DUCTILE IRON	GOOD
5	N OF 10TH LIFT STATION	5006	1535	8	REPLACED	GOOD
6	MUSKOGEE NEAR THE RAILROAD	1012	WEST	6	NEW DUCTILE LINE AND GOES FROM 1012 NOW	GOOD
7	500 BLOCK OF "F" STREET	1737	1641	8	DUCTILE SPANNING CREEK	GOOD
8	300 BLOCK N BOSTON	1567	1617	10	OLD DUCTILE OR STEEL THAT MAY NEED TO BE REPLACED	BAD
9	400 BLOCK N BOSTON	1620	1625	15	UNDER CONCRETE IN BOTTOM OF CREEK	GOOD
10	400 BLOCK N BOSTON	1618	1632	12	UNDER CONCRETE IN BOTTOM OF CREEK	GOOD
11	400 BLOCK N BOSTON	1634	SOUT	6	LINE LOOKS GOOD	GOOD
12	N. OF ERIE & "E" STREET	1737	1636	8	NO CREEK OR DITCH HERE	GOOD
13	500 BLOCK OF "E" STREET	1635	1636	8	BETWEEN ERIE AND DETROIT ON NORTH SIDE OF CREEK	GOOD
14	100 BLOCK OF N. LAREDO	1057	1055	6	CAN'T FIND MANHOLE NUMBERS ON MAP	GOOD
15	DIKE RD	2036	2077	8	CAMERAED LOOKS GOOD	GOOD
16	MAIN AND LOREDO	1070	1071	6	NEEDS CAMERAED	UNK
17	100 BLOCK OF S. LOREDO	1084	1085	18	1084 BURIED IN STREET-LINE GOES BESIDE CREEK	GOOD
18	FARGO & "P" TECH PASTURE	1466	2049	10	WEST OF WEST "O" STREET & NORTH GLENWOOD---CLAY	GOOD
19	E. 16TH 600' E. OF EL MIRA	6294	6295	24	NEEDS CAMERAED	UNK
20	2000 BLOCK OF EL MIRA	6317	6316	24	HAS GOOD CLAY LINE	GOOD
21	PITTSBURG CIRCLE	6153	6152	36	HAS NEW 36" PVC ENCASED WITH CONCRETE	GOOD
22	PITTSBURG CIRCLE	6153	6131	15	NEEDS CAMERAED	UNK
23	PITTSBURG & ALEWINE ON 17	6133	6134	10	6340 NOT NUMBERED	GOOD
24	200 BLOCK OF E. 16TH	6073	6082	10	LINE IS UNDER GARAGE AREA OF CM VENDING	GOOD
25	EAST 16TH ST. & ITHICA	6066	6067	8	NEEDS CAMERAED	UNK
26	6TH & ARKANSAS	1526	1522	6	UNDER CENTER OF STATE HIGHWAY S. ARKANSAS	GOOD
27	800 BLOCK OF 8TH STREET	1238	1242	8	NEED MORE INFO	UNK
28	12TH ST. & MUSKOGEE	1257	1258	8	NEEDS REPLACED FROM 1257 TO 1242	BAD
29	WEST MAIN & MODESTO	3109	3067	AL	3090 TO 3089-NEEDS CAMERAED	UNK
30	100 BLOCK OF EAST 6TH STREET	1539	1540	8	NUMBERS DO NOT MATCH	UNK
31	11TH ST. & BOSTON AVE.	5032	WEST	6	REPAIRED	GOOD
32	105 EAST 8TH ST.	1537	WEST	6	NUMBERS DO NOT MATCH	UNK

CREEK CROSSINGS

33	100 BLOCK OF EAST 8TH ST.	1536	SOUT	8	HAS DUCTILE	GOOD
34	10TH ST. & DENVER	5013	5124	8	NEEDS CAMERAED	UNK
35	12TH ST. & MUSKOGEE	1264	1265	8	NEEDS CAMERAED	UNK
36	MAIN ST. LIFT STATION	4000	4001	18	TOO MUCH FLOW	UNK
37	10TH ST. LIFT STATION	5007	STATI	8	REPLACED WITH NEW LIFT STATION	GOOD
38	OMAHA & SECOND	1091	1094	8	UNDER CONCRETE IN BOTTOM OF CREEK	UNK
39	OMAHA & SECOND	1092	1095	15	UNDER CONCRETE IN BOTTOM OF CREEK	UNK
40	2ND PLACE & MUSKOGEE	1120	1119	12	NEEDS CAMERAED	UNK
41	900 BLOCK OF E. "J"	1653	1152		UNDER CONCRETE IN CREEK AND WAS VIDEOED BEFORE CONSTRUCTION	UNK
42	2ND & UTAH	1115	SOUT	6	CAMERAED LOOKS GOOD	GOOD
43	2ND & UTAH	1115	1114	8	CAMERAED LOOKS GOOD	GOOD
44	412 N. JOPLIN	3076	3077	12	UNDER STREET--NEEDS 3077-3079 & 3077-3078	UNK
45	900 BLOCK OF E. "J"	1653	1654	8	CAMERAED LOOKS GOOD	GOOD
46	"H" ST. IN ADJOINING FIELDS	1648	1649	8	NUMBERS DO NOT MATCH	UNK
47	NEAR HARTFORD & EAST "H"	1646	1647	6	LOOKS GOOD	GOOD
48	"G" & GREENWICH	1725	1642	8	VERY BAD IN NEED OF REPLACEMENT	BAD
49	LOUISVILLE & UNIVERSITY	1655	1659	8	1655-1660	UNK
50	EAST CIRCLE DRIVE	1128	2104	12	DOES NOT NEED REPLACING	GOOD
51	100 BLOCK S. LOREDO	1085	1128	12	RUNS BESIDE CREEK AT KROGER - WEST MAIN	UNK
52	WEST "C" ST. & MUSKOGEE	1030	1031	15	HAS CAST IRON OR DUCTILE	UNK
53	EAST OF EL PASO	1826	1824	18	NOT SURE	UNK
54	100 BLOCK EAST "D"	1621	1619	6	DUCTILE EXPOSED UNDER BRIDGE	UNK
55	"B" ST. & GREENWICH	4002	1605	18	OVER FLOW LINE FOR PRAIRIE CREEK	UNK
56	"B" ST. & GREENWICH	2064	2065	10	UNDER CONSTRUCTION	GOOD
57	"B" ST. & GREENWICH	4007	4033	10	UNDER CONSTRUCTION	GOOD
58	KNOXVILLE & "C" ST.	4027	EST&	15	NEW DUCTILE ACROSS CREEK	GOOD
59	710 N. EL PASO	1827	1826	18	BEEN RENEWED	UNK
60	PRAIRIE ST. BOOSTER STATION	1818	1000	15	TOO MUCH FLOW	UNK
61	BEHIND TYSON HATCHERY	6289	6290	24	RIGHT OF WAY NEEDS CLEARED	UNK
62	NORTH OF THE RAILROAD	6289	6269	18	RIGHT OF WAY NEEDS CLEARED	UNK
63	NEAR TYSON HATCHERY	6291	6290	24	RIGHT OF WAY NEEDS CLEARED	UNK
64	INTERSECTION HWY 324	6266	6261	8	NUMBERS DO NOT MATCH	UNK
65	TYSON HATCHERY	6292	6293	24	RIGHT OF WAY NEEDS CLEARED	UNK
66	100 BLOCK SOUTH MUSKOGEE	1089	1088	15	NOT LIKE SHOWN ON MAP	UNK

CREEK CROSSINGS

67	NORTH OF THE RAILROAD	6268	6267	18	RIGHT OF WAY NEEDS CLEARED	UNK
68	TYLOR RD.	6270	6331	10	NEEDS CAMERAED	UNK
69	1700 EL PASO	5065	5067	8	NEEDS CAMERAED	UNK
70	1600 S. COMMERCE	5062	5029	6	NEEDS CAMERAED	UNK
71	10TH & DENVER	5014	5013	12	IN STREET UNDER BRIDGE	UNK
72	800 4TH PLACE	1162	1158	8	RUNS BESIDE CREEK AT KROGER - WEST MAIN	UNK
73	S. LOREDO MEADOWVIEW	1257	1242	8	NEEDS REPLACED FROM 1257 TO 1242	BAD
74	FIELD S. OF HONEYSUCKLE	2101	2100	10	NEW PVC SOUTH WACO BETWEEN W. 7TH & W. 8TH	GOOD
75	WEST 12TH & ARLINGTON	2115	2114	10	PVC	GOOD
76	BRADLEY LANE & VANCOUVER	????	????	10	1316-SOUTH	UNK
77	3RD CT. & VANCOUVER	1315	1332	10	NEEDS CAMERAED	UNK
78	S. ARK & 2ND ST.	1494	1495	8	IN ALLEY BETWEEN BOULDER AND ARKANSAS	UNK
79	KNOXVILLE & 16TH ST.	6073	6071	15	UNDER MIDDLE OF 16TH ST. EAST OF KNOXVILLE	UNK
80	8TH & GLENNWOOD	1229	1232	6	NEW MAIN	GOOD
81	4TH PL. & HOUSTON PL.	1163	1214	10	NEEDS REPLACED ON JAMES PARK SIDE OF CREEK	BAD
82	100 BLOCK S. MUSKOGEE	1087	1091	8	NEEDS CAMERAED	UNK
83	MAIN ST. & MUSKOGEE	1087	1072	12	TOO MUCH FLOW	UNK
84	18TH & COMMERCE	5069	5065	6	NEEDS CAMERAED	UNK
85	AREA IN 100 BLOCK N. ARK.	????	????	??	BEHIND ROBERSON AUCTION	UNK
86	200 WEST 13TH	5019	5021	8	NEEDS REPLACED	BAD
87	WEST "T" & N. GLENNWOOD	2044	2046	10	CREEK IS BETWEEN 2044 & 2043 CLAY LINE	UNK

Customer Comment/Complaint Form

Date: _____

Time: _____

Customer Name: _____

Customer Address: _____

_____

Phone Number: _____

Best time to contact customer: _____

Comment/Complaint:

_____

_____

_____

_____

For a complaint, choose an item from the following list that best describes the problem:

Odor ☐ Discolored ☐ Bad Taste ☐

Particles ☐ Low Pressure ☐ Other: _____

Describe/Explain item selected:

_____

_____

_____

_____

Mail form to: City Corporation, PO Box 3186, Russellville, AR 72811-3186

A written response will be submitted within 10 business days from date received from customer.

FOR OFFICE USE ONLY: Completed by: _____

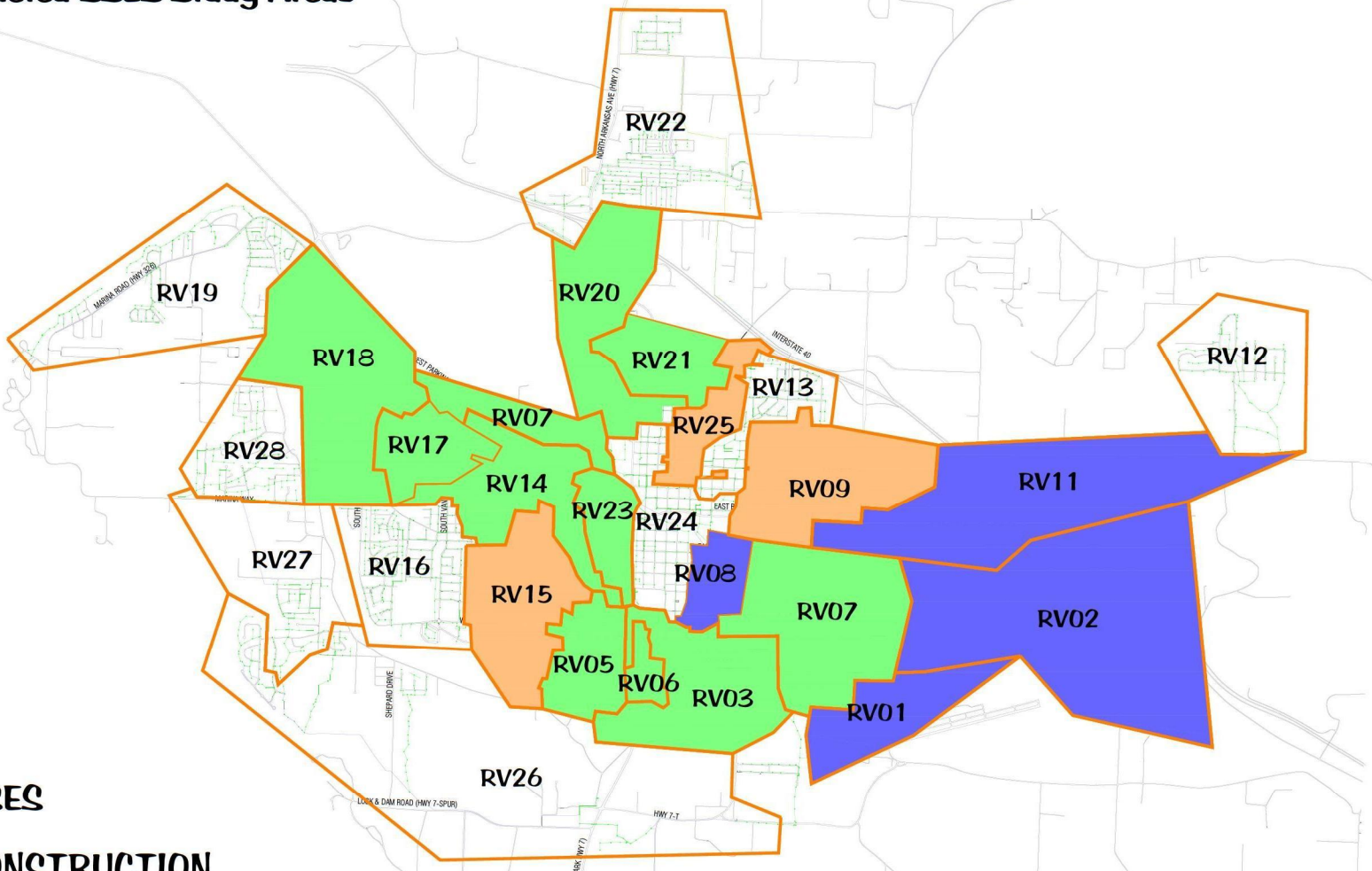
Received by: _____ Date: _____ Time: _____

Effluent Flow

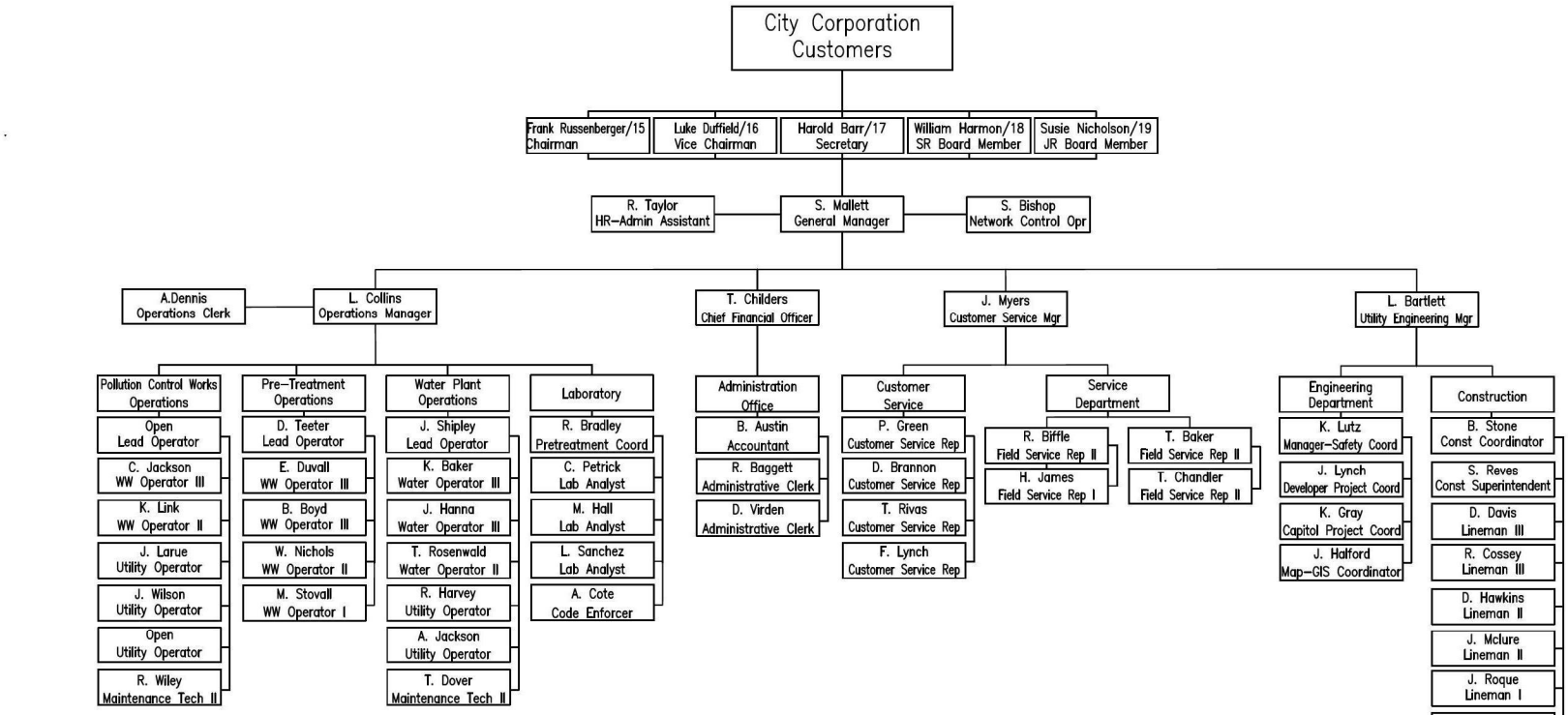
1 Effluent flow

Date	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014
1	6.072	5.469	5.114	6.191	8.295	7.430	6.336	6.142	3.550	4.136	4.290	4.099
2	6.251	5.050	4.744	5.860	7.368	6.303	6.598	5.246	3.683	4.206	4.113	4.731
3	5.925	6.219	6.058	5.828	6.378	6.469	6.731	4.548	5.439	5.046	3.931	4.213
4	6.158	6.105	6.892	6.309	6.447	6.208	6.041	5.656	4.693	4.684	4.415	4.831
5	6.729	7.531	7.227	6.091	5.950	6.865	5.085	4.786	4.654	3.946	5.973	5.268
6	5.912	7.171	6.665	5.402	5.955	6.502	5.475	4.541	4.380	4.017	5.767	6.837
7	6.053	7.099	6.812	6.210	5.392	6.925	6.316	4.385	4.222	4.414	5.011	5.837
8	5.815	6.904	5.782	7.515	5.623	5.954	6.586	5.125	3.655	4.232	4.832	5.479
9	5.948	6.709	6.008	7.011	8.293	7.780	7.816	5.043	4.295	5.862	4.478	5.529
10	7.233	6.494	5.938	6.619	8.034	14.429	7.144	7.464	3.063	5.365	4.199	5.024
11	11.332	6.389	5.889	6.426	8.006	10.280	7.530	6.768	4.622	6.257	5.329	5.045
12	6.828	6.371	6.013	5.948	6.770	8.684	7.153	5.943	5.174	7.152	4.879	5.124
13	7.430	6.367	5.933	5.547	10.746	7.709	5.889	5.352	5.767	6.179	4.510	4.926
14	7.304	6.112	5.696	6.187	12.685	7.060	5.980	6.052	4.518	8.072	4.456	4.811
15	7.420	6.011	5.717	6.078	12.874	6.317	6.671	4.786	4.941	7.023	4.457	5.096
16	7.304	5.455	6.330	7.371	10.002	6.341	3.366	6.329	4.732	6.056	4.177	7.176
17	6.834	6.151	7.471	7.876	9.736	6.812	5.795	6.473	5.580	6.960	4.327	5.909
18	6.803	6.487	7.576	7.252	13.347	6.719	6.115	4.290	5.243	5.660	4.550	6.623
19	6.201	5.610	7.979	6.038	9.866	6.565	6.148	4.805	4.506	5.344	4.494	6.685
20	6.066	5.794	7.004	5.730	8.907	6.397	6.218	4.614	4.466	5.867	4.519	6.708
21	6.810	5.606	6.820	6.422	8.044	6.001	6.066	4.397	4.089	5.323	4.611	6.086
22	6.588	5.474	6.722	6.257	7.227	5.445	6.690	4.497	4.240	5.305	4.769	5.857
23	6.659	5.145	6.011	6.310	6.404	6.000	6.593	4.558	4.569	4.543	5.523	5.844
24	6.440	4.795	5.718	6.736	5.813	6.214	8.480	4.350	4.395	4.764	5.095	6.212
25	6.587	5.113	6.270	6.791	5.236	6.871	6.848	3.984	4.278	4.496	5.060	5.245
26	5.768	4.914	5.901	6.041	4.695	6.996	5.912	4.458	4.272	4.125	4.884	5.978
27	5.735	5.016	6.206	5.489	4.866	6.213	4.953	4.462	4.283	4.007	4.704	6.147
28	5.694	4.892	5.963	8.514	6.777	4.337	5.244	4.356	3.932	4.669	5.049	6.955
29	5.904		6.560	10.007	6.373	6.113	6.501	4.322	3.623	4.833	3.820	6.404
30	6.251		5.631	9.244	6.485	5.688	6.675	4.467	4.229	4.493	4.093	5.879
31	6.259		5.850		8.351		6.341	3.904		4.431		4.859
Minimum	5.694	4.795	4.744	5.402	4.695	4.337	3.366	3.904	3.063	3.946	3.820	4.099
Maximum	11.332	7.531	7.979	10.007	13.347	14.429	8.480	7.464	5.767	8.072	5.973	7.176
Total	204.313	166.453	194.500	199.300	240.945	207.627	195.296	156.103	133.093	161.467	140.315	175.417
Average	6.591	5.945	6.274	6.643	7.772	6.921	6.300	5.036	4.436	5.209	4.677	5.659

APPENDIX 13
Completed SSES Study Areas



CITY CORPORATION
ORGANIZATIONAL CHART



Jeremy Myers

Larry Collins

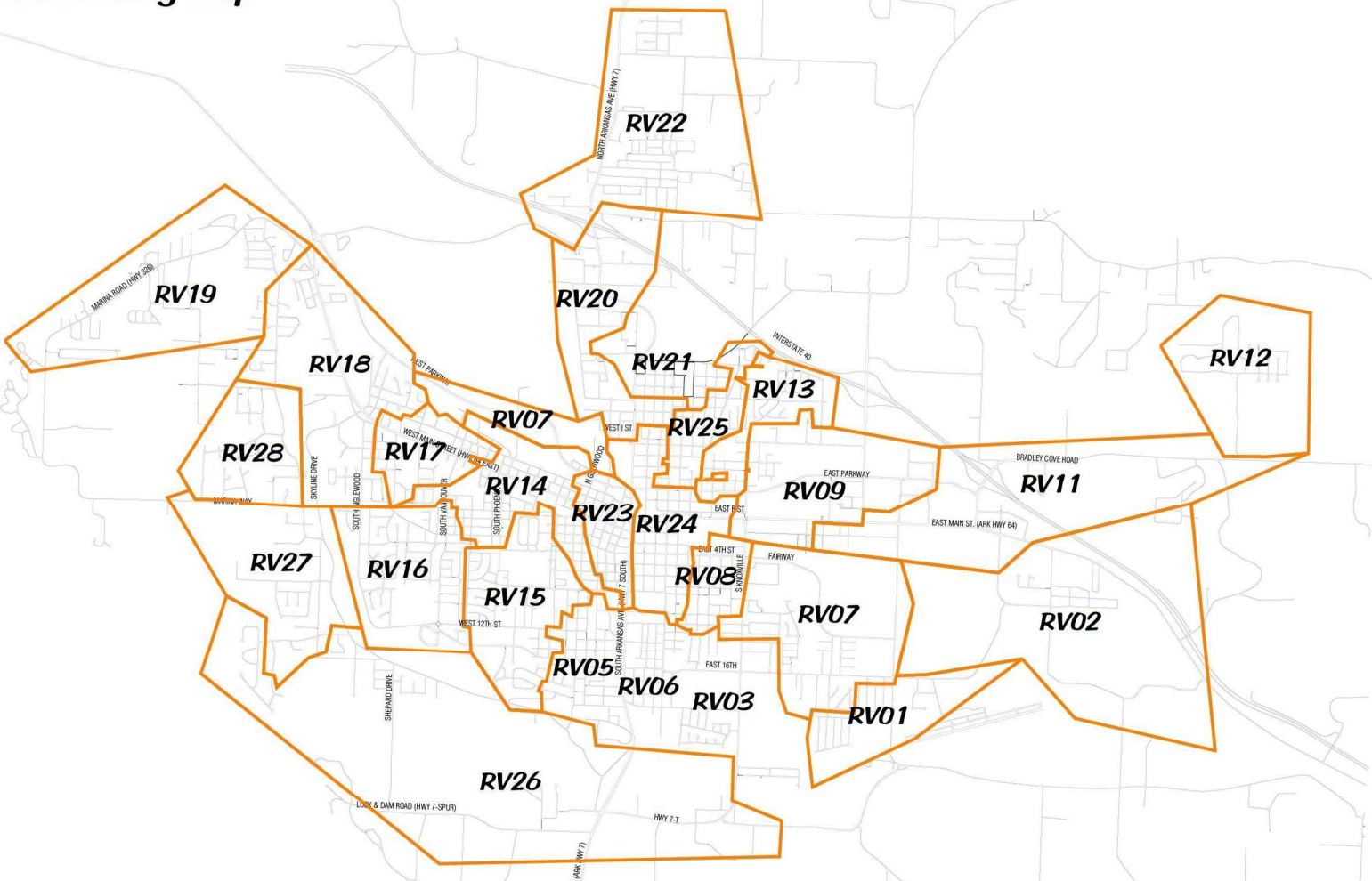
Taryn Childers

Lance Bartlett

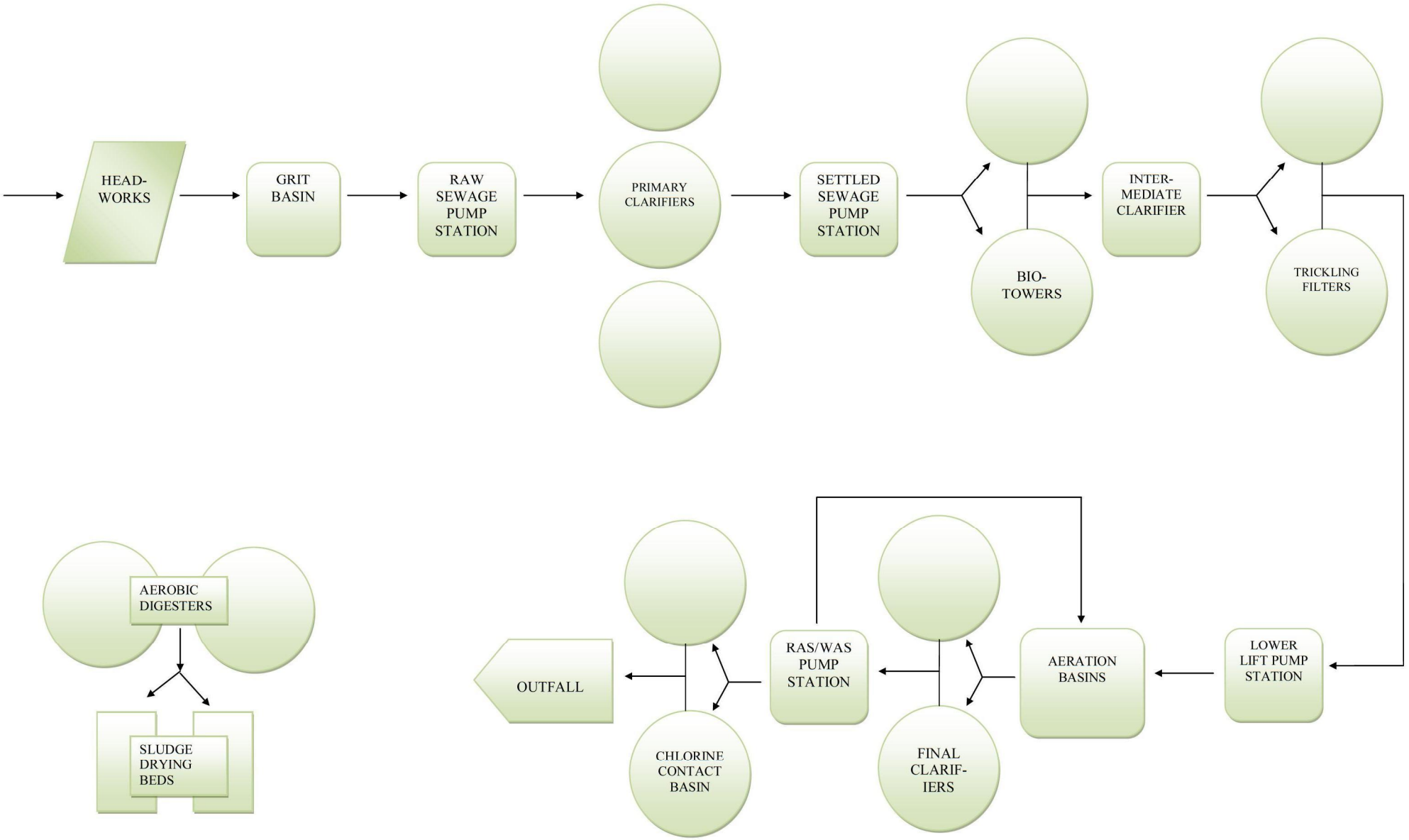
Steve Mallett

Revised 01–12–2015

APPENDIX 15
Subbasin Boundary Map

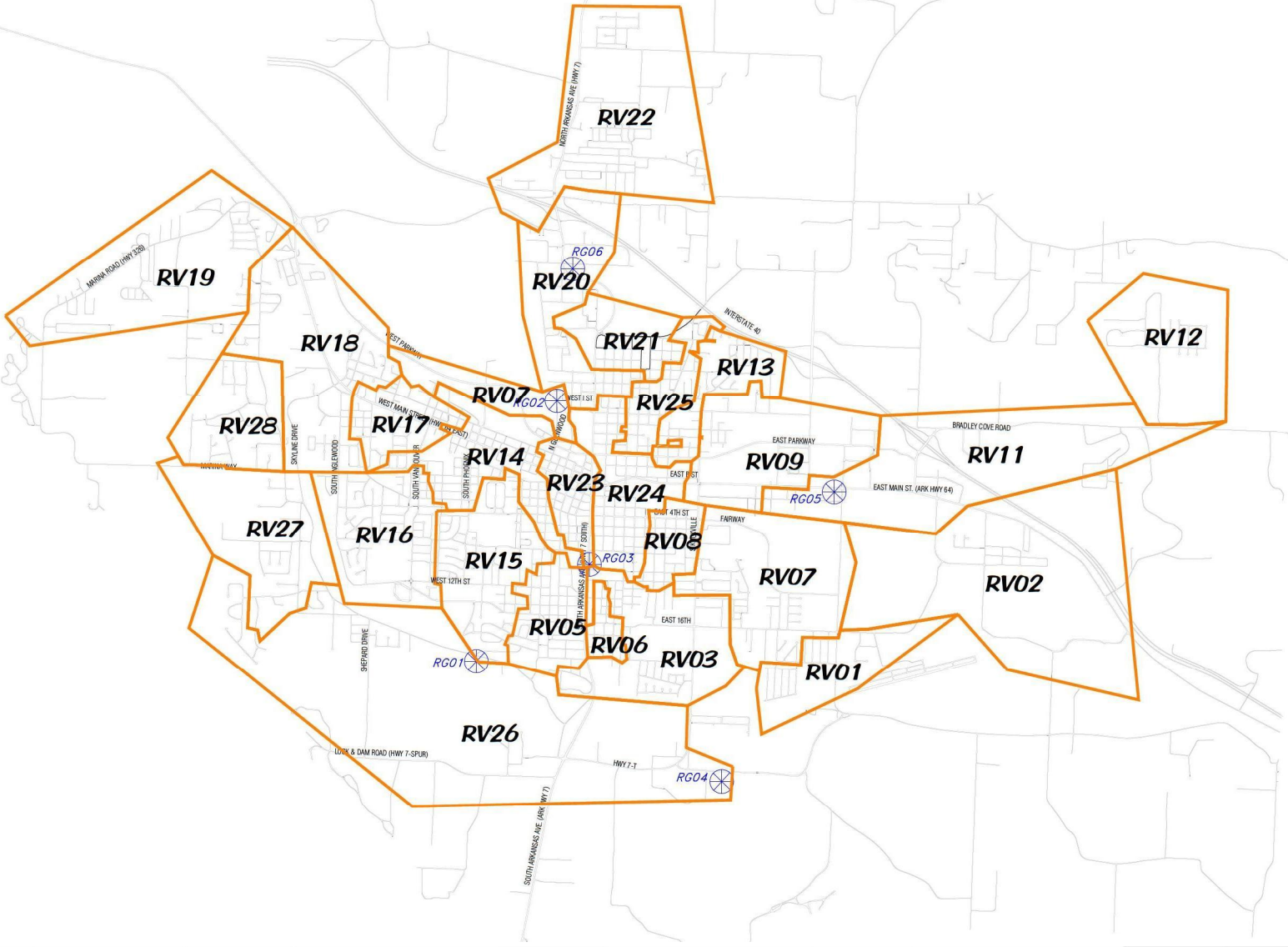


APPENDIX 16- TREATMENT PLANT LAYOUT



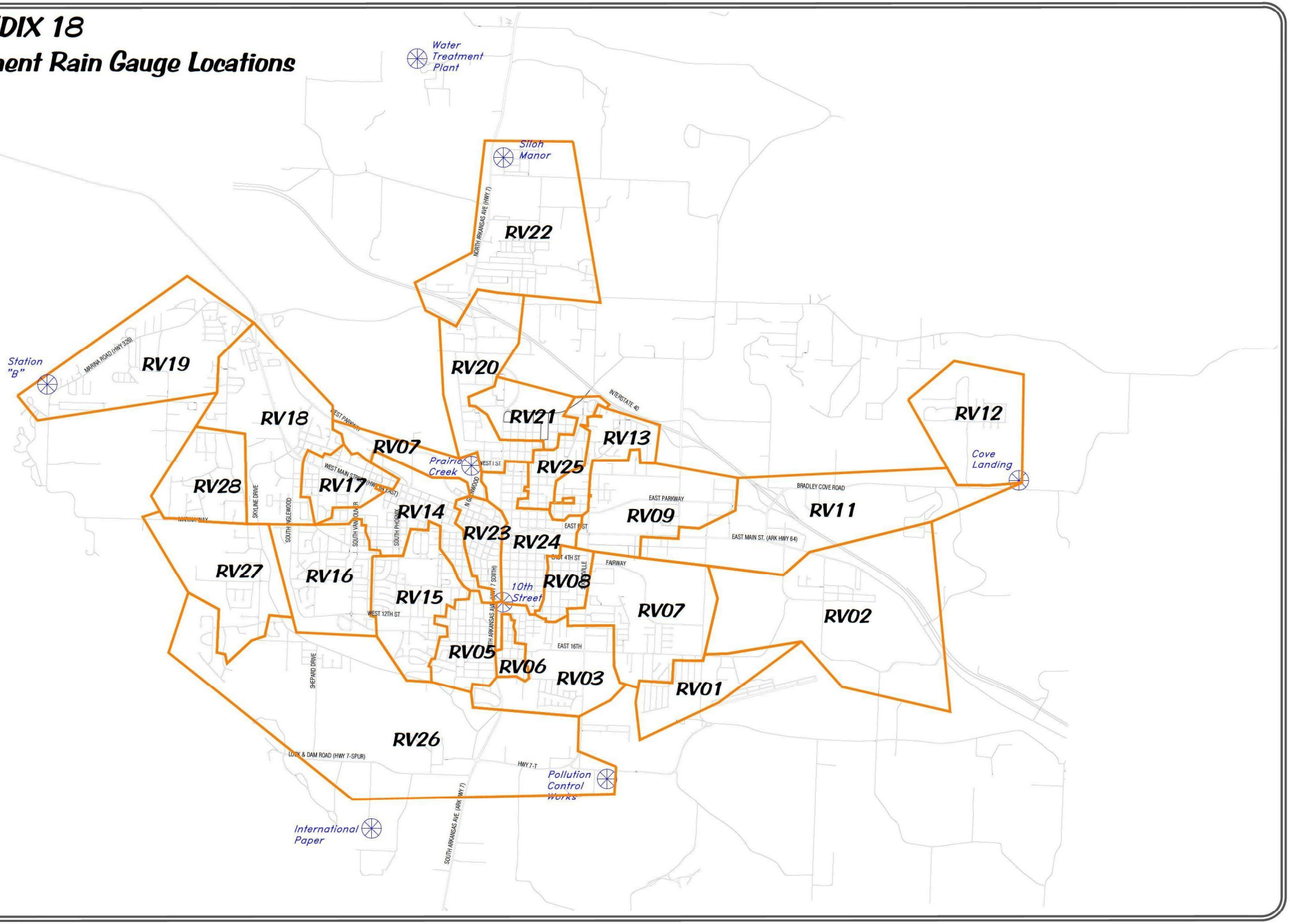
APPENDIX 17

Temporary Rain Gauge Locations

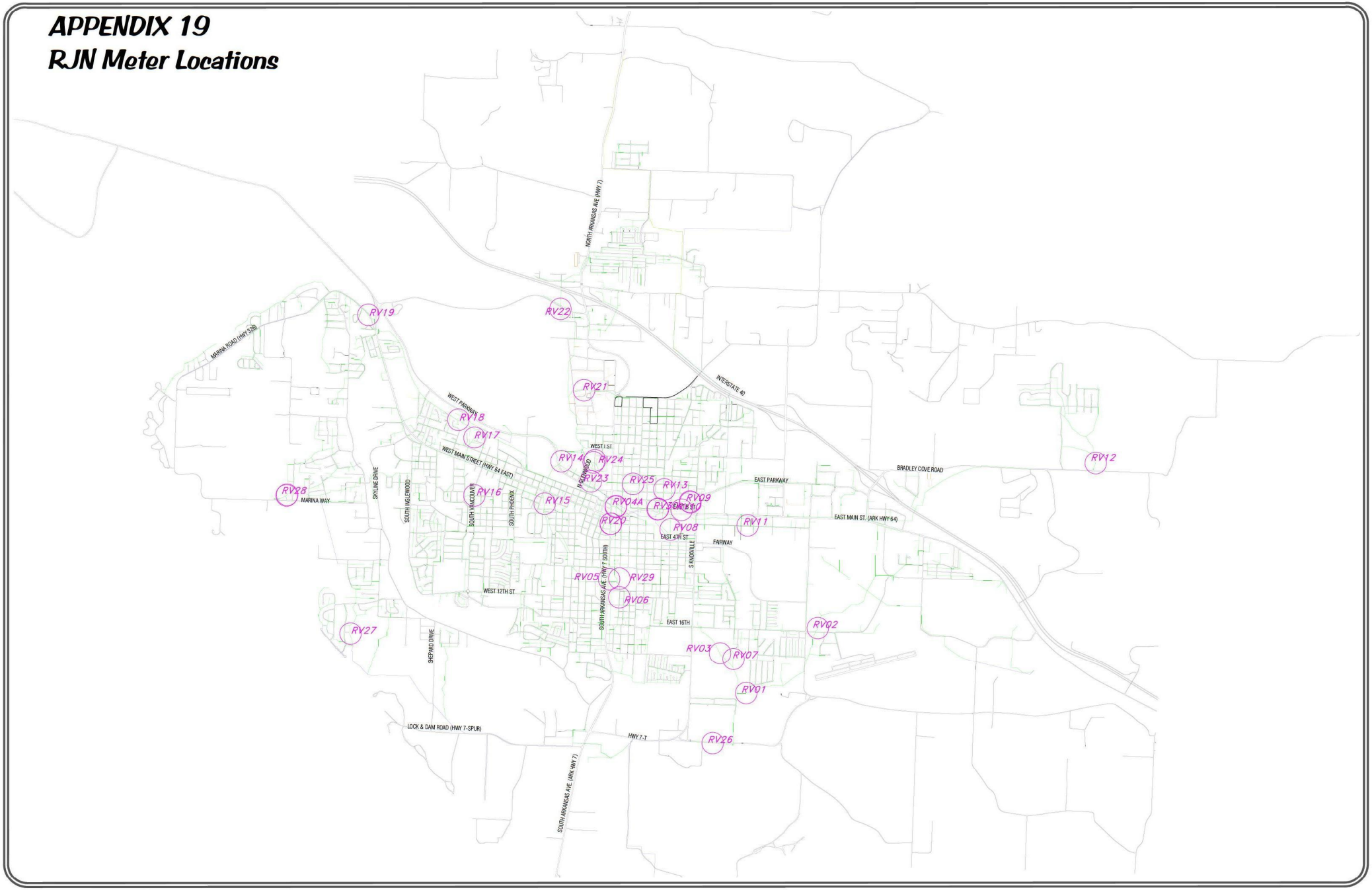


APPENDIX 18

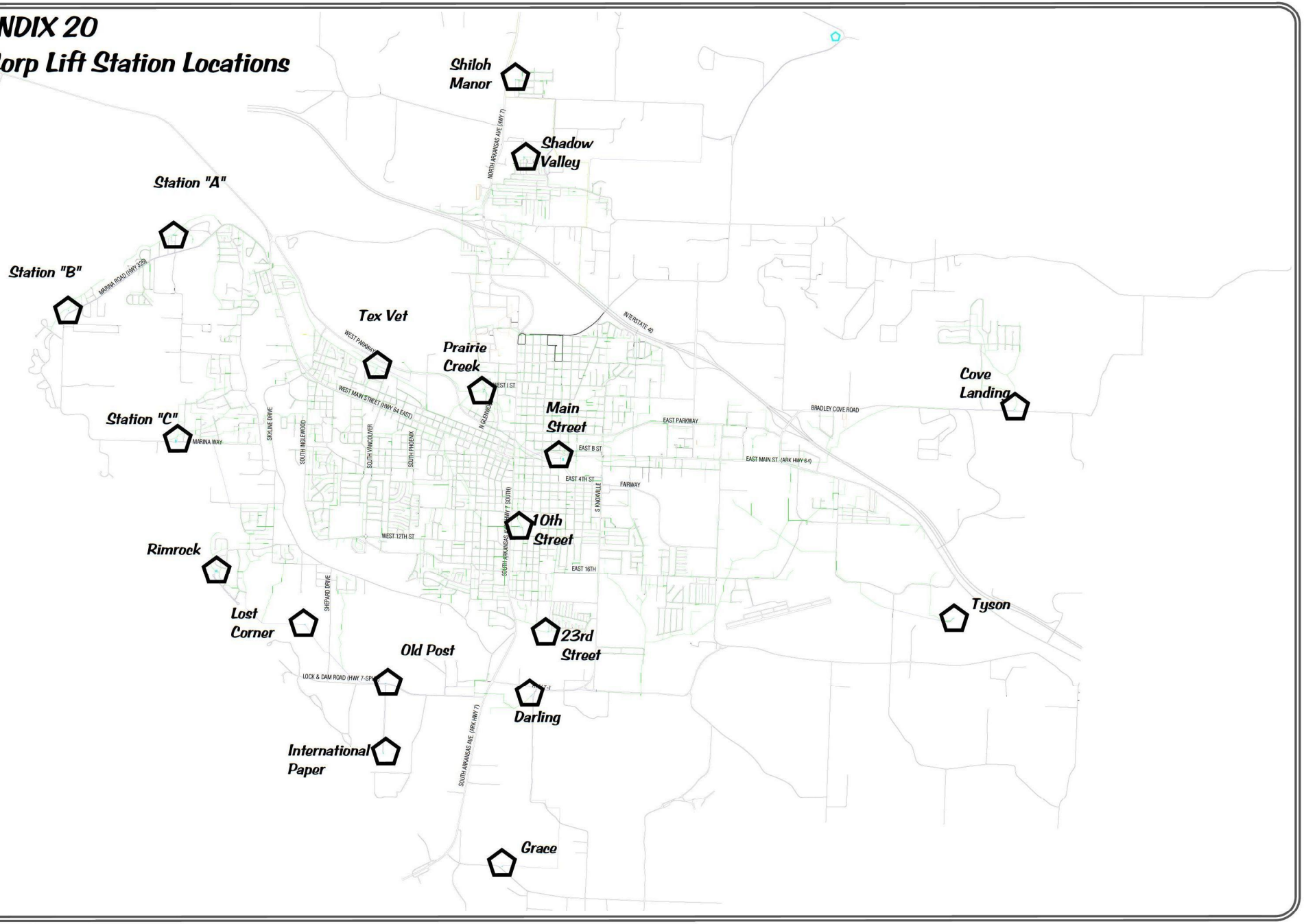
Permanent Rain Gauge Locations



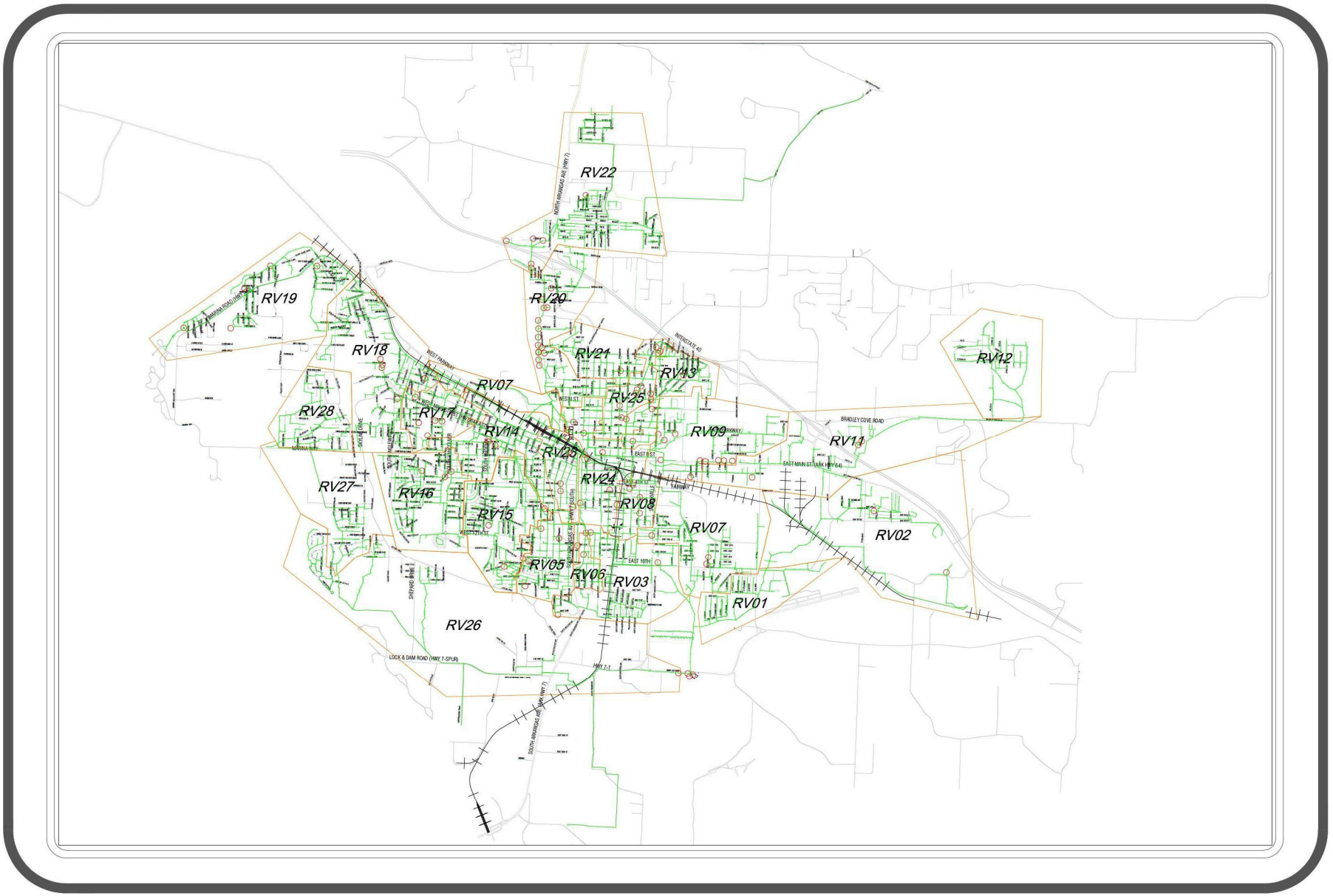
APPENDIX 19
RJN Meter Locations



APPENDIX 20
City Corp Lift Station Locations

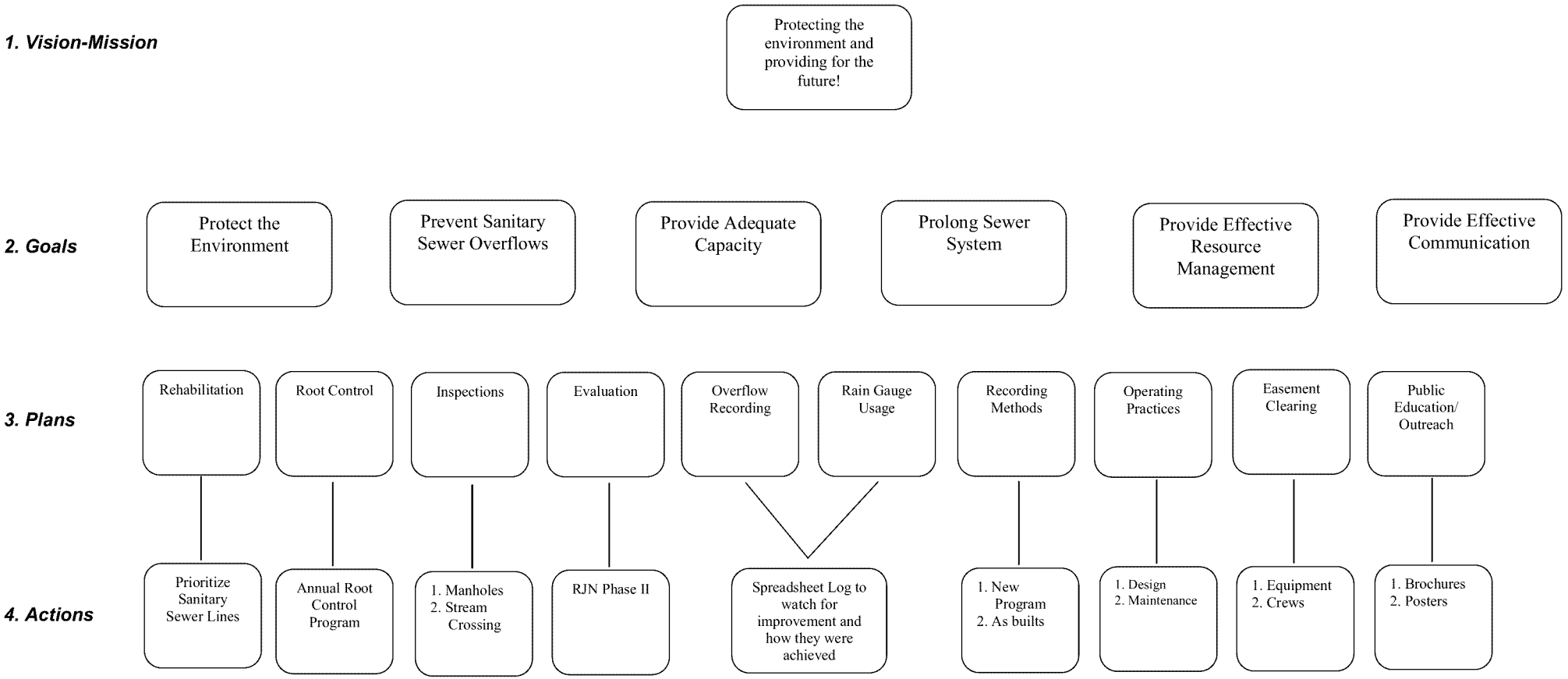


APPENDIX 21
City Corp Overflow Locations



APPENDIX 22

STRATEGIC PLANNING PROCESS FOR RECOMMENDATIONS



ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

IN THE MATTER OF:

Russellville City Corporation
P. O. Box 3186
Russellville AR 72811

LIS No. 09-146
AFIN 58-00105
NPDES Permit No. AR0021768

CONSENT ADMINISTRATIVE ORDER

This Consent Administrative Order (hereinafter "CAO") is issued pursuant to Ark. Code Ann. §8-1-202(b)(2)(B), which authorizes the Director of the Arkansas Department of Environmental Quality (hereinafter "ADEQ" or "Department") to initiate and settle administrative enforcement actions to compel compliance with laws, orders, and regulations charged to the responsibility of the Department, including but not limited to the Federal Water Pollution Control Act, 33 U.S.C §1311 et seq., and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. §8-4-101 et seq., and all regulations issued thereunder. The Director may also propose the assessment of civil penalties as provided by Ark. Code Ann. §8-4-103(c) and Arkansas Pollution Control and Ecology Commission (hereinafter "APC&EC") Regulation No. 7, Civil Penalties, and take all actions necessary to collect such penalties.

The issues herein having been settled by the agreement of the Russellville City Corporation and ADEQ, it is hereby agreed and stipulated that the following **FINDINGS OF FACT** and **ORDER AND AGREEMENT** be entered herein.

FINDINGS OF FACT

1. Russellville City Corporation (hereinafter "the Permittee") operates a publicly owned treatment works (POTW) in Pope County, Arkansas, pursuant to the conditions of NPDES Permit AR0021768 (hereinafter "the Permit"), issued by the authority of ADEQ and effective April 1, 2005. The POTW discharges treated effluent into Whig Creek.

2. The Permittee has exceeded the effluent characteristic limits in Part I, Section A of the Permit and has therefore violated Ark. Code Ann. §8-4-217(a)(3), which states that it shall be unlawful to violate any provision of a permit issued by ADEQ under the Arkansas Water and Air Pollution Control Act. Violations of the Permit's effluent limits found in Discharge Monitoring Reports (DMRs) submitted by the Permittee to ADEQ since April 2006 are as follows:

DATE	OUTFALL	PARAMETER	REPORTED	PERMITTED
04/30/06	001A	CBOD5 (mo. avg. load)	>414 lb/d	913 lb/d
04/30/06	001A	CBOD5 (mo. avg. conc.)	>9.3 mg/L	15 mg/L
04/30/06	001A	CBOD5 (max. conc.)	>9.5 mg/L	23 mg/L
05/31/06	001A	DO (inst. min.)	3.5 mg/L	6.0 mg/L
05/31/06	001A	TSS (mo. avg. load)	2298 lb/d	913 lb/d
05/31/06	001A	TSS (mo. avg. conc.)	39.7 mg/L	15 mg/L
05/31/06	001A	TSS (7-day avg. conc.)	57.2 mg/L	23 mg/L
05/31/06	001A	CBOD5 (mo. avg. load)	632 lb/d	609 lb/d
05/31/06	001A	CBOD5 (mo. avg. conc.)	10.9 mg/L	10 mg/L
05/31/06	001A	CBOD5 (max. conc.)	17.4 mg/L	15 mg/L
12/31/06	001A	TSS (mo. avg. load)	1931 lb/d	1217 lb/d
12/31/06	001A	TSS (mo. avg. conc.)	33.1 mg/L	20 mg/L
12/31/06	001A	TSS (7-day avg. conc.)	44.2 mg/L	30 mg/L
01/31/07	001A	TSS (mo. avg. load)	1913 lb/d	1217 lb/d
01/31/07	001A	TSS (mo. avg. conc.)	28.8 mg/L	20 mg/L
01/31/07	001A	TSS (7-day avg. conc.)	32.5 mg/L	30 mg/L
01/31/07	001A	Zinc (mo. avg. load)	37 lb/d	5.2 lb/d
01/31/07	001A	Zinc (mo. avg. conc.)	704.1 µg/l	86 µg/l
01/31/07	001A	Zinc (max. conc.)	1800.0 µg/l	172 µg/l
02/28/07	001A	TSS (mo. avg. load)	2487 lb/d	1217 lb/d
02/28/07	001A	TSS (mo. avg. conc.)	54.5 mg/L	20 mg/L
02/28/07	001A	TSS (7-day avg. conc.)	83.7 mg/L	30 mg/L
10/31/07	001A	DO (inst. min.)	5.3 mg/L	6.0 mg/L

DATE	OUTFALL	PARAMETER	REPORTED	PERMITTED
12/31/07	001A	TSS (mo. avg. load)	1551 lb/d	1217 lb/d
12/31/07	001A	TSS (mo. avg. conc.)	27.5 mg/L	20 mg/L
12/31/07	001A	TSS (7-day avg. conc.)	40.3 mg/L	30 mg/L
01/31/08	001A	TSS (7-day avg. conc.)	32.4 mg/L	30 mg/L
02/29/08	001A	TSS (mo. avg. load)	1664 lb/d	1217 lb/d
02/29/08	001A	TSS (mo. avg. conc.)	28.9 mg/L	20 mg/L
02/29/08	001A	TSS (7-day avg. conc.)	33.9 mg/L	30 mg/L
03/31/08	001A	DO (inst. min.)	4.5 mg/L	6.0 mg/L
03/31/08	001A	TSS (mo. avg. load)	5170 lb/d	1217 lb/d
03/31/08	001A	TSS (mo. avg. conc.)	57.3 mg/L	20 mg/L
03/31/08	001A	TSS (7-day avg. conc.)	64.5 mg/L	30 mg/L
03/31/08	001A	FCB (7-day geo mean)	5998 col/100 ml	2000 col/100 ml
03/31/08	001A	CBOD5 (mo. avg. load)	1364 lb/d	913 lb/d
03/31/08	001A	CBOD5 (mo. avg. conc.)	15.1 mg/L	15 mg/L
04/30/08	001A	DO (inst. min.)	5.2 mg/L	6.0 mg/L
04/30/08	001A	TSS (mo. avg. load)	1670 lb/d	1217 lb/d
04/30/08	001A	TSS (mo. avg. conc.)	23.4 mg/L	20 mg/L
04/30/08	001A	TSS (7-day avg. conc.)	46.9 mg/L	30 mg/L
04/30/08	001A	TRC (inst. max.)	0.48 mg/L	0.1 mg/L
05/31/08	001A	TSS (mo. avg. load)	1150 lb/d	913 lb/d
05/31/08	001A	TSS (mo. avg. conc.)	21.7 mg/L	15 mg/L
05/31/08	001A	TSS (7-day avg. conc.)	28.7 mg/L	23 mg/L
05/31/08	001A	TRC (inst. max.)	0.41 mg/L	0.1 mg/L
05/31/08	001A	Copper (mo. avg. load)	0.58 lb/d	0.56 lb/d
05/31/08	001A	Copper (mo. avg. conc.)	11 µg/l	9.24 µg/l
06/30/08	001A	TRC (inst. max.)	0.62 mg/L	0.1 mg/L
06/30/08	001A	Copper (mo. avg. load)	2 lb/d	0.56 lb/d
06/30/08	001A	Copper (mo. avg. conc.)	39 µg/l	9.24 µg/l
06/30/08	001A	Copper (7-day avg. conc.)	39 µg/l	18.54 µg/l
07/31/08	001A	TRC (inst. max.)	0.34 mg/L	0.1 mg/L
07/31/08	001A	NO_3-N (mo. avg. conc.)	10.2 mg/L	10 mg/L
07/31/08	001A	Copper (mo. avg. load)	1 lb/d	0.56 lb/d
07/31/08	001A	Copper (mo. avg. conc.)	14 µg/l	9.24 µg/l
08/31/08	001A	TRC (inst. max.)	0.3 mg/L	0.1 mg/L
08/31/08	001A	NO_3-N (mo. avg. conc.)	10.9 mg/L	10 mg/L
09/30/08	001A	TRC (inst. max.)	0.41 mg/L	0.1 mg/L
10/31/08	001A	TRC (inst. max.)	0.43 mg/L	0.1 mg/L
10/31/08	001A	NO_3-N (mo. avg. conc.)	12.6 mg/L	10 mg/L
11/30/08	001A	TRC (inst. max.)	.45 mg/L	.1 mg/L
11/30/08	001A	NO_3-N (mo. avg. load)	643 lb/d	609 lb/d
11/30/08	001A	NO_3-N (7-day avg. conc.)	16.4 mg/L	10 mg/L
11/30/08	001A	NO_3-N (mo. avg. conc.)	20 mg/L	15 mg/L
12/31/08	001A	TSS (mo. avg. conc.)	21.8 mg/L	20 mg/L

DATE	OUTFALL	PARAMETER	REPORTED	PERMITTED
12/31/08	001A	NO_3-N (mo. avg. load)	668 lb/d	609 lb/d
12/31/08	001A	NO_3-N (mo. avg. conc.)	14.6 mg/L	10mg/L
12/31/08	001A	NO_3-N (7-day avg. conc.)	21.6 mg/L	15 mg/L
12/31/08	001A	TRC (inst. max.)	.52 mg/L	.1 mg/L
01/31/09	001A	TSS (mo. avg. conc.)	24 mg/L	20 mg/L
01/31/09	001A	TSS (7-day avg. conc.)	42.2 mg/L	30 mg/L
01/31/09	001A	TRC (inst. max.)	.39 mg/L	.1 mg/L
01/31/09	001A	NO_3-N (mo. avg. conc.)	11.9 mg/L	10 mg/L
02/28/09	001A	TSS (mo. avg. load)	1470 lb/d	1217 lb/d
02/28/09	001A	TSS (mo. avg. conc.)	28.9 mg/L	20 mg/L
02/28/09	001A	TRC (inst. max.)	.47 mg/L	.1 mg/L
02/28/09	001A	NO_3-N (mo. avg. conc.)	10.3 mg/L	10 mg/L
03/31/09	001A	TSS (mo. avg. load)	1764 lb/d	1217 lb/d
03/31/09	001A	TSS (mo. avg. conc.)	28.7 mg/L	20 mg/L
03/31/09	001A	TSS (7-day avg. conc.)	35 mg/L	30 mg/L
03/31/09	001A	TRC (inst. max.)	.49 mg/L	.1 mg/L
04/30/09	001A	TSS (mo. avg. load)	3124 lb/d	1217 lb/d
04/30/09	001A	TSS (mo. avg. conc.)	49.1 mg/L	20 mg/L
04/30/09	001A	TSS (7-day avg. conc.)	68.4 mg/L	30 mg/L
04/30/09	001A	TRC (inst. max.)	.52 mg/L	.1 mg/L
04/30/09	001A	Zinc (mo. avg. load)	6 lb/d	5.2 lb/d
04/30/09	001A	Zinc (mo. avg. conc.)	118.3 µg/l	86 µg/l
04/30/09	001A	Zinc (max. conc.)	190 µg/l	172 µg/l
04/30/09	001A	Copper (7-day avg. conc.)	71µg/l	18.54 µg/l
04/30/09	001A	Copper (mo. avg. load)	2 lb/d	.56 lb/d
04/30/09	001A	Copper (mo. avg. conc.)	37 µg/l	9.24 µg/l
05/31/09	001A	TSS (mo. avg. load)	2829 lb/d	913 lb/d
05/31/09	001A	TSS (mo. avg. conc.)	36.7 mg/L	15 mg/L
05/31/09	001A	TSS (7-day avg. conc.)	110.7 mg/L	23 mg/L
05/31/09	001A	TRC (inst. max.)	.5 mg/L	.1 mg/L
06/30/09	001A	TRC (inst. max.)	.4 mg/L	.1 mg/L
07/31/09	001A	Copper (mo. avg. load)	.59 lb/d	.56 lb/d
07/31/09	001A	Copper (mo. avg. conc.)	14.1 µg/l	9.24 µg/l
07/31/09	001A	TRC (inst. max.)	.34 mg/L	.1 mg/L
07/31/09	001A	NO_3-N (mo. avg. conc.)	12.1 mg/L	10 mg/L

3. The Permittee failed to submit noncompliance reports with its DMRs for January, July, August, September, and October of 2008 on or before the 25th day of the month following the monitoring period, in violation of Part II, Section D, Paragraph 7 of the Permit and Ark. Code Ann. §§8-4-216(a) and 8-4-217(a)(3).

4. On May 21, 2007, ADEQ and the U.S.E.P.A. conducted a joint routine compliance inspection of the Permittee's POTW in accordance with the provisions of the Federal Clean Water Act, the Arkansas Water and Air Pollution Control Act, and the regulations promulgated thereunder.

A. The inspection revealed the following violations:

i) The totalizing meter at Outfall 001 was not reading within ± 10% of the true discharge rate, in violation of Part II, Section C, Paragraph 2 of the Permit and Ark. Code Ann. §8-4-217(a)(3).

ii) The Permittee was not conducting monitoring according to test procedures approved under 40 CFR 136, in violation of Part II, Section C, Paragraph 3 of the Permit and Ark. Code Ann. §8-4-217(a)(3), as follows:

(1) The facility's lab was not pre-distilling NH3 samples prior to analysis.

(2) Reviewed bench sheets showed that BOD samples were dechlorinated but there was no verification that the dechlorination was complete.

B. In a letter dated June 28, 2007, the Permittee adequately responded to the findings of ADEQ's and the U.S.E.P.A.'s May 21, 2007 inspection.

5. The Permittee has significant problems in its sanitary sewer collection system with inflow and/or infiltration (I/I) that cause sanitary sewer overflows (SSOs) and peak flows well over 200% of the treatment plant's design flow of 7.3 million gallons per day (mgd). A review of the file reveals peak flows as high as 19.8 mgd in January 2007, 17.25 mgd in March 2008, and 18.88 mgd in May 2009. These high flows have contributed in large part to the SSOs the Permittee has experienced since April 2006. The Permittee has reported these SSOs to the Department, as required by the Permit. SSOs violate Ark. Code Ann. § 8-4-217(a)(2), which

makes it unlawful to "place or cause to be placed any sewage . . . or other wastes in a location where it is likely to cause pollution of any waters of this state." ADEQ acknowledges the State of Arkansas has experienced two abnormally wet years. A list of the SSOs is attached to this CAO and by this reference incorporated herein.

6. The Permittee and ADEQ entered into CAO LIS 06-114, effective September 10, 2006.

A. That CAO addressed the Permittee's significant problems with I/I and SSOs.

i) The CAO allowed the Permittee, until the corrective actions addressing SSOs were completed or July 31, 2009, whichever came first, to bypass, under certain conditions, its secondary treatment process with any wastewater that exceeds 6.5 mgd.

ii) As required by the CAO, the Permittee submitted a comprehensive plan for eliminating SSOs.

iii) Given the SSOs and continued high peak flows referred to in Paragraph 5 above, it is apparent the comprehensive plan described in Paragraph 6A(ii) above has not adequately addressed the Permittee's problems with I/I.

B. CAO LIS 06-114 also addressed violations of the Permit, including, in part, forty-three effluent characteristics violations.

i) As required by the CAO, the Permittee submitted a comprehensive plan for achieving compliance with the Permit and eliminating effluent characteristics violations.

ii) Given the numerous effluent characteristics violations listed in Paragraph 2 above, it is apparent the comprehensive plan described in Paragraph 6B(i) above has not adequately addressed the wastewater treatment problems.

7. Part I, Section A of the Permit includes, in part, interim effluent limits for Nitrates (NO3-N), effective, April 1, 2005 through March 31, 2008, that require the Permittee to monitor and report only. It also includes final limits, effective April 1, 2008 through March 31, 2010 as follows:

Effluent Characteristics	Discharge Limitations		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/L, unless otherwise specified)	
	Monthly Avg.	Monthly Avg.	7-Day Avg.
Nitrates (NO3-N)	609	10	15
Total Residual Chlorine (TRC)	N/A	0.1 (Inst. Max)	

8. The Permittee has failed to meet the Permit's final effluent limits for NO3-N and TRC by April 1, 2008 as required by Part I, Section B of the Permit. The Permittee had planned and continues to plan to address these limits by permitting an outfall to the Arkansas River. The Permittee withdrew its permit to develop additional supporting information.

9. The Permittee has taken the following measures and actions to address the violations alleged by ADEQ:

A. Replaced two hundred fifty-two (252) customer owned and maintained cleanout caps;

B. Rehabilitated two hundred forty-four (244) manholes;

C. Rehabilitated the Permittee's primary pump station, Prairie Creek, at a cost of $560,199;

D. Rehabilitated the 10th Street Sewer Basin utilizing pipe bursting/slip lining techniques at a cost of $299,237;

E. Completed construction of a thirteen million gallon equalization basin at the POTW at a cost of $4,188,000;

F. Installed a chemical feed system at the activated sludge process with includes dissolved oxygen (DO), pH, and total suspended solids (TSS) meters at the equalization basins and final clarifiers;

G. Installed flow metering for the return activated sludge and waste sludge system with will help the Permittee to better control the operation of the activated sludge system process at a cost of $963,453;

H. Replaced the headwork's screening at a cost of $275,262;

I. Established a collection system I/I abatement field crew working full time in smoke testing and dye testing to identify leaking sewer mains and stormwater cross connections to the sanitary sewer system which enable the crew to repair leaking lines and stormwater cross connections as they are identified; and

J. Successfully petitioned the Russellville City Council to increase the sewer usage charges to provide sufficient system operation and maintenance funds, as well as to provide approximately $1,000,000 annually for system improvements, repair, and replacements.

10. Without admitting or denying these Findings of Fact, the Permittee agrees to the following Order and Agreement in full settlement and compromise of the alleged violations as stated herein.

ORDER AND AGREEMENT

Therefore, the parties do hereby stipulate and agree that:

1. Within **thirty (30) days** of the effective date of this CAO, the Permittee shall submit for ADEQ approval a comprehensive Corrective Action Report ("**CAR**") which shall detail the steps the Permittee has taken to achieve full compliance with the terms of the Permit, to eliminate the violations cited in the Findings of Fact, and to prevent future violations.

2. If the Permittee determines that full compliance with the terms of the Permit and correction of the violations cited above in the Findings of Fact cannot be achieved within **thirty (30) days** of the effective date of this CAO, the Permittee shall submit for ADEQ approval a

comprehensive Corrective Action Plan ("**CAP**") with a milestone schedule in lieu of the CAR required by Paragraph 1 above. The CAP shall detail the steps the Permittee shall take to achieve such full compliance, to correct the violations, and to prevent future violations. Upon approval by ADEQ, the CAP and milestone schedule shall be incorporated into this CAO by reference and shall be followed by the Permittee. Failure to comply with the schedule as approved by ADEQ shall be subject to the stipulated penalties contained in Paragraph 14 below.

3. Within **ten (10) days** of the effective date of this CAO, the Permittee through the services of an engineer licensed in the State of Arkansas shall develop and submit for ADEQ approval a CAP with a milestone schedule which shall detail the steps the Permittee shall take to expeditiously achieve full compliance with the Permit's effluent limits for Total Suspended Solids (TSS) and Total Chlorine Residual (TRC) and to prevent future TSS and TRC violations ("**CAP for TSS and TRC**"). Upon approval by ADEQ, the CAP, including milestone schedule shall be incorporated into this CAO by reference and shall be followed by the Permittee. Failure to comply with the schedule as approved by ADEQ shall be subject to the stipulated penalties contained in Paragraph 14 below.

4. Within **eighteen (18) months** of the effective date of this CAO, with the overall goal of eliminating noncapacity and capacity related SSOs and bypasses, the Permittee through the services of an engineer licensed in the State of Arkansas shall develop and submit for ADEQ approval a Sewer System Evaluation Study ("**SSES**") for its sanitary sewer collection system.

A. At minimum, the SSES shall:

i) Estimate peak flows (including escaped SSO volumes);

ii) Estimate the capacity of critical system components;

iii) Identify hydraulic deficiencies, including components of the system with limiting capacity;

iv) Establish short and long term capacity enhancements to address each hydraulic deficiency;

v) Evaluate alternatives for corrective action; and

vi) Prioritize corrective action.

B. The SSES shall include an **SSO Plan** with a milestone schedule which shall detail the steps the Permittee shall take to fully and expeditiously implement the corrective action.

i) The SSO Plan shall include a **deadline** for the Permittee's achieving **compliance** with the proper maintenance and operation of the wastewater collection system as it applies to noncapacity related SSOs and bypasses (**dry weather overflows**).

ii) The SSO Plan shall include a **deadline** for the Permittee's achieving **compliance** with the proper maintenance and operation of the wastewater collection system as it applies to capacity related SSOs and bypasses (**wet weather overflows**).

C. Upon approval by ADEQ, the SSES with SSO Plan and milestone schedule shall be incorporated into this CAO by reference and shall be followed by the Permittee. Failure to comply with the schedule as approved by ADEQ shall be subject to the stipulated penalties contained in Paragraph 14 below.

5. Within **thirty (30) days** of the effective date of this CAO, the Permittee shall identify all pumping stations that do not have **direct notification alarms and auxiliary power** and submit for ADEQ approval a milestone schedule for installing them. Upon approval by ADEQ, the milestone schedule shall be incorporated into this CAO by reference and shall be followed by the

Permittee. Failure to comply with the schedule as approved by ADEQ shall be subject to the stipulated penalties contained in Paragraph 14 below.

6. Within **sixty (60) days** of the effective date of this CAO, the Permittee shall establish, implement, and submit for ADEQ approval an **Overflow Response Plan** for the treatment works which shall:

A. Identify the individual(s) responsible for making the appropriate reports (24-hour notification and monthly tabular reports) to ADEQ;

B. Ensure that collection system overflows are identified and responded to in a timely manner;

C. Establish written procedures for cleaning up after SSOs;

D. Have provisions to notify the affected public of SSOs in parks and other public areas where access is not restricted and a reasonable potential exists for exposure to bacteria and other disease causing agents; and

E. Have provisions to notify any affected permit holders including municipal separate stormwater sewer permit (MS4) holders.

7. Within **one (1) year** of the effective date of this CAO the Permittee shall establish and maintain a **minimum inventory of spare parts** necessary to make immediate repairs to the pump stations, wastewater lines, and manholes for the POTW. The Permittee will submit this inventory list to ADEQ upon completion of the inventory.

8. Within **ninety (90) days** of the effective date of this CAO, the Permittee shall employ the services of a professional engineer licensed in the State of Arkansas to develop a continuous Capacity, Management, Operation, and Maintenance Program ("**CMOM**") for its sanitary sewer collection system. The CMOM shall include the following elements:

A. The CMOM shall enable the Permittee to:

i) Properly manage, operate, and maintain, at all times, all parts of the collection system the Permittee owns or over which it retains operational control;

ii) Provide adequate capacity to convey base flows and peak flows for all parts of the collection system the Permittee owns or over which it retains operational control and take all feasible steps to stop and mitigate the impact of non-wet weather related sanitary sewer overflows in portions of the collection system owned by the Permittee or over which the Permittee retains operational control;

iii) Provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.

B. The CMOM shall include a Statement of Major Goals consistent with Paragraph 8(A)(i-iii) above and a schedule for the implementation and achievement of the goals.

C. The CMOM shall include documentation identifying the Permittee's authority to:

i) Control private inflow sources;

ii) Require that sewers and connections be properly designed and constructed;

iii) Ensure proper installation, testing, and inspection of new and rehabilitated sewers (such collector sewers and service laterals);

iv) Address flows from satellite municipal collection systems; and

v) Implement the general and specific prohibitions of the national pretreatment program which the Permittee is subject to under 40 CFR § 403.5.

D. The CMOM shall include a list which shall identify the management/administrative personnel responsible for implementing the CMOM program, including lines of authority by organizational chart or similar document. The list shall

also identify the individuals, or positions within its organization, responsible for the following elements:

i) Lift station operation and maintenance;

ii) Geographic Information System, a geo-based inventory of collection system assets and associated databases that supports system mapping and other utility operations;

iii) Maintenance procedures that insure managers and supervisors are provided timely, relevant information from field personnel in order to establish and prioritize collections system activities (such as the elimination of dry weather overflows or overflows into sensitive waters based upon consideration of factors, including: public drinking water supplies and their source waters, swimming beaches and waters where swimming occurs, shellfish beds, designated Outstanding National Resource Waters, waters within federal, state or local parks, and water containing threatened or endangered species or their habitat);

iv) Computerized Maintenance Management System, an asset information and work management software used to schedule and track all work performed on collection system, lift station, and wastewater treatment plant (WWTP) assets.

v) Collection system preventive maintenance activities;

vi) Assessment of the current capacity of the collection system and treatment facilities which the Permittee owns or over which it retains operational control;

vii) Identification and prioritization of structural deficiencies and the short-term rehabilitation actions to address each deficiency;

viii) Collection system employee training;

ix) Equipment and replacement parts inventories, including identification of critical replacements parts; and

x) Trap Control Program to abate the impact of fats, oil, and grease (FOG) on the collection system.

E. The CMOM shall establish requirements and standards for the installation of new sewers, pumps, and other appurtenances and rehabilitation and repair projects. The requirements and standards must include the specifications and procedures for testing the installation of new sewers, pumps, and other appurtenances, and for rehabilitation and repair projects.

F. The Permittee shall develop a written summary of the CMOM program. This summary shall be made available to any member of the public upon request.

G. The Permittee shall:

i) Submit to ADEQ on or before March 31st each year annual reports for the previous calendar year on the implementation of each element of its CMOM program and on measurement of the program's effectiveness.

ii) Update CMOM program elements based on monitoring or performance evaluations.

iii) Modify the summary of its CMOM program, as appropriate, to keep it updated and accurate.

9. Upon ADEQ's approval of the CAP for TSS and TRC described in Paragraph 3 of this Order and Agreement, and lasting until such time as the corrective actions required by that paragraph are completed or July 31, 2012, whichever comes first, the Permittee may **bypass** the

activated sludge treatment process with any wastewater that exceeds 6.5 million gallons a day (mgd) under the following conditions:

A. The Permittee's flow equalization basin must be full and incapable of receiving any additional flows;

B. The Permittee shall notify ADEQ of the bypass within 24-hours (one working day) of beginning the bypass and will notify ADEQ no later than 24-hours (one working day) after bypassing has ceased;

C. The Permittee shall bypass only those waters that exceed 6.5 mgd. All other waters will be routed through the activated sludge treatment process;

D. All wastewater shall be routed through the disinfection process before being discharged;

E. The wastewater shall be sampled in accordance with the requirements of the Permit;

F. The Permittee shall submit to ADEQ a written follow-up report no later than five days after each bypass has been stopped;

G. The Permittee shall publish the five-day reports on the Permittee's website so that they are available for the public to review. These reports shall be published within one (1) week of submittal to the Department; and

H. The Director at any time for any reason may withdraw permission to bypass the secondary process or change any of the above conditions upon written notice to the Permittee.

10. Until the date of the deadline(s) set for compliance with effluent limits in the approved CAPs required by Paragraphs 2 and 3 of the Order and Agreement, the following **interim limits**

shall remain in effect. All other limits and monitoring frequencies shall be as stated in the Permit.

Effluent Characteristics	Discharge Limitations		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/L, unless otherwise specified)	
	Monthly Avg.	Monthly Avg.	7-Day Avg.
Nitrates (NO3-N)	919.3	15.1	20.4
Total Residual Chlorine (TRC)	N/A	0.55 (Inst. Max)	

11. Upon the effective date of this CAO, CAO LIS 06-114 shall be closed and superseded by this CAO.

12. In compromise and full settlement of the civil penalties for the violations specified in the Findings of Fact, the Permittee agrees to pay to ADEQ the total sum of **Nine Thousand Three Hundred Dollars ($9,300)** as a voluntary civil penalty. Payment of the penalty shall be made within **thirty (30) days** of the effective date of this CAO, made payable to the Arkansas Department of Environmental Quality and mailed to the attention of:

The Fiscal Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118

13. All submittals required by this CAO are subject to approval by ADEQ. In the event of any deficiency, the Permittee shall within fifteen (15) days of notification by ADEQ submit any additional information requested. Failure to adequately respond to the notice of deficiency within fifteen (15) days constitutes a failure to meet a deadline and is subject to the civil penalties contained in Paragraph 14 below.

14. Failure to meet the requirements, effluent limits, or construction deadlines of this CAO or the approved schedules provided for herein constitutes a violation of the CAO. If the Permittee

should fail to meet any such requirements, effluent limits or deadlines, the Permittee consents and agrees to pay, on demand, to ADEQ civil penalties according to the following schedule:

(a) First day through the tenth day:	$100.00 per day
(b) Eleventh day through the twentieth day:	$200.00 per day
(c) Twenty-first day through thirtieth day:	$300.00 per day
(d) Each day beyond the thirtieth day:	$500.00 per day

These stipulated penalties for delays in performance shall be in addition to any other remedies or sanctions which may be available to ADEQ by reason of the Permittee's failure to comply with the requirements of this CAO.

15. If any event, including but not limited to an act of nature, occurs which causes or may cause a delay in the achievement of compliance by the Permittee with the requirements or deadlines of this CAO, the Permittee shall so notify ADEQ, in writing, as soon as reasonably possible after it is apparent that a delay will result, but in no case after the due dates specified in the Permittee's milestone schedule. The notification shall describe in detail the anticipated length of the delay, the precise cause of the delay, the measures being taken and to be taken to minimize the delay, and the timetable by which those measures will be implemented.

16. ADEQ may grant an extension of any provision of this CAO, provided that the Permittee requests such an extension in writing and provided that the delay or anticipated delay has or will be caused by circumstances beyond the control of and without the fault of the Permittee. The time for performance may be extended for a reasonable period but in no event longer than the period of delay resulting from such circumstances. The burden of proving that any delay is caused by circumstances beyond the control of and without the fault of the Permittee and the length of the delay attributable to such circumstances shall rest with the Permittee. Failure to

notify ADEQ promptly, as provided in Paragraph 15 of this section, shall be grounds for a denial of an extension.

17. Nothing in this CAO shall constitute an admission of law or fact, nor evidence of any violation of law or regulations.

18. This CAO constitutes the entire agreement of the parties. All claims and disputes asserted by the parties hereto or capable of assertion in connection with the inspections, alleged violations, or the facts and circumstances related thereto shall be deemed merged into the terms and requirements of this CAO.

19. This CAO is subject to public review and comment in accordance with Ark. Code Ann. §8-4-103(d) and Arkansas Pollution Control and Ecology Commission Regulation No. 8 and shall not be effective until thirty (30) days after public notice is given. ADEQ retains the right to rescind this CAO based upon the comments received within the thirty-day public comment period. Notwithstanding the public notice requirements, the corrective actions necessary to achieve compliance with the terms of the Permit shall be taken immediately.

20. As provided by APC&EC Regulation No. 8, this matter is subject to being reopened upon Commission initiative or in the event a petition to set aside this CAO is granted by the Commission.

21. Nothing in this CAO shall be construed as a waiver by ADEQ of its enforcement authority over alleged violations not specifically addressed herein. Also, this CAO does not exonerate the

Permittee from any past, present, or future conduct which is not expressly addressed herein, nor does it relieve the Permittee of its responsibilities for obtaining any necessary permits.

SO ORDERED THIS 6th DAY OF Nov., 2009.

Teresa Marks

Teresa Marks, Director

APPROVED AS TO FORM AND CONTENT:

Russellville City Corporation

BY: _____
(Signature)

CRAIG NOBLE
(Typed or printed name)

TITLE: GENERAL MANAGER
(Typed or printed title)

DATE: November 3, 2009

CITY CORPORATION

RUSSELLVILLE, ARKANSAS

CITY CORPORATION WASTEWATER TREATMENT PLANT

CAO LIS No. 09-146 AFIN 58-00105

NPDES Permit No. AR0021768

CORRECTIVE ACTION PLAN for TSS & TRC VIOLATIONS

Prepared for: The Arkansas Department of Environmental Quality

December 23, 2009

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

CRAIG NOBLE, General Manager

CITY CORPORATION

I. General

This Corrective Action Plan (CAP) has been prepared by Garver LLC on behalf of City Corporation, Russellville, AR, in order to address the planned solutions for the Russellville City Corporation Pollution Control Works (PCW) Total Suspended Solids (TSS) and Total Residual Chlorine (TRC) violations. This CAP is required per the Consent Administrative Order (CAO) No. 09-146 AFIN 58-00105. TSS and TRC violations have occurred at the PCW over the past few years. This CAP outlines the proposed improvements to address these violations and proposes an implementation schedule for the said improvements.

II. Proposed Improvements

A. Plant Polishing Step

The proposed improvements involve the installation of a plant polishing treatment unit within the existing PCW process train. A disc-filter system is proposed for evaluation to provide solids removal to a final effluent average concentration of ≤ 15 mg/L TSS. The polishing step would be installed at the end of the process train, just prior to chlorination. A hydraulic profile is included in Appendix A, which shows the intended location of the disc-filter units within the process train. The proposed use of the disc-filter system as a plant polishing step may be modified depending upon the pilot plant data. It may be that the unit would serve more effectively as a wet weather by-pass treatment unit and be used to only treat flows above 6.5 mgd that by-pass the activated sludge treatment step. However, preliminary cost figures indicate that the filter equipment necessary to polish the total plant flow is only slightly more expensive than equipment sized to treat only the flow which by-passes the activated sludge system. Filtering of total plant flow versus filtering of only the flow by-passing the activated sludge facilities will be evaluated during the piloting of the proposed filters (discussed below) and during the final design effort.

B. Kruger Hydrotech Disc-filters

The proposed disc-filter equipment is equal to that manufactured by Kruger Hydrotech a division of Veolia Water. The system is composed of three (3) units of model HSF2220-1F to treat a peak flow of 20 mgd and an average flow of 5.7 mgd. The aforementioned effluent concentration of 15 mg/L TSS, or less, is targeted with this design. The units are equipped with automatic backwash and maintain continuous filtration even during a backwash cycle. The units will be furnished with woven polyester disc-filter media with a pore size of 10 μm. The

peak hydraulic loading will remain below 6 gpm/sf, for expected peak flows up to 20 mgd.

C. Pilot Testing

In order to validate and refine the proposed design, a pilot testing study of the proposed equipment is needed. The study results will be used to validate the intended design and refine the equipment parameters, such as filter pore size, design loading rates, potential need for additional coagulation/filtration step, etc..

D. Total Residual Chlorine

Control of the chlorine dosage required to properly disinfect the PCW effluent and thus meet NPDES FCB limits is counterproductive to being able to meet a <0.1 mg/l total residual chlorine limit in the plant effluent. Typically when chlorine is used for disinfection, dechlorination is required to meet the TRC limit. In the past it was anticipated that once the discharge point was moved to the Arkansas River, the PCW effluent would be dechlorinated naturally during the flow time in the outfall, therefore, no dechlorination facilities have been constructed to date. In order to meet the permitted limit of 0.1 mg/L, the installation of a sulfur dioxide feeder is now planned for dechlorination. Gaseous sulfur dioxide will be fed and mixed at the plant effluent prior to the effluent entering the outfall pipe. ADEQ has provided an interim limit in the CAO for TRC of <0.55 mg/l until such time as the dechlorination facilities can be completed. City Corporation believes that it will be able to comply with such an interim limit. The proposed dechlorination facility construction will be a part of the contract for installing the proposed disc-filters as outlined above.

III. Implementation Schedule

Milestone	Time (Days)	Cumulative Time (Days)	Date
CAO Effective Date	0	0	12/25/09
Submittal of CAP for TSS & TRC	10	10	1/04/10
Approval of CAP for TSS & TRC	30	40	2/03/10
Execution of Disc-Filter Pilot Agreement	30	70	3/05/10
Receive Pilot Equipment at PCW	60	130	5/04/10
Install Pilot Equipment and Complete Tests **	30	160	6/03/10
Prepare Construction Plans & Specifications	120	280	10/01/10
Regulatory Agency Review	30	310	11/01/10

Advertise, Bid, & Award Contract	60	370	1/02/11
Complete Construction	270	640	10/03/11
Place Units in Service			10/03/11
Attain TSS & TRC Compliance		not later than 7/31/12	

** In the event that the pilot test proves the filters to be ineffective, owner will research other treatment technologies and submit to ADEQ for a revision in this schedule.

The implementation schedule above assumes an effective date for the CAO of December 25, 2009 and is based on reasonable estimates of the time involved for each stage. A large portion of the construction phase will involve the shop drawing review and equipment delivery stages. A conservative estimate for the time involved in the shop drawing/equipment delivery period of the construction phase is 28 weeks (7 months).

IV. Conclusion

The use of disc-filters as a plant polishing process step is a commonly used solution for treating TSS problems, and, given the success of similar installations, we feel that this would be an appropriate solution to the Russellville PCW TSS problems. The pilot plant study will help to verify these assumptions and provide data necessary to fine tune the disc-filter units for the specific Russellville PCW wastewater characteristics. The project will include the installation of dechlorination facilities utilizing sulfur dioxide, in order to address the TRC violations. The proposed 18 month period between the completion of pilot testing and the completion of construction may be able to be improved upon depending on the lead time of equipment. However, we feel that the milestone schedule above is a good estimate of the time involved for the successful completion of the project.

APPENDIX A

File: L:\2009\09018320 - Russellville City Corp PCW 2009 CAD\Drawings\PRELIMINARY FLOW DIAGRAM.dwg Last Save: 11/9/2009 1:06 PM Last saved by: CKBreckenridge
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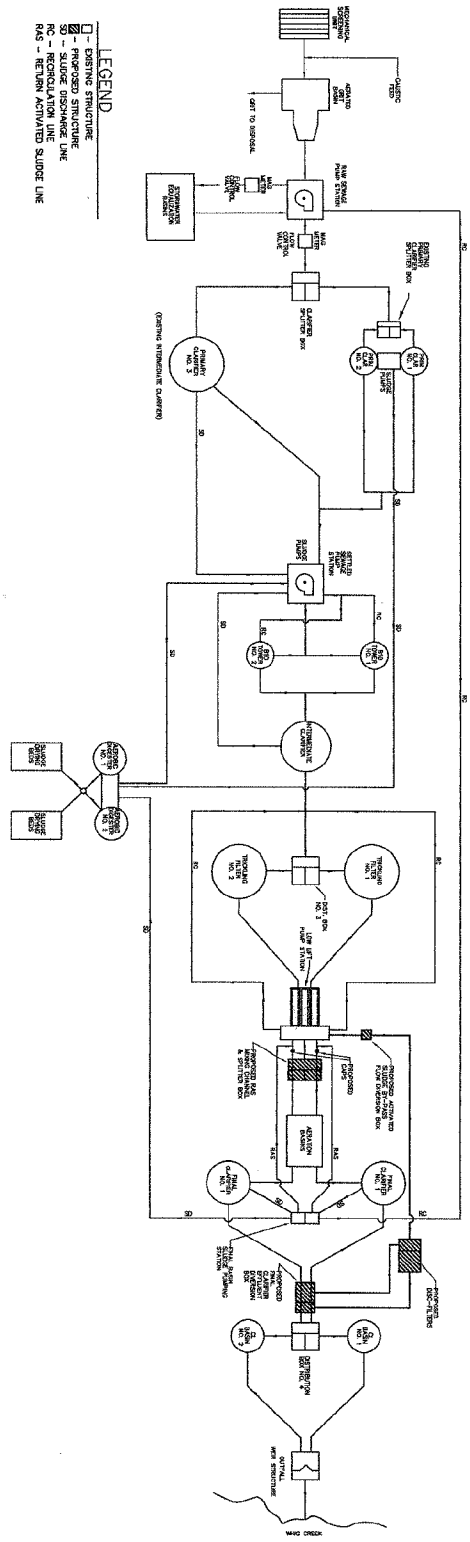
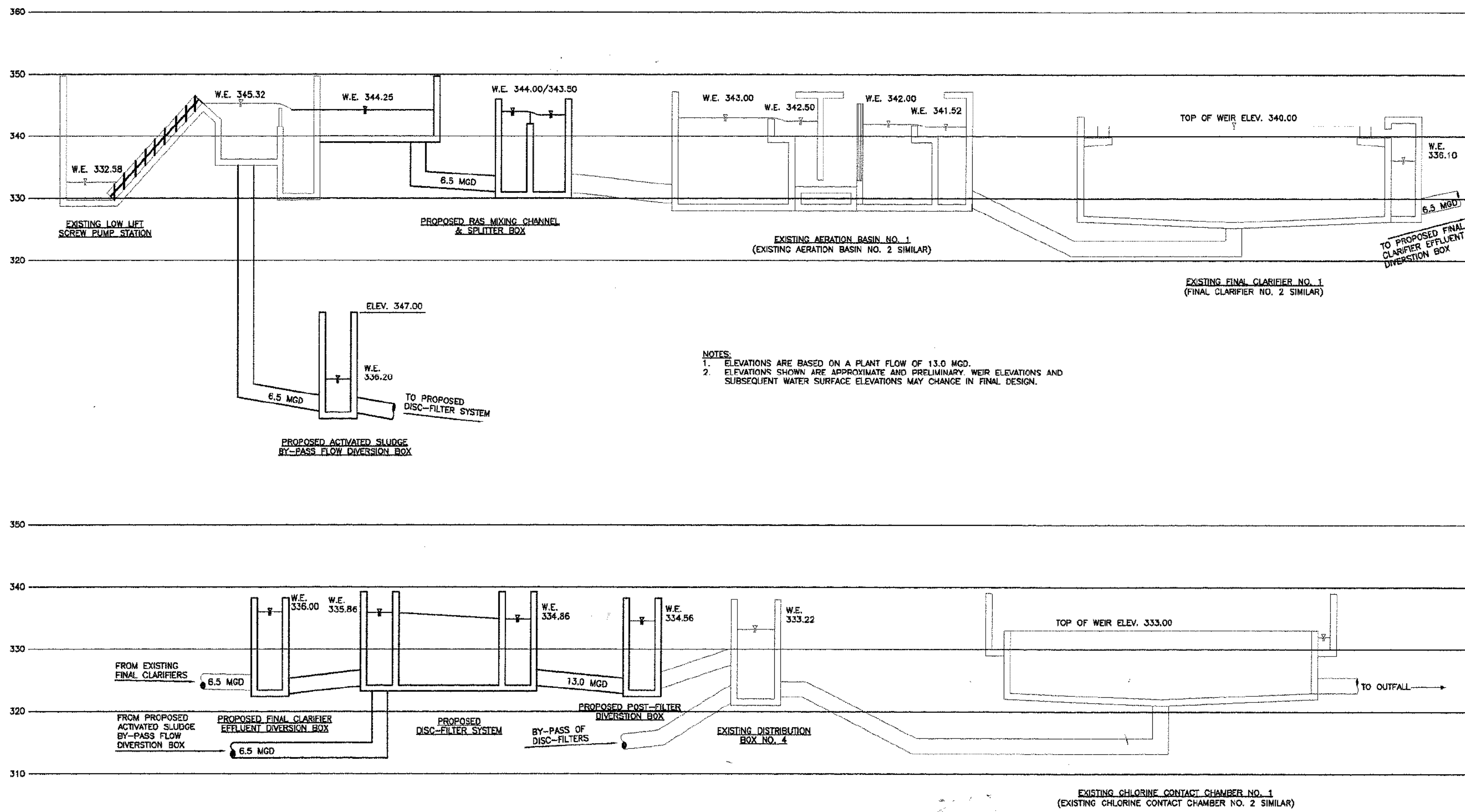


SHEET NUMBER: A1	DRAWING NUMBER	JOB NO.: 09018320 DATE: DEC. 2009 DESIGNED BY: CKB DRAWN BY: CKB	PRELIMINARY PROCESS FLOW DIAGRAM	CITY CORPORATION RUSSELLVILLE, ARKANSAS CORRECTIVE ACTION PLAN FOR TSS COMPLIANCE	REV. / DATE / DESCRIPTION / BY

GARVER



NOTES:
1. ELEVATIONS ARE BASED ON A PLANT FLOW OF 13.0 MGD.
2. ELEVATIONS SHOWN ARE APPROXIMATE AND PRELIMINARY. WEIR ELEVATIONS AND SUBSEQUENT WATER SURFACE ELEVATIONS MAY CHANGE IN FINAL DESIGN.

GARVER

REV.	DATE	DESCRIPTION	BY

CITY CORPORATION
RUSSELLVILLE, ARKANSAS

CORRECTIVE ACTION PLAN
FOR TSS COMPLIANCE

PRELIMINARY
HYDRAULIC
PROFILE

JOB NO.: 09018320
DATE: DEC., 2009
DESIGNED BY:CKB
DRAWN BY:CKB

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DRAWING NUMBER
A2

SHEET NUMBER

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CITY CORPORATION
RUSSELLVILLE, ARKANSAS

CITY CORPORATION WASTEWATER TREATMENT PLANT

CAO LIS No. 09-146

AFIN 58-00105

NPDES Permit No. AR0021768

COMPREHENSIVE CORRECTIVE ACTION PLAN

Prepared for: The Arkansas Department of Environmental Quality
21 January 2010

Revision 1 – Incorporating ADEQ Comments
9 April 2010

Revision 2 – Incorporating Additional ADEQ Comments
17 May 2010

Revision 3 - Table Revised
28 May 2010

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

CRAIG NOBLE, General Manager
CITY CORPORATION

1. General

This Comprehensive Corrective Action Plan (CAP) is intended to address paragraph Two (2.) of the Order and Agreement section of the Consent Administrative Order LIS No. 09-146.

2. City Corporation Wastewater Plant Inspection Deficiencies noted by ADEQ

As noted in the Findings of Fact within the CAO, City Corporation took actions to correct the deficiencies identified in the May 21, 2007, ADEQ and U.S.E.P.A. inspection. City Corporation adequately responded to the findings of that inspection with a letter to ADEQ dated June 28, 2007.

3. NPDES Permit Violations

3.1. Nature of Violations: One hundred and two (102) NPDES Permit violations are noted in the CAO beginning on 04/30/06 through 07/31/09. These violations include the following:

- Eight (8) $CBOD_5$.
- Forty two (42) TSS.
- One (1) Fecal Coliform Bacteria.
- Four (4) Dissolved Oxygen
- One (1) pH
- Sixteen (16) Total Residual Chlorine
- Twelve (12) Copper
- Six (6) Zinc, and
- Twelve (12) NO_3-N

3.2. Causes and Corrective Actions:

3.2.1. TSS and $CBOD_5$ Violations – The $CBOD_5$ and TSS violations are the direct result of surge flows into the City Corporation Pollution Control Works (PCW) during and following rainfall events. These surges are due to infiltration/inflow of storm waters into the City Corporation sanitary sewage collection system. In a previous corrective action plan City Corporation reported to ADEQ that it had an additional equalization basin under construction which will increase its ability to store in excess of 12 million gallons more of peak wet weather flows. It was hoped (and

expected) that would bring the total storage capacity available at the PCW to a level that would make wet weather surge flows manageable. That basin construction has been completed and the over $4 Million unit has been in service for some time. Even with a total storage of peak wet weather flows of approximately 20 million gallons available at the PCW, there continues to be storm events which overwhelm the storage available and cause the PCW flows to surge above acceptable levels.

In a separate Corrective Action Plan submitted to ADEQ for approval, City Corporation outlined a plan to evaluate treatment technology which, when proven during a pilot study, will be installed to provide final filtration of the PCW effluent in order to bring the facility into compliance with its NPDES TSS limits. City Corporation has begun that effort as outlined.

It should be noted that each of the $CBOD_5$ violations noted in the CAO occurred during a month of excessive TSS discharge. That would seem to indicate that the $CBOD_5$ violations are due to particulate $CBOD_5$ rather than dissolved $CBOD_5$. Therefore it is anticipated that the final effluent filtration discussed above for TSS removal will also correct the $CBOD_5$ violations.

3.2.2. Fecal Coliform Bacteria and Dissolved Oxygen – These five (5) violations occurred during times of excessive TSS discharge. With the increased strength of discharge during these times the DO was consumed and the solids provided a shielding effect that caused the fecal coliform bacteria violations. With the implementation of new treatment technologies for TSS treatment as outlined above City Corporation believes the PCW will be in material compliance with permit limits for fecal coliform and dissolved oxygen.

3.2.3. pH – The pH violation noted in the CAO is one of failure to report. This occurred by oversight, and is not anticipated to happen again. However, pH control at the PCW is of concern in that the pH tends to be depressed beyond acceptable levels from time to time. This occurs generally when the plant is operating in a heavy nitrifying condition converting ammonia nitrogen to nitrates. This biological activity utilizes alkalinity in the incoming wastewater, thus depressing the pH. The Plant Staff has been accustomed to feeding lime by hand during such plant conditions to avoid effluent pH problems. City Corporation has recently completed construction of a bulk storage tank and automatic feeding equipment for lime at a cost of approximately $800,000.00. The lime is fed at the influent to the activated sludge facilities where the nitrification is taking place. The control of the lime feed is automated to maintain pH levels in the activated sludge aeration basins. This system will help insure that plant effluent pH excursions do not happen.

3.2.4. TRC – Control of the chlorine dosage required to properly disinfect the PCW effluent and thus meet NPDES FCB limits is counterproductive to being able to meet a <0.1 mg/l total residual chlorine limit in the plant effluent. Typically when chlorine is used for disinfection, dechlorination is required to meet the TRC limit. ADEQ has provided an interim limit in the CAO for TRC of <0.55 mg/l. City

Corporation believes that it will be able to comply with such an interim limit. However, as mentioned in 3.2.1 above, City Corporation is evaluating, with the intent to construct, final effluent polishing for TSS and $CBOD_5$ control. As an insurance measure, City Corporation intends to include dechlorination facilities as outlined in the TSS/TRC CAP as submitted to ADEQ.

3.2.5. Copper and Zinc –

City Corporation is making a concerted effort at copper and zinc control. The PCW does not contain any treatment processes designed for copper or zinc removal. City Corporation has performed significant testing within its potable water treatment and distribution system. Based on those test results, City Corporation has concluded that the copper and zinc are entering the wastewater flow from leaching action in the water distribution system. The tests indicate these metals are coming from the residential customers of City Corporation, not commercial or industrial customers. The City Corporation raw and finished water to and from its water treatment plant have very low alkalinity. Low alkalinity waters are quite aggressive at low pH. As such, City Corporation has already implemented steps at its Water Treatment Plant to raise the finished water pH to make the water less corrosive. This adjustment will be monitored and evaluated as to effectiveness over time. It may be that further changes will be required in the chemical feed practices at the Water Plant such as further adjustment of the finished water target pH, feeding chemical(s) to increase finished water alkalinity, and/or changing types and/or increasing the feed rate of sequestering agents to prevent leaching of these metals from the pipe system. City Corporation will make such adjustments as may be required, and monitor the results as to effectiveness.

3.2.6. Nitrate (NO_3-N) –ADEQ has provided interim limits of 919.3 lb/day, 15.1 mg/l, and 20.4 mg/l (mass, monthly average, and 7-day average, respectively). Based on these interim limits, the twelve (12) NO_3-N violations noted in the CAO would be reduced to two (2) – one (1) 30 day average violation at 16.4 mg/l versus 15.1 mg/l interim limit and one (1) 7-day average at 21.6 mg/l versus 20.4 mg/l interim limit. City Corporation believes the PCW will be in material compliance with the interim limits.

City Corporation will evaluate our existing treatment processes to enhance ammonia and nitrate removal with alternative operational procedures which may result in a reduction of the nitrate nitrogen in the plant effluent. Operational modifications intended for evaluation include, but are not limited to, reduction in air flow delivered to the activated sludge aeration basins by cycling blowers and/or venting portions of the blower discharge periodically; operation of the effluent end of the aeration basins as an anoxic zone; and varying recycle rates around fixed film reactors.

City Corporation will submit an operations modification evaluation program to ADEQ for review and approval by September 1, 2010. City Corporation will

immediately proceed with easily implementable operational changes deemed to have potential of impacting ammonia and nitrate removal. The implementation and testing of potential solutions will proceed from the present through not later than December 31, 2012, to allow evaluation of the effectiveness of the modifications through seasonal changes in wastewater characteristics. If the testing indicates there are no effective means available within the current plant facilities to comply with these parameters, City Corporation will begin by December 31, 2012, the design, bidding, and construction of facilities that will bring their discharge into compliance not later than January 10, 2016. City Corporation will provide ADEQ quarterly progress reports beginning January 10, 2011, as this work proceeds.

4. SSES

As discussed above and in the CAO, City Corporation has made considerable effort and expended significant funds in constructing facilities to manage peak wet weather flows from its collection system. Also as noted, there continue to be instances of NPDES permit violations and overflow from the collection system directly attributable to extreme rainfall events. All overflows will be addressed according to the overflow response plan submitted to ADEQ. As with any wastewater system, the collection system cannot be economically designed to carry all rainfall events. City Corporation will implement a two-year storm event as the basis for hydraulic design in the system. As a result, City Corporation will design all sewer improvements to handle a minimum of a two-year event. Therefore, City Corporation shall evaluate, monitor, and address all overflows resulting from a rainfall event equal to a two-year storm or less. Any overflows occurring as a result of rainfall greater than the two-year storm will be monitored, cleaned, and reported according to City Corporations Overflow Response Plan, but no corrective action will be necessary.

City Corporation intends to proceed with the corrective actions described in the paragraphs below.

4.1. Sanitary Sewer Evaluation Survey (SSES) - Phase I – City Corporation will solicit statements of qualifications, select and enter into a contract with an Engineer licensed in the State of Arkansas to develop and submit for ADEQ approval a System Evaluation and Capacity Assurance Plan (SECAP). The statement of qualifications will be received by City Corporation within 30 days of the approval of this Corrective Action Plan by ADEQ. City Corporation will select an Engineer, execute an agreement for services, and issue the notice to proceed to the Engineer within 30 days of the Engineer's selection. The SECAP will as a minimum include:

4.1.1. The Engineer will obtain City Corporation records on its sewage collection system and will identify drainage sub-basins. (Note –This work is already completed and 27 sub-basins were identified).

4.1.2. Flow monitoring equipment will be installed in each system sub-basin in order to measure and record wet weather and dry weather flows. Using this information, the

Engineer will identify and rank from maximum to minimum each sub-basin's contribution of infiltration and inflow (I/I) to the system. From this ranking, the Engineer will prioritize the sub-basins with excessive I/I. (Note – The flow meters have been installed in 27 distinct sub-basins.)

4.1.3. Concurrent with the flow monitoring, the Engineer will update the system maps for all lines 10-inch in diameter and larger. All manholes on these lines will be GPS surveyed to ensure accuracy and each manhole will be inspected for signs of I/I and structural soundness. As a result of the survey information, a hydraulic model network will be developed for all 10-inch in diameter and larger lines, selected 8-inch diameter lines, and all major pump stations. The model will be used along with the flow monitoring data to identify collection system capacity issues.

4.1.4. As part of the SSES – Phase I, the Engineer will review operating data for each of City Corporation's pump stations to determine normal operating conditions and pumping records following rainfall events, estimate peak flows (including escaped SSO volumes, if any), estimate the capacity of critical system components, identify hydraulic deficiencies (if possible) including components of the system with limiting capacity, evaluate preliminary short and long term capacity enhancements to address each hydraulic deficiency identified, make preliminary evaluation of alternatives for corrective action, and prioritize corrective action.

4.1.5. Based on information collected and analyzed in the SSES – Phase I, the Engineer will prepare recommendations for capacity improvements in the system, necessary improvements to the collection system lift stations, and a milestone schedule for the completion of a Sanitary Sewer Evaluation Survey (SSES) – Phase II. City Corporation will require that the Engineer complete the SSES – Phase I portion of the work within the timeframe identified in the Table of Major Actions and Events found at the conclusion of this document. The submittal of the Phase I report by the 18 month deadline will satisfy the requirements for completion of an SSES by City Corporation in regards to the Consent Administrative Order (CAO LIS No. 09-146). As a result of the Phase I report, an SSO Plan with milestone schedule will be developed for all SSES Phase II activities. The remedial action and construction measures resulting from these activities will be included in the milestone schedule.

4.1.6. City Corporation will submit to ADEQ the following items at the completion of Phase I:

4.1.6.1. SECAP report detailing necessary capacity improvements, prioritizing sub-basins by I/I contribution, and recommended improvements to the collection system lift stations

4.1.6.2. Milestone Schedule for the completion of SSES Phase II portion of the Corrective Action Plan (CAP) and estimated schedule for the construction of the recommended corrective actions.

4.2. SSES – Phase II – The report produced from the SSES – Phase I will identify the priority basins in the collection system which contribute a significant amount of infiltration and inflow (I/I) to the system. These basins will be ranked and prioritized according to the amount of I/I contribution. A milestone schedule detailing the completion of the SSES – Phase II will be developed from the report. Upon approval by ADEQ, the SSES milestone schedule will be incorporated into the CAO by reference. The high priority basins resulting from the flow monitoring studies will be further examined in Phase II. The studies of the priority basins will involve extensive field investigation in an effort to quantify the results of the I/I Analysis and flow monitoring. The following field activities will be part of the Phase II investigations: manhole inspections, additional flow monitoring, smoke testing, dyed water flooding, cleaning, and television inspection. Phase II will be a multi-year effort of extensive field investigation and the length of this portion of the plan will be dependent on the results of the Phase I studies and the number of high priority basins identified.

A detailed report for each sub-basin studied will be developed by the engineer at the conclusion of the Phase II activities. The report for each sub-basin will include a capital improvement plan. The capital improvement plan will give a detailed description of cost effective improvements recommended for each sub-basin. This plan will identify rehabilitation needs and capacity improvements, and provide a staged priority schedule with associated budget costs. The sub-basin report will also include a narrative description of the hydraulic analysis and field investigations. As stated above, City Corporation would like to clarify that the SSES – Phase II will be a multi-year effort of intense field investigation dependent on the severity of the flow monitoring results in SSES – Phase I. The completion of the SSES – Phase II studies and reporting will be in accordance with the milestone schedule submitted to ADEQ for approval at the completion of Phase I.

4.3. Dry Weather Overflows - City Corporation is not aware of any "chronic" overflow areas in its wastewater collection system caused by capacity limitations in transporting dry weather flows. As with any system, City Corporation does experience dry weather overflows on occasion. Essentially all of the dry weather overflows have been caused by blockage in the lines from root intrusion or materials/objects inappropriately discharged into the sewer system. Correction of these type occurrences is reactive and City Corporation dispatches a crew immediately as required to clear the blockage. City Corporation has developed an Overflow Response Plan to direct and guide the utility in responding to overflow situations. City Corporation will continue to monitor the collection system and react in a timely manner to all dry weather overflows. Additionally, City Corporation is currently developing a Capacity, Management, Operation, and Maintenance (CMOM) program for the sanitary sewer system. The program addresses ways in which City Corp will become more proactive in managing the collection system. City Corporation is currently developing a grease trap program and working to reduce the impact of fats, oils, and grease (FOG) on the system. Routine maintenance schedules are being developed for problem areas around the city. City Corporation is increasing its efforts to actively monitor the system, which will also help reduce the possibility of dry weather stoppages and overflows. Also, as City

Corporation continues to correct wet weather overflows, the system as a whole will improve and positively impact the number of occurrences of dry weather overflows.

5. Capacity, Management, Operation, and Maintenance Program

In accordance with the provision in the CAO, City Corporation will employ the services of a professional engineer licensed in the State of Arkansas to supervise City Corporation Staff in the development of a continuous Capacity, Management, Operation, and Maintenance Program (CMOM) for its wastewater collection system. The CMOM shall include the following elements:

- The CMOM shall enable City Corporation to properly manage, operate, and maintain, at all times, all parts of the collection system City Corporation owns or over which it retains operational control; provide adequate capacity to convey base flows and peak flows for all parts of the collection system City Corporation owns or over which it retains operational control and take all feasible steps to stop and mitigate the impact of non-wet weather related sanitary sewer overflows in portions of the collection system owned by City Corporation; and, provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.

- The CMOM shall include a Statement of Major Goals consistent with the bullet next above and a schedule for the implementation and achievement of the goals.

- The CMOM shall include documentation identifying City Corporation's authority to control private inflow sources; require that sewers and connections be properly designed and constructed; ensure proper installation, testing, and inspection of new and rehabilitated sewers (such collector sewers and service laterals); address flows from satellite municipal collection systems; and implement the general and specific prohibitions of the national pretreatment program which City Corporation is subject to under 40 CFR § 403.5.

- The CMOM shall include a list which shall identify the management/administrative personnel responsible for implementing the CMOM program, including lines of authority by organizational chart or similar document. The list shall also identify the individuals, or positions within its organization, responsible for the following elements:

    - Lift station operation and maintenance

    - Geographic Information System, a geo-based inventory of collection system assets and associated databases that supports system mapping and other utility operations;

    - Maintenance procedures that insure managers and supervisors are provided timely, relevant information from field personnel in order to establish and prioritize collections system activities (such as the elimination of dry weather overflows or overflows into sensitive waters based upon consideration of factors,

including: public drinking water supplies and their source waters, swimming beaches and waters where swimming occurs, shellfish beds, designated Outstanding National Resource Waters, waters within federal, state or local parks, and water containing threatened or endangered species or their habitat);

- Computerized Maintenance Management System, an asset information and work management software used to schedule and track all work performed on collection system, lift station, and wastewater treatment plant (WWTP) assets.

- Collection system preventive maintenance activities;

- Assessment of the current capacity of the collection system and treatment facilities which City Corporation owns or over which it retains operational control;

- Identification and prioritization of structural deficiencies and the short-term rehabilitation actions to address each deficiency;

- Collection system employee training;

- Equipment and replacement parts inventories, including identification of critical replacements parts; and,

- Trap Control Program to abate the impact of fats, oil, and grease (FOG) on the collection system.

- The CMOM shall establish requirements and standards for the installation of new sewers, pumps, and other appurtenances and rehabilitation and repair projects. The requirements and standards must include the specifications and procedures for testing the installation of new sewers, pumps, and other appurtenances, and for rehabilitation and repair projects.

- City Corporation shall develop a written summary of the CMOM program. This summary shall be made available to any member of the public upon request.

- City Corporation shall:

  - Submit to ADEQ on or before March 31st each year annual reports for the previous calendar year on the implementation of each element of its CMOM program and on measurement of the program's effectiveness.

  - Update CMOM program elements based on monitoring or performance evaluations.

  - Modify the summary of its CMOM program, as appropriate, to keep it updated and accurate.

6. Treatment Plant Operations

Upon ADEQ's approval of the CAP for TSS described in Paragraph 3 of the Order and Agreement, and lasting until such time as the corrective actions required by that paragraph are completed or July 31, 2012, whichever comes first, City Corporation will implement operational procedures providing for bypass of the activated sludge treatment process with any wastewater that exceeds 6.5 million gallons a day (mgd) under the following conditions:

- City Corporation's PCW flow equalization basin must be full and/or incapable of receiving any additional flows;
- City Corporation shall notify ADEQ of the bypass within 24-hours (one working day) of beginning the bypass and will notify ADEQ no later than 24-hours (one working day) after bypassing has ceased;
- City Corporation shall bypass only those waters that exceed 6.5 mgd. All other waters will be routed through the activated sludge treatment process;
- All wastewater shall be routed through the disinfection process before being discharged;
- The wastewater shall be sampled in accordance with the requirements of the Permit;
- City Corporation shall submit to ADEQ a written follow-up report no later than five days after each bypass has been stopped;
- City Corporation shall publish the five-day reports on City Corporation's web site so that they are available for the public to review. These reports shall be published within one (1) week of submittal to the Department; and
- The Director at any time for any reason may withdraw permission to bypass the secondary process or change any of the above conditions upon written notice to City Corporation.

7. Timetable

Following is a timetable of major activities to be undertaken by City Corporation in this effort. The table also shows a projected date for attainment of permit compliance, allowing time after expected completion of construction to provide for potential delays in completion of that work and for start-up of the new facilities.

Table of Major Actions and Events
Revised May 28, 2010
City Corporation Wastewater Treatment Plant
Russellville, Arkansas
NPDES Permit No. AR0021768

Date	Event
December 25, 2009	Effective date of the CAO
January 4, 2010	Submission of Corrective Action Plan for TSS/TRC (TSS/TRC CAP)
January 10, 2010	Solicit qualifications for Engineering Services for SSES Phase I
January 10, 2010	Solicit qualifications for Engineering Services for program management and CMOM preparation
February 15, 2010	ADEQ Approval of TSS/TRC CAP
March 25, 2010	Select Engineer for program management and CMOM preparation, execute agreement, and issue Notice to Proceed
March 31, 2010	Select Engineer for SSES Phase I, execute agreement, issue Notice to Proceed
July 2010	Status Report with Environmental Protection Agency via Conference Call
September 1, 2010	Submission of Operations Modification Evaluation Program to address Nitrate removal to ADEQ
January 10, 2011	First quarterly progress report on operations modifications program for Nitrate removal
February 25, 2011	Complete SSES Phase I report, develop Milestone Schedule for SSES Phase II, and submit to ADEQ for approval
March 31, 2011	First annual report on implementation of CMOM
April 8, 2011	Quarterly progress report on operations modifications program for Nitrate removal

May 1, 2011	**ADEQ Approval of SSES Phase I Report and Milestone Schedule for SSES Phase II**
July 8, 2011	**Quarterly progress report on operations modifications program for Nitrate removal**
October 7, 2011	**Quarterly progress report on operations modifications program for Nitrate removal**
January 13, 2012	**Quarterly progress report on operations modifications program for Nitrate removal**
March 2012	**Begin Collection System Remedial Action**
April 6, 2012	**Quarterly progress report on operations modifications program for Nitrate removal**
July 6, 2012	**Quarterly progress report on operations modifications program for Nitrate removal**
July 31, 2012	**Complete pilot study of disc filter, prepare construction plans and specifications, advertise for bids, award construction contract, complete construction and place facility into service, modify PCW operating procedure to prohibit bypass of activated sludge facilities.**
October 5, 2012	**Quarterly progress report on operations modifications program for Nitrate removal**
December 31, 2012	**Final Report on Successful Operations Modifications Program for Nitrate Removal Or, (if Operational Modifications are unsuccessful) Begin design, bidding, and construction of facilities to address nitrate and ammonia removal**
January 10, 2016	**Final Compliance date for Nitrate**
*** May 1, 2017** **(See Note Below)**	**Complete SSES Phase II reports for each sub-basin**
March 2022	**Complete collection system remedial action and re-evaluate system**
***Note – City Corporation Sewer System is divided into 30 sub-basins. This date is assuming that City Corporation will have to complete a detailed SSES of every sub-basin in the system.**	

APPENDIX E- OVERFLOW LIST

Manhole	Address	Project Name	Basin	Design Year	Total # of Occurences (Since 2006)	Date of last Overflow
1043	400 N Vancouver	Basins 7,14 & 23	RV14	2012	1	10/28/2011
1108	W 2nd Place & S Phenoix	Basin 7,14 & 23	RV14	2012	1	1/12/2013
1200	1105 Resimont	Basins 9,15 & 25	RV15	2015	1	4/22/2012
1219	601 G St	Basins 9,15 & 25	RV25	2015	1	12/16/2013
1295	812 E Parkway	Basins 13,16 & 26	RV13	2016	1	1/25/2012
1315	3rd & Vancouver	Hydraulic Cap Improv	RV16	2013	3	1/12/2013
1333	4th & Waco	Hydraulic Cap Improv	RV16	2013	4	1/12/2013
1341	1310 Ridgewood Dr	Basins 13,16 & 26	RV16	2016	2	3/9/2013
1465	ATU	Basins 17,18,20, & 21	RV20	2014	2	12/20/2012
1466	Prairie Creek Lift Station	Basins 17,18,20, & 21	RV20	2014	1	6/24/2009
1468	ATU	Basins 17,18,20, & 21	RV20	2014	2	1/12/2013
1487	410 W Parkway	Basins 7,14 & 22	RV23	2012	1	11/5/2013
1510	413 S. Commerce	Basins 7,14 & 23	RV23	2012	1	9/8/2007
1513	5th & Commerce	Basins 7,14 & 23	RV23	2012	1	1/25/2012
1567	C and Boston	Hydraulic Cap Improv	RV24	2013	3	4/25/2011
1568	107 N Boston Pl	Hydraulic Cap Improv	RV24	2013	1	12/19/2011
1593	601 E 7th St	Basins 12,19 & 24	RV24	2017	1	12/5/2011
1608	E B St & N Detroit Ave	Basins 12,19 & 24	RV24	2017	1	1/12/2013
1624	115 E. Parkway	City Mall	RV24	2012	1	12/12/2006
1675	E. Main and Nashville	Basins 13,16 & 26	RV13	2016	1	11/21/2006
1704	E L st & Parker Rd	City Mall	RV25	2012	4	1/25/2012
1705	1025 Parker Rd	City Mall	RV25	2012	2	2/26/2013
1706	1022 Parker	City Mall	RV25	2012	2	12/5/2011
1709	1008 N Jackson Ave	Basins 9,15 & 25	RV25	2015	1	6/17/2014
1711	1003 E J St	City Mall	RV25	2012	1	1/23/2012
1725	E G & Greenwich	City Mall	RV25	2012	3	12/5/2011
1728	904 N Frankfort Ave	City Mall	RV25	2012	1	1/21/2012
1735	1317 N. Frankfort	Basins 3,5, & 6	RV21	2013	1	3/16/2007
1823	City Mall	City Mall	RV24	2012	2	12/5/2011
1825	N. Arkansas Ave	City Mall	RV24	2012	4	5/20/2010
1848	1500 N. Jackson	Basins 9,15 & 25	RV25	2015	1	9/8/2007
1850	1506 Knoxville Ave	Basins 9,15 & 25	RV25	2015	1	8/8/2010
1852	1506 N Jackson Ave	Basins 9,15 & 25	RV25	2015	1	4/24/2013
1996	906 W 16th St	Basins 3,5, & 6	RV05	2013	1	12/29/2011
2023	Cedar and N. Commerce	Basins 9,15 & 25	RV15	2015	2	5/15/2010
2024	108 W Birch St	ATU North-Garver	RV22	unk	7	3/21/2012
2028	Birch and Commerce	ATU North-Garver	RV22	unk	2	5/11/2009
2032	Birch and Commerce	Basins 22,27 & 28	RV22	2018	1	10/9/2009
2035	Honda of Rsvl, Lakefront Dr	ATU North-Garver	RV22	unk	1	5/15/2010
2036	220 Lakefront Dr	ATU North-Garver	RV22	unk	5	3/22/2012
2040	ATU	Basins 17,18,20, & 21	RV20	2014	1	12/5/2011
2042	Red Hill & N Phoenix Ave	Basins 17,18,20, & 21	RV20	2014	1	1/12/2013
2043	ATU Softball Field	Basins 17,18,20, & 21	RV20	2014	6	3/8/2012
2046	West R & N Glenwood	Basins 17,18,20, & 21	RV20	2014	1	3/21/2012
2048	ATU Pasture	Basins 17,18,20, & 21	RV20	2014	8	1/12/2013
2050	ATU Pasture	Basins 17,18,20, & 21	RV20	2014	6	3/21/2012
2146	1007 W 17th Terrace	Basins 9,15 & 25	RV15	2015	1	1/21/2014
2276	O & Glenwood	Basins 17,18,20, & 21	RV20	2014	1	5/20/2011
2314	ATU	Basins 17,18,20, & 21	RV20	2014	2	5/2/2011
2808	415 S Erie Ave	Basins 12,19 & 24	RV24	2017	1	1/4/2012
2814	N Phoenix & W 2nd St	Basins 7,14 & 23	RV14	2012	1	1/12/2013
2815	Arkansas Tech	Basins 17,18,20, & 21	RV20	2014	2	12/20/2012
2816	Arkansas Tech	Basins 17,18,20, & 21	RV20	2014	2	12/20/2012
2817	N Glenwood	Basins 17,18,20, & 21	RV20	2014	2	1/3/2010
2859	321 W. B	Basins 7,14 & 23	RV23	2012	1	6/12/2006
2874	718 S Arkansas Ave	Basins 7,14 & 23	RV23	2012	1	6/17/2014
3026	2502 W 2nd St.	Basins 17,18,20, & 21	RV17	2014	1	8/14/2011
3027	2502 W 2nd St.	Basins 17,18,20, & 21	RV17	2014	2	7/15/2010
3034	220 S Cumberland Ave	Basins 17,18,20, & 21	RV17	2014	1	1/21/2014
3043	N Hunter Ridge Ln	Basins 17,18,20, & 21	RV18	2014	1	2/20/2010
3052	102 N Fairbanks	Basins 17,18,20, & 21	RV17	2014	2	6/11/2010
3075	3801 W Main	Basins 17,18,20, & 21	RV18	2014	2	7/19/2012
3093	3515 Main St	Basins 17,18,20, & 21	RV18	2014	1	5/1/2014

APPENDIX E- OVERFLOW LIST

Manhole	Address	Project Name	Basin	Design Year	Total # of Occurrences (Since 2006)	Date of last Overflow
3094	215 S. Portland	Basins 17,18,20, & 21	RV18	2014	2	12/8/2010
3114	106 S. Hastings	Basins 17,18,20, & 21	RV18	2014	1	11/16/2006
3133	243 Enid Ave	Basins 17,18,20, & 21	RV17	2014	1	12/24/2013
3191	John Trusty Lane	Hydraulic Cap Improv	RV18	2013	1	12/5/2011
3193	John Trusty Lane	Hydraulic Cap Improv	RV18	2013	9	3/21/2012
3283	104 Sunset Dr	Basins 12,19 & 24	RV19	2017	1	4/18/2013
4009	2005 E Main St	Basins 9,15 & 25	RV09	2015	1	7/26/2013
4015	1900 E. Main	East 2nd Street	RV09	Complete	1	8/19/2006
4019	1611 E. Main St.	Basins 9,15 & 25	RV09	2015	1	11/20/2006
4020	E Main & N Sydney	Basins 9,15 & 25	RV09	2015	2	7/17/2013
4022	2007 E Main St	Basins 9,15 & 25	RV09	2015	1	2/13/2014
4023	2209 E. Main	Basins 9,15 & 25	RV09	2015	1	8/16/2006
4043	N. Glenwood	Basins 9,15 & 25	RV09	2015	1	10/9/2009
4058	1400 E F St	Basins 9,15 & 25	RV09	2015	1	3/26/2013
4078	1002 E I St	Basins 13,16 & 26	RV13	2016	1	2/5/2014
4090	1611 E Main St	Basins 9,15 & 25	RV09	2015	1	2/18/2014
4107	200 S El Mira	East 2nd Street	RV11	Complete	1	4/9/2010
4116	806 E. 4th St.	Basins 1,2,8 & 11	RV08	Construction	1	11/15/2006
4127	515 S Ithaca	Basins 1,2,8 & 11	RV08	Construction	5	3/8/2012
4138	807 S Ithaca	Basins 1,2,8 & 11	RV08	Construction	1	12/29/2010
4182	1200 East E St.	Basins 9,15 & 25	RV09	2015	1	11/5/2012
4213	88 Joyce Lane	Basins 1,2,8 & 11	RV11	Construction	3	1/16/2014
4214	Flying J Truck Stop	Basins 1,2,8 & 11	RV11	Construction	2	1/30/2013
5005	909 Sequoyah Way	Basins 3,5, & 6	RV05	2014	1	1/19/2012
5018	1203 S Commerce Ave	Basins 3,5, & 6	RV05	2014	1	11/9/2011
5032	E. 11th and Boston	Basins 3,5, & 6	RV03	2014	10	3/21/2012
5043	109 E 13th Street	Basins 3,5, & 6	RV03	2014	1	11/13/2012
5054	14th and Boston	Basins 3,5, & 6	RV06	2014	2	1/5/2010
5102	105 Western Drive	Basins 3,5, & 6	RV06	2014	1	11/29/2013
5120	11th and Glenwood	Basins 3,5, & 6	RV05	2014	1	3/26/2007
5136	111 E. 8th St.	Basins 12,19 & 24	RV24	2017	1	9/21/2006
5164	Eat 11th St & Boston Ave	Basins 3,5, & 6	RV03	2014	1	12/5/2011
5668	710 E. 23rd	Basins 3,5, & 6	RV03	2014	1	3/19/2007
6035	1106 12th St	Basins 7,14 & 23	RV07	2012	1	12/26/2013
6085	1336 S Sidney Ave	Basins 7,14 & 23	RV07	2012	1	7/30/2012
6088	1312 S Sidney Ave	Basins 7,14 & 23	RV07	2012	1	3/19/2007
6108	1206 S Utica Ave	Basins 7,14 & 23	RV07	2012	1	9/30/2013
6231	3509 E. 4th St.	Basins 1,2,8 & 11	RV02	Construction	1	9/21/2006
6399	1519 Knoxville Ave	Basins 3,5, & 6	RV03	2014	1	12/12/2013
6415	300 Industrial	Basins 1,2,8 & 11	RV02	Construction	1	8/16/2006
6478	404 Jimmy Lile Rd	Treatment Plant			4	1/12/2013
7017	106 Lakeshore Dr.	Basins 12,19 & 24	RV19	2017	1	1/4/2007
7035	110 Lakeview Dr	Basins 12,19 & 24	RV19	2017	1	9/29/2013
7053	Lift Station B	Basins 12,19 & 24	RV19	2017	1	12/14/2006
8046	Pollution Control Works	Basins 13,16 & 26	RV26	2016	1	5/2/2009
8048	Pollution Control Works	Treatment Plant			5	4/10/2008
9016	Shadow Valley PS	Basins 22,27 & 28	RV22	2018	1	2/9/2012
Old Post	Old Post Lift Station	Basins 13,16 & 26	RV26	2016	2	4/19/2011
PCW	Pollution Control Works	Treatment Plant			1	5/2/2011

ADEQ

A R K A N S A S
Department of Environmental Quality

June 4, 2010

Mr. Craig Noble
City Corporation
P.O.Box 3186
Russellville, AR 72811

RE: Notice for No Exposure Exclusion under the Industrial Stormwater General Permit, ARR000000 (Permit Tracking No. ARR000104 - AFIN 58-00105)

Dear Mr. Noble:

The renewal certification for "No Exposure Exclusion" under the Industrial Stormwater General Permit ARR000000 for City Corporation Wastewater Treatment Plant, located in Russellville, AR, has been approved by the Department based on the information the facility provided. The Renewal No Exposure Certification was received on 03/26/2010. For tracking purposes, the facility will remain under permit tracking number, ARR000104. Please continue to use this number in all future correspondence related to this facility.

Renewal Certification Date: 03/26/2010
Expiration Date: 06/30/2014

Please note that a facility site inspection may be conducted at a later date to verify the conditions of the "No Exposure Exclusion". If all of the conditions of "No Exposure" are not verified during the site inspection, the "No Exposure Exclusion" will be canceled and stormwater discharges shall be in accordance with the terms and conditions of the ARR000000.

On July 29, 2009, the Arkansas Environmental Federation ("AEF") filed a Third Party Request for Commission Review and Adjudicatory Hearing challenging the permit, Docket No. 09-011-P. As a result of that appeal, the 2009 IGP was automatically stayed and not in effect. On March 26, 2010, the Arkansas Pollution Control and Ecology Commission (Commission) granted a modification of the automatic stay in Minute Order No. 10-09. This modification lifted the automatic stay from the 2009 IGP until a final decision on the appeal is issued by the Commission. Under the terms of the Commission's Minute Order lifting the stay, the 2009 IGP immediately became effective, except for those sections that are the subject of the appeal by the Arkansas Environmental Federation. The written decision of the Commission included alternative terms and conditions that applied in the place of the sections that remained stayed. A copy of Commission's Minute Order, including the attachment that lists the sections that remain stayed and the alternative terms and conditions that apply to all dischargers during the pendency of the appeal, and the 2009 IGP can be obtained from the following website:
http://www.adeq.state.ar.us/water/branch_permits/general_permits/stormwater/industrial.htm.

Please note that one of the primary issues in the appeal is the authority of ADEQ to issue a general permit. Although ADEQ believes the law unequivocally gives the Director the authority to issue permits, if any facility is concerned about having legal authority to operate in the unlikely event that AEF should prevail in its appeal, facilities covered by the general permit have the option of obtaining an individual NPDES permit from ADEQ for industrial stormwater discharges.

If you have any questions concerning this matter or need additional information, please feel free to contact the General Permits Section at (501) 682-0623.

Sincerely,

Mo Shafii
Assistant Chief
Water Division

MS: ag

cc: Electronic Filing (ARR000104 w/ attachments)
Eric Fleming, Branch Manager, Field Services Branch
Cindy Garner, Branch Manager, Enforcement Branch
Jim Purvis, Administrative Analyst, Fiscal Division
David Ramsey, Administrative Analyst, Enforcement Branch

Industrial Stormwater Renewal Route Sheet

Facility Name: Cita Corporation Wastewater Treatment Plant			
Permit Number: ARR000104		AFIN NO.*: 58-00105	
No Exposure Exclusion: ☐ Yes ☐ No	Monitoring Category: X		Industrial Sector: IL
Stream Segment: 3F	Nearest Receiving Water: Wing Creek		HUC: 11110203

Assigned	Activity	Initials	Date Complete/Entered
Sect.	NOI Logged/Assign to Engineer (1-day)		N/A
Engineer (5 days)	Confirm/Perform the following: ☒ Check Permittee Name on SOS (if applicable) ☒ Check SIC Code ☐ Assign Industrial Sector ☐ Check Facility and Outfall Coordinates by Google Earth. ☐ Check Receiving Stream ☐ Enter information into Access ☐ DMR status _____ submitted Dates not submitted:	RY	5/7/10
AA (5 days unless AFIN Change is Required)	Check the following into PDS: ☐ AFIN Change Required name change ☐ Invoice Information ☐ Coordinates-if not already there ☐ SIC/NAICS ☐ Receiving Stream ☐ Stream Segment ☐ Facility Contact (All info-name/number/email) ☐ Facility Mailing Information ☐ Monitoring Category ☐ Staff	JeH JeH	5/18/10 wait 2 weeks 5/18/10
Engineer (2 days)	Merge Permit Authorization Letter	JeH	6/2/10
Engineer Supervisor (1-day)	Review all the documents. Make recommendation.		
Assistant Chief (1-day)	Review the documents and sign the authorization letter or the permit.		
Sect.	☒ Scan complete packet ☒ E-mail to everyone cc on the letter ☒ Mail Letter	hH	6/8/2010

Comments:

City Corporation Fleet Listing

Vehicle #	Description	Operation
502	2006 Chev. Silverado	2
503	1999 International 4700 Dump	4
504	1995 Ford F800 Dump	1
505	2007 Ford F150 (8cyl)	5
506	2008 Ford F350	1
507	2013 John Deer Minix	1
508	2003 New Holland LB75.B Backhoe	1
509	1997 Sullair 185DLG (542)	1
510	2006 International 420 Diesel Pickup	1
511	2009 Ford F150	1
514	2000 Dodge 1/2 Ton	4
515	2007 Ford F150 (6cyl)	7
517	2010 Ford Ranger	1
518	2000 Ford TC35D Tractor	4
519	2007 Ford F150	4
520	1998 Chevrolet 1/2 Ton 1500	3
521	2004 Chevrolet 1500	6
522	2005 Chev SC1 Pickup	6
523	2007 Ford F150	6
526	2009 Ford F150	6
527	2008 Ford F250	5
528	2002 Ford F350 4x4	1
529	1986 Ford 2110 4x4 Tractor	4
530	1995 New Holland Skid Loader	4
531	2009 Ford F250	1
532	2005 Chev SC1 Pickup	5
533	2005 GMC 2KH Pickup	5
538	1993 Case 1845C Uniloader	2
539	2004 Sreco Jetter	1
540	2003 International 4200 Diesel	1
541	2004 International 4200 Diesel	1
542	2010 Freightliner M2106	1
543	1995 Ford F700 Flatbed	1
544	2008 Ford F350 Diesel	1
545	2004 New Holland LB75.B Backhoe	1
546	1997 International 2 Ton Flatbed Dump	1
555	1998 Ford 555E Backhoe	1
556	2005 case 580M Backhoe	1
558	2007 SECA Model 747FR2 Jetter/Cam Tr.	1
559	2007 Tex-Mex 14' Trailer	5
560	1996 Alumacraft MV 1650 AW Boat	2
601	1992 Hudson Trailer	1
602	1992 Hudson Trailer	1
603	2005 Holden Model HCZ Trailer	1

City Corporation Fleet Listing

Vehicle #	Description	Operation
604	2000 Tiger-Vac	1
605	2007 Kubota RTV	4
606	1994 Justin C Trailer 6x14	1
607	2005 Holden Model HCZ Trailer	1
608	1996 Gooseneck Trailer	5
609	1995 Sullair Compressor 540	1
610	1995 Sullair Compressor 541	1
611	1989 Wells Cargo Trailer	1
612	1986 Light Boat Trailer	2
613	2010 Trailmaster 14' Trailer	4
614	1996 M-F Tractor	2
616	1995 CRLY Utility Boat Trailer	2
617	2007 Kubo RTV	2
618	2001 Troy Built 50" Mower	2
619	1996 Sullair 185 543	1
620	2013 ECO-III Sewer Cleaner/Trailer	1
621	1999 Easement Cleaner	1
622	1999 Sreco Seca Trailer	1
623	1999 Big Tex Dump Trailer	1
624	1999 Kodiak Trailer	2
625	2004 Husqvarna Lawn Tractor	1
626	2005 Cherokee Enclosed Trailer	1
627	1991 Toro Proline 52" Mower	2
628	2003 MEBT U Trailer	5
629	2006 Bad Boy Mower	5
630	2006 John Deere X500 Mower	2
631	2003 125 Geneartor RE02JB	4
632	2003 500 Generator	4
633	2009 125 Geneartor GCT-2E-11400	4
634	2009 10' Big Bee Rotary Cutter	2
	Black 16' Trailer (Kept at Const. Shop)	1
636	Gator Gam Push Camera	1
620	New jetter	1
	Cat Mini x	1

1	Construction Dept
2	Water Plant
3	Con-Agra PTP
4	Wastewater Plant
5	Maintenance
6	Office-Service
7	NOC

City Corporation Spare Parts Inventory

No.	Item2	Quantity
1	Radio for Scada PAC MDS 4710/S.N.1486560	1
2	Shaft Sleeve for Flygt Pump Part # 52-109-473-001	1
3	Rail Guides for Grinder Pump Station	1
4	Scad PAC S.N. 5015705.	1
5	Cramer Hour Meters Model # 6x137	1
6	Bushing Material for Air Lift Disc at the PCW Porgy 2.375x3.75	1
7	Complete Capacitor Package for 2hp single phase 230 v grinder pump	7
8	Capacitor # 97F9632 440 VOLTS 50/60HZ (Fits all sewer lift stations)	7
9	Capacitor # 12141A006 220 VAC. 50/60 HZ	2
10	Capacitor # 12141A000 250 VAC. 50/60 HZ	2
11	Capacitor #97F9633 440 VAC 50/60 HZ	1
12	Capacitor #97F9264 410 VAC 50/60 HZ	1
13	Relay # 3ARR22J15M3	3
14	O-Ring kit for Flygt Pump	2
15	Rebuild Kits for 2inch Air Relief Valves	4
16	Transducer Serial # 2007/PBD/1V3090029	1
17	Transducer Serial # PBD / W 5140518	1
18	Transducer Serial # PBD/ W 7080013	1
19	2 inch air release valves for sewer force mains	3
20	Myers 5 Horse Power 1750 RPM Pump. Spare for Rim Rock	1
21	Complete Rebuild Kit for a Residential Grinder Pump Station	1
22	Myers 2 Horse Power 230 Volt Grinder Pump	1
23	4715 Sewer Service Saddle Romac 4.63	7
24	4723 Furnco Plastic x Plastic 4"	32
25	4731 Furnco Clay x Plastic 4"	46
26	4758 Furnco Plastic x Plastic 6"	17
27	4766 Furnco Clay x Plastic 6"	16
28	4774 Furnco Plastic x Plastic 8"	37
29	4782 Furnco Clay x Platic 8"	69
30	4790 Furnco Plastic x Plastic 10"	20
31	4804 Furnco Clay x Plastic 10"	2
32	4812 Furnco Plastic x Plastic 12"	6
33	4820 Furnco Clay x Plastic 12"	6
34	4839 Pipe PVC SCH 40 4"	601
35	4847 Pipe PVC SDR 26 6"	76
36	4855 Pipe PVC SDR 26 8"	48
37	4863 Pipe PVC SDR 26 10"	27
38	4871 Pipe PVC SDR 26 12"	100
39	4898 Manhole Riser STD. DIA. 1.5"	25
40	4901 Manhole Riser STD. DIA. 2"	15
41	4928 Manhole Riser STD. DIA. 3"	0
42	4936 Manhole Riser STD. DIA. 4"	6
43	4944 Manhole Riser STD. DIA. 6"	3
44	4952 Manhole Riser STD. DIA. 8"	0

45	4960 Manhole Riser STD. DIA. 10"	0
46	4979 Manhole Riser STD. DIA. 12"	0
47	4987 Reg Manhole Top Ring	5
48	4995 Flat Top Manhole Ring	1
49	5002 Manhole Lid STD. DIA.	13
50	5010 Sondes Green Marker	81
51	5517 Manhole Riser Ring 2.5"	21

Workplace Safety Committee

Many people, including the Nonprofit Risk Management staff, believe that workplace safety must be everyone's concern and that the collective "everyone" needs a leader to consistently address and promote safe practices in the workplace. In most small to mid-size entities a single person serves this purpose. The role of "workplace safety coordinator" can be incorporated into someone's job description—it does not have to be a separate position. Various personnel must be able to perform specific steps to identify and control hazards. In larger organizations, a safety director, safety manager or safety officer, sometimes under the leadership of a professional risk manager, is in charge of the workplace safety program and appoints a workplace safety committee to assist in implementing the workplace safety program.

Membership

Membership in the workplace safety committee is determined by the nature of the entity's operations. Usually all supervisors (department heads or program managers) serve on the committee. Other employees and special advisors—an insurance professional, a firefighter, or a police officer—may be invited to attend.

Committee Chair

The committee is chaired by the workplace safety coordinator. The chair leads the committee, schedules monthly safety meetings, serves as the contact with outside agencies on safety matters, and retains all safety-related documents. The chair is able to function best with direct access to the chief elected official or administrator of the organization.

Committee Functions

- Create, carry out and watch over safety-specific programs.
- Hold monthly safety meetings.
- Hold monthly workplace safety inspections.
- Run quarterly loss analysis. (Review injury and illness records).
- Provide safety-related in-services.
- Make advisory recommendations to the entity's managers.

Specific Safety Programs

Those safety programs that are required by law (applicable OSHA requirements, fire codes, and state departments of health) or required by the safety committee in response to high accident frequency or potential at the nonprofit.

Specific safety programs include:

- Back Injury Prevention
- Bloodborne Pathogen
- Fire Evacuation
- Hazard Communication
- Fleet Safety (transportation)
- Emergency Response
- Accident Investigation

Workplace safety programs should be included in the entity's safety manual. Individual components, such as floor-by-floor fire-evacuation plans, should be posted. The programs should be reviewed and updated at least annually to ensure quality, effectiveness and compliance with all applicable codes.

Safety Meetings

Meetings should be documented and kept on file for at least three years for reference. Duties of the safety committee vary, depending on the entity's size and the nature and severity of the location's hazards. To keep meetings on target and timely, distribute an agenda to committee members before each meeting. Record and file minutes of each meeting. Try to keep the meeting length to one hour.

The safety committee's monthly meeting agenda could include:

- Review or accident and investigation reports
- Overview of accident/incident trends
- Summation of in-service training sessions
- Results/findings of inspections
- New and outstanding safety issues
- Safety topic of the month

Facility Safety Inspections

Monthly workplace safety inspections and documentation help monitor adherence to workplace safety programs. A member of the safety committee should lead the inspection. Department representatives should participate in the inspection of their departments. Focus inspections on physical hazards and unsafe acts or operations. Start with areas or operations that show up as causes of accidents/incidents in previous monthly safety inspections and in the quarterly loss

analysis. Include fire hazards, security and other life-threatening areas. Correct any unsafe acts or conditions. Report the inspection results at the safety committee meeting. Create a "To Do" list of the committee's recommendations and assign people to correct them.

Quarterly Loss Analysis Report

Before the committee can make the workplace safer, it needs to identify accident trends and causes making it unsafe. This is the role of the quarterly loss analysis report, which goes into more detail than the monthly loss analysis that is part of the safety meeting. The committee should follow-up on and correct any cause or trend identified.

Safety In-Services

In-service training sessions increase safety and health awareness among staff, educate them about changes in procedure, and address specific areas of concern identified by the safety inspection. An annual schedule should be developed to ensure all content is covered. Additional in-services can be provided as necessary, prompted by such factors as high frequency of accidents, turnover of employees, or expansion or reduction of staff. Document all training and attendance and keep it on file. In addition, each employee's personal file should have a cumulative record of the in-service meetings attended.

Annual Safety Report

The safety committee should produce a report at the end of each calendar year that summarizes its action. The reports serve as guideposts for future committee members. Submit the report to the chief elected official, administrator or risk manager for review and comment. Include:

- Year's accomplishments
- Continuing accident and incident trends
- Action plans to modify trends or significant safety issues
- In-service schedule for the next year

Special Event Safety Committee

Some nonprofits convene a separate risk management/safety committee for a special event, such as a fund-raising benefit, staff planning retreat or health fair. The committee should be led by an individual who has overall responsibility and is authorized to take action if an emergency arises. The "safety czar" and committee should be involved in all facets of event planning and coordination. Sometimes the special event safety committee is a subcommittee of the overall safety committee, other times it is a separate committee headed by a member of the overall safety committee. The work of this committee should be summarized in a report to the whole and included in the overall safety committee's records.

Resources

Risk Management: A Technical Assistance Brief, A Guide to Risk Management, prepared by The Loss Control Department, The Hartford, © 2000 by American Association of Homes and Services for the Aging.

CITY CORPORATION
SAFETY POLICY STATEMENT

TO ALL EMPLOYEES:

The preservation of the life and health of our employees is of the utmost importance. Therefore, it is the intent of City Corporation to provide its employees with a working environment consistent with high standards of industrial safety and hygiene. To achieve this goal, management has implemented a Safety Program in an attempt to eliminate all known unsafe acts, conditions and potential hazards.

The real success of this program depends upon you, our employees. In order to provide the safest working conditions for all, every employee is expected to learn and follow all safety rules and regulations and take a wholehearted interest in strengthening the program.

SAFETY IS TO TAKE PRECEDENCE OVER SPEED AND SHORTCUTS. In no conditions or circumstances shall safety procedures be broken.

We expect all employees to join together in providing a safe atmosphere for one another and in striving toward a strong, effective and meaningful safety program.

It is the responsibility of all supervisors to see that the employees under him follow all safety requirements and rules. The supervisor will be held responsible for all accidents where he failed to provide a safe working environment.

CITY CORPORATION
SAFETY ORIENTATION AND TRAINING

On the day of arrival each new employee shall be given a safety orientation by the immediate supervisor.

The orientation will include:

a. An explanation of the safety policy and practices of the company.
b. A tour of the site with identification of possible safety hazards.
c. Emphasis on the responsibility of the employee for their own safety and that of others.

The employee is given a copy of pertinent safety material. As additional safety material is made available, copies will be distributed to all personnel.

The employee is instructed to learn the safety regulations and to consult the supervisor when in doubt.

The employee will sign a statement that he/she has read City Corporation's General Safety Rules, fully understands them and agrees to abide by them. This statement is retained in the employee's personnel file. Signing a copy of the rules and agreeing to them is a condition of employment.

All supervisors will hold monthly safety meetings with their employees to discuss pertinent safety topics. Meetings and employee attendance is documented.

_____

Employee Signature Date

_____

Supervisor Signature Date

GENERAL SAFETY RULES

1. If you are injured, no matter how slight the injury may be you must report *immediately* to your supervisor and received first aid treatment.

2. Approved personal protective equipment (eye, ear, head and foot) must be worn by all employees working in designated areas.

3. Back injuries are serious and every effort is to be taken to prevent them. All employees are to follow the Lifting Procedures found in the safety manual.

4. Never operate, repair or adjust, in any way, machinery or equipment unless you are authorized to do so by a supervisor.

5. Be absolutely sure no one is in a position to be injured and that all safeguards are in proper position before turning on electricity, gas, steam, air, water or setting any machinery or equipment in motion.

6. Check tools and equipment before using them. If any are found defective, do not use them and report them to your supervisor.

7. Good housekeeping is the responsibility of each employee. Keep your work area neat and clean at all times.

8. Stay clear of working machinery and be particularly careful in handling material.

9. For those driving a company vehicle a complete safety check of vehicle and equipment must be made before leaving the shop or plant site.

10. A City Corporation driver must be in possession of a valid Arkansas Operator's License at all times when driving company vehicles.

11. The carrying of unauthorized passengers in a City Corporation vehicle is strictly prohibited.

12. Drinking or possession of intoxicating liquor or illegal drugs or reporting for work while under the influence of either is prohibited and will result in termination.

CAUTION – If you don't know or if you are not sure, ask your supervisor: **It's better to be safe…than sorry.**

City Corporation
Safety and Health Manual

Safety Program

The safety program contained herein has been prepared to assist employees in the safe and efficient performance of their duties. Workplace safety is of the utmost importance to City Corporation.

It is the duty of all employees to plan and carry out their job duties in the safest manner possible. The practice of effective accident prevention is mandatory and a responsibility to be shared by all employees.

Since it is not possible to cover every situation that might be encountered in the many operations of the utility, department heads and supervisors will be responsible for tailoring these guidelines to meet the requirements of each particular operation.

City Corporation's Safety Program is designed to go beyond this text. Employees may be required or encouraged to attend training courses addressing issues relating to personal safety as well as the safety of co-workers and citizens. These training sessions will focus on job related injuries and prevention.

Safety and Hazard Committee

The Network Operations Center Manager / Safety Director will be responsible for ensuring that City Corporation's Safety Committee meets on a regular basis, understands its responsibilities, and properly assumes the responsibilities set forth herein related to enforcing the Safety Program. The basic functions of a safety committee are to create and maintain an active interest in safety and to reduce accidents. The safety committee will discuss the current safety problems and seek solutions or ways of prevention of future accidents.

The Committee membership shall consist of the management team and individuals designated to serve on a 6-month term. All departments shall designate, preferably by peer recommendation, an individual to serve a 6-month term on the Safety Committee. Committee members shall nominate the Chairman of the Committee. The Committee will conduct regularly scheduled meetings.

The Committee shall:

1) Promote activities and provide a positive program to maintain employee interest in safety.
2) Recommend, coordinate, and/or plan safety programs to increase the awareness of safety issues among employees at all levels.
3) Regularly schedule, conduct, and supervise inspections of property and facilities to determine safety problems and recommend corrective actions (Committee may designate a two-person inspection team).
4) Monitor and, if deemed necessary, recommend safety training programs for employees.
5) Assist departments in integrating safety into the everyday activities of the department.
6) Supervise adequate recordkeeping of accidents, injuries, and illnesses resulting from on-the-job situations.
7) Coordinate and host any compliance visit by the Arkansas Department of Labor.
8) Review and revise the Safety and Health Manual during the first calendar month of each year.
9) Conduct accident investigations to determine causes of accidents and various methods for preventing future accidents of the same nature.

Responsibility

Department supervisors and lead operators are initially and ultimately responsible for accident prevention within their respective departments. This responsibility is delegated to the supervisors through management directives and the safety program. Each department shall establish safety performance goals and maintain accurate performance and accident records. Goals and records will be reviewed regularly and appropriate action will be taken.

Supervisors are charged with the responsibility of preventing accidents and maintaining safe working conditions. They must cooperate and work with the Managers regarding safe operation of mechanical equipment. Supervisors must be familiar with the safe method and procedures required for the work to be performed under their supervision. They must set an example for other employees by practicing proper safety procedures at all times. **Supervisors will be responsible for furnishing a detailed explanation of applicable safety and hazardous materials procedures to new employees (other than that information that is provided during the Human Resources Department orientation) and for ensuring that these procedures are understood and followed.** They are also responsible for general housekeeping in and around their respective work areas. Each accident shall also be investigated and analyzed by the appropriate supervisor and manager, and a written report will be submitted to Human Resources.

Employees must abide by the adopted safety procedures at all times. Those found in violation of safety procedures will be subject to disciplinary action. Approved uniform and required personal protective equipment (PPE) shall be worn while on the job. Employees are expected to observe general housekeeping rules and to assist in maintaining their respective work areas in a clean and sanitary condition. **Employees must immediately report all accidents, incidents, and near misses (no matter how minor) to their supervisor.**

Accident Reporting, Investigation & Analysis

Any accident, incident, or near miss, no matter how slight the injury or damage must be reported to the department supervisor immediately for appropriate action. The supervisor is responsible for taking appropriate follow-up action, including getting medical attention for the injured, completing an investigation report and recommending or implementing appropriate corrective actions.

ACCIDENT - an undesired event or sequence of events causing injury, ill-health or property damage.

INCIDENT - is an unplanned, undesired event that hinders completion of a task and may cause injury or other damage.

NEAR MISS - describes incidents where, given a slight shift in time or distance, injury, ill-health or damage easily could have occurred, but didn't this time.

Accident Investigation Procedures:

1) The supervisor is required to notify Human Resources immediately to allow sufficient time to prepare for and conduct an investigation and other processes including medical care and drug/alcohol screening.
2) Investigation forms will be obtained from Human Resources or Network Operations Manager's office; reports will be completed by the supervisor as soon as possible, but no later than 24 hours after the accident.
3) After an accident the supervisor will take pictures of any damage or other details which may be useful in the accident investigation.

The Network Operations Manger / Safety Director Human Resources will review and report all accident investigations to the Safety Committee on a monthly basis.

Disciplinary Program

Deviation from approved safety regulations will be considered misconduct. It is imperative that all employees and supervisors follow safety rules. If any employee's misconduct is deemed to be seriously negligent City Corporation may bypass the disciplinary program and suspend or terminate the employee immediately.

The nature of the disciplinary action should be in line with such factors as severity, prior history, adequacy of prior training, and length of service to the organization and time on current job. For any employee who violates approved safety rules, City Corporation will enforce the following disciplinary actions:

First offense – counseling/retraining/written warning

Second offense – suspension

Third offense – dismissal

Health and Safety Education and Training

Supervisors are responsible for ensuring that specialized training (such as confined space and HAZCOM) is provided and documented before employees are required to perform tasks that could potentially expose them to health or safety concerns.

General Safety Information for City Corporation Employees

Main Causes of Accidents:

1) Improper Tools or Equipment – employees are responsible for knowing and using the proper tools for each job duty.
2) Unsuitable Method – a safe employee knows the proper method of performing each duty. If an employee is in doubt as to how to complete a task safely, the supervisor shall be consulted.
3) Not Using Protective Equipment – every employee must use all safeguards and protective equipment as required.
4) Not Observing Rules and Regulations – rules and procedures are essential for smooth and effective operations. Suggestions are always welcome, but before deviating from the established rules an employee shall consult the supervisor.
5) Lack of Proper Instructions and Maintenance – machinery, tools, and operating equipment shall be inspected before use. Necessary repairs shall be reported to the supervisor immediately.
6) Negligence – employees shall think about others around them and not allow carelessness or neglect to endanger co-workers. Inattention, even for only a moment, can result in serious injury.
7) Inattention – employees shall keep their minds actively on the job. Daydreaming, worry, and horseplay can lead to accidents.
8) Housekeeping – a large percentage of reportable hazards can be classified as "poor housekeeping." Clean equipment and work areas promote safe working conditions.
9) Lack of Communication – poor communication often causes accidents. Employees shall communicate effectively with every employee connected with the job to prevent accidents.
10) Medication – it is the employee's responsibility to apprise the supervisor when medication that might affect the safety of the operation or co-workers is being

used. A physician's certification may be required, so it is imperative that an employee contact their supervisor or the Human Resources department if concerned or there is a reason to believe that the medication will affect the ability to perform job duties safely.

11) Attire – employees shall maintain uniforms in good state of repair and wear them properly.

12) Use of Hand Tools – take good care of tools. Many injuries result from the use of defective or unsafe tools or improper use of tools. Keep cutting edges sharp. A sharp tool makes the work easier, faster, and safer than a dull one. Learn how to sharpen tools properly or have it done by an outside party. Inspect tools regularly to note damage. Repair or replace all damaged tools before they injure you or someone else. Tools which are not being used should be put away properly, on racks or in a suitable tool box. If it is necessary to carry tools with you, use a holster or sheath to protect the cutting edges and pointed ends to avoid injury to yourself and others. Use the right tool for the job.

13) Use of Portable Electric Tools – never use portable electric equipment unless you know it is in good condition. Questionable items should be inspected and tested by qualified maintenance personnel. Always report defective parts on any piece of equipment. Portable electric tools should always be grounded, either at the frame or by use of a three-wire conductor and plug. In wet locations, wear rubber boots and gloves or stand on a good insulating mat or platform. Use only low voltage equipment in such locations if possible. Never use or attempt to repair power equipment with which you are not familiar. Electrical cords should be protected from damage by oil and should not be left in aisles where they may be run over by trucks, equipment, or cause tripping.

First Aid and Health

First aid is the immediate and temporary care given to the victim of an accident or sudden illness until the services of a physician can be obtained.

General rules for first aid:

1) If you are injured, report it and get First Aid immediately.
2) If you become ill while at work, do not continue on the job. Report the illness to your supervisor. They will see that you get the proper medical aid.
3) Do your part to keep washrooms and toilets sanitary.
4) First Aid kits will be kept in all City Corporation vehicles and administrative reporting worksites.
5) Keep first aid kits stocked and in a sanitary condition.
6) Make sure that an adequate supply of drinking water is available at all times.

Operation of City Corporation Vehicles

The operation of company vehicles is a privilege that should not be abused. No employee will be directed to operate a vehicle for which they are not trained and certified by appropriate classification of driver's license. To do so is a violation of state law. All drivers of company vehicles and those using personal vehicles while performing company business shall comply with all applicable traffic laws.

Vehicle Operations Regulations:

1) Operators of company vehicles are required to perform the following daily pre-operational status checks:
   - Check all lights, including tail lights and turn signals.
   - Check gas, oil, and water levels.

- Check brakes.
- Check tire pressures.
- Clean windshield, windows, and mirrors.
- Check emergency equipment (first aid kit, fire extinguisher, etc.)

2) All vehicles having any condition that would interfere with safe operation shall be immediately removed from service and necessary repairs made to bring the vehicle into a safe operating condition before any future operation of the vehicle.
3) All drivers shall have a valid Arkansas driver's license. City Corporation shall determine the validity of each driver's license upon hire. Employees are, thereafter, required to immediately give written notification to their manager of the revocation of the individual's license. Driver's who violate this obligation will be subject to disciplinary action that could result in suspension or termination.
4) All drivers and passengers will utilize seat belts.
5) Employees only are allowed as passengers in City Corporation vehicles. The maximum number of passengers inside a vehicle is equal to the number of available operating seat belts.
6) When backing a vehicle that does not have a clear view of the rear, the passenger will exit and assist the driver. If alone, the driver will exit the vehicle and inspect the area behind the vehicle prior to backing.
7) During periods of limited visibility or any time windshield wipers are in use the vehicle headlights will be turned on.
8) Drivers will not operate cell phones when vehicle is moving without an approved hands-free device.
9) Trailers will be securely fastened to hitches; pintle claws will be secured with safety pin. Chains will be crossed and secured under hitch before moving.
10) City Corporation vehicles shall not be parked in "No Parking" or designated handicap zones.
11) Unattended vehicles will have the engine turned off, keys removed from ignition, and doors locked.

Special Equipment

Work boots are utilized and required for most employees working outside of the business office to protect feet from injuries resulting from dropped items, vehicle wheels, machinery, and nail puncture. Employees working in designated work sites are required to wear steel toed safety shoes prior to operating mowing or construction equipment.

Rain gear is to be worn in inclement weather and job sites where water is falling or spraying.

Gloves will be worn in designated job sites. Gloves will be in good repair and a type suited for the task to protect against cuts, needle sticks, abrasion, chemicals, heat, and electric shock.

Protective headgear will be worn to protect the head from falling objects, overhead equipment, and electric shock.

Respiratory protection is used to filter or otherwise prevent toxic substances from entering the respiratory system.

Protective clothing such as gloves, sleeves, aprons, leggings, and full suits protect against wounds, abrasions, bumps, etc.

Office Safety

1) Use handrails when ascending and descending stairs.
2) Do not stand on chairs, boxes or other items not intended for climbing.
3) Maintain passageways; keep isles clear of obstructions.

4) Do not open more than one file cabinet drawer at a time.
5) Always close file cabinet drawers when not being used.
6) Smoking is prohibited inside any City Corporation building or vehicle.

Temperature Extremes

Severe sunburn and illnesses caused by exposure to weather are among the most unnecessary of occupational hazards. Employees should use sunscreen and minimize their exposure by wearing loose fitting long sleeves, gloves, and hats to protect from sunlight. Drinking water will be supplied for all employees to prevent dehydration and heat injuries.

Cold weather requires layered clothing to protect employees from cold injuries. Protect your face and wear a muffler or mask over your mouth to protect the lungs while breathing cold air. Rapid cooling of exposed skin increases susceptibility to frost-bite, which causes loss of feeling and white or pale appearance in fingers, toes, tip of nose, and earlobes. Get medical attention immediately if you suspect frost-bite. Hypothermia occurs when the body loses heat faster than it can produce it. Symptoms include uncontrolled shivering, slurred speech, memory lapses, fumbling hands, stumbling, drowsiness, and exhaustion.

Poison Ivy, Oak, Sumac

Every year a certain number of employees come into contact with poison ivy, poison oak, or poison sumac. To help prevent exposure and the allergic or sensitive reactions to these plants, workers must be able to first *identify* them.

The compound leaves of poison ivy consist of three pointed leaflets; the middle leaflet has a much longer stalk than the two side ones. The leaflet edges can be smooth or

toothed but are rarely lobed. The toxic substance in poison ivy is the oil that is present in the plant throughout the year. The oil can be carried on clothing, pet fur, or in the smoke from burning the plant.

Poison Ivy Poison Oak Poison Sumac

Poison oak usually does not climb as a vine, but occurs as a low growing shrub. Leaflets occur in threes, as in poison ivy, but are lobes, resembling oak tree leaves.

Poison sumac, unlike poison ivy, grows as a coarse woody shrub, and has green flowers and loose clusters of white fruit. It has the same oily poisonous material as poison ivy and produces the same rash. Seek first aid and/or doctor's care as needed.

Bites and Stings

City Corporation field duties will expose employees to numerous opportunities for bites and stings from insects and snakes. The best protection is always avoidance; look before reaching bare hands into valve boxes, meter vaults, or other nooks and crannies. Be sure to positively identify the creature if bitten or stung. Use first aid to prevent infection, and seek immediate medical attention for allergic reactions.

Sprains and Strains

The most common injury resulting from workplace accidents nationally, as well as at City Corporation, is sprains and strains. The major contributors are slips, trips, and falls

resulting from walking on wet or cluttered surfaces, and improper body positioning while digging or lifting objects. The primary short-term focus of the Safety Program will be to lower/eliminate the number of sprains and strains. Prevention will consist of environmental and physical awareness training. Departments are encouraged to incorporate slip, trip, and fall awareness training on a quarterly basis.

Review and Revision

This manual will be updated annually, during the month of January. Revisions and updates will be reviewed and approved by the Safety Committee and Managers prior to implementation.

CITY CORPORATION
Vehicle Accident SOP

An insurance card should be in all company vehicles. A laminated short SOP card should also be in the vehicle.

When an employee is involved in an accident in a City Corporation vehicle, they should report the accident immediately to Human Resources via phone (968-2080 ext. 115) if possible. If they do not have access to a phone, they should make contact by company radio. HR will then contact the police if necessary and will also contact the Manager/Supervisor.

When the Manager/Supervisor arrives on the scene, they should make a record of the insurance information of the other driver involved in the accident. Human Resources will advise the Manager/Supervisor to transport the employee to River Valley Occupational Health for a drug screening. The manager/supervisor will use their Reasonable Suspicion testing training to determine if a BAT (for alcohol) or a Collector (for drugs) should be administered.

If the accident occurred on private property, the Manager/Supervisor should also take a digital camera and take photographs of the damage (vehicles, property, etc) as there would be no police report. If the manager does not have access to the camera, they should report this to Human Resources who will see that pictures are taken. These photos and the insurance information should be returned to the Administrative Department. After the drug test has been administered, the Manager/Supervisor should then bring the employee to the Administrative Department for the accident report to be completed. The accident report will be reviewed by the General Manger and Administrative Manager upon completion. If the manager/supervisor has made a determination based on their Reasonable-Suspicion training that the employee is impaired, the employee should be driven to their home and not allowed to return to work. Consider disciplinary action if the employee refuses transport or call the police if you feel the employee will endanger others on the road.

If the employee is injured and requires medical treatment, a drug screening may be administered after treatment. If the injury requires admittance to the hospital, River Valley Occupational Health will go to the facility to administer the screening.

River Valley Occupational Health states that testing (Collector) be done with 32 hours of the accident. However, City Corporation policy requires that testing be administered within two hours. If two hours have passed from the time the Manager/Supervisor became aware of the requirement to test and testing has not been completed, the Manager/Supervisor must document this fact and the reasons why.

The vehicle should be taken for at least two (2) repair estimates. If the damage exceeds $2,500.00, our insurance carrier will require digital pictures. If the damage exceeds $5,000.00, the carrier will send an adjustor to inspect the vehicle. The estimates are returned to the Administrative Department. After Administrative Department receives instructions from the insurance carrier on proceeding with repairs the information will be forwarded to the manager.

If this accident occurs after regular business hours, the employee would notify their immediate supervisor/manager. The manager will call River Valley Occupational Health at their after-hours number (264-2425 or 970-7208 or 264-9170) and proceed with all above steps but will bring the employee into the Administrative Office at the beginning of the next regular business day.

CITY CORPORATION
VEHICLE ACCIDENT PROCEDURES

The employee is required to call 968-2080 ext. 115 immediately. If unable to make phone contact, the contact may be made via company radio. If the accident occurs after regular business hours, the employee should contact their immediate supervisor. The immediate supervisor will then advise of proper procedures to be followed.

City Corporation
Parked Vehicle Traffic Cone Procedures

Purpose – traffic cones will be placed around every parked City Corporation motor vehicle to facilitate and encourage each operator to conduct a pre-trip vehicle inspection prior to operation. These procedures are a direct result of preventable vehicular damages and are designed to prevent future accidents.

Scope – this procedure shall be applicable to all City Corporation motor vehicles.

Procedures:

1. Every City Corporation vehicle will have two 18" fluorescent green un-striped traffic cones as standard issue equipment for purposes of this procedure.
   1.1. Any available traffic cone is deemed an acceptable temporary substitute for a lost or stolen cone.
   1.2. The assigned operator will be responsible for replacement cost of a lost or misplaced cone.
   1.3. City Corporation will bear the cost of a properly reported stolen cone.
2. Upon parking a vehicle, the operator will place both cones around the vehicle to facilitate an operator walk-around pre-trip inspection prior to the next operation.
   2.1. When the vehicle is parked at an unmarked or unbounded marked parking space the cones will be placed at opposite corners (i.e. left rear and right front bumper) so that all four sides of the vehicle will be observed during the next pre-trip inspection.
   2.2. When the vehicle is parked in a space bounded by a curb both cones will be placed at the corners of the unbounded bumper so that three sides of the vehicle will be observed during the next pre-trip inspection.
   2.3. Placement of traffic cones for this procedure will not hinder the normal flow of traffic.
3. Prior to operating a parked City Corporation vehicle the operator will conduct a pre-trip inspection to retrieve the traffic cones.
   3.1. The operator will check for nearby equipment, vehicles, pedestrians, and blind spots prior to operating the vehicle.
   3.2. The operator will secure the cones inside the cab, bed, locked compartment, or placed on a mounted cone holder prior to operating the vehicle.
   3.3. Lost or stolen traffic cones will immediately be reported to the department supervisor or manager.
4. The Safety Committee will conduct an annual review and assessment of these procedures.

CERTIFICATION STATEMENT

I have read and fully understand the City Corporation Parked Vehicle Traffic Cone Procedures.

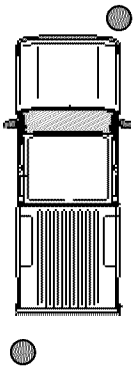
Name/Employee Number:_____

Signature:_____

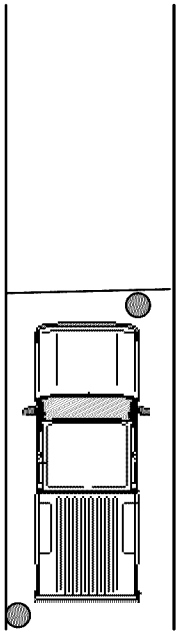
Date:_____

(Return to Safety Coordinator when completed)

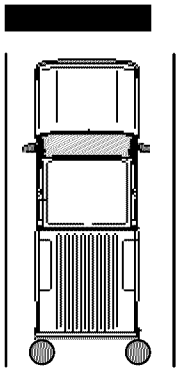
Cone placement diagrams:



Unmarked

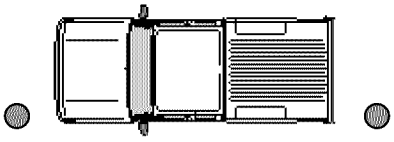


Marked, no curb



Marked w/curb

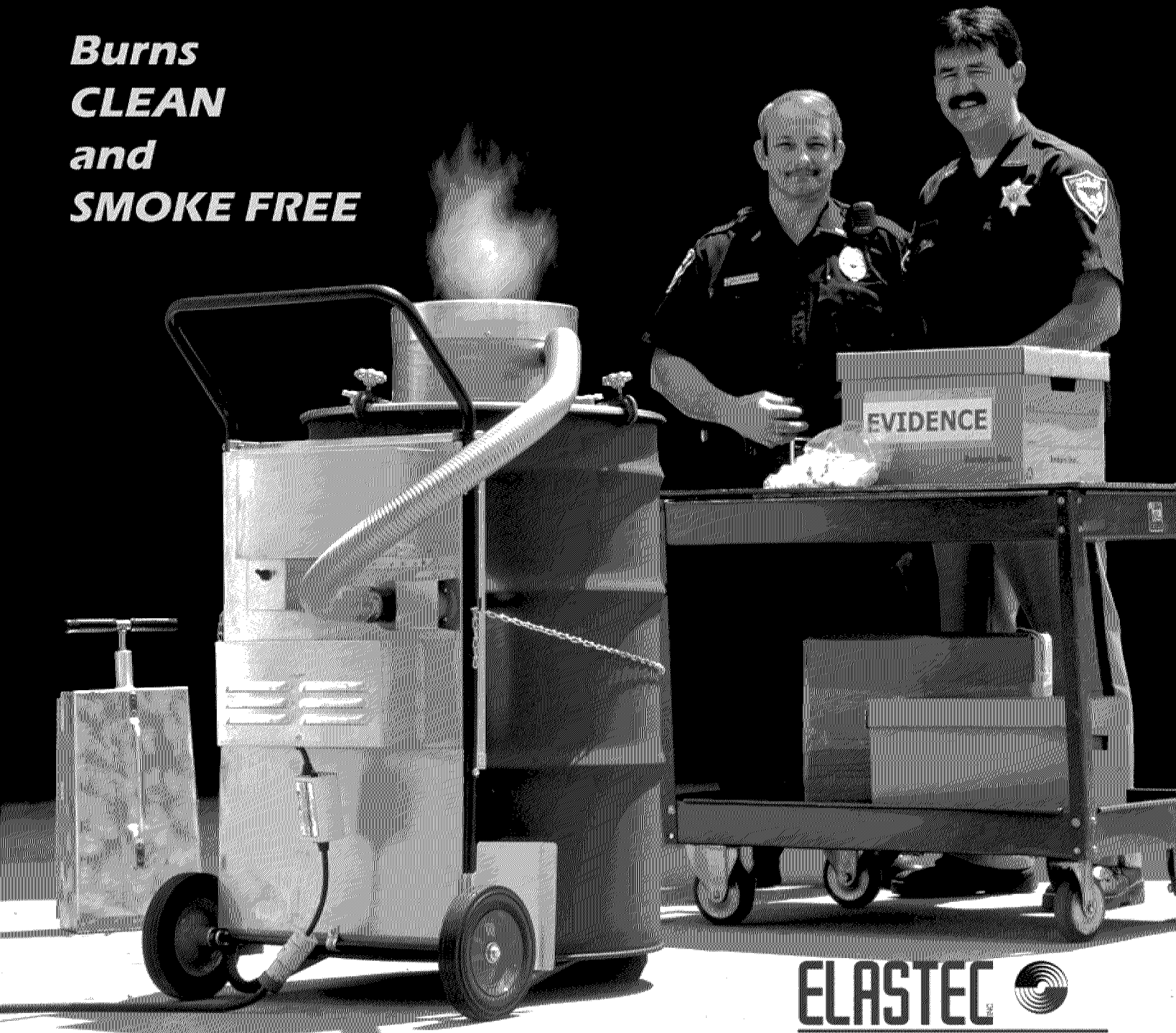
Street curb



DRUG TERMINATOR

For Disposal of Confiscated Drugs

Burns
CLEAN
and
SMOKE FREE



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DRUG TERMINATOR

For Disposal of Confiscated Drugs

This innovative, easy to use incinerator is specifically designed for safe and efficient disposal of confiscated drugs. Drug Terminator is used by local law enforcement when other disposal options are limited.

After the preliminary fire is started, drugs are injected into the fire with the EZ Feed system.

Drug Terminator is wood or charcoal fired. Two high velocity electric blowers create a cyclone of intense heat eliminating illicit drugs quickly and completely. The volume of material is reduced to an average of 1% ash. Non-combustible drug paraphernalia is sterilized by heat and can be disposed in municipal waste.

Drug Terminator has been developed from the Cyclonic Barrel Burner®, a highly successful and efficient incinerating device. Over two thousand Cyclonic Barrel Burners® are in use around the world.

Drug Terminator users include:

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Miami-Dade Police Department
Delaware Police Department
United States Air Force
Wyoming Highway Patrol
Key West Police Department
Knoxville Police Department
Arizona Department of Public Safety
Hawaii Police
Carmi Police Department
...plus many others

Specifications

Construction:	**Stainless Steel Lid**
	Plated Tubular Steel Frame,
	2-Blowers, Axial Vane 110V standard
	or 220V optional
	55 Gallon Steel Open Head Drum
Weight:	**129 lbs**
Height:	**46"**
Floor Space:	**36" x 26"**

PATENT # 6928935 B2

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print

City Corp buys mini-excavator

by Jeanette Anderton
12.26.14 - 11:00 am

The City Corporation Board of Directors approved accepting a state bid of $57,594 for a mini-excavator during its regular meeting last week.

City Corporation had initially planned to purchase a backhoe, for which it had budgeted $88,000.

However, because of the popularity of the mini-excavator in the construction department, the staff chose it instead.

“They have proven to be more versatile and provide easier operation in neighborhoods and alleys,” Lance Bartlett, utility engineering manager, said. “While we won’t be able to abandon using backhoes altogether because of their depth, reach of bucket, when staff has a choice, they will go with the mini-excavator.”

Bartlett said the mini-excavators, in addition to being cheaper than the backhoes, should use less fuel and cost less to maintain.

In other business, the board approved:

• The low bid of nearly $1.6 million bid for Water Treatment Plant improvements, which combines four improvement projects.

• Amending the biosolids contract from $17,600 to $32,600.

• A financial plan to address the identified needs of both the water and wastewater systems.

print

City Corp. approves contract change order

by Whitney Snipes
01.24.14 - 07:00 am

The City Corp. Board of Directors approved a change order at its meeting Tuesday in hopes of moving forward with a project originally approved more than a year ago.

A change order to increase the contract for Garver Engineers by $15,750 was approved unanimously by board members. Garver's original contract, for $28,650, included part-time inspection for a paint project at the Western Hills water tank.

That project was supposed to take place last year, but when Utility Service Group — the company contracted to paint the tank — arrived on scene, they determined the high temperatures were causing the tank to sweat and it would not be possible to complete the project.

After that, Utility Service Group submitted a change order proposal for $29,500 to cover mobilization/demobilization costs. After extensive negotiations, Utility Service Group agreed to accept $12,000 to help cover the actual cost incurred. That amount was approved by the board during its December meeting.

Garver Engineers were involved in negotiations, which led to billable hours not included in the original contract. The change order also included additional funds to increase inspection during the painting process if needed.

Utility Service Group is expected to set a date to complete the project.

Also on Tuesday, board members voted to approve the 2014 officers, which are as follows: Art Jones, president; Frank Russenberger, vice president; Luke Duffield, secretary; Harold Barr, senior member; and Bill Harmon, junior member.

The board recognized outgoing chairman Don Guess, who served from 2009-2013, for his years of service.

"We're really very happy to have had you to lead us during this time," Jones said.

print

Water line ruptures downtown

by Whitney Snipes
02.12.14 - 07:00 am

City Corp. crews were on scene at the intersection of West Main Street and Commerce Avenue on Sunday and Monday repairing a ruptured water line.

General Manager Steve Mallett said crews were dispatched Sunday to repair a 6-inch water line that ruptured. A jackhammer was used to dig under the asphalt and locate a valve that needed to be shut off before repairs could be made.

Once the work to fix the line was complete, the road was temporarily patched, but Mallett said crews will have to come back at a later time to make permanent repairs, which are expected to be made by the end of the week.

Work to repair the break was complete by Sunday evening, but asphalt repair work continued into Monday.

An estimated 20,000-30,000 gallons of water were lost during the break. Mallett said he is not aware of disruption of service to any customers during the break, possibly because it occurred in a commercial area on a Sunday, when many of the businesses are closed.

print

City Corp. dechlorination system online

by Whitney Snipes
02.20.14 - 07:00 am

The dechlorination system at City Corp.'s Pollution Control Works (PCW) is up and running, although some of the monitoring systems remain offline.

Representatives from engineering firm CDM Smith indicated in a report to the City Corp. board during its meeting Tuesday automatic monitoring systems were not working because of high solids in the plant effluent.

Some board members expressed frustration that the equipment was not up and running.

"We've had problems with these from the beginning, and they have not worked," Art Jones, board president said, adding he would not be satisfied until all equipment was functioning properly.

A representative from CDM Smith said the monitoring equipment was designed for the water to be cleaner and as the second phase of the PCW project proceeded, the analyzers should begin to work better.

The project is expected to be complete within a year.

Also on Tuesday, board members were advised work began on the Western Hills tank painting project last week, and is expected to be complete within 30 days.

That project was supposed to take place last year, but when Utility Service Group — the company contracted to paint the tank — arrived on scene, they determined the high temperatures were causing the tank to sweat and it would not be possible to complete the project.

print

City Corp. to see $428,145 upgrade

by Jeanette Anderton
06.23.14 - 08:15 am

The City Corp. Board approved a $428,145 contract with Brown Engineers to upgrade its human machine interface (HMI) system during its regular meeting Tuesday.

The contract includes an upgrade to the hardware and software that comprises the existing water and sewer HMI system.

"Since we are at the crossroads of having to either renew or replace, staff is opting to replace the software with a more reliable and economic software package," Lance Bartlett, utility engineering manager, said.

"Additionally, the servers that operate the HMI system are aging and need to be replaced for reliability and technology upgrades.'

'This is a vital system for operation of our plants and communication with our pump stations, lift stations and tanks."

The board also approved a $49,995 contract for installation of supervisory control and data acquisition (SCADA) remote terminal units (RTU) at five locations that don't currently have them.

In other business, the board approved:

• An amendment to the $30,000 contract with Garver Engineers approved in December 2013 for construction of a bypass on the raw water line that feeds the water treatment plant.

During the design phase, engineers discovered electrical components that were not up to code.

The amendment added $17,500 to the contract.

• A resolution extending the City/City Corp. lease by one year.

• First State Bank's bid to re-issue a 12-month maturing certificate of deposit worth $477,289 at a rate of 4 percent.

• The 2014-15 capital budget and the May 2014 financial report.

• Renewing annual contracts from July 1, 2014 through June 30, 2015 with Brown Engineers for SCADA support and electrical engineering services; with Garver Engineers for ConAgra support, wastewater system support and water system support; and with CWB Engineers for general engineering support.

All board members were present, and all actions were unanimous.

print

City Corporation looks to enforce violations

by Laura Bean
07.17.14 - 09:30 am

City Corp. discussed enforcing code violations during its board meeting Tuesday.

After hearing a presentation about the city's water system from RJN Group, Mayor Bill Eaton suggested the board enforce private violations to make it easier for the city to repair and maintain its pipelines.

"The public ought to know that the public is causing this," Eaton said.

General Manager Steve Mallett explained City Corp. will install a temporary $5 cap for free, but for more major repairs, a letter is sent to customers with the recommendation to have the problem fixed.

Board member Bill Harmon said if a problem like a $5 cap is the fault of the customer, the customer should be responsible for paying for it.

"If it cost $5, why shouldn't I pay for that?" Harmon said. "To improve our finances, repairs that should be mine as a customer, I should pay for it."

Chairman Art Jones suggested taking Eaton's advice to enforce the repairs as a code violation on a customer's bill.

"What we need is for us to request for the city to make a change to the code," Jones said.

The discussion began after a fourth-annual presentation from RJN Group, which was hired to inspect the city's water system. The data-collecting group divided the water system into 28 basins and is in the process of inspecting each basin's pipeline for inflow defects.

Daniel Johnson, project manager, said the city's biggest problem is an overload of inflow during heavy rain and outdated, clay piping. The project is scheduled to be complete in 2018.

The board also approved a $90,700 agreement with United States Geological Survey (USGS) to continue data collection, including:

• Water-quality monitoring for Huckleberry Reservoir, including quarterly samples of Huckleberry Creek and semi-annual samples at the water treatment plant and Illinois Bayou.

• Continuously monitor the quality of water flowing into Huckleberry Creek.

• Collect water-quality samples of runoff in the area owned by Green Bay Packing.

• Collect water-quality samples at the water treatment plant.

• Quarterly water-quality sampling at Whig Creek at the outflow of the sewage treatment plant and its confluence with the Arkansas River.

Proper Disposal of Prescription Drugs

Office of National Drug Control Policy October 2009

Federal Guidelines:

- Do not flush prescription drugs down the toilet or drain unless the label or accompanying patient information specifically instructs you to do so. For information on drugs that should be flushed visit the FDA's website.

- To dispose of prescription drugs not labeled to be flushed, you may be able to take advantage of community drug take-back programs or other programs, such as household hazardous waste collection events, that collect drugs at a central location for proper disposal. Call your city or county government's household trash and recycling service and ask if a drug take-back program is available in your community.

- If a drug take-back or collection program is not available:

    1. Take your prescription drugs out of their original containers.

    2. Mix drugs with an undesirable substance, such as cat litter or used coffee grounds.

    3. Put the mixture into a disposable container with a lid, such as an empty margarine tub, or into a sealable bag.

    4. Conceal or remove any personal information, including Rx number, on the empty containers by covering it with black permanent marker or duct tape, or by scratching it off.

    5. Place the sealed container with the mixture, and the empty drug containers, in the trash.

Office of National Drug Control Policy
750 17th St. N.W., Washington, D.C. 20503
p (202) 395- 6618 f (202) 395-6730

CITY CORPORATION -- RUSSELLVILLE

WATER RATE STUDY
WASTEWATER RATE STUDY

December 2014 – FINAL

Prepared by:

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CITY CORPORATION -- RUSSELLVILLE
WATER RATE STUDY
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Acknowledgements

During the course of this rate study, several City Corporation employees expended considerable time and effort in assisting the project team. These employees included the Mayor and Council of the City of Russellville, City Corporation's Board of Directors, Mr. Steve Mallett, Hope Penman, Taryn Childers, Kenny Lutz, and Larry Collins. The project team owes a debt of gratitude to the hard work, dedication and professionalism of these individuals, without whom this project would not have been successfully completed.

The project team has relied upon the extensive data supplied by City Corporation. Thus, the integrity of the study is largely dependent upon the accuracy of this financial and volumetric data. Every effort has been made by the project team to validate and confirm the information contained herein prior to the preparation of the final study documents. This report presents no assurance or guarantee that the forecast contained herein will be consistent with actual results or performances. These represent forecasts based on a series of assumptions about future behavior, and are not guarantees. Any changes in assumptions or actual events may result in significant revisions to the forecast and its conclusions. The cash flow projections and debt service coverage calculations are not intended to present overall financial positions, results of operations, and/or cash flows for the periods indicated, which is in conformity with guidelines for presentation of a forecast established by the American Institute of Certified Public Accountants.

Executive Summary

Executive Summary

In December 2012, City Corporation of Russellville, Arkansas ("City Corporation") engaged **Economists.com** to conduct a water rate study and a wastewater rate study. City Corporation was interested in developing a comprehensive water and wastewater rate and general financial plan for a ten year period. The objective was to develop a long-term rate plan that will enable City Corporation to recover sufficient funds to meet operating expenses, capital outlays, debt service and coverage requirements, while at the same time to the best extent possible minimizing the impact on ratepayers.

City Corporation requested that the study be suspended for a period of time so that the Capital Improvement Plan could be revised and other City objectives could be achieved. The study was therefore put on hold for a twelve-month period and updated with the information contained in this final version.

The City identified numerous objectives for the water and wastewater rate studies, including but not limited to the following:

- A detailed analysis and comparison of City Corporation's current and proposed rates to the Arkansas state average as well as other surrounding communities
- A comprehensive analysis and evaluation of the water and wastewater systems' current cost of service and revenue requirements
- An estimate of current and forecast accounts, volumes and billing units for the ten year forecast period
- A forecast of operating and capital expenses over the next decade, taking into consideration such factors as inflation, system growth, and increases in staffing levels
- An analysis of the cost of providing service to Tri-County Regional Water Distribution District under the terms of the contract for wholesale water service executed between Tri-County and City Corporation
- The development of a proposed rate structures that would recover City Corporation's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios

In conjunction with City Corporation staff, the project team evaluated several alternative rate structures, which would allow it to achieve these objectives while continuing to provide ratepayers with superior quality water and wastewater services. After a series of meetings with City Corporation officials and the Board of Directors, the

project team narrowed its recommendations to the water and wastewater rate design contained in this study. The analysis and recommendations presented in this study achieve all of the objectives outlined above.

Water and Wastewater Rate Comparison

Table ES-1 compares City Corporation's monthly residential water and wastewater charges to those of nearby cities of similar size in the region. Volumes of 5,000 gallons water and 5,000 gallons wastewater were used for the comparison as they represent typical usage levels for an average household in the City of Russellville. The rate data is based on published rates and ordinances posted by each municipality on their website or reported in the November 2012 Arkansas Retail Rate Survey published by the Arkansas Natural Resources Commission.

These rates do not include sales tax, activation or other charges beyond the basic minimum and volume charges. Comparisons such as these are for usage charges only. *This type of comparison may have the unintended effect of discriminating against communities who choose to finance system expansions through current rates or revenue bonds, which are included in rates, as opposed to those who utilize general obligation bonds, which are funded through taxes*. All else being equal, a City that primarily or exclusively uses general obligation bonds will have a lower water rate per 1,000 gallons but a higher tax rate.

With these caveats in mind, the comparisons reveal that City Corporation's rates are comparable to, or lower than the majority of the similarly sized cities in the region. City Corporation's combined residential water and wastewater charges are approximately **27% less** than the statewide survey average.

TABLE ES-1

CITY CORPORATION -- RUSSELLVILLE
RESIDENTIAL MONTHLY CHARGE COMPARISON

	Water 5,000 Gal	Wastewater 5,000 Gal	Total 5,000 gallons
Russellville	**$ 17.93**	**$ 17.03**	**$ 34.96**
Arkadelphia	13.22	14.13	27.35
Benton	20.72	27.50	48.22
Bentonville	21.70	26.23	47.93
Conway	16.03	22.29	38.32
Fayetteville	20.49	32.99	53.48
Fort Smith	20.57	16.05	36.62
Hot Springs	13.39	25.88	39.27
Jacksonville	21.34	23.30	44.64
Jonesboro	9.33	7.20	16.53
Little Rock (CAW)	11.86	28.40	40.26
North Little Rock (CAW)	11.86	12.72	24.58
Pine Bluff	23.52	14.16	37.68
Rogers	14.83	30.40	45.23
Springdale	15.42	17.63	33.05
State Median	**28.31**	**19.15**	**47.46**
Texarkana	19.70	23.83	43.53
West Memphis	32.29	6.57	38.86

Water Rate Study

This section focuses on City Corporation's water utility operations. As has been experienced by utilities throughout the United States, City Corporation has found that the cost of water service has been increasing at above-inflation rates over the past decade.

One of the primary objectives of this study is to calculate the overall cost of operating and maintaining its water utility operations, both inside and outside the City of Russellville. An additional objective is to segregate the cost of service by defined customer class. Thirdly, the study is intended to calculate the cost of service to Tri-County Regional Water Distribution District under the terms of the contract for wholesale water service executed between Tri-County and City Corporation. Fourth, the recommendations will include a thorough review of the water system's known capital improvement needs. This section will conclude with the development of a proposed rate plan that would recover City Corporation's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios.

Water Customers and Usage – Test Year & Ten Year Forecast

As of FY 2015, there are an average of **12,497** water accounts across 11 identified customer classes in City Corporation's water system. The vast majority of accounts are inside the city limits of Russellville, and there is one class of wholesale customers made up entirely of Tri-County accounts. It should be noted that the number of accounts increased significantly recently due to the acquisition of approximately 376 accounts from Tri-County, most of which are outside the City.

Table ES-2 presents total water accounts by rate classification for the past four years, the test year, and the ten-year forecast period. As the table reveals, growth is forecast to be nominal over the next decade. In future years the average number of new accounts is forecast to be 32 per year.

TABLE ES-2

CITY CORPORATION -- RUSSELLVILLE
TOTAL WATER ACCOUNTS
WATER Customer Classes

	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities City	Municipal City	Fire Protection City	Tri County Outside City	Total
WATER Total Accounts												
FY 2009	9,864	129	1,490	14	87	7	-	190	3	1	7	11,792
FY 2010	9,853	138	1,525	14	88	7	-	198	3	1	7	11,834
FY 2011	9,863	141	1,560	14	86	7	-	199	4	1	7	11,882
FY 2012	9,882	140	1,582	14	86	7	-	204	3	2	7	11,927
FY 2013	9,904	318	1,605	15	87	7	-	206	3	2	7	12,154
FY 2014	9,993	499	1,635	17	86	7	-	210	3	2	7	12,459
2015	10,013	500	1,645	18	86	7	-	211	3	3	7	12,497
2016	10,033	501	1,655	18	86	7	-	212	3	3	7	12,529
2017	10,053	502	1,665	18	86	7	-	213	3	3	7	12,561
2018	10,073	503	1,675	18	86	7	-	214	3	3	7	12,593
2019	10,093	504	1,685	18	86	7	-	215	3	3	7	12,625
2020	10,113	505	1,695	18	86	7	-	216	3	3	7	12,657
2021	10,133	506	1,705	18	86	7	-	217	3	3	7	12,689
2022	10,153	507	1,715	18	86	7	-	218	3	3	7	12,721
2023	10,173	508	1,725	18	86	7	-	219	3	3	7	12,753
2024	10,193	509	1,735	18	86	7	-	220	3	3	7	12,785

The project team prepared a ten-year forecast of water usage based on the same principles on which customer accounts were projected. The results of this forecast for water usage are presented in **Table ES-3.** The tables reveal that water usage is expected to increase by an annual average of **0.16%** during the forecast period.

TABLE ES-3

CITY CORPORATION -- RUSSELLVILLE
WATER CONSUMPTION -- GALLONS

	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities City	Municipal City	Fire Protection City	Tri County Outside City	Total
WATER Historical Volume												
FY 2009	576,783,000	7,539,000	276,704,000	2,722,000	602,459,000	86,302,000	-	106,837,000	34,263,000	116,000	635,586,000	**2,329,311,000**
FY 2010	595,328,000	7,828,000	283,167,000	2,260,000	544,137,000	82,964,000	-	107,714,000	33,581,000	113,000	715,943,000	**2,373,035,000**
FY 2011	623,466,000	7,892,000	285,618,000	2,287,000	563,420,000	85,805,000	-	112,421,000	88,461,000	306,000	661,936,000	**2,431,612,000**
FY 2012	674,459,000	7,603,000	281,360,000	2,244,000	538,217,000	81,201,000	-	117,941,000	37,666,000	189,000	651,836,000	**2,392,716,000**
FY 2013	604,282,000	16,594,000	274,392,000	1,965,000	502,313,000	93,796,000	-	108,162,000	36,804,000	478,000	589,933,000	**2,228,719,000**
FY 2014	592,582,000	33,562,000	282,679,000	3,556,000	513,795,000	81,501,000	-	98,330,000	33,095,000	242,000	549,739,000	**2,189,081,000**
WATER Forecast Volume												
2015	594,082,000	33,622,000	283,579,000	3,556,000	513,795,000	81,501,000	-	98,810,000	33,095,000	242,000	549,739,000	**2,192,021,000**
2016	595,268,681	33,689,255	285,303,321	3,556,000	513,795,000	81,501,000	-	99,278,664	33,095,000	242,000	549,739,000	**2,195,467,921**
2017	596,455,361	33,756,510	287,027,643	3,556,000	513,795,000	81,501,000	-	99,747,328	33,095,000	242,000	549,739,000	**2,198,914,842**
2018	597,642,042	33,823,766	288,751,964	3,556,000	513,795,000	81,501,000	-	100,215,992	33,095,000	242,000	549,739,000	**2,202,361,763**
2019	598,828,723	33,891,021	290,476,285	3,556,000	513,795,000	81,501,000	-	100,684,656	33,095,000	242,000	549,739,000	**2,205,808,685**
2020	600,015,403	33,958,276	292,200,606	3,556,000	513,795,000	81,501,000	-	101,153,320	33,095,000	242,000	549,739,000	**2,209,255,606**
2021	601,202,084	34,025,531	293,924,928	3,556,000	513,795,000	81,501,000	-	101,621,984	33,095,000	242,000	549,739,000	**2,212,702,527**
2022	602,388,765	34,092,786	295,649,249	3,556,000	513,795,000	81,501,000	-	102,090,648	33,095,000	242,000	549,739,000	**2,216,149,448**
2023	603,575,445	34,160,042	297,373,570	3,556,000	513,795,000	81,501,000	-	102,559,312	33,095,000	242,000	549,739,000	**2,219,596,369**
2024	604,762,126	34,227,297	299,097,891	3,556,000	513,795,000	81,501,000	-	103,027,976	33,095,000	242,000	549,739,000	**2,223,043,290**

Revenue Requirement Methodology and Calculations

The next step in the ratemaking process is to develop the water utility's revenue requirement. The calculation of a revenue requirement differs from a utility's budget in that it represents only that amount that must be raised through the water utility's user rates. This means that non-rate revenue (such as connection fees, late payment charges and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

The revenue requirement is based on a chosen test year. The test year utilized for the purposes of this study consists of City Corporation's fiscal year, July 1, 2014 through June 30, 2015. The estimates presented in this section are based on the water utility's budget for FY 2015, as well as a forecast of the City's future capital improvements and debt obligations.

As is typical for publicly owned utilities, the water utility revenue requirements were developed using the Cash Basis of ratemaking. Under the cash basis, as defined by the AWWA Manual M-1, system revenue requirements consist of cash expenditures and other financial commitments (such as debt service coverage or reserves) that must be met through system operating revenues and other revenue sources. The following specific items are included in the water utility's revenue requirements that must be raised from rates:

Operating Expenses

Capital Outlays

Debt Service

The primary assumptions used in the development of the forecast of operating costs are as follows:

- Most operating costs are expected to increase at an annual rate of 3.0% to 5.0%, which is approximately equivalent to the rate of inflation.

- Certain expenses are forecast to increase at above-inflation rates, to reflect the rapid rate of increase of the costs. These expenses include supplies and materials such as chemicals and fuels, Medicare and insurance.
- Certain expenses will increase at higher rates to reflect the forecast growth in accounts and volumes. These expenses include maintenance and system repairs.
- Most importantly, the replacement reserve is reduced due to the fact that the Corporation is assumed to issue long-term debt to fund capital improvements. The debt service on the long-term debt is intended to replace the reserve expenditures. This will be addressed more fully in the next section.

At this time City Corporation maintains no water-related long-term debt. All current debt service is related to the wastewater utility, which will be examined in the next section.

City Corporation staff and consulting engineers have completed a review of long-term capital improvement requirements, and now currently estimates that it will require **$41,611,076** in capital improvements in the next decade. City Corporation intends to fund these capital requirements through a combination of existing balance, replacement reserve and long-term debt. City Corporation forecasts the need to issue $30,000,000 in long-term debt in the next decade. $20,000,000 is to be issued during FY 2015 with another $10,000,000 to be issued in FY 2018. This debt is assumed to issued for 25 year terms at 4.0% interest and a 1 year reserve requirement funded from bond proceeds.

The net revenue requirement differs from City Corporation's budget in that it represents only that amount that must be raised through water rates. **Table ES-4** presents City Corporation's net revenue requirement for the water utility for the test year 2015 and forecast period. The water net revenue requirement is expected to increase from **$4,938,931** in FY 2015 to **$7,182,550** in FY 2024. This represents an average annual increase of **4.25%**. Detailed calculations are presented in the rate model contained in Appendix A of this report.

TABLE ES-4

CITY CORPORATION -- RUSSELLVILLE
FORECAST NET REVENUE REQUIREMENT
WATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Operating	$ 3,591,863	$ 3,753,267	$ 3,922,548	$ 4,100,118	$ 4,286,414	$ 4,481,898	$ 4,687,056	$ 4,902,402	$ 5,128,480	$ 5,365,864
Cap Outlays/Replace Reserve	1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Debt Service -- Current	-	-	-	-	-	-	-	-	-	-
Debt Service -- Future	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
Sub-Total	5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
Non-Rate Revs	(308,932)	(612,980)	(631,369)	(650,310)	(669,820)	(689,914)	(710,612)	(731,930)	(753,888)	(776,505)
Total	**$ 4,938,931**	**$ 6,191,748**	**$ 6,342,639**	**$ 5,345,268**	**$ 6,209,786**	**$ 6,385,175**	**$ 6,569,635**	**$ 6,763,663**	**$ 6,967,783**	**$ 7,182,550**

Water Rate Design

Rate design involves determining charges for each class of customers that will generate a desired level of revenue. The water rates developed in this section are designed to recover the test year and forecast revenue requirement while providing funding for the proposed reserve requirement. It is recommended that rate changes be implemented in January of each year.

The Rate Plan proposed for this study incorporates the following assumptions:

- It requires adjustments in water charges for the next four years.
- The outside city rates have been adjusted to reflect the City's ordinance requirement that all outside city rates be 50% greater than inside rates. For residential outside customers, this results in a reduction of the volumetric rate in the first year.
- The rate design reflects the Board's desire to increase the conservation incentive of the rate design. A third tier is therefore added to the residential inside and outside rate for usage above 5,000 gallons.
- The adjustment percentages are nominally different by customer class. The purpose is to reduce the intra-class subsidy that currently exists between the customer classes. This requires larger annual adjustments for the residential and public authorities customer classes.

Table ES-5 presents a summary of the rate plan proposed for City Corporation under this scenario. **Table ES-6** presents the impact the proposed rate plan will have on monthly residential, commercial and industrial charges at each class' average monthly level of consumption. Rates and impacts are presented for both inside city and outside city customer classes.

TABLE ES-5

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED RATE DESIGN
WATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:				**2014 12 12 -- Scen 2 -- Conservation**				
Inside City								
Monthly Charge								
5/8" -- 3/4"		$ 8.69	$ 9.30	**$ 10.14**	$ 10.44	$ 11.28	$ 11.62	$ 11.97
1"		12.03	12.87	**14.03**	14.45	15.61	16.08	16.56
1 1/2"		22.86	24.46	**26.66**	27.46	29.66	30.55	31.47
2"		29.99	32.09	**34.98**	36.03	38.91	40.08	41.28
Vol Chg -- Per 1,000 Gal								
Residential	**City**							
-	2,000	1.71	1.71	**1.86**	1.92	2.07	2.13	2.19
2,001	5,000	1.94	2.05	**2.23**	2.30	2.48	2.55	2.63
5,001	Above	1.94	2.25	**2.45**	2.52	2.72	2.80	2.88
Commercial		1.78	1.90	**2.07**	2.13	2.30	2.37	2.44
Industrial		1.49	1.59	**1.73**	1.78	1.92	1.98	2.04
Public Authorities		1.99	2.13	**2.32**	2.39	2.58	2.66	2.74
Municipal		1.53	1.64	**1.79**	1.84	1.99	2.05	2.11
Fire Protection		1.35	1.44	**1.57**	1.62	1.75	1.80	1.85
Outside City								
Monthly Charge								
5/8" -- 3/4"		$ 13.04	$ 13.95	**$ 15.21**	$ 15.66	$ 16.92	$ 17.43	$ 17.96
1"		18.05	19.31	**21.05**	21.68	23.42	24.12	24.84
1 1/2"		34.29	36.69	**39.99**	41.19	44.49	45.83	47.21
2"		44.99	48.14	**52.47**	54.05	58.37	60.12	61.92
Vol Chg -- Per 1,000 Gal								
Residential	**Outside City**							
-	2,000	3.52	2.57	**2.79**	2.88	3.11	3.20	3.29
2,001	5,000	3.90	3.08	**3.35**	3.45	3.72	3.83	3.95
5,001	20,000	3.90	3.38	**3.68**	3.78	4.08	4.20	4.32
Commercial		2.67	2.85	**3.11**	3.20	3.45	3.56	3.66
Industrial		2.24	2.39	**2.60**	2.67	2.88	2.97	3.06

TABLE ES-6

CITY CORPORATION -- RUSSELLVILLE
IMPACT OF RATE PLAN ON MONTHLY CHARGES
WATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
	Scenario:		**2014 12 12 -- Scen 2 -- Conservation**					
Inside City								
Residential 5/8"	5,000 Gal	$ 17.93	$ 18.87	$ 20.55	$ 21.18	$ 22.86	$ 23.53	$ 24.24
	Increase		**0.94**	**1.68**	**0.63**	**1.68**	**0.67**	**0.71**
Residential 5/8"	10,000 Gal	27.63	30.12	32.80	33.78	36.46	37.53	38.64
	Increase		**2.49**	**2.68**	**0.98**	**2.68**	**1.07**	**1.11**
Commercial 1"	15,000 Gal	38.73	41.37	45.08	46.40	50.11	51.63	53.16
	Increase		**2.64**	**3.71**	**1.32**	**3.71**	**1.52**	**1.53**
Industrial 2"	500,000 Gal	774.99	827.09	899.98	926.03	998.91	1,030.08	1,061.28
	Increase		**52.10**	**72.89**	**26.05**	**72.88**	**31.17**	**31.20**
Outside City								
Residential 5/8"	5,000 Gal	$ 31.78	$ 28.31	$ 30.83	$ 31.77	$ 34.29	$ 35.30	$ 36.36
	Increase		**(3.47)**	**2.52**	**0.94**	**2.52**	**1.01**	**1.06**
Residential 5/8"	10,000 Gal	51.28	45.19	49.21	50.67	54.69	56.30	57.96
	Increase		**(6.10)**	**4.02**	**1.47**	**4.02**	**1.61**	**1.66**
Commercial 1"	15,000 Gal	58.10	62.06	67.62	69.60	75.17	77.45	79.74
	Increase		**3.96**	**5.57**	**1.98**	**5.57**	**2.28**	**2.30**
Industrial 2"	500,000 Gal	1,162.49	1,240.64	1,349.97	1,389.05	1,498.37	1,545.12	1,591.92
	Increase		**78.15**	**109.34**	**39.08**	**109.32**	**46.75**	**46.80**

Tri County Rate

City Corporation currently charges Tri-County Water Supply Corporation, its largest single customer, under the terms of a wholesale contract for service entered into by the two parties. The contract was executed after years of litigation between the two parties, and it contains a specific formula for calculating the rate per 1,000 gallons. The rate formula is intended to calculate the cost of treating water and providing it to Tri-County's take points. The rate is intended to be based on financial data provided in City Corporation's prior year audit.

Under the methodology utilizing the prior year's audit as a base, the project team recommends that City Corporation immediately adjust Tri-County's rate from its current level of $1.740 per 1,000 gallons to **$1.8557** per 1,000 gallons. Table II-18 in Section II summarizes the calculation of Tri-County's unit rate.

Further, the project team considers the formula that is utilized to calculate Tri-County's rate per 1,000 gallons to be reasonable, with one exception. A more appropriate cost basis would be to use City Corporation's current year budget/test year instead of the prior year's audit. Given the rapidly-increasing cost of providing water

service, basing a current year rate on a prior year's cost data results in a substantial risk that City Corporation will recover less than its current year cost of providing service to Tri-County. To the extent that this happens, it means that City Corporation's remaining customers will have to make up the shortfall from Tri-County. Given the reasonableness and tradition of utilities across the United States in calculating rates based on current year budgets, the project team recommends that the two parties attempt to amend the current rate calculation in order to ensure that each party is treated in a just, reasonable and fair manner.

Wastewater Rate Study

As has been the case with its water operation, City Corporation has found that the cost of wastewater service has been increasing at above-inflation rates over the past decade. The objectives for the wastewater rate study are similar to those for the water rate study. The project team has employed standard ratemaking methodologies to calculate the overall cost of operating and maintaining its wastewater utility operations, both inside and outside the City of Russellville.

Wastewater Accounts and Billing Units – Current Year and Forecast

Table ES-7 presents total wastewater accounts by rate classification for the past four years, the test year, and the ten-year forecast period. As with the water utility, growth is forecast to be nominal over the next decade. In the period 2009-2014, total active wastewater accounts increased by an average of approximately 45-50 per year. In future years the average number of new accounts is forecast to be 32 per year.

The project team prepared a ten-year forecast of wastewater billing units based on the same principles on which customer accounts were projected. The results of this forecast for wastewater units are presented in **Table ES-8.** The tables reveal that wastewater billing units are expected to increase by an annual average of **0.25%** during the forecast period. By FY 2024 wastewater units are expected to reach **1,470,458,973** gallons.

TABLE ES-7

CITY CORPORATION -- RUSSELLVILLE
TOTAL WASTEWATER ACCOUNTS
WASTEWATER Customer Classes

	Res Inside	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities	Total
	WASTEWATER Total Accounts								
2009	9,083	90	1,194	3	54	4	6	155	10,589
2010	9,095	98	1,216	3	54	4	6	158	10,634
2011	9,122	102	1,237	3	53	4	6	157	10,684
2012	9,149	102	1,252	3	53	4	6	158	10,727
2013	9,164	206	1,269	4	53	4	6	158	10,864
2014	9,249	313	1,279	4	52	4	6	160	11,067
2015	9,269	314	1,289	4	52	4	6	161	11,100
2016	9,289	315	1,299	4	52	4	6	162	11,132
2017	9,309	316	1,309	4	52	4	6	163	11,164
2018	9,329	317	1,319	4	52	4	6	164	11,196
2019	9,349	318	1,329	4	52	4	6	165	11,228
2020	9,369	319	1,339	4	52	4	6	166	11,260
2021	9,389	320	1,349	4	52	4	6	167	11,292
2022	9,409	321	1,359	4	52	4	6	168	11,324
2023	9,429	322	1,369	4	52	4	6	169	11,356
2024	9,449	323	1,379	4	52	4	6	170	11,388

TABLE ES-8

CITY CORPORATION -- RUSSELLVILLE
WASTEWATER BILLING UNITS -- GALLONS

	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities	Total
2009	523,833,000	5,174,000	257,564,000	566,000	594,713,000	10,625,000	391,384,000	101,279,000	**1,885,138,000**
2010	537,420,000	5,401,000	258,782,000	297,000	535,067,000	10,416,000	253,951,000	100,392,000	**1,701,726,000**
2011	563,536,000	5,260,000	265,031,000	552,000	553,873,000	11,765,000	219,131,000	100,569,000	**1,719,717,000**
2012	605,333,000	5,051,000	259,902,000	691,000	528,068,000	11,272,000	179,234,000	105,485,000	**1,695,036,000**
2013	479,651,000	9,993,000	253,269,000	514,000	490,030,000	10,519,000	123,209,000	100,050,000	**1,467,235,000**
2014	448,792,000	15,694,000	257,891,000	552,000	498,247,000	9,411,000	119,063,000	85,967,000	**1,435,617,000**
2015	449,992,000	15,742,000	258,851,000	552,000	498,247,000	9,411,000	119,063,000	86,507,000	**1,438,365,000**
2016	450,962,926	15,792,067	260,859,803	552,000	498,247,000	9,411,000	119,063,000	87,043,200	**1,441,930,997**
2017	451,933,853	15,842,135	262,868,606	552,000	498,247,000	9,411,000	119,063,000	87,579,401	**1,445,496,994**
2018	452,904,779	15,892,202	264,877,409	552,000	498,247,000	9,411,000	119,063,000	88,115,601	**1,449,062,991**
2019	453,875,705	15,942,269	266,886,212	552,000	498,247,000	9,411,000	119,063,000	88,651,802	**1,452,628,988**
2020	454,846,632	15,992,337	268,895,015	552,000	498,247,000	9,411,000	119,063,000	89,188,002	**1,456,194,985**
2021	455,817,558	16,042,404	270,903,818	552,000	498,247,000	9,411,000	119,063,000	89,724,202	**1,459,760,982**
2022	456,788,484	16,092,471	272,912,621	552,000	498,247,000	9,411,000	119,063,000	90,260,403	**1,463,326,979**
2023	457,759,411	16,142,539	274,921,424	552,000	498,247,000	9,411,000	119,063,000	90,796,603	**1,466,892,976**
2024	458,730,337	16,192,606	276,930,227	552,000	498,247,000	9,411,000	119,063,000	91,332,804	**1,470,458,973**

Revenue Requirement Methodology and Calculations

The next step in the ratemaking process is to develop the wastewater utility's revenue requirement. Again, the process for developing a revenue requirement is the same as for City Corporation's Water Utility. It includes only that amount that must be raised through the water utility's user rates. This means that non-rate revenue (such as connection fees, late payment charges and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

The primary assumptions used in the development of this forecast are as follows:

- Most operating costs are expected to increase at an annual rate of 3.0% to 5.0%, which is approximately equivalent to the rate of inflation.
- Certain expenses are forecast to increase at above-inflation rates, to reflect the rapid rate of increase of the costs. These expenses include supplies and materials such as chemicals and fuels, Medicare and insurance.
- Certain expenses will increase at higher rates to reflect the forecast growth in accounts and volumes.
- City Corporation maintains one wastewater-related long-term bond. This $9.0 million bond was issued within in the last year, and annual principal and interest is approximately $614,297. The proceeds were used for improvements to City Corporation's wastewater treatment plant. In addition, there is a balloon payment due at the end of the bond's term, in 2027. City Corporation's Board of Directors has requested that the wastewater utility set aside an annual amount that will be used to fund the balloon payment when it becomes due. This amount is calculated to be $223,224 per year.

- Importantly, the forecast also assumes that the wastewater utility's capital outlays/reserve requirement remains at approximately $250,000 per year throughout the forecast period. The Corporation is assumed to issue long-term debt to fund capital improvements. The debt service on the long-term debt is intended to replace the reserve expenditures.

- City Corporation is currently in the process of evaluating its long-term capital needs for both the water and the wastewater utility, and currently estimates that it will require **$54,548,025** in wastewater-related capital improvements in the next decade. City Corporation intends to fund these capital requirements through a combination of existing balance, replacement reserve and long-term debt. City Corporation forecasts the need to issue $41,000,000 in long-term debt in the next decade. $20,000,000 is to be issued during FY 2015 with another $15,000,000 to be issued in FY 2018 and $6,000,000 to be issued in 2020. This debt is assumed to be issued for 25 year terms at 4.0% interest and a 1 year reserve requirement funded from bond proceeds.

Table ES-9 presents City Corporation's net revenue requirement for the wastewater utility for the test year 2015 and the forecast period. The wastewater net revenue requirement is expected to increase from **$3,852,048** in FY 2015 to **$8,090,923** in FY 2024. This represents an average annual increase of **8.60%**. Detailed calculations are presented in the rate model contained in Appendix A of this report.

TABLE ES-9

CITY CORPORATION -- RUSSELLVILLE
FORECAST NET REVENUE REQUIREMENT
WASTEWATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**									
Operating	$ 2,837,482	$ 2,965,026	$ 3,098,766	$ 3,239,024	$ 3,386,142	$ 3,540,477	$ 3,702,409	$ 3,872,338	$ 4,050,685	$ 4,237,898
Cap Outlays/Replace Reserve	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Debt Service -- Current	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
Debt Service -- Future	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
Sub-Total	3,925,003	5,448,008	5,581,748	5,722,006	6,915,719	7,070,055	7,650,625	7,820,554	7,998,901	8,186,113
Non-Rate Revs	(72,955)	(75,144)	(77,398)	(79,720)	(82,111)	(84,575)	(87,112)	(89,725)	(92,417)	(95,190)
Total	**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**6,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**

Wastewater Rate Design

Table ES-10 presents a summary of the wastewater rate plan proposed for City Corporation under this scenario. **Table ES-11** presents the impact the proposed rate plan will have on monthly residential and commercial charges at each class' average monthly level of consumption. Rates and impacts are presented for both inside city and outside city customer classes.

As part of this engagement, the project team also developed a recommended set of rates per lb. for BOD and TSS. This was completed through the process of functionalizing treatment costs between volume, BOD and TSS elements.

Table ES-12 presents a summary of the recommended BOD and TSS rate plan for City Corporation. It is recommended that City Corporation continue the policy of not implementing these charges until strength levels have exceeded 350 mg/l BOD and TSS respectively.

TABLE ES-10

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED RATE DESIGN
WASTEWATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:		**2014 12 12 -- Scen 2 -- Conservation**						
Inside City								
All Classes -- Inside								
Monthly Charge		$ 6.67	**$ 8.17**	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12
Volume Rate								
1,001	20,000	2.59	**3.17**	3.88	4.60	4.95	5.32	5.48
20,001	Above	2.20	**2.70**	3.31	3.92	4.21	4.53	4.67
Outside City								
All Classes -- Inside								
Monthly Charge		10.01	**12.26**	15.02	17.79	19.13	20.57	21.18
Volume Rate								
1,001	20,000	3.89	**4.76**	5.82	6.90	7.43	7.98	8.22
20,001	Above	3.30	**4.05**	4.97	5.88	6.32	6.80	7.01

TABLE ES-11

CITY CORPORATION -- RUSSELLVILLE
IMPACT OF RATE PLAN ON MONTHLY CHARGES
WASTEWATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:			**2014 12 12 -- Scen 2 -- Conservation**					
Inside City								
Residential	5,000 Gal	$ 17.03	**$ 20.85**	$ 25.53	$ 30.26	$ 32.55	$ 34.99	$ 36.04
	Increase		**3.82**	**4.68**	**4.73**	**2.29**	**2.44**	**1.05**
Residential	10,000 Gal	29.98	**36.70**	44.93	53.26	57.30	61.59	63.44
	Increase		**6.72**	**8.23**	**8.33**	**4.04**	**4.29**	**1.85**
Commercial	15,000 Gal	42.93	**52.55**	64.33	76.26	82.05	88.19	90.84
	Increase		**9.62**	**11.78**	**11.93**	**5.79**	**6.14**	**2.65**
Outside City								
Residential	5,000 Gal	$ 25.55	**$ 31.28**	$ 38.30	$ 45.39	$ 48.83	$ 52.49	$ 54.06
	Increase		**5.73**	**7.02**	**7.10**	**3.44**	**3.66**	**1.58**
Residential	10,000 Gal	44.97	**55.05**	67.40	79.89	85.95	92.39	95.16
	Increase		**10.08**	**12.35**	**12.50**	**6.06**	**6.44**	**2.77**
Commercial	15,000 Gal	64.40	**78.83**	96.50	114.39	123.08	132.29	136.26
	Increase		**14.43**	**17.67**	**17.90**	**8.69**	**9.21**	**3.98**

TABLE ES-12

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED BOD AND TSS RATE
WASTEWATER UTILITY

	Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:		**2014 12 12 -- Scen 2 -- Conservation**					
BOD Charge							
Total Functionalized Cost		$ 1,038,815	$ 1,356,424	$ 1,387,859	$ 1,420,824	$ 1,674,771	$ 1,710,933
Total Lbs		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167
Total Cost/lb.	**0.0727**	**0.3464**	**0.4512**	**0.4605**	**0.4703**	**0.5530**	**0.5635**
TSS Charge							
Total Functionalized Cost		603,962	788,618	806,895	826,061	973,704	994,729
Total Lbs		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167
Total Cost/lb.	**0.0624**	**0.2014**	**0.2623**	**0.2677**	**0.2734**	**0.3215**	**0.3276**

Section I

SECTION I

Introduction and Demographic Profile

Background

In December 2012, City Corporation of Russellville, Arkansas ("City Corporation") engaged **Economists.com** to conduct a water rate study and a wastewater rate study. City Corporation was interested in developing a comprehensive water and wastewater rate and general financial plan for a ten-year period. The objective was to develop a long-term rate plan that will enable City Corporation to recover sufficient funds to meet operating expenses, capital outlays, debt service and coverage requirements, while at the same time to the best extent possible minimizing the impact on ratepayers.

The City identified numerous objectives for the water and wastewater rate studies, including but not limited to the following:

- A detailed analysis and comparison of City Corporation's current and proposed rates to the Arkansas state average as well as other surrounding communities
- A comprehensive analysis and evaluation of the water and wastewater systems' current cost of service and revenue requirements
- An estimate of current and forecast accounts, volumes and billing units for the ten year forecast period
- A forecast of operating expenses over the next decade, taking into consideration such factors as inflation, system growth, and increases in staffing levels
- An analysis of the cost of providing service to Tri-County Regional Water Distribution District under the terms of the contract for wholesale water service executed between Tri-County and City Corporation
- A thorough review of the water and wastewater systems' known capital improvement needs, as well as a determination of City Corporation's ability to fund capital requirements through the issuance of long-term debt
- The development of alternative rate structures that would recover City Corporation's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios

In conjunction with City Corporation staff, the project team evaluated several alternative rate structures, which would allow it to achieve these objectives while continuing to provide ratepayers with superior quality water and wastewater services.

City Corporation requested that the study be suspended for a period of time so that the Capital Improvement Plan could be revised and other City objectives could be achieved. The study was therefore put on hold for a twelve-month period and updated with the information contained in this final version.

After a series of meetings with City Corporation officials and the Board of Directors, the project team narrowed its recommendations to the water and wastewater rate design alternatives contained in this study. The analysis and recommendations presented in this study achieve all of the objectives outlined above.

Report Organization

This report is organized into the following sections:

Section I – Introduction and Demographic Profile - outlines the background, objectives and scope of this rate study and long-term financial plan. Also presents City Corporation's current rate structures and a demographic profile of the City of Russellville. This includes a comparison of City Corporation's water and wastewater charges with other cities in Arkansas.

Section II – Water Rate Study – presents a comprehensive analysis of City Corporation's water utility. Includes an analysis of the water utility's current and forecast customer base, total accounts and current volumes of treated water. Outlines the process of analyzing the water utility's cost structure, including developing the current or "test year" revenue requirement and functionalizing costs between treatment, distribution, administration and customer billing. Presents rate recommendations for City Corporation to consider which would enable it to meet its revenue requirements over the next decade. Finally, presents an analysis of the impact of these rate plans on each defined customer class.

Section III – Wastewater Rate Study – presents a comprehensive analysis of City Corporation's wastewater utility. Includes an analysis of the wastewater utility's current and forecast customer base, total accounts and current wastewater billing units. Outlines the process of analyzing the wastewater utility's cost structure, including developing the current or "test year" revenue requirement and functionalizing costs between treatment, collection, administration and customer billing. Presents rate recommendations for City Corporation to consider which would enable it to meet its revenue requirements over the next decade. Finally, presents an analysis of the impact of these rate plans on each defined customer class.

Appendix A – presents a hard copy printout of the interactive Microsoft Excel spreadsheet model developed for City Corporation to calculate water and wastewater current and future revenue requirements. The model automatically generates all calculations based on a set of defined user inputs. An electronic copy of this model will be provided to City Corporation so that staff may use it as a tool for future rate development.

City and Corporation Overview

The City of Russellville is the county seat and largest city in Pope County, Arkansas. It is home to Arkansas Tech University and Arkansas Nuclear One, the state's only nuclear power plant. The City borders on Lake Dardanelle as well as the Arkansas River.

As described on the City's Wikipedia entry (the source of much of this history), prior to the founding of the City of Russellville, there was a small town located on the Arkansas River directly south of the area in which the modern-day City is located. This small community was known as Norristown. Norristown no longer exists, and its only remaining remnant is the small Norristown Cemetery that is located near the Dow Chemical Plant.

Before the town was called Russellville, it was known to local people as Chactus Prairie, The Prairie, or Cactus Flats. The first settler in the area was a man named P.C. Holledger in 1834. In 1835 Dr. Thomas Russell bought Holledger's house. The first business in the town was stared by a man named Mr. Shinn, and his masonry building exists to this day. The area became a settling place for early travellers and explorers. On June 7, 1870 Russellville became an incorporated City, as local residents chose this name over Shinnville.

The Town grew slowly at first, but in the early 1870s a railroad was built which caused growth to explode. The Town was also touched by violence from the bloody Pope County Military War of the early 1870s. By 1876 the Town boasted a population of approximately 800. By the end of the century, Russellville had become a prosperous coal-mining area. Cotton also became a profitable crop for residents. Sadly, today no coal is mined and the cotton gins are gone.

In 1906 the Town suffered a devastating fire in its central business district. Much of the Town was rebuilt quickly with buildings that stand to this day. In the years after World War II, further growth was sparked by the construction of Interstate 40 and the completion of a dam near the Arkansas River crossing. The dam led to the establishment of Lake Dardanelle State Park, a major tourist attraction for the area. In the 1970s Arkansas' one nuclear power plant, Arkansas Nuclear One, was built just outside the City, bringing further job growth and population to the City.

Today Russellville is known for its diverse manufacturing base, and its local music, art scene, and historic downtown area. The City is also home to Arkansas Tech University, which boasts one of the highest graduation rates in the state.

City Corporation

City Corporation is a semi-autonomous nonprofit corporation that operates the City's water and wastewater system. As described in the Corporation's most recent Audited Financial Statement, The Russellville Water and Sewer System is owned by the City of Russellville and is leased to City Corporation. As of 2012, the Board of Directors of City Corporation and the Russellville City Council have agreed that each body will adopt a resolution agreeing to an annual extension of the lease.

Table I-1 lists current serving City officials, City Corporation Board of Directors and senior staff. The City utilizes standard government accounting procedures for its general and enterprise funds. The Fiscal Year begins on July 1st and ends on the following June 30th.

TABLE I-1

CITY OF RUSSELLVILLE

CITY AND CORPORATION OFFICIALS -- DECEMBER 2014

City Elected Officials		City Corporation Board of Directors		City Corporation Senior Staff	
Bill Eaton	*Mayor*	Art Jones	*Chairman*	Steve Mallett	*General Manager*
Mark Tripp	*Ward 1, Position 1*	Frank Russenberger	*Vice Chairman*	Taryn Childers	*Chief Financial Officer*
Richard Harris	*Ward 1, Position 2*	Luke Duffield	*Secretary*	Lance Bartlett	*Engineering Manager*
Randall Horton	*Ward 2, Position 1*	Harold Barr	*Member*	Larry Collins	*Operations Manager*
Freddie Harris	*Ward 2, Position 2*	Bill Harmon	*Member*	Jeremy Myers	*Customer Service Manager*
Robert Wiley	*Ward 3, Position 1*			Steve Reves	Construction Supervisor
Spencer Roberts	*Ward 3, Position 2*			Jonathan Shipley	WTP Lead Operator
Martin Irwin	*Ward 4, Position 1*			Danny Teeter	ConAgra Lead Operator
Garland Steuber	*Ward 4, Position 2*			Randy Bradley	Pretreatment Coordinator

Water and Wastewater Rate Structure

Table I-2 summarizes City Corporation's current water rate structure. Under the current rate ordinance, accounts are segregated into those inside the City of Russellville and those outside the City ("rural"). Residential customers are assessed an inverted block rate, whereby after the first 2,000 gallons the rate per 1,000 gallons increases. This rate structure is intended to encourage conservation, and these rate structures are becoming increasingly common across the USA. An inverted block volumetric rate is assessed to all water accounts. For accounts outside city limits, charges are assessed at approximately 1.50 times those of inside city accounts, although the percentage is not the same for all accounts due to unequal historical rate adjustments. Other customer classes, including Tri-County, pay a uniform rate per 1,000 gallons. As will be discussed later, Tri-County's rate is based on a formula as specified in a contract between the two parties.

TABLE I-2

CITY CORPORATION -- RUSSELLVILLE
CURRENT WATER RATE SCHEDULE

		Residential City	Commercial City	Industrial City	Public City	Municipal City	Fire Prot City
Monthly Charge -- 1st 1,000 Gal							
5/8" -- 3/4"		$ 8.69	$ 8.69	$ 8.69	$ 8.69	$ 8.69	$ 8.69
1"		12.03	12.03	12.03	12.03	12.03	12.03
1 1/2"		22.86	22.86	22.86	22.86	22.86	22.86
2"		29.99	29.99	29.99	29.99	29.99	29.99
3"		49.20	49.20	49.20	49.20	49.20	49.20
4"		157.48	157.48	157.48	157.48	157.48	157.48
6"		194.26	194.26	194.26	194.26	194.26	194.26
Volume Charge (per 1,000 gal)							
-	2,000	1.71	1.78	1.49	1.99	1.53	1.35
2,001	Above	1.94	1.78	1.49	1.99	1.53	1.35

		Residential Outside	Commercial Outside	Industrial Outside	Tri-County Wholesale
Monthly Charge -- 1st 1,000 Gal					
5/8" -- 3/4"		$ 13.04	$ 13.04	$ 13.04	na
1"		18.05	18.05	18.05	na
1 1/2"		34.29	34.29	34.29	na
2"		44.99	44.99	44.99	na
3"		73.80	73.80	73.80	na
4"		236.22	236.22	236.22	na
6"		291.39	291.39	291.39	na
Volume Charge (per 1,000 gal)					
-	2,000	3.52	2.67	2.24	1.74
2,001	Above	3.90	2.67	2.24	1.74

Table I-3 summarizes the wastewater rate structure. As the table reveals, residential wastewater rates are assessed a combination of a monthly charge and volume rate per 1,000 gallons. All inside city ratepayers pay the same monthly and volume charge, as do all outside city customers.

Volume rates are based on winter averages for each customer, using the months of January, February and March as a base. Winter averaging is a common billing practice for cities in Texas and throughout the United States. The concept behind winter averaging is that during the winter months, residents are not as likely to water lawns, wash cars, or engage in other summer water uses that are not returned through the wastewater system. However, residents will continue to use water indoors (for bathing, drinking, etc.), in a volume similar to other months. Therefore, it is assumed that all water used during these winter months results in wastewater flows.

TABLE I-3

CITY CORPORATION -- RUSSELLVILLE
CURRENT WASTEWATER RATE SCHEDULE

	Residential City	Commercial City	Industrial City	Public City
Wastewater Charges -- Inside City				
Monthly Charge	$ 6.67	$ 6.67	$ 6.67	$ 6.67
Volume Chg/1,000 Gal				
- 20,000	2.59	2.59	2.59	2.59
20,001 Above	2.20	2.20	2.20	2.20

	Residential Outside	Commercial Outside	Industrial Outside
Wastewater Charges -- Outside			
Monthly Charge	$ 10.01	$ 10.01	$ 10.01
Volume Chg/1,000 Gal			
- 20,000	3.89	3.89	3.89
20,001 Above	3.30	3.30	3.30

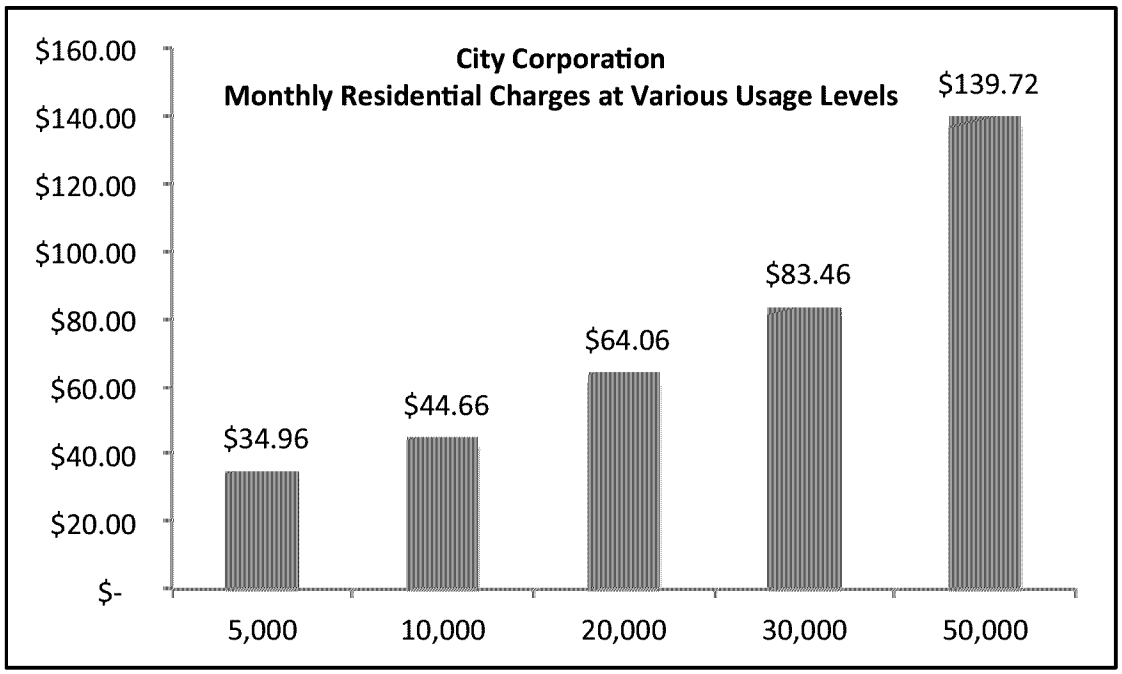
City Corporation has implemented only limited rate adjustments in recent years. According to City Corporation records, in 1989 City Corporation actually reduced its residential rates by 3.2% for the first 2,000 gallons but increased rates by 10.7% for over 2,000 gallons. At the same time commercial rates were increased by 16.4%, industrial rates were increased by 20.2% and Public Authority rates were increased by 14.4%.

In 1997 City corporation reduced inside city residential rates by 24.9% and increased residential outside rates by 3.3%. In 2009 and 2010 City Corporation implemented uniform rate adjustments of 12.0% for all ratepayers.

City Corporation last adjusted Tri-County's rate in 2010, even though the contract provides the option of adjusting rates every year.

Chart I-4 shows the impact of City Corporation's inverted block rate structure at various usage levels. The chart reveals that charges get progressively larger at higher usage levels.

CHART I-4



Water and Wastewater Rate Comparison

Table I-5 compares City Corporation's monthly residential water and wastewater charges to those of nearby cities of similar size in the region. **Chart I-6, Chart I-7** and **Chart I-8** present the data graphically. Volumes of 5,000 gallons water and 5,000 gallons wastewater were used for the comparison as they represent typical usage levels for an average household in the City of Russellville. The rate data is based on published rates and ordinances posted by each municipality on their website or reported in the November 2012 Arkansas Retail Rate Survey published by the Arkansas Natural Resources Commission.

These rates do not include sales tax, activation or other charges beyond the basic minimum and volume charges. Comparisons such as these are for usage charges only. *This type of comparison may have the unintended effect of discriminating against communities who choose to finance system expansions through current rates or revenue bonds, which are included in rates, as opposed to those who utilize general obligation bonds, which are funded through taxes*. All else being equal, a City that primarily or exclusively uses general obligation bonds will have a lower water rate per 1,000 gallons but a higher tax rate.

With these caveats in mind, the comparisons reveal that City Corporation's rates are comparable to, or lower than the majority of the similarly sized cities in the region. City Corporation's combined residential water and wastewater charges are approximately **27% less** than the statewide survey average.

TABLE I-5

CITY CORPORATION -- RUSSELLVILLE
RESIDENTIAL MONTHLY CHARGE COMPARISON

	Water 5,000 Gal	Wastewater 5,000 Gal	Total 5,000 gallons
Russellville	**$ 17.93**	**$ 17.03**	**$ 34.96**
Arkadelphia	13.22	14.13	27.35
Benton	20.72	27.50	48.22
Bentonville	21.70	26.23	47.93
Conway	16.03	22.29	38.32
Fayetteville	20.49	32.99	53.48
Fort Smith	20.57	16.05	36.62
Hot Springs	13.39	25.88	39.27
Jacksonville	21.34	23.30	44.64
Jonesboro	9.33	7.20	16.53
Little Rock (CAW)	11.86	28.40	40.26
North Little Rock (CAW)	11.86	12.72	24.58
Pine Bluff	23.52	14.16	37.68
Rogers	14.83	30.40	45.23
Springdale	15.42	17.63	33.05
State Median	**28.31**	**19.15**	**47.46**
Texarkana	19.70	23.83	43.53
West Memphis	32.29	6.57	38.86

CHART I-6

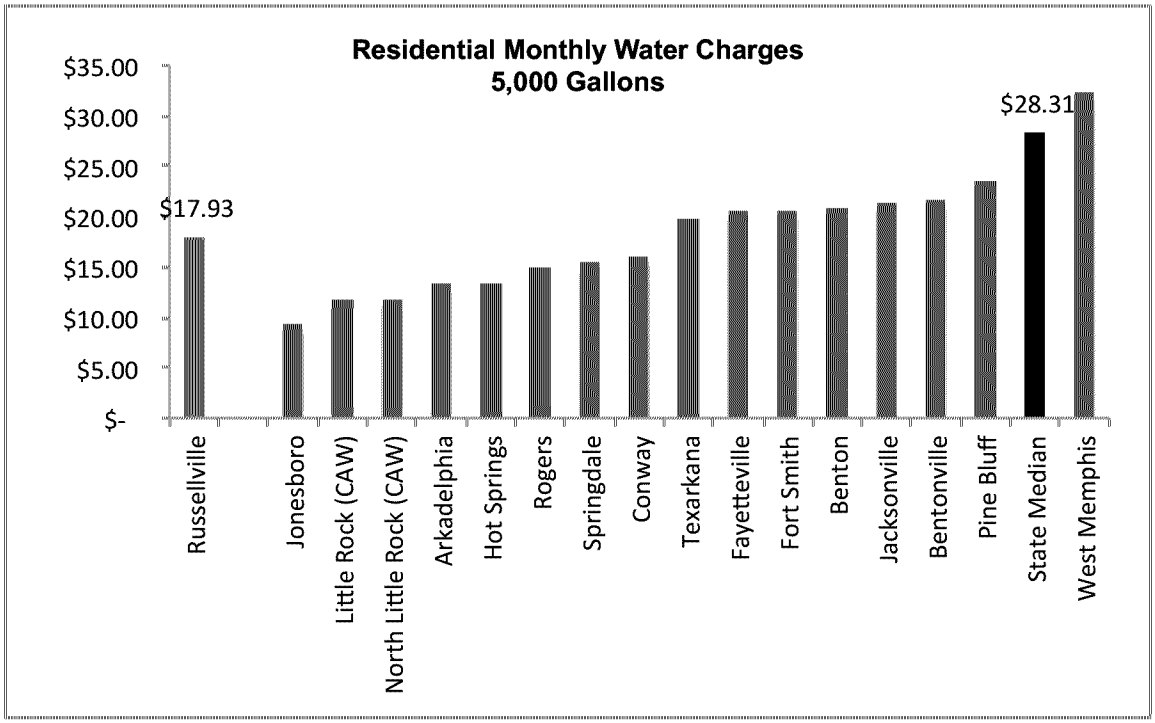


CHART I-7

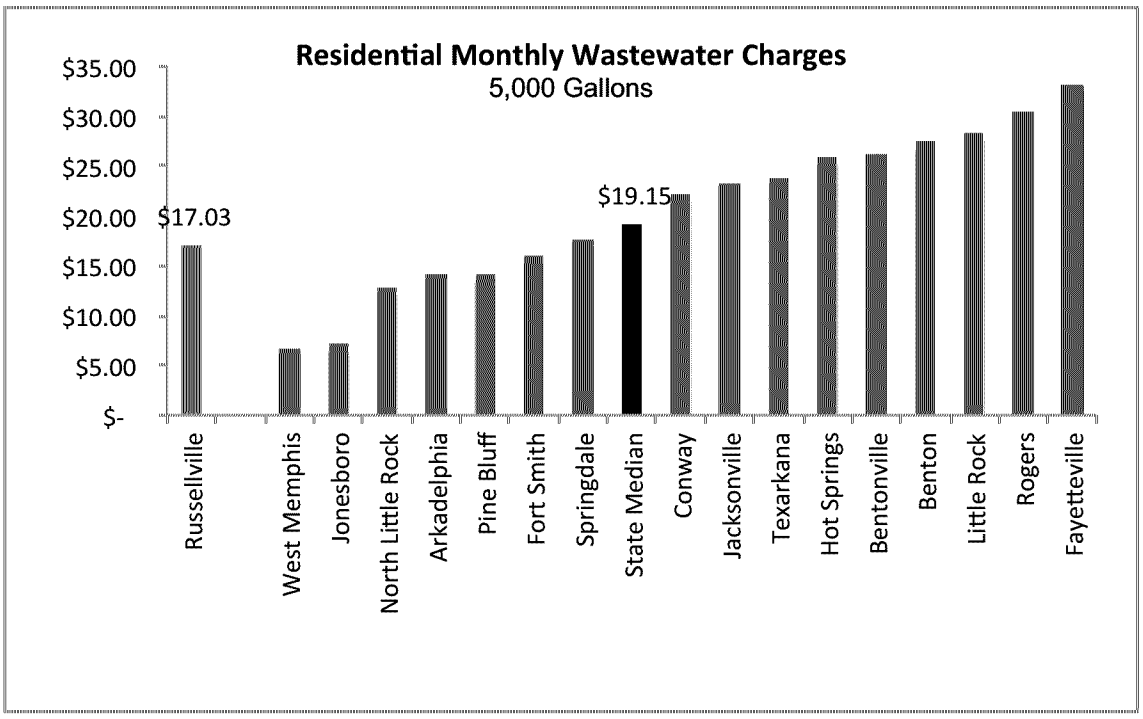
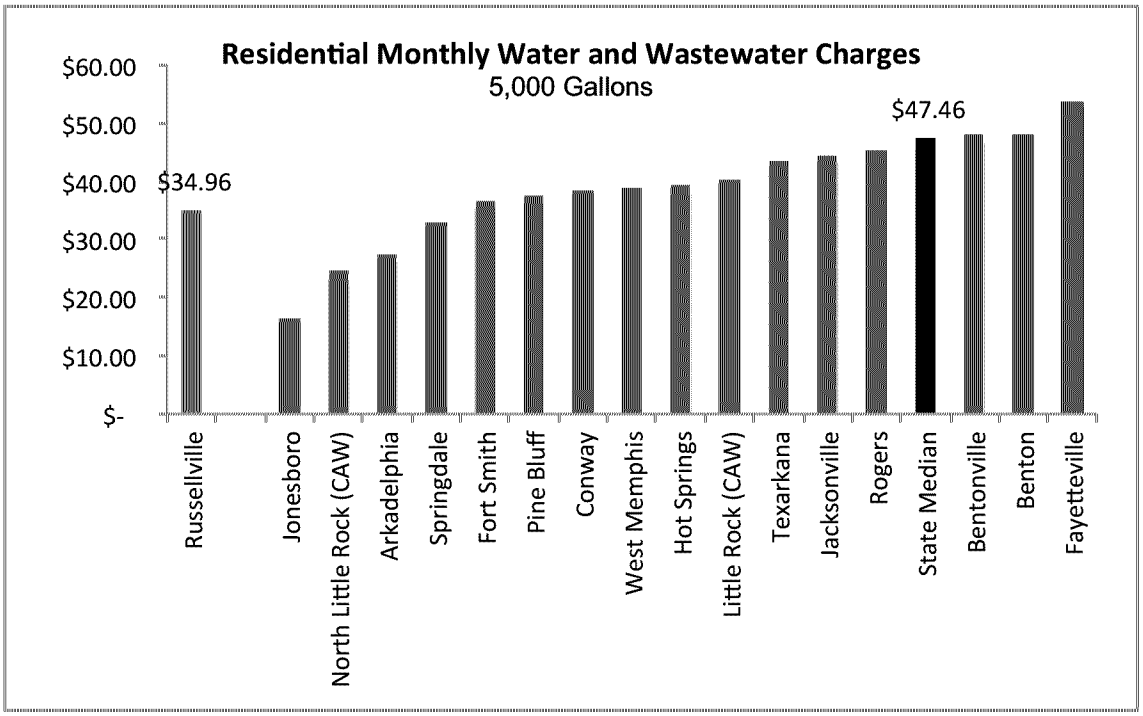


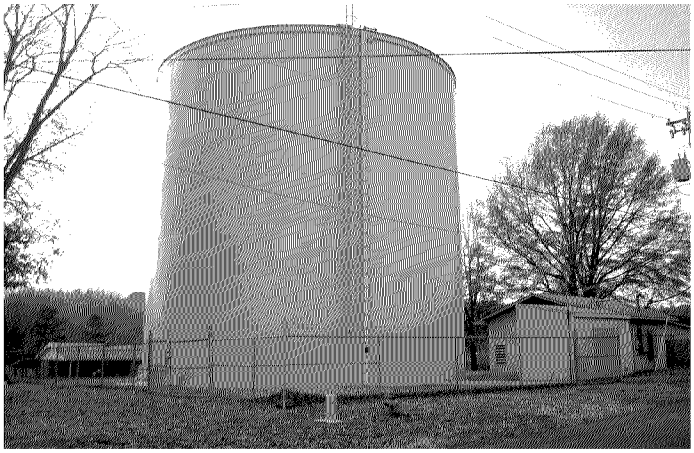
CHART I-8



Section II

SECTION II

Water Rate Study



This section focuses on City Corporation's water utility operations. As has been experienced by utilities throughout the United States, City Corporation has found that the cost of water service has been increasing at above-inflation rates over the past decade.

One of the primary objectives of this study is to calculate the overall cost of operating and maintaining its water utility operations, both inside and outside the City of Russellville. An additional objective is to segregate the cost of service by defined customer class. This involves allocating costs to customer classes based on their consumption characteristics. Thirdly, the study is intended to calculate the cost of service to Tri-County Regional Water Distribution District under the terms of the contract for wholesale water service executed between Tri-County and City Corporation. Fourth, the recommendations will include a thorough review of the water system's known capital improvement needs. This section will conclude with the development of a proposed rate plan that would recover City Corporation's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios.

Methodology

Determining a water utility's total cost of service requires an analysis of both operating (O & M) and capital costs. The first step in the process is to allocate these costs to the following functions: **treatment** costs including supply and pumping; **distribution** costs; **customer** related costs such as meter reading, billing and collection; and **administration** costs. This process is known in ratemaking as **Functionalization.**

The next step in the ratemaking process is to allocate functionalized costs among the various customer classes. According to the American Water Works Association, one of the most widely used methods of allocating these costs is the **base-extra capacity method**. This method recognizes the differences in the cost of providing service due to variations in the average rate of use and peak rate of use by a given customer class. It also recognizes customer related costs as a valid function.

In the base-extra capacity method, costs must be carefully classified into base and extra capacity costs, a process known as **Classification**. **Base** costs are those that tend to vary with the total quantity of water used, plus those operating expenses and capital costs associated with service under average load conditions.

Chemicals are an example of variable base costs. **Extra capacity** costs are those associated with meeting requirements in excess of average flows. These may be subdivided into costs required for maximum day extra demand, maximum hour demand in excess of maximum day demand or other appropriate criteria. Expenses for meters and services and for customer billing and collecting are allocated directly to the **customer** cost component.

The base extra capacity method is particularly well suited for use when developing the cost of service for publicly-owned utilities where certain expenses may benefit multiple utility operations. This methodology enables the costs to be allocated to each utility and proportioned appropriately to the cost components described above.

The final step in the process is to allocate these classified costs to customer classes based on the usage characteristics of each class. This process is known as **Allocation.** The final result of the allocation process is an identification of both the total cost of service for the utility and the specific cost of service for each customer class.

The methodology described above and used to develop the cost of service and rate recommendations in this section is recognized by the American Water Works Association and used by thousands of utilities throughout the United States in their rate setting process.

Water Accounts – Current Year and Forecast

Table II-1 presents the number of water accounts in the test year FY 2015 for each identified customer class. The table reveals that as of FY 2015, there are an average of **12,497** water accounts across 11 identified customer classes. The vast majority of accounts are inside the city limits of Russellville, and there is one class of wholesale customers made up entirely of Tri-County accounts. It should be noted that the number of accounts increased significantly due to the acquisition of approximately 376 accounts from Tri-County, most of which are outside the City.

TABLE II-1

CITY CORPORATION -- RUSSELLVILLE
TEST YEAR WATER ACCOUNTS

		Test Year Accounts
Residential	City	10,013
Residential	Outside City	500
Commercial	City	1,645
Commercial	Outside City	18
Industrial	City	86
Industrial	Outside City	7
Ind. Discounts	City	-
Public Authorities	City	211
Municipal	City	3
Fire Protection	City	3
Tri County	Outside City	7
Total		**12,497**

Table II-2 presents total water accounts by rate classification for the past four years, the test year, and the ten-year forecast period. As the table reveals, growth is forecast to be nominal over the next decade. In the period 2009-2014, total active water accounts increased by an average of approximately 40 per year, after exclusion of the acquired outside city Tri-County accounts. In future years the average number of new accounts is forecast to be 32-33 per year.

TABLE II-2

CITY CORPORATION -- RUSSELLVILLE
TOTAL WATER ACCOUNTS
WATER Customer Classes

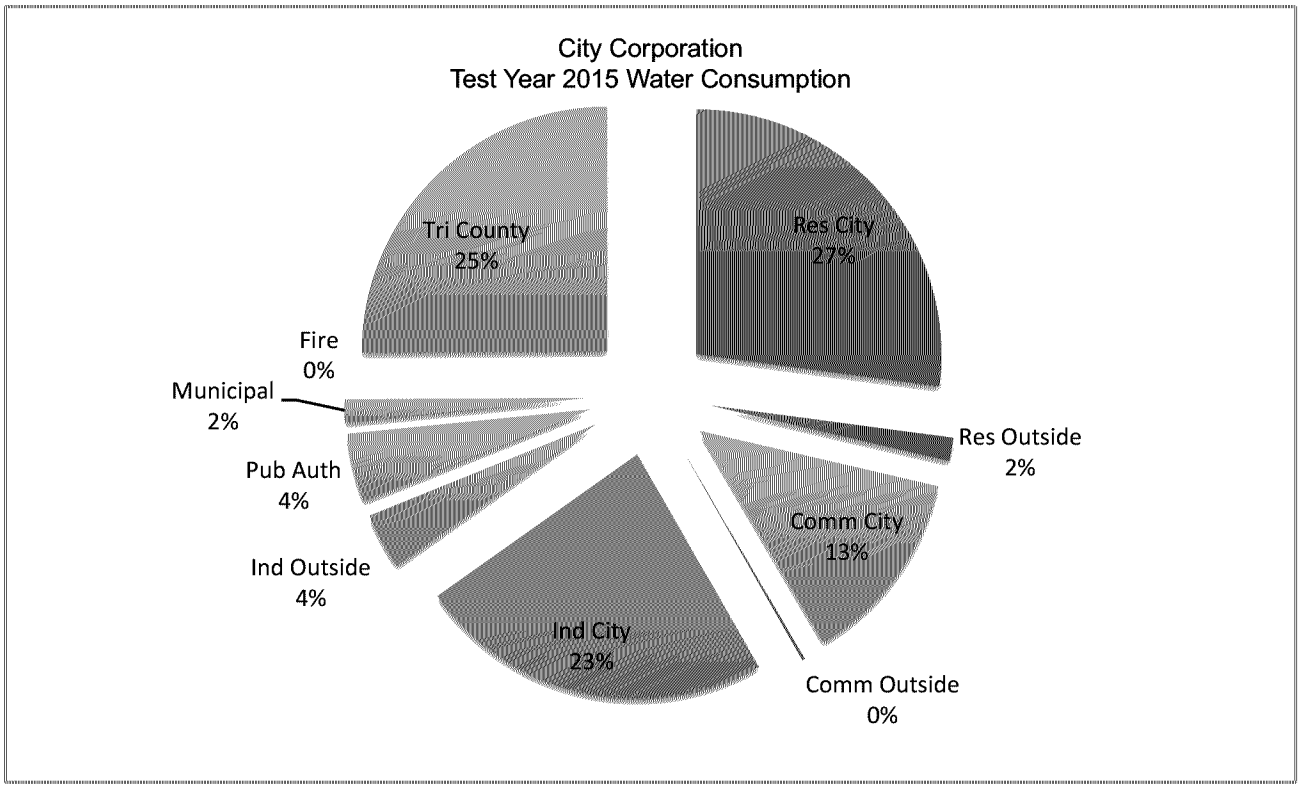
	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities City	Municipal City	Fire Protection City	Tri County Outside City	Total
WATER Total Accounts												
FY 2009	9,864	129	1,490	14	87	7	-	190	3	1	7	11,792
FY 2010	9,853	138	1,525	14	88	7	-	198	3	1	7	11,834
FY 2011	9,863	141	1,560	14	86	7	-	199	4	1	7	11,882
FY 2012	9,882	140	1,582	14	86	7	-	204	3	2	7	11,927
FY 2013	9,904	318	1,605	15	87	7	-	206	3	2	7	12,154
FY 2014	9,993	499	1,635	17	86	7	-	210	3	2	7	12,459
2015	10,013	500	1,645	18	86	7	-	211	3	3	7	12,497
2016	10,033	501	1,655	18	86	7	-	212	3	3	7	12,529
2017	10,053	502	1,665	18	86	7	-	213	3	3	7	12,561
2018	10,073	503	1,675	18	86	7	-	214	3	3	7	12,593
2019	10,093	504	1,685	18	86	7	-	215	3	3	7	12,625
2020	10,113	505	1,695	18	86	7	-	216	3	3	7	12,657
2021	10,133	506	1,705	18	86	7	-	217	3	3	7	12,689
2022	10,153	507	1,715	18	86	7	-	218	3	3	7	12,721
2023	10,173	508	1,725	18	86	7	-	219	3	3	7	12,753
2024	10,193	509	1,735	18	86	7	-	220	3	3	7	12,785
WATER Annual New Accounts												
FY 2010	(11)	9	35	-	1	-	-	8	-	-	-	42
FY 2011	10	3	35	-	(2)	-	-	1	1	-	-	48
FY 2012	19	(1)	22	-	-	-	-	5	(1)	1	-	45
FY 2013	22	178	23	1	1	-	-	2	-	-	-	227
FY 2014	89	181	30	2	(1)	-	-	4	-	-	-	305
2015	20	1	10	1	-	-	-	1	-	-	-	33
2016	20	1	10	-	-	-	-	1	-	-	-	32
2017	20	1	10	-	-	-	-	1	-	-	-	32
2018	20	1	10	-	-	-	-	1	-	-	-	32
2019	20	1	10	-	-	-	-	1	-	-	-	32
2020	20	1	10	-	-	-	-	1	-	-	-	32
2021	20	1	10	-	-	-	-	1	-	-	-	32
2022	20	1	10	-	-	-	-	1	-	-	-	32
2023	20	1	10	-	-	-	-	1	-	-	-	32
2024	20	1	10	-	-	-	-	1	-	-	-	32

Historical and Forecast Water Consumption

Total water system consumption data was analyzed over the same time period as customer data. Consumption over the past 12 months and historical trends were used as the basis for the development of the test year and forecast water usage within the rate model. As with the account data, the project team used averaging to smooth out fluctuations in the monthly consumption data.

Chart II-3 presents the percentage of total consumption by customer class groupings in the test year. Total test year usage is calculated to be 2,192,021,000 gallons. The chart illustrates the relative volume demands of each class. The chart reveals that residential inside and Tri-County use approximately equivalent percentages in the test year, followed closely by Industrial Inside accounts. Other customer class' usage is more nominal.

CHART II-3



The project team prepared a ten-year forecast of water usage based on the same principles on which customer accounts were projected. The results of this forecast for water usage are presented in **Table II-4.** The tables reveal that water usage is expected to increase by an annual average of **0.16%** during the forecast period. By FY 2024 water usage is expected to reach **2,233,043,290** gallons.

TABLE II-4

CITY CORPORATION -- RUSSELLVILLE
WATER CONSUMPTION -- GALLONS

	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities City	Municipal City	Fire Protection City	Tri County Outside City	Total
WATER Historical Volume												
FY 2009	576,783,000	7,539,000	276,704,000	2,722,000	602,459,000	86,302,000	-	106,837,000	34,263,000	116,000	635,586,000	**2,329,311,000**
FY 2010	595,328,000	7,828,000	283,167,000	2,260,000	544,137,000	82,964,000	-	107,714,000	33,581,000	113,000	715,943,000	**2,373,035,000**
FY 2011	623,466,000	7,892,000	285,618,000	2,287,000	563,420,000	85,805,000	-	112,421,000	88,461,000	306,000	661,936,000	**2,431,612,000**
FY 2012	674,459,000	7,603,000	281,360,000	2,244,000	538,217,000	81,201,000	-	117,941,000	37,666,000	189,000	651,836,000	**2,392,716,000**
FY 2013	604,282,000	16,594,000	274,392,000	1,965,000	502,313,000	93,796,000	-	108,162,000	36,804,000	478,000	589,933,000	**2,228,719,000**
FY 2014	592,582,000	33,562,000	282,679,000	3,556,000	513,795,000	81,501,000	-	98,330,000	33,095,000	242,000	549,739,000	**2,189,081,000**
WATER Forecast Volume												
2015	594,082,000	33,622,000	283,579,000	3,556,000	513,795,000	81,501,000	-	98,810,000	33,095,000	242,000	549,739,000	**2,192,021,000**
2016	595,268,681	33,689,255	285,303,321	3,556,000	513,795,000	81,501,000	-	99,278,664	33,095,000	242,000	549,739,000	**2,195,467,921**
2017	596,455,361	33,756,510	287,027,643	3,556,000	513,795,000	81,501,000	-	99,747,328	33,095,000	242,000	549,739,000	**2,198,914,842**
2018	597,642,042	33,823,766	288,751,964	3,556,000	513,795,000	81,501,000	-	100,215,992	33,095,000	242,000	549,739,000	**2,202,361,763**
2019	598,828,723	33,891,021	290,476,285	3,556,000	513,795,000	81,501,000	-	100,684,656	33,095,000	242,000	549,739,000	**2,205,808,685**
2020	600,015,403	33,958,276	292,200,606	3,556,000	513,795,000	81,501,000	-	101,153,320	33,095,000	242,000	549,739,000	**2,209,255,606**
2021	601,202,084	34,025,531	293,924,928	3,556,000	513,795,000	81,501,000	-	101,621,984	33,095,000	242,000	549,739,000	**2,212,702,527**
2022	602,388,765	34,092,786	295,649,249	3,556,000	513,795,000	81,501,000	-	102,090,648	33,095,000	242,000	549,739,000	**2,216,149,448**
2023	603,575,445	34,160,042	297,373,570	3,556,000	513,795,000	81,501,000	-	102,559,312	33,095,000	242,000	549,739,000	**2,219,596,369**
2024	604,762,126	34,227,297	299,097,891	3,556,000	513,795,000	81,501,000	-	103,027,976	33,095,000	242,000	549,739,000	**2,223,043,290**

Peaking Factors

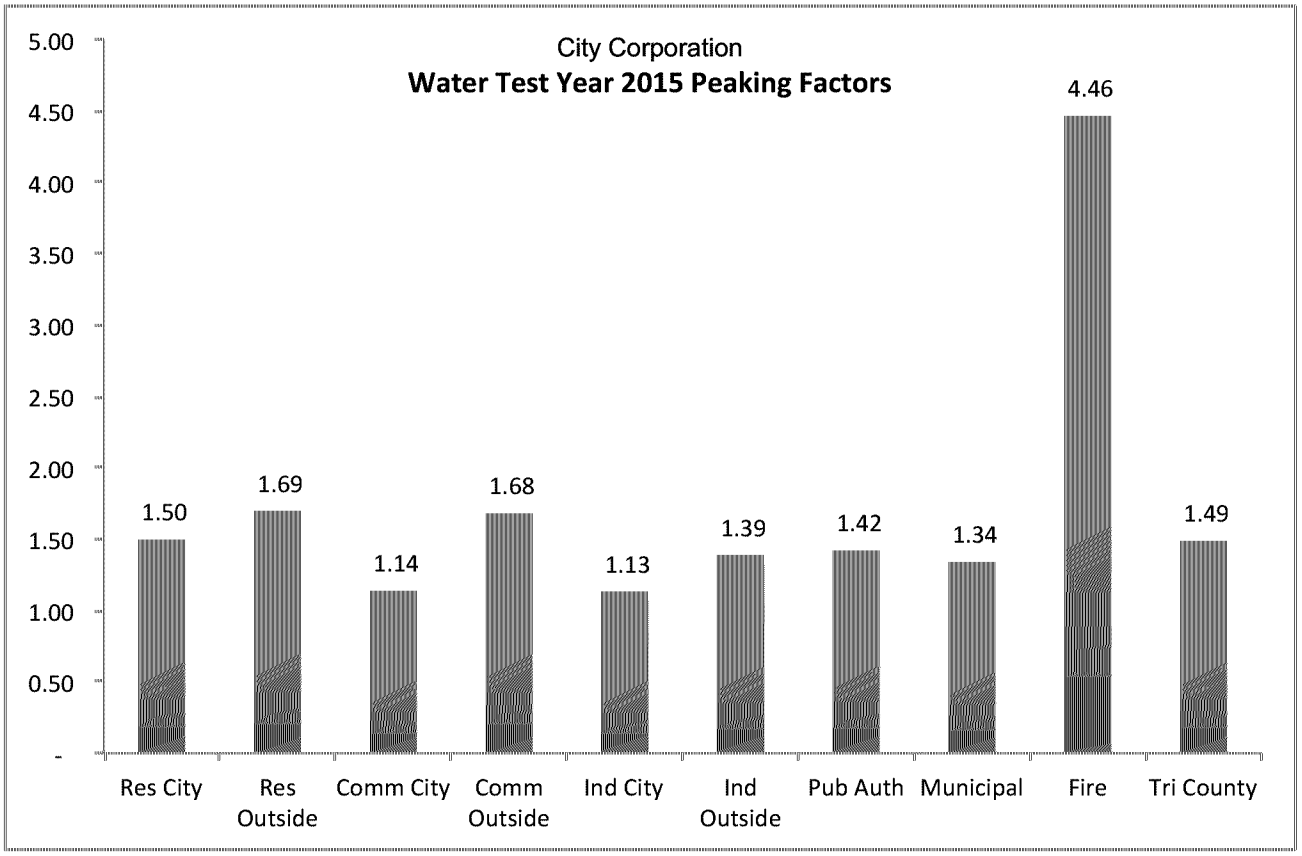
The cost of providing water to customers depends not only on the amount of water each class uses, but also on how that usage occurs over time. The maximum-day and maximum-hour peaking requirements of a water utility's customers are an important influence on the utility's costs. Because water utilities attempt to meet all of the demands of their customers, water systems are sized to meet customers' peak requirements. Therefore, during off-peak periods, there are usually significant costs associated with the unused capacity of the system. These costs must be allocated to customers in proportion to the contribution of each customer class to the system peak, in order to develop equitable cost-based rates. Thus, it is necessary to determine the peak rate of use relative to the average rate of use for each class. This ratio is called a ***Peaking Factor***.

The consumption data by class provided by City Corporation was utilized in the rate model to calculate the peak day factor and peaking factors for individual rate classes.

The calculation of peaking factors for individual classes relies on available pumping and consumption information as well as professional judgment. If customer meters could record daily flow rates for each customer, more refined information could be obtained on peaking factors. This is not feasible because of the enormous cost that would be imposed on the utility. Therefore, it is accepted practice in the water industry to develop peaking factor estimates based on standard formulas using system peak day information and monthly customer class usage records. This is a conservative methodology, since customer class peaking factors based on peak months will inevitably be lower than the system-wide peaking factor, which is based on the peak day.

Based on AWWA guidelines, the customer class peaking factors calculated in this study are for non-coincidental peaks. The peaking factors developed for this analysis are based on actual monthly water consumption by customer class for the test year 2015. The calculations of the peaking factors by class are presented in **Table II-5**.

TABLE II-5



A general ratemaking rule is that **the higher the peak to average ratio, the higher the unit cost of service for a given customer class.** While this is not an absolute rule, it is a good general indicator as to which customer classes are incurring the greatest costs to provide service.

Revenue Requirement Background and Methodology

The next step in the ratemaking process is to develop the water utility's revenue requirement. The calculation of a revenue requirement differs from a utility's budget in that it represents only that amount that must be raised through the water utility's user rates. This means that non-rate revenue (such as connection fees, late payment charges and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

The revenue requirement is based on a chosen test year. The test year utilized for the purposes of this study consists of City Corporation's fiscal year, July 1, 2014 through June 30, 2015. The estimates presented in this section are based on the water utility's budget for FY 2015, as well as a forecast of the City's future capital improvements and debt obligations.

As is typical for publicly owned utilities, the water utility revenue requirements were developed using the Cash Basis of ratemaking. Under the cash basis, as defined by the AWWA Manual M-1, system revenue

requirements consist of cash expenditures and other financial commitments (such as debt service coverage or reserves) that must be met through system operating revenues and other revenue sources. The following specific items are included in the water utility's revenue requirements that must be raised from rates:

Operating Expenses

Capital Outlays

Debt Service

The assumptions utilized in this forecast will be examined extensively in this section of the report. These assumptions, particularly those associated with the water utility's capital expenditure and reserve requirements budget, are critical to the development of both the revenue requirement and the ultimate rate recommendations. The project team discussed these assumptions with City staff and considers all to be consistent with staff recommendations.

All data used in the development of the revenue requirements was obtained from the financial statements, budgets and other information provided by City Corporation staff. Detailed calculations are presented in the rate model contained in Appendix A of this report.

Operating Expenses and Capital Outlays - Test Year and Forecast

Table II-6 presents a summary of City Corporation's water utility test year 2015 budget. Operating expenditures capture the primary operating expenses associated with the day-to-day management of the water utility. The table examines operating expenses and capital outlays only; allocations for debt service are presented in the next section.

TABLE II-6

CITY CORPORATION -- RUSSELLVILLE
TEST YEAR OPERATING EXPENSES
WATER UTILITY

	2015 Rev Rqmt	Treatment	Distribution	Administration	Customer
Scenario:		**2014 12 12 -- Scen 2 -- Conservation**			
Budget Operating Expenses/Capital Outlays					
OPERATING EXPENSES					
SUPPLY EXPENSES	$ 159,313	$ 79,657	$ 79,657	$ -	$ -
PUMPING EXPENSES	211,949	211,949	-	-	-
TREATMENT EXPENSES	1,216,383	1,216,383	-	-	-
TRANSMISSION AND DISTRIBUTION EXPENSES	85,306	-	85,306	-	-
MAINTENANCE EXPENSE	665,438	157,823	442,675	-	64,941
CUSTOMER ACCOUNT EXPENSES	378,763	-	-	-	378,763
ADMIN AND GENERAL EXPENSES	874,711	-	-	874,711	-
DEPRECIATION AND AMORTIZATION	-	-	-	-	-
	3,591,863	1,665,811	607,637	874,711	443,704
CAPITAL OUTLAYS/REPLACEMENT RESERVE					
TOTAL	1,656,000	828,000	828,000	-	-
Total Operating/Cap Outlays	**5,247,863**	**2,493,811**	**1,435,637**	**874,711**	**443,704**

As the table shows, total operating expenses and capital outlays in the test year for the water utility is **$5,247,863**. The budget separates costs into several categories, including supply, pumping, treatment, transmission/distribution, maintenance, customer account, and administration. Depreciation is not included as rates are calculated on the Cash Basis.

The rate model further functionalizes these costs into the categories of Treatment, Distribution, Administration and Customer. Many budget costs are directly allocated; other categories (such as maintenance) are allocated based on the percentage devoted to each function.

The table further reveals that Treatment expenses are the predominant expenses related to the budget.

Table II-7 presents the project team's ten-year forecast of City Corporation's operating expenses and capital outlays. The table reveals that water related operating expenses and capital outlays are forecast to increase from the test year total of $5,247,863 to $5,865,864 by FY 2024. This represents an average annual increase of **1.24%** for the water utility.

The primary assumptions used in the development of this forecast of operating costs are as follows:

- Most operating costs are expected to increase at an annual rate of 3.0% to 5.0%, which is approximately equivalent to the rate of inflation.
- Certain expenses are forecast to increase at above-inflation rates, to reflect the rapid rate of increase of the costs. These expenses include supplies and materials such as chemicals and fuels, Medicare and insurance.

- Certain expenses will increase at higher rates to reflect the forecast growth in accounts and volumes. These expenses include maintenance and system repairs.
- Most importantly, the replacement reserve is reduced due to the fact that the Corporation is assumed to issue long-term debt to fund capital improvements. The debt service on the long-term debt is intended to replace the reserve expenditures. This will be addressed more fully in the next section.

Details behind these calculations can be found in the rate model contained in Appendix A.

TABLE II-7

CITY CORPORATION -- RUSSELLVILLE
FORECAST OPERATING EXPENSES AND CAPITAL OUTLAYS
WATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**									
Budget Operating Expenses/Capital Outlays										
OPERATING EXPENSES										
SUPPLY EXPENSES	$ 159,313	$ 166,745	$ 174,542	$ 182,722	$ 191,307	$ 200,315	$ 209,770	$ 219,693	$ 230,110	$ 241,046
PUMPING EXPENSES	211,949	223,344	235,379	248,091	261,519	275,704	290,693	306,530	323,267	340,956
TREATMENT EXPENSES	1,216,383	1,269,279	1,324,659	1,382,646	1,443,375	1,506,982	1,573,616	1,643,430	1,716,587	1,793,260
TRANSMISSION AND DISTRIBUTION EXPENSES	85,306	88,176	91,149	94,230	97,423	100,732	104,162	107,719	111,406	115,231
MAINTENANCE EXPENSE	665,438	696,862	729,882	764,585	801,061	839,408	879,728	922,129	966,725	1,013,637
CUSTOMER ACCOUNT EXPENSES	378,763	396,188	414,486	433,704	453,893	475,104	497,394	520,821	545,447	571,338
ADMIN AND GENERAL EXPENSES	874,711	912,673	952,451	994,139	1,037,838	1,083,652	1,131,694	1,182,081	1,234,938	1,290,396
DEPRECIATION AND AMORTIZATION	-	-	-	-	-	-	-	-	-	-
Total Operating/Cap Outlays	**$ 3,591,863**	**$ 3,753,267**	**$ 3,922,548**	**$ 4,100,118**	**$ 4,286,414**	**$ 4,481,898**	**$ 4,687,056**	**$ 4,902,402**	**$ 5,128,480**	**$ 5,365,864**
CAPITAL OUTLAYS/REPLACEMENT RESERVE										
TOTAL	**1,656,000**	**1,656,000**	**1,656,000**	**500,000**	**500,000**	**500,000**	**500,000**	**500,000**	**500,000**	**500,000**
TOTAL OPERATING/CAPITAL OUTLAYS	**5,247,863**	**5,409,267**	**5,578,548**	**4,600,118**	**4,786,414**	**4,981,898**	**5,187,056**	**5,402,402**	**5,628,480**	**5,865,864**

Debt Service

At this time City Corporation maintains no water-related long-term debt. All current debt service is related to the wastewater utility, which will be examined in the next section.

City Corporation is currently in the process of evaluating its long-term capital needs for both the water and the wastewater utility. City Corporation staff and consulting engineers have completed a review of long-term capital improvement requirements. As shown in **Table II-8**, City Corporation currently estimates that it will require **$41,611,076** in capital improvements in the next decade.

Table II-8 also shows that City Corporation intends to fund these capital requirements through a combination of existing balance, replacement reserve and long-term debt. City Corporation forecasts the need to issue $30,000,000 in long-term debt in the next decade. $20,000,000 is to be issued during FY 2015 with another $10,000,000 to be issued in FY 2018. This debt is assumed to be issued for 25 year terms at 4.0% interest and a 1 year reserve requirement funded from bond proceeds. Forecast debt service for the water utility is presented in **Table II-8A**.

TABLE II-8

CITY CORPORATION -- RUSSELLVILLE
CURRENT AND FORECAST CAPITAL PROJECT FUNDING AVAILABILITY
WATER UTILITY

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
		Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Beginning Balance		$ 6,342,462	$ 24,713,311	$ 25,105,076	$ 20,877,853	$ 28,249,910	$ 24,140,158	$ 19,787,961	$ 16,683,721	$ 13,517,395	$ 10,287,743
Plus Sources of Funds:											
Interest		126,849	494,266	502,102	417,557	564,998	482,803	395,759	333,674	270,348	205,755
Replacement Reserve		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Long-Term Debt	**30,000,000**	20,000,000	-	-	10,000,000	-	-	-	-	-	-
Water Impact Fees		-	-	-	-	-	-	-	-	-	-
Total Sources		21,782,849	2,150,266	2,158,102	10,917,557	1,064,998	982,803	895,759	833,674	770,348	705,755
Less Uses of Funds:											
Capital Improvement Plan -- WATER	**41,611,076**	3,412,000	1,758,501	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000
Ending Balance		**24,713,311**	**25,105,076**	**20,877,853**	**28,249,910**	**24,140,158**	**19,787,961**	**16,683,721**	**13,517,395**	**10,287,743**	**6,993,498**

TABLE II-8A

CITY CORPORATION -- RUSSELLVILLE
CURRENT AND FORECAST DEBT SERVICE
WATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Current Debt Service										
Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-	-	-	-	-
Reserve	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Future Debt Service										
Principal	-	523,461	544,399	566,175	850,553	884,575	919,958	956,756	995,026	1,034,827
Interest	-	872,000	851,062	829,286	1,242,639	1,208,616	1,173,234	1,136,435	1,098,165	1,058,364
Reserve	-	-	-	-	-	-	-	-	-	-
Total	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
Total Water Debt Service										
Principal	-	523,461	544,399	566,175	850,553	884,575	919,958	956,756	995,026	1,034,827
Interest	-	872,000	851,062	829,286	1,242,639	1,208,616	1,173,234	1,136,435	1,098,165	1,058,364
Reserve	-	-	-	-	-	-	-	-	-	-
Total	**-**	**1,395,461**	**1,395,461**	**1,395,461**	**2,093,191**	**2,093,191**	**2,093,191**	**2,093,191**	**2,093,191**	**2,093,191**

Non-Rate Revenues

Although sales revenues constitute the majority of the revenue received by City Corporation for water service, a certain amount of revenue is accrued from non-rate sources. These revenues include tapping fees, fees from the Arkansas Nuclear One generator, solid waste fees and interest income. Total non-rate revenues for the test year and forecast period are presented in **Table II-9.**

TABLE II-9

CITY CORPORATION -- RUSSELLVILLE
FORECAST NON-RATE REVENUES
WATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario: 2014 12 12 -- Scen 2 -- Conservation									
Non-Rate Revenues										
Misc. Service Revenue	$ 174,000	$ 474,000	$ 488,220	$ 502,867	$ 517,953	$ 533,491	$ 549,496	$ 565,981	$ 582,960	$ 600,449
Other Revenue (Sales of Supplies)	-	-	-	-	-	-	-	-	-	-
London/Ark Nuclear One Revenue	13,282	13,680	14,091	14,514	14,949	15,397	15,859	16,335	16,825	17,330
Tapping Fees	26,500	27,295	28,114	28,957	29,826	30,721	31,642	32,592	33,569	34,576
Other Service Fees	-	-	-	-	-	-	-	-	-	-
Cross Connection Fees	-	-	-	-	-	-	-	-	-	-
Solid Waste Fees	64,200	66,126	68,110	70,153	72,258	74,425	76,658	78,958	81,327	83,766
Interest Income	19,200	19,776	20,369	20,980	21,610	22,258	22,926	23,614	24,322	25,052
Misc. Non-Operating Revenue	11,750	12,103	12,466	12,840	13,225	13,621	14,030	14,451	14,885	15,331
Revenue	-	-	-	-	-	-	-	-	-	-
Total	**$ 308,932**	**$ 612,980**	**$ 631,369**	**$ 650,310**	**$ 669,820**	**$ 689,914**	**$ 710,612**	**$ 731,930**	**$ 753,888**	**$ 776,505**

Net Revenue Requirement

The net revenue requirement differs from City Corporation's budget in that it represents only that amount that must be raised through water rates. **Table II-10** presents City Corporation's net revenue requirement for the water utility for the test year 2015 and forecast period. The water net revenue requirement is expected to increase from **$4,938,931** in FY 2015 to **$7,182,550** in FY 2024. This represents an average annual increase of **4.25%**. Detailed calculations are presented in the rate model contained in Appendix A of this report.

TABLE II-10

CITY CORPORATION -- RUSSELLVILLE
FORECAST NET REVENUE REQUIREMENT
WATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario: 2014 12 12 -- Scen 2 -- Conservation									
Operating	$ 3,591,863	$ 3,753,267	$ 3,922,548	$ 4,100,118	$ 4,286,414	$ 4,481,898	$ 4,687,056	$ 4,902,402	$ 5,128,480	$ 5,365,864
Cap Outlays/Replace Reserve	1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Debt Service -- Current	-	-	-	-	-	-	-	-	-	-
Debt Service -- Future	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
Sub-Total	5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
Non-Rate Revs	(308,932)	(612,980)	(631,369)	(650,310)	(669,820)	(689,914)	(710,612)	(731,930)	(753,888)	(776,505)
Total	**$ 4,938,931**	**$ 6,191,748**	**$ 6,342,639**	**$ 5,345,268**	**$ 6,209,786**	**$ 6,385,175**	**$ 6,569,635**	**$ 6,763,663**	**$ 6,967,783**	**$ 7,182,550**

Water Utility Cost Functionalization, Classification and Allocation

Once the total water utility system costs have been identified, the next step in the rate development process is to isolate the costs associated with each system function. Some of these expenditures are a function of base water demand; others are based on the peak demands placed on the system. Certain costs are associated with serving customers regardless of the volume of water use or wastewater discharge. The basic steps used to allocate City Corporation's water revenue requirements include the following:

1. Each system's costs (revenue requirements) are categorized by utility function (i.e. treatment, distribution, administrative, customer). This process is known as *functionalization*.
2. Functionalized costs are classified based on the service characteristics or the types of demand served by the utility (base and maximum day). This process is known as *classification.*
3. Costs by service characteristic are allocated to customer classes in proportion to the service demands demonstrated by each class.

This three-step process allows for the allocation of system costs in the same terms as customer classes. The approaches described in this section follow standard industry practices. Water system costs are allocated to the following functions:

Treatment – the process by which raw water is converted to potable water

Distribution – the lines that carry water to individual customers' properties

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and providing other services to customers

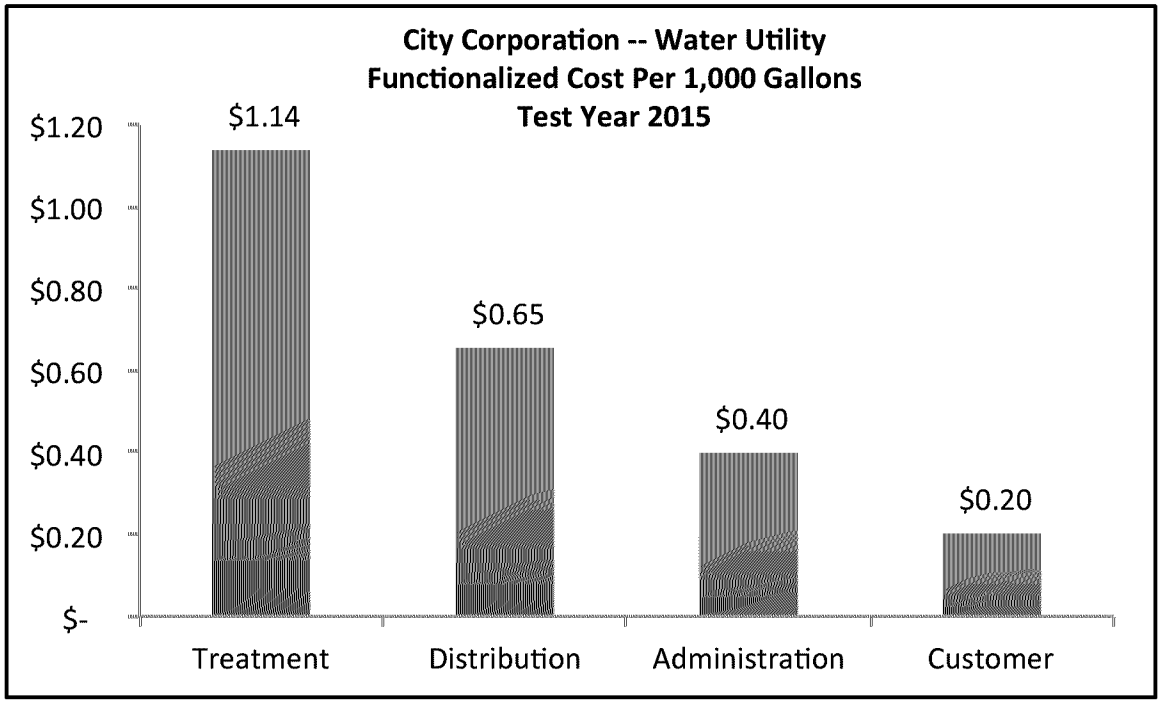
The project team allocated operating budget line item expenses individually to system functions based on general guidelines, specific research and input from City Corporation staff. The results of the allocation process for the test year are presented in **Table II-11**. **Chart II-12** presents the functionalized cost per 1,000 gallons for the test year as well. The rate model presented in Appendix A includes a detailed listing of the allocations by line item.

TABLE II-11

CITY CORPORATION -- RUSSELLVILLE
COST FUNCTIONALIZATION
WATER UTILITY

	Test Year 2015	
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**	
Treatment	$	2,493,811
Distribution		1,435,637
Administration		874,711
Customer		443,704
Total	**$**	**5,247,863**

CHART II-12



The allocation of functionalized water system costs to service characteristics follows the base-extra capacity cost allocation method recommended by AWWA. Using this method, costs are segregated into the following categories:

Base costs – capital costs and O&M expenses associated with service to customers under average demand conditions. This category does not include any costs attributable to variations in water use resulting from peaks in demand. Base costs tend to vary directly with the total quantity of water used.

Maximum Day/Maximum Hour/Extra Capacity costs – costs attributable to facilities that are designed to meet peaking requirements. These costs include capital and operating charges for additional plant and system capacity beyond that required for average usage.

Customer Billing costs – costs associated with any aspect of customer service, including billing, accounting, and meter services. These costs are independent of the amount of water used and the size of the customer's meter, and are not subject to peaking factors.

According to AWWA Manual M-1 (p.12), in the base-extra capacity method, care must be taken in separating costs between those devoted to base capacity and those devoted to extra capacity. Over the past twelve months City Corporation's peak day to average capacity factor was estimated to be 2.0. The peak to average factor is calculated by dividing the volume on the peak day of the year by the average daily volume. This means that facilities designed to meet maximum-day requirements, such as the treatment and distribution functions, are allocated 50.00% (1/2.00) to base, and 50.00% to extra capacity. The peak hour capacity factor was calculated to be 4.0. All customer service-related costs are allocated 100% to customer billing. Administration costs are generally not directly assignable to individual classifications. Therefore, it is standard ratemaking practice to allocate these costs on an indirect basis to service characteristics.

The rate model in Appendix A provides the detailed allocations of costs to service characteristics. The system-wide costs by service characteristic are shown in **Table II-13**. As with cost functionalization, these percentages are not expected to change significantly in the forecast period.

TABLE II-13

CITY CORPORATION -- RUSSELLVILLE
COST CLASSIFICATION
WATER UTILITY

	Test Year 2015
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**
Base	$ 1,609,550
Max Day	861,395
Max Hour	2,244,464
Customer	532,453
Total	**$ 5,247,863**

Allocation of costs by service characteristic to customer classes is based on the proportionate use levels of each characteristic by each class. The total water utility costs by customer class for the entire forecast period are summarized in **Table II-14.** Overall cost calculations are presented in detail in the rate model contained in Appendix A.

TABLE II-14

CITY CORPORATION -- RUSSELLVILLE
FORECAST COST OF SERVICE BY CUSTOMER CLASS
WATER UTILITY

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
		Scenario: 2014 12 12 -- Scen 2 -- Conservation									
Residential	City	$ 2,091,679	$ 2,701,420	$ 2,767,960	$ 2,259,086	$ 2,682,399	$ 2,759,914	$ 2,841,496	$ 2,927,371	$ 3,017,777	$ 3,112,968
Residential	Outside City	146,663	191,132	195,703	158,419	188,894	194,220	199,825	205,725	211,936	218,475
Commercial	City	434,221	573,176	588,841	474,740	570,636	588,627	607,560	627,491	648,476	670,579
Commercial	Outside City	14,180	18,752	19,138	15,228	18,263	18,717	19,194	19,697	20,226	20,783
Industrial	City	681,528	921,318	938,668	731,995	887,043	907,516	929,067	951,754	975,639	1,000,783
Industrial	Outside City	202,870	271,875	277,182	217,887	262,955	269,210	275,794	282,725	290,021	297,702
Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
Public Authorities	City	267,929	358,445	367,348	291,837	352,772	363,026	373,814	385,167	397,118	409,702
Municipal	City	75,438	101,194	103,161	81,022	97,825	100,144	102,586	105,156	107,862	110,710
Fire Protection	City	4,088	5,398	5,510	4,390	5,261	5,393	5,531	5,676	5,830	5,991
Other	City	159	162	169	171	182	190	199	208	218	228
Other	City	-	-	-	-	-	-	-	-	-	-
Other	City	-	-	-	-	-	-	-	-	-	-
Other	City	-	-	-	-	-	-	-	-	-	-
Tri County	Outside City	1,020,175	1,048,876	1,078,960	1,110,494	1,143,555	1,178,220	1,214,570	1,252,693	1,292,681	1,334,630
TOTAL		**4,938,931**	**6,191,748**	**6,342,639**	**5,345,268**	**6,209,786**	**6,385,175**	**6,569,635**	**6,763,663**	**6,967,783**	**7,182,550**

Water Rate Design

Rate design involves determining charges for each class of customers that will generate a desired level of revenue. The water rates developed in this section are designed to recover the test year and forecast revenue requirement while providing funding for the proposed reserve requirement. It is recommended that rate changes be implemented in October of each year.

The Rate Plan proposed for this study incorporates the following assumptions:

- It requires adjustments in water charges for the next four years.
- The outside city rates have been adjusted to reflect the City's ordinance requirement that all outside city rates be 50% greater than inside rates. For residential outside customers, this results in a reduction of the volumetric rate in the first year.
- The rate design reflects the Board's desire to increase the conservation incentive of the rate design. A third tier is therefore added to the residential inside and outside rate for usage above 5,000 gallons.
- The adjustment percentages are nominally different by customer class. The purpose is to reduce the intra-class subsidy that currently exists between the customer classes. This requires larger annual adjustments for the residential and public authorities customer classes.

Table II-15 presents a summary of the rate plan proposed for City Corporation under this scenario. **Table II-16** presents the impact the proposed rate plan will have on monthly residential, commercial and industrial charges

at each class' average monthly level of consumption. Rates and impacts are presented for both inside city and outside city customer classes.

TABLE II-15

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED RATE DESIGN
WATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:				**2014 12 12 -- Scen 2 -- Conservation**				
Inside City								
Monthly Charge								
5/8" -- 3/4"		$ 8.69	$ 9.30	**$ 10.14**	$ 10.44	$ 11.28	$ 11.62	$ 11.97
1"		12.03	12.87	**14.03**	14.45	15.61	16.08	16.56
1 1/2"		22.86	24.46	**26.66**	27.46	29.66	30.55	31.47
2"		29.99	32.09	**34.98**	36.03	38.91	40.08	41.28
Vol Chg -- Per 1,000 Gal								
Residential	**City**							
-	2,000	1.71	1.71	**1.86**	1.92	2.07	2.13	2.19
2,001	5,000	1.94	2.05	**2.23**	2.30	2.48	2.55	2.63
5,001	Above	1.94	2.25	**2.45**	2.52	2.72	2.80	2.88
Commercial		1.78	1.90	**2.07**	2.13	2.30	2.37	2.44
Industrial		1.49	1.59	**1.73**	1.78	1.92	1.98	2.04
Public Authorities		1.99	2.13	**2.32**	2.39	2.58	2.66	2.74
Municipal		1.53	1.64	**1.79**	1.84	1.99	2.05	2.11
Fire Protection		1.35	1.44	**1.57**	1.62	1.75	1.80	1.85
Outside City								
Monthly Charge								
5/8" -- 3/4"		$ 13.04	$ 13.95	**$ 15.21**	$ 15.66	$ 16.92	$ 17.43	$ 17.96
1"		18.05	19.31	**21.05**	21.68	23.42	24.12	24.84
1 1/2"		34.29	36.69	**39.99**	41.19	44.49	45.83	47.21
2"		44.99	48.14	**52.47**	54.05	58.37	60.12	61.92
Vol Chg -- Per 1,000 Gal								
Residential	**Outside City**							
-	2,000	3.52	2.57	**2.79**	2.88	3.11	3.20	3.29
2,001	5,000	3.90	3.08	**3.35**	3.45	3.72	3.83	3.95
5,001	20,000	3.90	3.38	**3.68**	3.78	4.08	4.20	4.32
Commercial		2.67	2.85	**3.11**	3.20	3.45	3.56	3.66
Industrial		2.24	2.39	**2.60**	2.67	2.88	2.97	3.06

TABLE II-16

CITY CORPORATION -- RUSSELLVILLE
IMPACT OF RATE PLAN ON MONTHLY CHARGES
WATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:			**2014 12 12 -- Scen 2 -- Conservation**					
Inside City								
Residential 5/8"	5,000 Gal	$ 17.93	$ 18.87	$ 20.55	$ 21.18	$ 22.86	$ 23.53	$ 24.24
	Increase		**0.94**	**1.68**	**0.63**	**1.68**	**0.67**	**0.71**
Residential 5/8"	10,000 Gal	27.63	30.12	32.80	33.78	36.46	37.53	38.64
	Increase		**2.49**	**2.68**	**0.98**	**2.68**	**1.07**	**1.11**
Commercial 1"	15,000 Gal	38.73	41.37	45.08	46.40	50.11	51.63	53.16
	Increase		**2.64**	**3.71**	**1.32**	**3.71**	**1.52**	**1.53**
Industrial 2"	500,000 Gal	774.99	827.09	899.98	926.03	998.91	1,030.08	1,061.28
	Increase		**52.10**	**72.89**	**26.05**	**72.88**	**31.17**	**31.20**
Outside City								
Residential 5/8"	5,000 Gal	$ 31.78	$ 28.31	$ 30.83	$ 31.77	$ 34.29	$ 35.30	$ 36.36
	Increase		**(3.47)**	**2.52**	**0.94**	**2.52**	**1.01**	**1.06**
Residential 5/8"	10,000 Gal	51.28	45.19	49.21	50.67	54.69	56.30	57.96
	Increase		**(6.10)**	**4.02**	**1.47**	**4.02**	**1.61**	**1.66**
Commercial 1"	15,000 Gal	58.10	62.06	67.62	69.60	75.17	77.45	79.74
	Increase		**3.96**	**5.57**	**1.98**	**5.57**	**2.28**	**2.30**
Industrial 2"	500,000 Gal	1,162.49	1,240.64	1,349.97	1,389.05	1,498.37	1,545.12	1,591.92
	Increase		**78.15**	**109.34**	**39.08**	**109.32**	**46.75**	**46.80**

Exhibit II-17 presents a detailed summary of the rate model for this recommended rate plan including the projected revenues and expenses for the ten year forecast period.

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

1 Water Rates

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Monthly Minimum Charge													
5/8" -- 3/4"			$ 8.69	$ 9.30	$ 10.14	$ 10.44	$ 11.28	$ 11.62	$ 11.97	$ 12.69	$ 13.07	$ 13.46	$ 13.86
3/4"			8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
1"			12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
1 1/2"			22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
2"			29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
3"			49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
4"			157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
6"			194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
Volume Rate/1,000 Gal													
Residential	City												
-		2,000	1.71	1.71	1.86	1.92	2.07	2.13	2.19	2.32	2.39	2.46	2.53
2,001		Above	1.94	2.05	2.23	2.30	2.48	2.55	2.63	2.79	2.87	2.96	3.05
Residential	Outside City												
-		2,000	3.52	2.57	2.79	2.88	3.11	3.20	3.29	3.48	3.59	3.69	3.80
2,001		Above	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44	4.58
Commercial	City		1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
Industrial	City		1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
Public Authorities	City		1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
Municipal	City		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
Tri County			1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278

2 Residential Monthly Water Bill -- 5/8" Meter

5,000 W	Total	$ 17.93	$ 18.87	$ 20.55	$ 21.18	$ 22.86	$ 23.53	$ 24.24	$ 25.70	$ 26.46	$ 27.26	$ 28.07
	Dollar Inc		0.94	1.68	0.63	1.68	0.67	0.71	1.46	0.76	0.80	0.81
	Percent Inc		5.2%	8.9%	3.1%	7.9%	2.9%	3.0%	6.0%	3.0%	3.0%	3.0%
10,000 W	Total	27.63	29.12	31.70	32.68	35.26	36.28	37.39	39.65	40.81	42.06	43.32
5,000 WW	Dollar Inc		1.49	2.58	0.98	2.58	1.02	1.11	2.26	1.16	1.25	1.26
	Percent Inc		5.4%	8.9%	3.1%	7.9%	2.9%	3.1%	6.0%	2.9%	3.1%	3.0%
20,000 W	Total	47.03	49.62	54.00	55.68	60.06	61.78	63.69	67.55	69.51	71.66	73.82
5,000 WW	Dollar Inc		2.59	4.38	1.68	4.38	1.72	1.91	3.86	1.96	2.15	2.16
	Percent Inc		5.5%	8.8%	3.1%	7.9%	2.9%	3.1%	6.1%	2.9%	3.1%	3.0%
30,000 W	Total	66.43	70.12	76.30	78.68	84.86	87.28	89.99	95.45	98.21	101.26	104.32
5,000 WW	Dollar Inc		3.69	6.18	2.38	6.18	2.42	2.71	5.46	2.76	3.05	3.06
	Percent Inc		5.6%	8.8%	3.1%	7.9%	2.9%	3.1%	6.1%	2.9%	3.1%	3.0%
50,000 W	Total	122.69	129.57	140.97	145.38	156.78	161.23	166.26	176.36	181.44	187.10	192.77
	Dollar Inc		6.88	11.40	4.41	11.40	4.45	5.03	10.10	5.08	5.66	5.67
	Percent Inc		5.6%	8.8%	3.1%	7.8%	2.8%	3.1%	6.1%	2.9%	3.1%	3.0%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3	WATER Revenues and Expenses -- CASH Basis												
	Water Revenues												
W.1	Residential	City	$ 2,187,308	$ 2,358,998	$ 2,513,538	$ 2,647,238	$ 2,805,696	$ 2,894,322	$ 3,022,971	$ 3,170,980	$ 3,271,703	$ 3,375,483	
W.2	Residential	Outside City	194,014	188,645	201,000	211,692	224,354	231,433	241,714	253,546	261,598	269,895	
W.3	Commercial	City	788,209	753,886	806,366	852,320	907,457	940,296	986,530	1,039,941	1,077,746	1,116,128	
W.4	Commercial	Outside City	14,054	13,654	14,516	15,251	16,142	16,627	17,342	18,175	18,727	19,282	
W.5	Industrial	City	832,196	856,884	910,183	955,683	1,011,141	1,042,325	1,086,519	1,135,927	1,169,293	1,205,666	
W.6	Industrial	Outside City	192,568	202,727	215,335	226,099	239,218	246,597	257,052	268,738	276,631	285,239	
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-	
W.8	Public Authorities	City	283,877	243,853	260,540	275,137	292,568	302,913	317,146	333,477	345,247	357,137	
W.9	Municipal	City	53,431	56,692	60,299	63,352	67,098	69,096	72,065	75,561	77,891	80,222	
W.10	Fire Protection	City	7,933	728	775	815	863	888	925	969	998	1,027	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
W.11	Tri County	Outside City	956,546	995,017	1,061,411	1,092,099	1,124,270	1,157,999	1,193,366	1,230,455	1,269,355	1,310,160	
	Water Rate Revenues		5,510,136	5,671,084	6,043,965	6,339,687	6,688,805	6,902,495	7,195,628	7,527,768	7,769,190	8,020,239	
	Water Non-Rate Revenues		308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505	
	Total Revenues		**5,819,068**	**6,284,064**	**6,675,334**	**6,989,997**	**7,358,625**	**7,592,409**	**7,906,240**	**8,259,698**	**8,523,078**	**8,796,744**	
	Total Operating		3,591,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,698	4,687,056	4,902,402	5,128,480	5,365,864	
	Net Revenues Available for Replacement Reserve/Debt Service		2,227,205	2,530,796	2,752,787	2,889,879	3,072,210	3,110,511	3,219,184	3,357,296	3,394,597	3,430,880	
	Debt Service -- Prin&Int		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	
	Debt Service -- Reserve		-	-	-	-	-	-	-	-	-	-	
	Total Debt Service		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	
	Net Revenues Available for Replacement Reserve		2,227,205	1,135,336	1,357,326	1,494,419	979,019	1,017,320	1,125,993	1,264,105	1,301,406	1,337,689	
	Replacement Reserve		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	
	Total Cost of Service		**5,247,863**	**6,804,728**	**6,974,008**	**5,995,579**	**6,879,606**	**7,075,089**	**7,280,247**	**7,495,594**	**7,721,671**	**7,959,055**	
	Net Cash Flow Available for Contingency		571,205	(520,664)	(298,674)	994,419	479,019	517,320	625,993	764,105	801,406	837,689	
			9.8%	-8.3%	-4.5%	14.2%	6.5%	6.8%	7.9%	9.3%	9.4%	9.5%	
	WATER Debt Coverage (NOTE: excludes reserve funding)		-	1.81	1.97	2.07	1.47	1.49	1.54	1.60	1.62	1.64	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
4	**Capital Project Funding Summary -- WATER**													
	Beginning Balance				$ 6,342,462	$ 24,713,311	$ 25,105,076	$ 20,877,853	$ 28,249,910	$ 24,140,158	$ 19,787,961	$ 16,683,721	$ 13,517,395	$ 10,287,743
	Plus Sources of Funds:													
	Interest	2.0%			126,849	494,266	502,102	417,557	564,998	482,803	395,759	333,674	270,348	205,755
	Replacement Reserve				1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
	Long-Term Debt				20,000,000	-	-	10,000,000	-	-	-	-	-	-
	Water Impact Fees				-	-	-	-	-	-	-	-	-	-
	Total Sources		Total 2013-2018	39,056,575	21,782,849	2,150,266	2,158,102	10,917,557	1,064,998	982,803	895,759	833,674	770,348	705,755
			Less 2013	(21,782,849)										
	Less Uses of Funds:		Net Total	17,273,726										
	Capital Improvement Plan -- WATER				3,412,000	1,758,501	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000
	Ending Balance				**24,713,311**	**25,105,076**	**20,877,853**	**28,249,910**	**24,140,158**	**19,787,961**	**16,683,721**	**13,517,395**	**10,287,743**	**6,993,498**
5	**Total Accounts**													
	Total Accounts				**12,497**	**12,529**	**12,561**	**12,593**	**12,625**	**12,657**	**12,689**	**12,721**	**12,753**	**12,785**
	New Accounts					32	32	32	32	32	32	32	32	32
	Avg. Annual Growth Rate					0.26%	0.26%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
6	**Annual Water Consumption**													
W.1	Residential	City			594,082,000	595,268,681	596,455,361	597,642,042	598,828,723	600,015,403	601,202,084	602,388,765	603,575,445	604,762,126
W.2	Residential	Outside City			33,622,000	33,689,255	33,756,510	33,823,766	33,891,021	33,958,276	34,025,531	34,092,786	34,160,042	34,227,297
W.3	Commercial	City			283,579,000	285,303,321	287,027,643	288,751,964	290,476,285	292,200,606	293,924,928	295,649,249	297,373,570	299,097,891
W.4	Commercial	Outside City			3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000
W.5	Industrial	City			513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000
W.6	Industrial	Outside City			81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000
W.7	Ind. Discounts	City			-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City			98,810,000	99,278,664	99,747,328	100,215,992	100,684,656	101,153,320	101,621,984	102,090,648	102,559,312	103,027,976
W.9	Municipal	City			33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000
W.10	Fire Protection	City			242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City			549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000
	Total System				**2,192,021,000**	**2,195,467,921**	**2,198,914,842**	**2,202,361,763**	**2,205,808,685**	**2,209,255,608**	**2,212,702,527**	**2,216,149,448**	**2,219,596,369**	**2,223,043,290**

Tri County Rate

City Corporation currently charges Tri-County Water Supply Corporation, its largest single customer, under the terms of a wholesale contract for service entered into by the two parties. The contract was executed after years of litigation between the two parties, and it contains a specific formula for calculating the rate per 1,000 gallons. The rate formula is intended to calculate the cost of treating water and providing it to Tri-County's take points. The rate is intended to be based on financial data provided in City Corporation's prior year audit.

Table II-18 summarizes the calculation of Tri-County's unit rate. Under the methodology utilizing the prior year's audit as a base, the project team recommends that City Corporation immediately adjust Tri-County's rate from its current level of $1.740 per 1,000 gallons to **$1.8557** per 1,000 gallons.

Further, the project team considers the formula that is utilized to calculate Tri-County's rate per 1,000 gallons to be reasonable, with one exception. A more appropriate cost basis would be to use City Corporation's current year budget/test year instead of the prior year's audit. Given the rapidly-increasing cost of providing water service, basing a current year rate on a prior year's cost data results in a substantial risk that City Corporation will recover less than its current year cost of providing service to Tri-County. To the extent that this happens, it means that City Corporation's remaining customers will have to make up the shortfall from Tri-County. Given the reasonableness and tradition of utilities across the United States in calculating rates based on current year budgets, the project team recommends that the two parties attempt to amend the current rate calculation in order to ensure that each party is treated in a just, reasonable and fair manner.

Finally, given the fact that the contract requires a recalculation of the rate every year, the project team has not included a forecast of future rates or a multi-year rate plan for Tri-County.

TABLE II-18

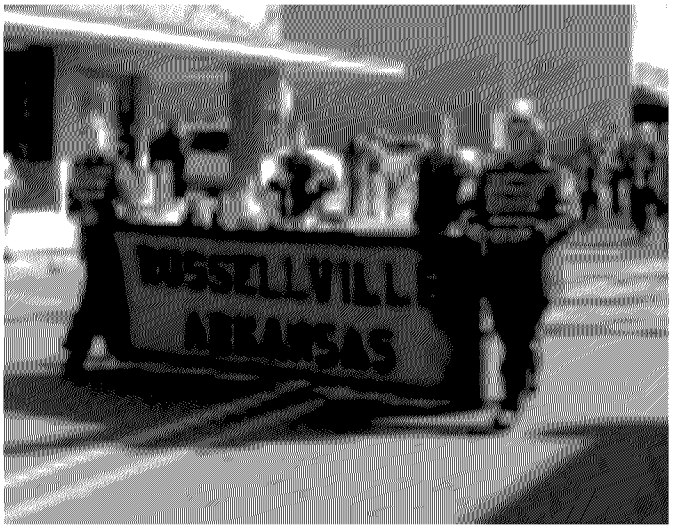
CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED RATE DESIGN -- TRI COUNTY
WATER UTILITY

	2015 Test Year
Treatment Cost of Service	
Supply	$ 159,313
Pumping	211,949
Treatment	1,216,383
Depreciation	786,630
Total Treatment Cost	**2,374,275**
Total Water Metered For Sale	2,192,021,000
Treatment Cost/1,000 Gallons	**$ 1.0831**
Operations and Maintenance	
Transmission and Distribution	$ 85,306
Maintenance	665,438
Administration and General	874,711
Depreciation	872,190
Sub-Total	2,497,645
Contract Adjustment Factor	53.00%
Net Cost of Service	1,323,752
Total Water Sold by City Corporation	2,192,021,000
O&M Cost/1,000 Gallons	**$ 0.6039**
Rate Calculation	
Treatment Plus O&M	1.6870
Contract Adjustment Factor	1.10
Tri-County Rate Per 1,000 Gallons	**$ 1.8557**

Section III

SECTION III

Wastewater Rate Study



This section focuses on City Corporation's wastewater utility operations. As has been the case with its water operation, City Corporation has found that the cost of wastewater service has been increasing at above-inflation rates over the past decade.

The objectives for the wastewater rate study are similar to those for the water rate study. The project team has employed standard ratemaking methodologies to calculate the overall cost of operating and maintaining its wastewater utility operations, both inside and outside the City of Russellville. As with water, the methodology will also segregate the cost of service by defined customer class. This involves allocating costs to customer classes based on their consumption characteristics. Thirdly, the recommendations will include a thorough review of the wastewater systems' known capital improvement needs. This section will conclude with the development of a proposed rate structures that would recover City Corporation's cost of service, ensure equitable, just and reasonable treatment of identified customer classes, and maintain critical financial ratios. There are no major wholesale customers in City Corporation's wastewater utility.

Methodology

Determining a wastewater utility's total cost of service requires an analysis of both operating (O & M) and capital costs. The first step in the process is to allocate these costs to the following functions: **treatment** costs including volume and strength characteristics; **collection** costs; **customer** related costs such as billing and collection; and **administration** costs. This process is known in ratemaking as **Functionalization.**

The next step in the ratemaking process is to allocate functionalized costs among the various customer classes. For wastewater utilities, this is typically completed by classifying costs into volume and strength-related components. This is a process known as **Classification**. The final step in the process is to allocate these classified costs to customer classes based on the usage and strength characteristics of each class. This process is known as **Allocation.** The final result of the allocation process is an identification of both the total cost of service for the utility and the specific cost of service for each customer class.

The methodology described above and used to develop the cost of service and rate recommendations in this section is recognized by the American Water Works Association and used by thousands of utilities throughout the United States in their rate setting process.

Wastewater Accounts – Current Year and Forecast

Table III-1 presents the number of wastewater accounts in the test year FY 2015 for each identified customer class. The table reveals that as of FY 2015, there are an average of **11,100** wastewater accounts across 8 identified customer classes. The vast majority of accounts are inside the city limits of Russellville.

TABLE III-1

CITY CORPORATION -- RUSSELLVILLE
TEST YEAR WASTEWATER ACCOUNTS

	Test Year Accounts
Residential City	9,269
Residential Outside City	314
Commercial City	1,289
Commercial Outside City	4
Industrial City	52
Industrial Outside City	4
Ind. Discounts City	6
Public Authorities	161
Total	**11,100**

Table III-2 presents total wastewater accounts by rate classification for the past four years, the test year, and the ten-year forecast period. As with the water utility, growth is forecast to be nominal over the next decade. In the period 2009-2014, total active wastewater accounts increased by an average of approximately 45-50 per year, with the exception of the years the new accounts from the Tri-County service area were added. In future years the average number of new accounts is forecast to be 32 per year.

TABLE III-2

CITY CORPORATION -- RUSSELLVILLE
TOTAL WASTEWATER ACCOUNTS
WASTEWATER Customer Classes

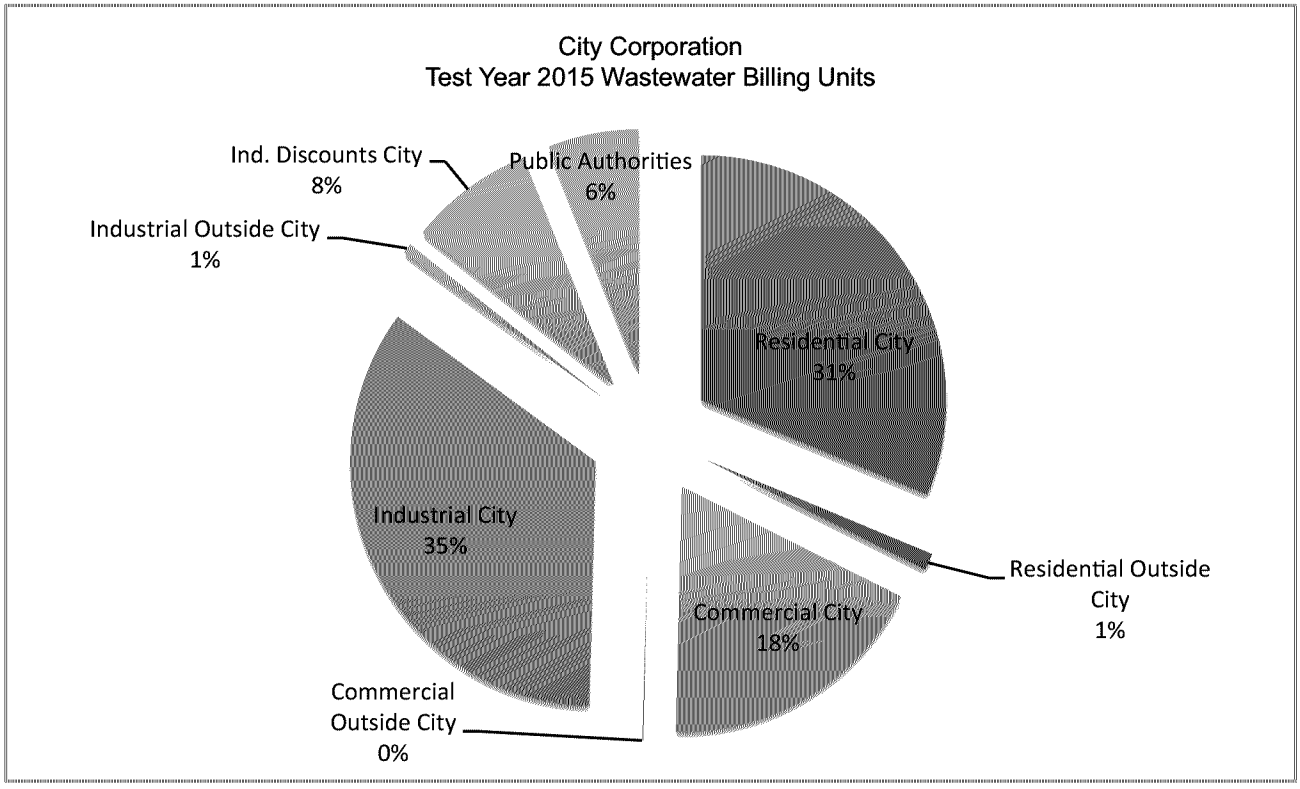
	Res Inside	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities	Total
WASTEWATER Total Accounts									
2009	9,083	90	1,194	3	54	4	6	155	10,589
2010	9,095	98	1,216	3	54	4	6	158	10,634
2011	9,122	102	1,237	3	53	4	6	157	10,684
2012	9,149	102	1,252	3	53	4	6	158	10,727
2013	9,164	206	1,269	4	53	4	6	158	10,864
2014	9,249	313	1,279	4	52	4	6	160	11,067
2015	9,269	314	1,289	4	52	4	6	161	11,100
2016	9,289	315	1,299	4	52	4	6	162	11,132
2017	9,309	316	1,309	4	52	4	6	163	11,164
2018	9,329	317	1,319	4	52	4	6	164	11,196
2019	9,349	318	1,329	4	52	4	6	165	11,228
2020	9,369	319	1,339	4	52	4	6	166	11,260
2021	9,389	320	1,349	4	52	4	6	167	11,292
2022	9,409	321	1,359	4	52	4	6	168	11,324
2023	9,429	322	1,369	4	52	4	6	169	11,356
2024	9,449	323	1,379	4	52	4	6	170	11,388
WASTEWATER Annual New Accounts									
2010	12	8	22	-	-	-	-	3	45
2011	27	4	21	-	(1)	-	-	(1)	50
2012	27	-	15	-	-	-	-	1	43
2013	15	104	17	1	-	-	-	-	137
2014	85	107	10	-	(1)	-	-	2	203
2015	20	1	10	-	0	-	-	1	33
2016	20	1	10	-	-	-	-	1	32
2017	20	1	10	-	-	-	-	1	32
2018	20	1	10	-	-	-	-	1	32
2019	20	1	10	-	-	-	-	1	32
2020	20	1	10	-	-	-	-	1	32
2021	20	1	10	-	-	-	-	1	32
2022	20	1	10	-	-	-	-	1	32
2023	20	1	10	-	-	-	-	1	32
2024	20	1	10	-	-	-	-	1	32

Historical and Forecast Wastewater Billing Units

Total wastewater system billing units were analyzed over the same time period as customer data. Units over the past 12 months and historical trends were used as the basis for the development of the test year and forecast wastewater billing units within the rate model. As with the account data, the project team used averaging to smooth out fluctuations in the monthly data.

Chart III-3 presents the percentage of total billing units by wastewater customer class groupings in the test year. Total test year units are calculated to be 1,438,365,000 gallons. The chart illustrates the relative volume demands of each class. The chart reveals that Residential City and Industrial City compose 31% and 33% of the respective total billing units.

CHART III-3



The project team prepared a ten-year forecast of wastewater billing units based on the same principles on which customer accounts were projected. The results of this forecast for wastewater units are presented in **Table III-4.** The tables reveal that wastewater billing units are expected to increase by an annual average of **0.25%** during the forecast period. By FY 2024 wastewater units are expected to reach **1,470,458,973** gallons.

TABLE III-4

CITY CORPORATION -- RUSSELLVILLE
WASTEWATER BILLING UNITS -- GALLONS

	Residential City	Residential Outside City	Commercial City	Commercial Outside City	Industrial City	Industrial Outside City	Ind. Discounts City	Public Authorities	Total
2009	523,833,000	5,174,000	257,564,000	566,000	594,713,000	10,625,000	391,384,000	101,279,000	**1,885,138,000**
2010	537,420,000	5,401,000	258,782,000	297,000	535,067,000	10,416,000	253,951,000	100,392,000	**1,701,726,000**
2011	563,536,000	5,260,000	265,031,000	552,000	553,873,000	11,765,000	219,131,000	100,569,000	**1,719,717,000**
2012	605,333,000	5,051,000	259,902,000	691,000	528,068,000	11,272,000	179,234,000	105,485,000	**1,695,036,000**
2013	479,651,000	9,993,000	253,269,000	514,000	490,030,000	10,519,000	123,209,000	100,050,000	**1,467,235,000**
2014	448,792,000	15,694,000	257,891,000	552,000	498,247,000	9,411,000	119,063,000	85,967,000	**1,435,617,000**
2015	449,992,000	15,742,000	258,851,000	552,000	498,247,000	9,411,000	119,063,000	86,507,000	**1,438,365,000**
2016	450,962,926	15,792,067	260,859,803	552,000	498,247,000	9,411,000	119,063,000	87,043,200	**1,441,930,997**
2017	451,933,853	15,842,135	262,868,606	552,000	498,247,000	9,411,000	119,063,000	87,579,401	**1,445,496,994**
2018	452,904,779	15,892,202	264,877,409	552,000	498,247,000	9,411,000	119,063,000	88,115,601	**1,449,062,991**
2019	453,875,705	15,942,269	266,886,212	552,000	498,247,000	9,411,000	119,063,000	88,651,802	**1,452,628,988**
2020	454,846,632	15,992,337	268,895,015	552,000	498,247,000	9,411,000	119,063,000	89,188,002	**1,456,194,985**
2021	455,817,558	16,042,404	270,903,818	552,000	498,247,000	9,411,000	119,063,000	89,724,202	**1,459,760,982**
2022	456,788,484	16,092,471	272,912,621	552,000	498,247,000	9,411,000	119,063,000	90,260,403	**1,463,326,979**
2023	457,759,411	16,142,539	274,921,424	552,000	498,247,000	9,411,000	119,063,000	90,796,603	**1,466,892,976**
2024	458,730,337	16,192,606	276,930,227	552,000	498,247,000	9,411,000	119,063,000	91,332,804	**1,470,458,973**

Revenue Requirement Background and Methodology

The next step in the ratemaking process is to develop the wastewater utility's revenue requirement. Again, the process for developing a revenue requirement is the same as for City Corporation's Water Utility. It includes only that amount that must be raised through the water utility's user rates. This means that non-rate revenue (such as connection fees, late payment charges and interest) must be subtracted from the budgeted operating and capital expenditures to determine the net revenue requirement to be raised from rates.

As with the water utility, the test year utilized for the wastewater utility consists of City Corporation's fiscal year, July 1, 2014 through June 30, 2015. The estimates presented in this section are based on the wastewater utility's budget for FY 2015, as well as a forecast of the City's future capital improvements and debt obligations.

As is typical for publicly owned utilities, the wastewater utility revenue requirements were developed using the Cash Basis of ratemaking. The following specific items are included in the wastewater utility's revenue requirements that must be raised from rates:

Operating Expenses

Capital Outlays

Debt Service

The assumptions utilized in this forecast will be examined extensively in this section of the report. These assumptions, particularly those associated with the wastewater utility's capital expenditure and reserve requirement budget, are critical to the development of both the revenue requirement and the ultimate rate recommendations. The project team discussed these assumptions with City staff and considers all to be consistent with staff recommendations.

All data used in the development of the revenue requirements was obtained from the financial statements, budgets and other information provided by City Corporation staff. Detailed calculations are presented in the rate model contained in Appendix A of this report.

Operating Expenses and Capital Outlays - Test Year and Forecast

Table III-5 presents a summary of City Corporation's wastewater utility test year 2015 budget. Operating expenditures capture the primary operating expenses associated with the day-to-day management of the wastewater utility. The table examines operating expenses and capital outlays only; allocations for debt service are presented in the next section.

TABLE III-5

CITY CORPORATION -- RUSSELLVILLE
TEST YEAR OPERATING EXPENSES
WASTEWATER UTILITY

	2015 Rev Rqmt	Treatment	Collection	Administration	Customer
Scenario:		**2014 12 12 -- Scen 2 -- Conservation**			
Budget Operating Expenses/Capital Outlays					
OPERATING EXPENSES					
PUMPING	$ 210,914	$ -	$ 210,914	$ -	$ -
TREATMENT	992,528	992,528	-	-	-
COLLECTION	470,700	-	470,700	-	-
CUSTOMER ACCOUNT	231,146	-	-	-	231,146
ADMINISTRATION	806,351	-	-	806,351	-
PRETREATMENT	125,843	125,843	-	-	-
DEPRECIATION AND AMORTIZATION	-	-	-	-	-
	2,837,482	1,118,371	681,614	806,351	231,146
CAPITAL OUTLAYS/REPLACEMENT RESERVE					
TOTAL	250,000	-	250,000	-	-
Total Operating/Cap Outlays	**3,087,482**	**1,118,371**	**931,614**	**806,351**	**231,146**

As the table shows, total operating expenses and capital outlays/replacement reserve in the test year for the water utility is **$3,087,482**. The budget separates costs into several categories, including pumping, treatment, collection, customer account, administration and pretreatment. Depreciation is not included as rates are calculated on the Cash Basis.

The rate model further functionalizes these costs into the categories of Treatment, Collection, Administration and Customer. All of the budget costs are directly allocated to one of these categories.

The table further reveals that Collection expenses are the predominant expenses related to the budget. This is mainly due to the fact that capital outlays are allocated 100% to collection.

Table III-6 presents the project team's ten-year forecast of City Corporation's operating expenses and capital outlays. The table reveals that water related operating expenses and capital outlays are forecast to increase from the test year total to $4,487,898 by FY 2024. This represents an average annual increase of **4.24%** for the water utility.

TABLE III-6

CITY CORPORATION -- RUSSELLVILLE
FORECAST OPERATING EXPENSES AND CAPITAL OUTLAYS
WASTEWATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario:	2014 12 12 -- Scen 2 -- Conservation								
OPERATING EXPENSES										
PUMPING	$ 210,914	$ 220,172	$ 229,861	$ 240,003	$ 250,620	$ 261,737	$ 273,376	$ 285,565	$ 298,331	$ 311,702
TREATMENT	992,528	1,039,838	1,089,526	1,141,714	1,196,537	1,254,132	1,314,646	1,378,234	1,445,059	1,515,294
COLLECTION	470,700	493,017	516,468	541,116	567,025	594,263	622,904	653,024	684,704	718,031
CUSTOMER ACCOUNT	231,146	241,543	252,455	263,910	275,938	288,569	301,836	315,775	330,422	345,816
ADMINISTRATION	806,351	838,098	871,228	905,810	941,913	979,612	1,018,985	1,060,113	1,103,084	1,147,989
PRETREATMENT	125,843	132,358	139,227	146,470	154,108	162,165	170,662	179,627	189,085	199,065
DEPRECIATION AND AMORTIZATION	-	-	-	-	-	-	-	-	-	-
Total Operating/Cap Outlays	**$ 2,837,482**	**$ 2,965,026**	**$ 3,098,766**	**$ 3,239,024**	**$ 3,386,142**	**$ 3,540,477**	**$ 3,702,409**	**$ 3,872,338**	**$ 4,050,685**	**$ 4,237,898**
CAPITAL OUTLAYS/REPLACEMENT RESERVE										
TOTAL	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**	**250,000**
TOTAL OPERATING/CAPITAL OUTLAYS	**3,087,482**	**3,215,026**	**3,348,766**	**3,489,024**	**3,636,142**	**3,790,477**	**3,952,409**	**4,122,338**	**4,300,685**	**4,487,898**

The primary assumptions used in the development of this forecast of operating costs are as follows:

- Most operating costs are expected to increase at an annual rate of 3.0% to 5.0%, which is approximately equivalent to the rate of inflation.
- Certain expenses are forecast to increase at above-inflation rates, to reflect the rapid rate of increase of the costs. These expenses include supplies and materials such as chemicals and fuels, Medicare and insurance.
- Certain expenses will increase at higher rates to reflect the forecast growth in accounts and volumes.

Details behind these calculations can be found in the rate model contained in Appendix A. Importantly, the forecast also assumes that the wastewater utility's capital outlays/reserve requirement remains at approximately $250,000 per year throughout the forecast period. The Corporation is assumed to issue long-term debt to fund capital improvements. The debt service on the long-term debt is intended to replace the reserve expenditures. This will be addressed more fully in the next section.

Debt Service

At this time City Corporation maintains one wastewater-related long-term bond. This $9.0 million bond was issued within in the last year, and annual principal and interest is approximately $614,297. The proceeds were used for improvements to City Corporation's wastewater treatment plant.

In addition, there is a balloon payment due at the end of the bond's term, in 2027. City Corporation's Board of Directors has requested that the wastewater utility set aside an annual amount that will be used to fund the balloon payment when it becomes due. This amount is calculated to be $223,224 per year.

City Corporation is currently in the process of evaluating its long-term capital needs for both the water and the wastewater utility. City Corporation staff and consulting engineers have completed a review of long-term capital improvement requirements. As shown in **Table III-7**, City Corporation currently estimates that it will require **$54,548,025** in wastewater-related capital improvements in the next decade.

Table III-7 also shows that City Corporation intends to fund these capital requirements through a combination of existing balance, replacement reserve and long-term debt. City Corporation forecasts the need to issue $41,000,000 in long-term debt in the next decade. $20,000,000 is to be issued during FY 2015 with another $15,000,000 to be issued in FY 2018 and $6,000,000 to be issued in 2020. This debt is assumed to issued for 25 year terms at 4.0% interest and a 1 year reserve requirement funded from bond proceeds. Current and forecast debt service for the water utility is presented in **Table III-8**.

TABLE III-7

CITY CORPORATION -- RUSSELLVILLE
CURRENT AND FORECAST CAPITAL PROJECT FUNDING AVAILABILITY
WASTEWATER UTILITY

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
		Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Beginning Balance		$ 6,342,462	$ 12,915,921	$ 10,600,338	$ 5,743,019	$ 18,628,380	$ 15,142,197	$ 17,426,041	$ 14,263,221	$ 10,798,486	$ 7,264,455
Plus Sources of Funds:											
Interest		126,849	258,318	212,007	114,860	372,568	302,844	348,521	285,264	215,970	145,289
Replacement Reserve		250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Long-Term Debt	41,000,000	20,000,000	-	-	15,000,000	-	6,000,000	-	-	-	-
WW Impact Fees		-	-	-	-	-	-	-	-	-	-
Total Sources		20,791,007	1,574,318	1,528,007	16,430,860	1,688,568	7,618,844	837,180	535,264	465,970	395,289
Less Uses of Funds:											
Capital Improvement Plan -- WW	54,548,025	14,217,548	3,889,902	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000
Ending Balance		**12,915,921**	**10,600,338**	**5,743,019**	**18,628,380**	**15,142,197**	**17,426,041**	**14,263,221**	**10,798,486**	**7,264,455**	**3,659,744**

TABLE III-8

CITY CORPORATION -- RUSSELLVILLE
CURRENT AND FORECAST DEBT SERVICE
WASTEWATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Current Debt Service										
Prin & Int	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297
Reserve	-	-	-	-	-	-	-	-	-	-
Balloon Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
Total	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
Future Debt Service										
Prin & Int	-	523,461	544,399	566,175	981,418	1,020,674	1,218,540	1,267,281	1,317,973	1,370,691
Reserve	-	872,000	851,062	829,286	1,460,639	1,421,382	1,642,155	1,593,413	1,542,722	1,490,003
Balloon Reserve	-	-	-	-	-	-	-	-	-	-
Total	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
Total WW Debt Service										
Prin & Int	614,297	1,137,758	1,158,696	1,180,472	1,595,715	1,634,971	1,832,837	1,881,578	1,932,270	1,984,988
Reserve	-	872,000	851,062	829,286	1,460,639	1,421,382	1,642,155	1,593,413	1,542,722	1,490,003
Balloon Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
Total	**837,521**	**2,232,982**	**2,232,982**	**2,232,982**	**3,279,577**	**3,279,577**	**3,698,216**	**3,698,216**	**3,698,216**	**3,698,216**

Non-Rate Revenues

As with the water utility, City Corporation accrues a certain amount of revenue from non-rate sources for its wastewater utility. These revenues include dumping charges, strength surcharges, grinder pump fees, tapping fees and interest income. Total non-rate revenues for the test year and forecast period are presented in **Table III-9.**

TABLE III-9

CITY CORPORATION -- RUSSELLVILLE
FORECAST NON-RATE REVENUES
WASTEWATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Scenario:	**2014 12 12 -- Scen 2 -- Conservation**								
Non-Rate Revenues										
Sales -- Customer Billing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sales -- Dumping	-	-	-	-	-	-	-	-	-	-
Sewer Surcharge	26,400	27,192	28,008	28,848	29,713	30,605	31,523	32,469	33,443	34,446
Grinder Pump Fees	3,360	3,461	3,565	3,672	3,782	3,895	4,012	4,132	4,256	4,384
Other Revenue	-	-	-	-	-	-	-	-	-	-
Tapping Fees	38,800	39,964	41,163	42,398	43,670	44,980	46,329	47,719	49,151	50,625
Other Service Fees	720	742	764	787	810	835	860	886	912	939
Interest Income	3,675	3,785	3,899	4,016	4,136	4,260	4,388	4,520	4,655	4,795
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Total	**$ 72,955**	**$ 75,144**	**$ 77,398**	**$ 79,720**	**$ 82,111**	**$ 84,575**	**$ 87,112**	**$ 89,725**	**$ 92,417**	**$ 95,190**

Net Revenue Requirement

The net revenue requirement differs from City Corporation's budget in that it represents only that amount that must be raised through wastewater rates. **Table III-10** presents City Corporation's net revenue requirement for the wastewater utility for the test year 2015 and forecast period. The wastewater net revenue requirement is expected to increase from **$3,852,048** in FY 2015 to **$8,090,923** in FY 2024. This represents an average annual increase of **8.60%**. Detailed calculations are presented in the rate model contained in Appendix A of this report. The most significant component of the increase is the additional debt service required to fund the CIP.

TABLE III-10

CITY CORPORATION -- RUSSELLVILLE
FORECAST NET REVENUE REQUIREMENT
WASTEWATER UTILITY

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**									
Operating	$ 2,837,482	$ 2,965,026	$ 3,098,766	$ 3,239,024	$ 3,386,142	$ 3,540,477	$ 3,702,409	$ 3,872,338	$ 4,050,685	$ 4,237,898
Cap Outlays/Replace Reserve	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Debt Service -- Current	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
Debt Service -- Future	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
Sub-Total	3,925,003	5,448,008	5,581,748	5,722,006	6,915,719	7,070,055	7,650,625	7,820,554	7,998,901	8,186,113
Non-Rate Revs	(72,955)	(75,144)	(77,398)	(79,720)	(82,111)	(84,575)	(87,112)	(89,725)	(92,417)	(95,190)
Total	**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**6,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**

Wastewater Utility Cost Functionalization, Classification and Allocation

Once the total wastewater utility system costs have been identified, the next step in the rate development process is to isolate the costs associated with each system function. Certain costs are associated with serving customers regardless of the volume of wastewater discharge. Other costs are more dependent on the strength components of the sewage delivered into the system. The basic steps used to allocate City Corporation's wastewater revenue requirements include the following:

1. Each system's costs (revenue requirements) are categorized by utility function (i.e. treatment, collection, administrative, customer). This process is known as *functionalization*.
2. Functionalized costs are classified based on the volume and strength characteristics of the sewage. This process is known as *classification.*
3. Costs by service characteristic are allocated to customer classes in proportion to the service demands demonstrated by each class.

This three-step process allows for the allocation of system costs in the same terms as customer classes. The approaches described in this section follow standard industry practices. Wastewater system costs are allocated to the following functions:

Treatment – the process by which wastewater influent is processed and converted to discharge effluent

Collection – the lines that carry wastewater from individual customers' properties to the treatment plant

Administration – miscellaneous overhead and other non-operating costs

Customer Billing – the processes involved in billing and providing other services to customers

The project team allocated operating budget line item expenses individually to system functions based on general guidelines, specific research and input from City Corporation staff. The results of the functionalization process for the test year are presented in **Table III-11**. **Chart III-12** presents the functionalized cost per 1,000 gallons for the test year as well. **Chart III-13** presents the allocated cost per customer class for the forecast period. The rate model presented in Appendix A includes a detailed listing of the allocations by line item.

TABLE III-11

CITY CORPORATION -- RUSSELLVILLE
COST FUNCTIONALIZATION
WASTEWATER UTILITY

	Test Year 2015
Treatment	$ 1,955,892
Collection	931,614
Administration	806,351
Customer	231,146
Total	**$ 3,925,003**

CHART III-12

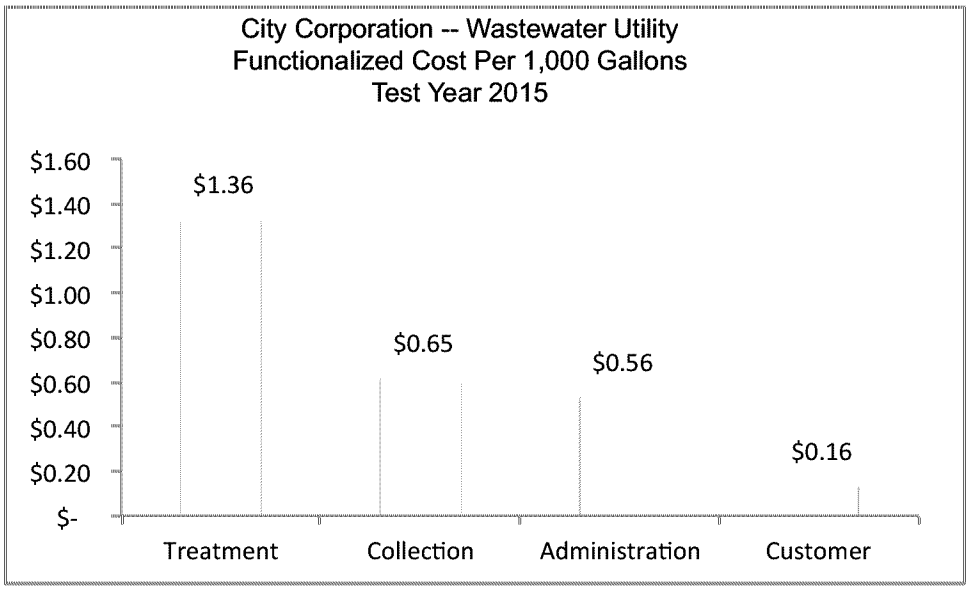


CHART III-13

CITY CORPORATION -- RUSSELLVILLE
FORECAST COST OF SERVICE BY CUSTOMER CLASS
WASTEWATER UTILITY

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Scenario:	**2014 12 12 -- Scen 2 -- Conservation**									
Residential City	$ 1,354,207	$ 1,827,372	$ 1,874,982	$ 1,924,949	$ 2,299,883	$ 2,354,612	$ 2,541,254	$ 2,601,488	$ 2,664,759	$ 2,731,230
Residential Outside City	47,121	63,742	65,463	67,270	80,501	82,493	89,132	91,327	93,632	96,053
Commercial City	674,986	953,898	981,880	1,011,206	1,234,807	1,268,056	1,380,774	1,417,668	1,456,324	1,496,842
Commercial Outside City	1,472	2,050	2,095	2,142	2,589	2,640	2,852	2,908	2,966	3,028
Industrial City	1,236,793	1,760,506	1,796,801	1,834,890	2,236,783	2,277,996	2,465,191	2,510,383	2,557,878	2,607,793
Industrial Outside City	23,438	33,329	34,018	34,741	42,334	43,116	46,655	47,513	48,415	49,362
Ind. Discounts City	295,381	420,532	429,198	438,292	534,326	544,166	588,892	599,682	611,021	622,939
Public Authorities	218,651	311,436	319,913	328,797	402,384	412,401	448,765	459,861	471,488	483,676
Total	**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**6,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**

Wastewater Rate Design

As with the water rates from the previous section, the wastewater rates developed in this section are designed to recover the test year and forecast revenue requirement while providing funding for the proposed reserve requirement. It is recommended that rate changes be implemented in October of each year.

The wastewater rate plan proposed for this study incorporates the following assumptions:

- It maintains the current rate design structure for all wastewater customer classes
- It requires adjustments in wastewater charges for the next four years
- The adjustment percentages are nominally larger than for the water rates discussed in the previous section. The reason for this is that wastewater rates have recovered significantly less than their cost of service in recent years. Additionally, the 2013 bond issue has further increased the cost of wastewater service. These two factors have resulted in the need for greater levels of wastewater adjustments in the next five years.

Table III-14 presents a summary of the wastewater rate plan proposed for City Corporation under this scenario. **Table III-15** presents the impact the proposed rate plan will have on monthly residential and commercial charges at each class' average monthly level of consumption. Rates and impacts are presented for both inside city and outside city customer classes.

Exhibit III-16 presents a detailed summary of the rate model for this recommended rate plan including the projected revenues and expenses for the ten year forecast period.

TABLE III-14

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED RATE DESIGN
WASTEWATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:			**2014 12 12 -- Scen 2 -- Conservation**					
Inside City								
All Classes -- Inside								
Monthly Charge		$ 6.67	**$ 8.17**	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12
Volume Rate								
1,001	20,000	2.59	**3.17**	3.88	4.60	4.95	5.32	5.48
20,001	Above	2.20	**2.70**	3.31	3.92	4.21	4.53	4.67
Outside City								
All Classes -- Inside								
Monthly Charge		10.01	**12.26**	15.02	17.79	19.13	20.57	21.18
Volume Rate								
1,001	20,000	3.89	**4.76**	5.82	6.90	7.43	7.98	8.22
20,001	Above	3.30	**4.05**	4.97	5.88	6.32	6.80	7.01

TABLE III-15

CITY CORPORATION -- RUSSELLVILLE
IMPACT OF RATE PLAN ON MONTHLY CHARGES
WASTEWATER UTILITY

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:			**2014 12 12 -- Scen 2 -- Conservation**					
Inside City								
Residential	5,000 Gal	$ 17.03	**$ 20.85**	$ 25.53	$ 30.26	$ 32.55	$ 34.99	$ 36.04
	Increase		**3.82**	**4.68**	**4.73**	**2.29**	**2.44**	**1.05**
Residential	10,000 Gal	29.98	**36.70**	44.93	53.26	57.30	61.59	63.44
	Increase		**6.72**	**8.23**	**8.33**	**4.04**	**4.29**	**1.85**
Commercial	15,000 Gal	42.93	**52.55**	64.33	76.26	82.05	88.19	90.84
	Increase		**9.62**	**11.78**	**11.93**	**5.79**	**6.14**	**2.65**
Outside City								
Residential	5,000 Gal	$ 25.55	**$ 31.28**	$ 38.30	$ 45.39	$ 48.83	$ 52.49	$ 54.06
	Increase		**5.73**	**7.02**	**7.10**	**3.44**	**3.66**	**1.58**
Residential	10,000 Gal	44.97	**55.05**	67.40	79.89	85.95	92.39	95.16
	Increase		**10.08**	**12.35**	**12.50**	**6.06**	**6.44**	**2.77**
Commercial	15,000 Gal	64.40	**78.83**	96.50	114.39	123.08	132.29	136.26
	Increase		**14.43**	**17.67**	**17.90**	**8.69**	**9.21**	**3.98**

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WASTEWATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	**Wastewater Rates -- Residential**													
	Inside City													
	Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
	Usage Chg	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
		20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
2	**Residential Monthly Bill -- 5/8" Meter**													
	5,000 WW	Total		$ 17.03	$ 20.85	$ 25.53	$ 30.26	$ 32.55	$ 34.99	$ 36.04	$ 37.10	$ 38.22	$ 39.35	$ 40.53
		Dollar Inc			3.82	4.68	4.73	2.29	2.44	1.05	1.06	1.12	1.13	1.18
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	3.0%	3.0%
	10,000 WW	Total		29.98	36.70	44.93	53.26	57.30	61.59	63.44	65.30	67.27	69.25	71.33
		Dollar Inc			6.72	8.23	8.33	4.04	4.29	1.85	1.86	1.97	1.98	2.08
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	2.9%	3.0%
	20,000 WW	Total		55.88	68.40	83.73	99.26	106.80	114.79	118.24	121.70	125.37	129.05	132.93
		Dollar Inc			12.52	15.33	15.53	7.54	7.99	3.45	3.46	3.67	3.68	3.88
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	2.9%	3.0%
	30,000 WW	Total		77.88	95.40	116.83	138.46	148.90	160.09	164.94	169.80	174.87	180.05	185.43
		Dollar Inc			17.52	21.43	21.63	10.44	11.19	4.85	4.86	5.07	5.18	5.38
		Percent Inc			22.5%	22.5%	18.5%	7.5%	7.5%	3.0%	2.9%	3.0%	3.0%	3.0%
	50,000 WW	Total		121.88	149.40	183.03	216.86	233.10	250.69	258.34	266.00	273.87	282.05	290.43
		Dollar Inc			27.52	33.63	33.83	16.24	17.59	7.65	7.66	7.87	8.18	8.38
		Percent Inc			22.6%	22.5%	18.5%	7.5%	7.5%	3.1%	3.0%	3.0%	3.0%	3.0%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WASTEWATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3	**WASTEWATER Revenues and Expenses**										
	WW Revenues										
	Residential City	$ 1,727,670	$ 2,120,695	$ 2,563,620	$ 2,915,260	$ 3,141,346	$ 3,323,115	$ 3,429,718	$ 3,539,348	$ 3,653,041	$ 3,769,931
	Residential Outside City	69,844	110,395	133,587	152,065	164,023	173,687	179,437	185,355	191,497	197,817
	Commercial City	760,783	939,149	1,141,559	1,305,266	1,414,136	1,504,152	1,560,809	1,619,012	1,679,497	1,742,116
	Commercial Outside City	2,538	3,109	3,750	4,255	4,575	4,830	4,975	5,123	5,275	5,432
	Industrial City	1,213,551	1,488,398	1,795,697	2,036,026	2,188,522	2,311,832	2,382,256	2,452,793	2,525,455	2,600,985
	Industrial Outside City	34,646	42,493	51,266	58,127	62,481	66,001	68,011	70,025	72,100	74,256
	Ind. Discounts City	(51,681)	(63,158)	(75,937)	(85,830)	(92,125)	(97,128)	(99,903)	(103,292)	(106,680)	(110,068)
	Public Authorities	221,378	273,148	331,565	378,284	409,111	434,733	450,634	466,759	483,461	500,853
	WW Rate Revenues	3,998,730	4,914,229	5,945,106	6,763,453	7,292,070	7,721,222	7,975,938	8,235,123	8,503,646	8,781,323
	WW Non-Rate Revenues	72,955	75,144	77,398	79,720	82,111	84,575	87,112	89,725	92,417	95,190
	Total Revenues	**4,071,685**	**4,989,372**	**6,022,504**	**6,843,173**	**7,374,181**	**7,805,797**	**8,063,050**	**8,324,849**	**8,596,064**	**8,876,513**
	Operating Expenses	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,698
	Net Revenues Available for Replacement Reserve/Debt Service	1,234,203	2,024,346	2,923,739	3,604,148	3,988,039	4,265,319	4,360,640	4,452,511	4,545,378	4,638,816
	Debt Service -- Prin&Int	614,297	2,009,758	2,009,758	2,009,758	3,056,353	3,056,353	3,474,992	3,474,992	3,474,992	3,474,992
	Debt Service -- Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
	Total Debt Service	837,521	2,232,982	2,232,982	2,232,982	3,279,577	3,279,577	3,698,216	3,698,216	3,698,216	3,698,216
	Net Revenues Available for Replacement Reserve	396,682	(208,635)	690,757	1,371,167	708,462	985,742	662,425	754,295	847,163	940,400
	Replacement Reserve	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
	Total Cost of Service	**3,925,003**	**5,448,008**	**5,581,748**	**5,722,006**	**6,915,719**	**7,070,055**	**7,650,625**	**7,820,554**	**7,998,901**	**8,186,113**
	Net Cash Flow Available for Contingency	**146,682**	**(458,635)**	**440,757**	**1,121,167**	**458,462**	**735,742**	**412,425**	**504,295**	**597,163**	**690,400**
		3.6%	-9.2%	7.3%	16.4%	6.2%	9.4%	5.1%	6.1%	6.9%	7.8%
	WASTEWATER Debt Coverage (NOTE: excludes reserve funding)	**2.01**	**1.01**	**1.45**	**1.79**	**1.30**	**1.40**	**1.25**	**1.28**	**1.31**	**1.33**

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

WASTEWATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

4 **Capital Project Funding Summary -- WASTEWATER**

Beginning Balance	$ 6,342,462	$ 12,915,921	$ 10,600,338	$ 5,743,019	$ 18,628,380	$ 15,142,197	$ 17,426,041	$ 14,263,221	$ 10,798,486	$ 7,264,455
Plus Sources of Funds:										
Interest 2.0%	126,849	258,318	212,007	114,860	372,568	302,844	348,521	285,264	215,970	145,289
Replacement Reserve	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Long-Term Debt	20,000,000	-	-	15,000,000	-	6,000,000	-	-	-	-
WW Impact Fees	-	-	-	-	-	-	-	-	-	-
Total Sources	20,791,007	1,574,318	1,528,007	16,430,860	1,688,568	7,618,844	837,180	535,264	465,970	395,289
Less Uses of Funds:										
Capital Improvement Plan -- WW	14,217,548	3,889,902	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000
Ending Balance	**12,915,921**	**10,600,338**	**5,743,019**	**18,628,380**	**15,142,197**	**17,426,041**	**14,263,221**	**10,798,486**	**7,264,455**	**3,659,744**

5 **Total Accounts**

Wastewater Accounts									
Total Accounts	11,100	11,132	11,164	11,196	11,228	11,260	11,292	11,324	11,356	11,388
New Accounts		32	32	32	32	32	32	32	32	32
Avg. Annual Growth Rate		0.29%	0.29%	0.29%	0.29%	0.28%	0.28%	0.28%	0.28%	0.28%

BOD and TSS Rates

As part of this engagement, the project team also developed a recommended set of rates per lb. for BOD and TSS. This was completed through the process of functionalizing treatment costs between volume, BOD and TSS elements.

Table III-17 presents a summary of the recommended BOD and TSS rate plan for City Corporation. It is recommended that City Corporation continue the policy of not implementing these charges until strength levels have exceeded 350 mg/l BOD and TSS respectively.

TABLE III-17

CITY CORPORATION -- RUSSELLVILLE
RECOMMENDED BOD AND TSS RATE
WASTEWATER UTILITY

	Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19	Effective Jan-20
Scenario:		**2014 12 12 -- Scen 2 -- Conservation**					
BOD Charge							
Total Functionalized Cost		$ 1,038,815	$ 1,356,424	$ 1,387,859	$ 1,420,824	$ 1,674,771	$ 1,710,933
Total Lbs		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167
Total Cost/lb.	**0.0727**	**0.3464**	**0.4512**	**0.4605**	**0.4703**	**0.5530**	**0.5635**
TSS Charge							
Total Functionalized Cost		603,962	788,618	806,895	826,061	973,704	994,729
Total Lbs		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167
Total Cost/lb.	**0.0624**	**0.2014**	**0.2623**	**0.2677**	**0.2734**	**0.3215**	**0.3276**

Appendix A

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Model Summary
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	**Water and Wastewater Rates**													
	Water Rates													
	Monthly Minimum Charge													
	5/8" -- 3/4"			$ 8.69	$ 9.30	$ 10.14	$ 10.44	$ 11.28	$ 11.62	$ 11.97	$ 12.69	$ 13.07	$ 13.46	$ 13.86
	3/4"			8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	1"			12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	1 1/2"			22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	2"			29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	3"			49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	4"			157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	6"			194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Volume Rate/1,000 Gal													
	Residential	City												
		-	2,000	1.71	1.71	1.86	1.92	2.07	2.13	2.19	2.32	2.39	2.46	2.53
		2,001	Above	1.94	2.05	2.23	2.30	2.48	2.55	2.63	2.79	2.87	2.96	3.05
	Residential	Outside City												
		-	2,000	3.52	2.57	2.79	2.88	3.11	3.20	3.29	3.48	3.59	3.69	3.80
		2,001	Above	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44	4.58
	Commercial	City		1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
	Industrial	City		1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
	Public Authorities	City		1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
	Municipal	City		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
	Tri County			1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
	Wastewater Rates -- Residential													
	Inside City													
	Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
	Usage Chg	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
		20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
2	**Residential Monthly Bill -- 5/8" Meter**													
	5,000 W	Total		$ 34.96	$ 39.72	$ 46.08	$ 51.44	$ 55.41	$ 58.52	$ 60.28	$ 62.60	$ 64.68	$ 66.61	$ 68.60
	5,000 WW	Dollar Inc			4.76	6.36	5.36	3.97	3.11	1.76	2.52	1.88	1.93	1.99
		Percent Inc			13.6%	16.0%	11.6%	7.7%	5.6%	3.0%	4.2%	3.0%	3.0%	3.0%
	10,000 W	Total		44.66	49.97	57.23	62.94	67.81	71.27	73.43	76.75	79.03	81.41	83.85
	5,000 WW	Dollar Inc			5.31	7.26	5.71	4.87	3.46	2.16	3.32	2.28	2.38	2.44
		Percent Inc			11.9%	14.5%	10.0%	7.7%	5.1%	3.0%	4.5%	3.0%	3.0%	3.0%
	20,000 W	Total		64.06	70.47	79.53	85.94	92.61	96.77	99.73	104.65	107.73	111.01	114.35
	5,000 WW	Dollar Inc			6.41	9.06	6.41	6.67	4.16	2.96	4.92	3.08	3.28	3.34
		Percent Inc			10.0%	12.9%	8.1%	7.8%	4.5%	3.1%	4.9%	2.9%	3.0%	3.0%
	30,000 W	Total		83.46	90.97	101.83	108.94	117.41	122.27	126.03	132.55	136.43	140.61	144.85
	5,000 WW	Dollar Inc			7.51	10.86	7.11	8.47	4.86	3.76	6.52	3.88	4.18	4.24
		Percent Inc			9.0%	11.9%	7.0%	7.8%	4.1%	3.1%	5.2%	2.9%	3.1%	3.0%
	50,000 W	Total		139.72	150.42	166.50	175.64	189.33	196.22	202.30	213.46	219.66	226.45	233.30
		Dollar Inc			10.70	16.08	9.14	13.69	6.89	6.08	11.16	6.20	6.79	6.85
		Percent Inc			7.7%	10.7%	5.5%	7.8%	3.6%	3.1%	5.5%	2.9%	3.1%	3.0%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Model Summary
Scen: **2014 12 12 -- Scen 2 -- Conservation**

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3 **Revenues and Expenses -- CASH BASIS**	$ 9,890,753	$ 11,273,436	$ 12,697,839	$ 13,833,170	$ 14,732,806	$ 15,398,206	$ 15,969,290	$ 16,584,547	$ 17,119,141	$ 17,673,257	
Water Fund											
Water Rate Revenues	$ 5,510,136	$ 5,671,084	$ 6,043,965	$ 6,339,687	$ 6,688,805	$ 6,902,495	$ 7,195,628	$ 7,527,768	$ 7,769,190	$ 8,020,239	
Non-Rate Revenues	308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505	
Total Revenues	5,819,068	6,284,064	6,675,334	6,989,997	7,358,625	7,592,409	7,906,240	8,259,698	8,523,078	8,796,744	
Operating Expenses	3,591,863	3,753,267	3,922,648	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,365,864	
Debt Service -- P&I	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	
Debt Service -- Reserve	-	-	-	-	-	-	-	-	-	-	
Capital Outlays	1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	
Total Cost of Service	5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055	
Net Cash Flow Available for Contingency	**571,205**	**(520,664)**	**(298,674)**	**994,419**	**479,019**	**517,320**	**625,993**	**764,105**	**801,406**	**837,689**	
Percent of COS	9.8%	-8.3%	-4.5%	14.2%	6.5%	6.8%	7.9%	9.3%	9.4%	9.5%	
Debt Coverage	-	1.81	1.97	2.07	1.47	1.49	1.54	1.60	1.62	1.64	
Wastewater Fund											
WW Rate Revenues	$ 3,998,730	$ 4,914,229	$ 5,945,106	$ 6,763,453	$ 7,292,070	$ 7,721,222	$ 7,975,938	$ 8,235,123	$ 8,503,646	$ 8,781,323	
Non-Rate Revenues	72,955	75,144	77,398	79,720	82,111	84,575	87,112	89,725	92,417	95,190	
Total Revenues	4,071,685	4,989,372	6,022,504	6,843,173	7,374,181	7,805,797	8,063,050	8,324,849	8,596,064	8,876,513	
Operating Expenses	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,898	
Debt Service -- P&I	614,297	2,009,758	2,009,758	2,009,758	3,056,353	3,056,353	3,474,992	3,474,992	3,474,992	3,474,992	
Debt Service -- Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	
Capital Outlays	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	
Total Cost of Service	3,925,003	5,448,008	5,581,748	5,722,006	6,915,719	7,070,055	7,650,625	7,820,554	7,998,901	8,186,113	
Net Cash Flow Available for Contingency	**146,682**	**(458,635)**	**440,757**	**1,121,167**	**458,462**	**735,742**	**412,425**	**504,295**	**597,163**	**690,400**	
Percent of COS	3.6%	-9.2%	7.3%	16.4%	6.2%	9.4%	5.1%	6.1%	6.9%	7.8%	
Debt Coverage	2.01	1.01	1.45	1.79	1.30	1.40	1.25	1.28	1.31	1.33	
Water/WW Net Cash Flow for Contingency	**717,887**	**(979,300)**	**142,083**	**2,115,585**	**937,481**	**1,253,062**	**1,038,418**	**1,268,400**	**1,398,569**	**1,528,089**	
Debt Coverage	5.63	1.34	1.67	1.91	1.37	1.43	1.36	1.40	1.43	1.45	
2013 Bond Requirement 1.50											

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Model Summary
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
4	**Capital Project Funding Summary -- TOTAL**													
	Beginning Balance				$ 12,684,924	$ 37,629,232	$ 35,705,414	$ 26,620,872	$ 46,878,290	$ 39,282,356	$ 37,214,003	$ 30,946,942	$ 24,315,881	$ 17,552,198
	Plus Sources of Funds:													
	Interest	2.0%			253,698	752,585	714,108	532,417	937,566	785,647	744,280	618,939	486,318	351,044
	Replacement Reserve				1,906,000	1,906,000	1,906,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
	Long-Term Debt				40,000,000	-	-	25,000,000	-	6,000,000	-	-	-	-
	Water Impact Fees				-	-	-	-	-	-	-	-	-	-
	Total Sources	Total 2013-2018	88,688,180		42,573,856	3,724,585	3,666,108	27,348,417	2,753,566	8,601,647	1,732,939	1,368,939	1,236,318	1,101,044
		Less 2013	(42,573,856)											
	Less Uses of Funds:	Net Total	46,114,323											
	Capital Improvement Plan -- TOTAL				17,629,548	5,648,403	12,770,650	7,091,000	10,349,500	10,670,000	8,000,000	8,000,000	8,000,000	8,000,000
	Ending Balance				**37,629,232**	**35,705,414**	**26,620,872**	**46,878,290**	**39,282,356**	**37,214,003**	**30,946,942**	**24,315,881**	**17,552,198**	**10,853,242**
5	**Total Accounts**													
	Water Accounts													
	Total Accounts				**12,497**	**12,529**	**12,561**	**12,593**	**12,625**	**12,657**	**12,689**	**12,721**	**12,753**	**12,785**
	New Accounts					32	32	32	32	32	32	32	32	32
	Avg. Annual Growth Rate					0.26%	0.26%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
	Wastewater Accounts													
	Total Accounts				**11,100**	**11,132**	**11,164**	**11,196**	**11,228**	**11,260**	**11,292**	**11,324**	**11,356**	**11,388**
	New Accounts					32	32	32	32	32	32	32	32	32
	Avg. Annual Growth Rate					0.29%	0.29%	0.29%	0.29%	0.28%	0.28%	0.28%	0.28%	0.28%
6	**Annual Water Consumption**													
W.1	Residential	City			594,082,000	595,268,681	596,455,361	597,642,042	598,828,723	600,015,403	601,202,084	602,388,765	603,575,445	604,762,126
W.2	Residential	Outside City			33,622,000	33,689,255	33,756,510	33,823,766	33,891,021	33,958,276	34,025,531	34,092,786	34,160,042	34,227,297
W.3	Commercial	City			283,579,000	285,303,321	287,027,643	288,751,964	290,476,285	292,200,606	293,924,928	295,649,249	297,373,570	299,097,891
W.4	Commercial	Outside City			3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000
W.5	Industrial	City			513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000
W.6	Industrial	Outside City			81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000
W.7	Ind. Discounts	City			-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City			98,810,000	99,278,664	99,747,328	100,215,992	100,684,656	101,153,320	101,621,984	102,090,648	102,559,312	103,027,976
W.9	Municipal	City			33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000
W.10	Fire Protection	City			242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
0	Other	City			-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City			549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000
	Total System				**2,192,021,000**	**2,195,467,921**	**2,198,914,842**	**2,202,361,763**	**2,205,808,685**	**2,209,255,606**	**2,212,702,527**	**2,216,149,448**	**2,219,596,369**	**2,223,043,290**

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

1 Water Sales

Monthly Minimum Charge

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
5/8" -- 3/4"	$ 8.69	$ 9.30	$ 10.14	$ 10.44	$ 11.28	$ 11.62	$ 11.97	$ 12.69	$ 13.07	$ 13.46	$ 13.86
3/4"	8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
1"	12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
1 1/2"	22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
2"	29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
3"	49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
4"	157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
6"	194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71

Volume Rate/1,000 Gal

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	City												
	-	2,000	1.71	1.71	1.86	1.92	2.07	2.13	2.19	2.32	2.39	2.46	2.53
	2,001	Above	1.94	2.05	2.23	2.30	2.48	2.55	2.63	2.79	2.87	2.96	3.05
Residential	Outside City												
	-	2,000	3.52	2.57	2.79	2.88	3.11	3.20	3.29	3.48	3.59	3.69	3.80
	2,001	Above	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44	4.58
Commercial	City		1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
Industrial	City		1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
Public Authorities	City		1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
Municipal	City		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
Tri County			1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278

2 Residential Monthly Water Bill - 5/8" Meter

		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
5,000 W	Total	$ 17.93	$ 18.87	$ 20.55	$ 21.18	$ 22.86	$ 23.53	$ 24.24	$ 25.70	$ 26.48	$ 27.26	$ 28.07
	Dollar Inc		0.94	1.68	0.63	1.68	0.67	0.71	1.46	0.78	0.80	0.81
	Percent Inc		5.2%	8.9%	3.1%	7.9%	2.9%	3.0%	6.0%	3.0%	3.0%	3.0%
10,000 W	Total	27.63	29.12	31.70	32.68	35.26	36.28	37.39	39.65	40.81	42.06	43.32
5,000 WW	Dollar Inc		1.49	2.58	0.98	2.58	1.02	1.11	2.26	1.16	1.25	1.26
	Percent Inc		5.4%	8.9%	3.1%	7.9%	2.9%	3.1%	6.0%	2.9%	3.1%	3.0%
20,000 W	Total	47.03	49.62	54.00	55.68	60.06	61.78	63.69	67.55	69.51	71.66	73.82
5,000 WW	Dollar Inc		2.59	4.38	1.68	4.38	1.72	1.91	3.86	1.96	2.15	2.16
	Percent Inc		5.5%	8.8%	3.1%	7.9%	2.9%	3.1%	6.1%	2.9%	3.1%	3.0%
30,000 W	Total	66.43	70.12	76.30	78.68	84.86	87.28	89.99	95.45	98.21	101.26	104.32
5,000 WW	Dollar Inc		3.69	6.18	2.38	6.18	2.42	2.71	5.46	2.76	3.05	3.06
	Percent Inc		5.6%	8.8%	3.1%	7.9%	2.9%	3.1%	6.1%	2.9%	3.1%	3.0%
50,000 W	Total	122.69	129.57	140.97	145.38	156.78	161.23	166.26	176.36	181.44	187.10	192.77
	Dollar Inc		6.88	11.40	4.41	11.40	4.45	5.03	10.10	5.08	5.66	5.67
	Percent Inc		5.6%	8.8%	3.1%	7.8%	2.8%	3.1%	6.1%	2.9%	3.1%	3.0%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3	WATER Revenues and Expenses -- CASH Basis												
	Water Revenues												
W.1	Residential	City	$ 2,187,308	$ 2,358,998	$ 2,513,536	$ 2,647,238	$ 2,805,696	$ 2,894,322	$ 3,022,971	$ 3,170,980	$ 3,271,703	$ 3,375,483	
W.2	Residential	Outside City	194,014	188,645	201,000	211,692	224,354	231,433	241,714	253,546	261,598	269,895	
W.3	Commercial	City	788,209	753,886	806,366	852,320	907,457	940,296	986,530	1,039,941	1,077,746	1,116,128	
W.4	Commercial	Outside City	14,054	13,654	14,516	15,251	16,142	16,627	17,342	18,175	18,727	19,282	
W.5	Industrial	City	832,196	856,884	910,183	955,683	1,011,141	1,042,325	1,086,519	1,135,927	1,169,293	1,205,666	
W.6	Industrial	Outside City	192,568	202,727	215,335	226,099	239,218	246,597	257,052	268,738	276,631	285,239	
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-	
W.8	Public Authorities	City	283,877	243,853	260,540	275,137	292,566	302,913	317,146	333,477	345,247	357,137	
W.9	Municipal	City	53,431	56,692	60,299	63,352	67,098	69,096	72,065	75,561	77,891	80,222	
W.10	Fire Protection	City	7,933	728	775	815	863	888	926	969	998	1,027	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
0	Other	City	-	-	-	-	-	-	-	-	-	-	
W.11	Tri County	Outside City	956,546	995,017	1,061,411	1,092,099	1,124,270	1,157,999	1,193,368	1,230,455	1,269,355	1,310,160	
	Water Rate Revenues		5,510,136	5,671,084	6,043,965	6,339,687	6,688,805	6,902,495	7,195,628	7,527,768	7,769,190	8,020,239	
	Water Non-Rate Revenues		308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505	
	Total Revenues		**5,819,068**	**6,284,064**	**6,675,334**	**6,989,997**	**7,358,625**	**7,592,409**	**7,906,240**	**8,259,698**	**8,523,078**	**8,796,744**	
	Total Operating		3,591,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,365,864	
	Net Revenues Available for Replacement Reserve/Debt Service		2,227,205	2,530,796	2,752,787	2,889,879	3,072,210	3,110,511	3,219,184	3,357,296	3,394,597	3,430,880	
	Debt Service -- Prin&Int		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	
	Debt Service -- Reserve		-	-	-	-	-	-	-	-	-	-	
	Total Debt Service		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	
	Net Revenues Available for Replacement Reserve		2,227,205	1,135,336	1,357,326	1,494,419	979,019	1,017,320	1,125,993	1,264,105	1,301,406	1,337,689	
	Replacement Reserve		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	
	Total Cost of Service		**5,247,863**	**6,804,728**	**6,974,008**	**5,995,579**	**6,879,606**	**7,075,089**	**7,280,247**	**7,495,594**	**7,721,671**	**7,959,055**	
	Net Cash Flow Available for Contingency		571,205	(520,664)	(298,674)	994,419	479,019	517,320	626,993	764,105	801,406	837,689	
			9.8%	-8.3%	-4.5%	14.2%	6.5%	6.8%	7.9%	9.3%	9.4%	9.5%	
	WATER Debt Coverage (NOTE: excludes reserve funding)		-	**1.81**	**1.97**	**2.07**	**1.47**	**1.49**	**1.54**	**1.60**	**1.62**	**1.64**	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
4	**Capital Project Funding Summary - WATER**													
	Beginning Balance			$ 6,342,462	$ 24,713,311	$ 25,105,076	$ 20,877,853	$ 28,249,910	$ 24,140,158	$ 19,787,961	$ 16,683,721	$ 13,517,395	$ 10,287,743	
	Plus Sources of Funds:													
	Interest	2.0%		126,849	494,266	502,102	417,557	564,998	482,803	395,759	333,674	270,348	205,755	
	Replacement Reserve			1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000	
	Long-Term Debt			20,000,000	-	-	10,000,000	-	-	-	-	-	-	
	Water Impact Fees			-	-	-	-	-	-	-	-	-	-	
	Total Sources	Total 2013-2018	39,056,575	21,782,849	2,150,266	2,158,102	10,917,557	1,064,998	982,803	895,759	833,674	770,348	705,755	
		Less 2013	(21,782,849)											
	Less Uses of Funds:	Net Total	17,273,726											
	Capital Improvement Plan -- WATER			3,412,000	1,758,501	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000	
	Ending Balance			**24,713,311**	**25,105,076**	**20,877,853**	**28,249,910**	**24,140,158**	**19,787,961**	**16,683,721**	**13,517,395**	**10,287,743**	**6,993,498**	
5	**Total Accounts**													
	Total Accounts			**12,497**	**12,529**	**12,561**	**12,593**	**12,625**	**12,657**	**12,689**	**12,721**	**12,753**	**12,785**	
	New Accounts				32	32	32	32	32	32	32	32	32	
	Avg. Annual Growth Rate				0.26%	0.26%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	
6	**Annual Water Consumption**													
W.1	Residential	City		594,082,000	595,268,681	596,455,361	597,642,042	598,828,723	600,015,403	601,202,084	602,388,765	603,575,445	604,762,126	
W.2	Residential	Outside City		33,622,000	33,689,255	33,756,510	33,823,766	33,891,021	33,958,276	34,025,531	34,092,786	34,160,042	34,227,297	
W.3	Commercial	City		283,579,000	285,303,321	287,027,643	288,751,964	290,476,285	292,200,606	293,924,928	295,649,249	297,373,570	299,097,891	
W.4	Commercial	Outside City		3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	
W.5	Industrial	City		513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	
W.6	Industrial	Outside City		81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	
W.7	Ind. Discounts	City		-	-	-	-	-	-	-	-	-	-	
W.8	Public Authorities	City		98,810,000	99,278,664	99,747,328	100,215,992	100,684,656	101,153,320	101,621,984	102,090,648	102,559,312	103,027,976	
W.9	Municipal	City		33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	
W.10	Fire Protection	City		242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	
0	Other	City		-	-	-	-	-	-	-	-	-	-	
0	Other	City		-	-	-	-	-	-	-	-	-	-	
0	Other	City		-	-	-	-	-	-	-	-	-	-	
0	Other	City		-	-	-	-	-	-	-	-	-	-	
W.11	Tri County	Outside City		549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	
	Total System			**2,192,021,000**	**2,195,467,921**	**2,198,914,842**	**2,202,361,763**	**2,205,808,685**	**2,209,255,606**	**2,212,702,527**	**2,216,149,448**	**2,219,596,369**	**2,223,043,290**	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WASTEWATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	**Wastewater Rates -- Residential**													
	Inside City													
	Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.66	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
	Usage Chg	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
		20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
2	**Residential Monthly Bill -- 5/8" Meter**													
	5,000 WW	Total		$ 17.03	$ 20.85	$ 25.53	$ 30.26	$ 32.55	$ 34.99	$ 36.04	$ 37.10	$ 38.22	$ 39.35	$ 40.53
		Dollar Inc			3.82	4.68	4.73	2.29	2.44	1.05	1.06	1.12	1.13	1.18
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	3.0%	3.0%
	10,000 WW	Total		29.98	36.70	44.93	53.26	57.30	61.59	63.44	65.30	67.27	69.25	71.33
		Dollar Inc			6.72	8.23	8.33	4.04	4.29	1.85	1.86	1.97	1.98	2.08
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	2.9%	3.0%
	20,000 WW	Total		55.88	68.40	83.73	99.26	106.80	114.79	118.24	121.70	125.37	129.05	132.93
		Dollar Inc			12.52	15.33	15.53	7.54	7.99	3.45	3.46	3.67	3.68	3.88
		Percent Inc			22.4%	22.4%	18.5%	7.6%	7.5%	3.0%	2.9%	3.0%	2.9%	3.0%
	30,000 WW	Total		77.88	95.40	116.83	138.46	148.90	160.09	164.94	169.80	174.87	180.05	185.43
		Dollar Inc			17.52	21.43	21.63	10.44	11.19	4.85	4.86	5.07	5.18	5.38
		Percent Inc			22.5%	22.5%	18.5%	7.5%	7.5%	3.0%	2.9%	3.0%	3.0%	3.0%
	50,000 WW	Total		121.88	149.40	183.03	216.86	233.10	250.69	258.34	266.00	273.87	282.05	290.43
		Dollar Inc			27.52	33.63	33.83	16.24	17.59	7.65	7.66	7.87	8.18	8.38
		Percent Inc			22.6%	22.5%	18.5%	7.5%	7.5%	3.1%	3.0%	3.0%	3.0%	3.0%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WASTEWATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

3 WASTEWATER Revenues and Expenses	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW Revenues											
Residential City	$ 1,727,670	$ 2,120,695	$ 2,563,620	$ 2,915,260	$ 3,141,346	$ 3,323,115	$ 3,429,716	$ 3,539,348	$ 3,653,041	$ 3,769,931	
Residential Outside City	89,844	110,395	133,587	152,065	164,023	173,687	179,437	185,355	191,497	197,817	
Commercial City	760,783	939,149	1,141,559	1,305,266	1,414,136	1,504,152	1,560,809	1,619,012	1,679,497	1,742,116	
Commercial Outside City	2,538	3,109	3,750	4,255	4,575	4,830	4,975	5,123	5,275	5,432	
Industrial City	1,213,551	1,488,398	1,795,697	2,036,026	2,188,522	2,311,832	2,382,256	2,452,793	2,525,455	2,600,985	
Industrial Outside City	34,646	42,493	51,266	58,127	62,481	66,001	68,011	70,025	72,100	74,256	
Ind. Discounts City	(51,881)	(63,158)	(75,937)	(85,830)	(92,125)	(97,128)	(99,903)	(103,292)	(106,680)	(110,068)	
Public Authorities	221,378	273,148	331,565	378,264	409,111	434,733	450,634	466,759	483,461	500,853	
WW Rate Revenues	3,998,730	4,914,229	5,945,106	6,763,453	7,292,070	7,721,222	7,975,938	8,235,123	8,503,646	8,781,323	
WW Non-Rate Revenues	72,955	75,144	77,398	79,720	82,111	84,575	87,112	89,725	92,417	95,190	
Total Revenues	**4,071,685**	**4,989,372**	**6,022,504**	**6,843,173**	**7,374,181**	**7,805,797**	**8,063,050**	**8,324,849**	**8,596,064**	**8,876,513**	
Operating Expenses	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,898	
Net Revenues Available for Replacement Reserve/Debt Service	1,234,203	2,024,346	2,923,739	3,604,148	3,988,039	4,265,319	4,360,640	4,452,511	4,545,378	4,638,616	
Debt Service -- Prin&Int	614,297	2,009,758	2,009,758	2,009,758	3,056,353	3,056,353	3,474,992	3,474,992	3,474,992	3,474,992	
Debt Service -- Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	
Total Debt Service	837,521	2,232,982	2,232,982	2,232,982	3,279,577	3,279,577	3,698,216	3,698,216	3,698,216	3,698,216	
Net Revenues Available for Replacement Reserve	396,682	(208,635)	690,757	1,371,167	708,462	985,742	662,425	754,295	847,163	940,400	
Replacement Reserve	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	
Total Cost of Service	**3,925,003**	**5,448,008**	**5,581,748**	**5,722,006**	**6,915,719**	**7,070,055**	**7,650,625**	**7,820,554**	**7,998,901**	**8,186,113**	
Net Cash Flow Available for Contingency	**146,682**	**(458,635)**	**440,757**	**1,121,167**	**458,462**	**735,742**	**412,425**	**504,295**	**597,163**	**690,400**	
	3.6%	-9.2%	7.3%	16.4%	6.2%	9.4%	5.1%	6.1%	6.9%	7.8%	
WASTEWATER Debt Coverage (NOTE: excludes reserve funding)	**2.01**	**1.01**	**1.45**	**1.79**	**1.30**	**1.40**	**1.25**	**1.28**	**1.31**	**1.33**	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

WASTEWATER Fund Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

4 **Capital Project Funding Summary -- WASTEWATER**

		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning Balance		$ 6,342,462	$ 12,915,921	$ 10,600,338	$ 5,743,019	$ 18,628,380	$ 15,142,197	$ 17,426,041	$ 14,263,221	$ 10,798,486	$ 7,264,455	
Plus Sources of Funds:												
Interest	2.0%		126,849	258,318	212,007	114,860	372,568	302,844	348,521	285,264	215,970	145,289
Replacement Reserve			250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Long-Term Debt			20,000,000	-	-	15,000,000	-	6,000,000	-	-	-	-
WW Impact Fees			-	-	-	-	-	-	-	-	-	-
Total Sources			20,791,007	1,574,318	1,528,007	16,430,860	1,688,568	7,618,844	837,180	535,264	465,970	395,289
Less Uses of Funds:												
Capital Improvement Plan -- WW			14,217,548	3,889,902	6,385,325	3,545,500	5,174,750	5,335,000	4,000,000	4,000,000	4,000,000	4,000,000
Ending Balance			**12,915,921**	**10,600,338**	**5,743,019**	**18,628,380**	**15,142,197**	**17,426,041**	**14,263,221**	**10,798,486**	**7,264,455**	**3,659,744**

5 **Total Accounts**

Wastewater Accounts											
Total Accounts	**11,100**	**11,132**	**11,164**	**11,196**	**11,228**	**11,260**	**11,292**	**11,324**	**11,356**	**11,388**
New Accounts		32	32	32	32	32	32	32	32	32
Avg. Annual Growth Rate		0.29%	0.29%	0.29%	0.29%	0.28%	0.28%	0.28%	0.28%	0.28%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Revenue and Expense Summary -- CASH Basis

Scen: **2014 12 12 -- Scen 2 -- Conservation**

1 **TOTAL Revenues and Expenses -- CASH Basis**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Revenues										
Water Rate Revenues	$ 5,510,136	$ 5,671,084	$ 6,043,965	$ 6,339,687	$ 6,688,805	$ 6,902,495	$ 7,195,628	$ 7,527,768	$ 7,769,190	$ 8,020,239
WW Rate Revenues	3,998,730	4,914,229	5,945,106	6,763,453	7,292,070	7,721,222	7,975,938	8,235,123	8,503,646	8,781,323
Non-Rate Revenues	381,887	688,124	708,767	730,030	751,931	774,489	797,724	821,656	846,305	871,694
Total Revenues	9,890,753	11,273,436	12,697,839	13,833,170	14,732,806	15,398,206	15,969,290	16,584,547	17,119,141	17,673,257
Operating Expenses	6,429,345	6,718,293	7,021,313	7,339,142	7,672,556	8,022,375	8,389,465	8,774,740	9,179,166	9,603,781
Net Revenues Available for Capital Outlays/Debt Service	3,461,408	4,555,143	5,676,525	6,494,028	7,060,250	7,375,830	7,579,825	7,809,807	7,939,976	8,069,496
Debt Service -- Prin&Int	614,297	3,405,219	3,405,219	3,405,219	5,149,545	5,149,545	5,568,183	5,568,183	5,568,183	5,568,183
Debt Service -- Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
Total Debt Service	837,521	3,628,443	3,628,443	3,628,443	5,372,769	5,372,769	5,791,407	5,791,407	5,791,407	5,791,407
Net Revenues Available for Capital Outlays	2,623,887	926,700	2,048,083	2,865,585	1,687,481	2,003,062	1,788,418	2,018,400	2,148,569	2,278,089
Capital Outlays	1,906,000	1,906,000	1,906,000	750,000	750,000	750,000	750,000	750,000	750,000	750,000
Total Cost of Service	**9,172,866**	**12,252,736**	**12,555,756**	**11,717,585**	**13,795,325**	**14,145,144**	**14,930,872**	**15,316,147**	**15,720,572**	**16,145,168**
Net Cash Flow Available for Contingency	**717,887**	**(979,300)**	**142,083**	**2,115,585**	**937,481**	**1,253,062**	**1,038,418**	**1,268,400**	**1,398,569**	**1,528,089**
Total Debt Coverage	**5.63**	**1.34**	**1.67**	**1.91**	**1.37**	**1.43**	**1.36**	**1.40**	**1.43**	**1.45**
Ending Cash Balance	717,887	(261,412)	(119,330)	1,996,256	2,933,737	4,186,799	5,225,217	6,493,616	7,892,185	9,420,275
Operating Expense/Net Cash Balance Ratio		(0.04)	(0.02)	0.27	0.38	0.52	0.62	0.74	0.86	0.98

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Revenue and Expense Summary -- CASH Basis
Scen: **2014 12 12 -- Scen 2 -- Conservation**

2 WATER Revenues and Expenses - CASH Basis

Water Revenues

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Water Monthly Rates											
W.1	Residential	City	$ 2,187,308	$ 2,358,998	$ 2,513,538	$ 2,647,238	$ 2,805,696	$ 2,894,322	$ 3,022,971	$ 3,170,980	$ 3,271,703	$ 3,375,483
W.2	Residential	Outside City	194,014	188,645	201,000	211,692	224,354	231,433	241,714	253,546	261,598	269,895
W.3	Commercial	City	788,209	753,886	806,366	852,320	907,457	940,296	986,530	1,039,941	1,077,746	1,116,128
W.4	Commercial	Outside City	14,054	13,654	14,516	15,251	16,142	16,627	17,342	18,175	18,727	19,282
W.5	Industrial	City	832,196	856,884	910,183	955,683	1,011,141	1,042,325	1,086,519	1,135,927	1,169,293	1,205,666
W.6	Industrial	Outside City	192,568	202,727	215,335	226,099	239,218	246,597	257,052	268,738	276,631	285,239
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	283,877	243,853	260,540	275,137	292,568	302,913	317,146	333,477	345,247	357,137
W.9	Municipal	City	53,431	56,692	60,299	63,352	67,098	69,096	72,065	75,561	77,891	80,222
W.10	Fire Protection	City	7,933	726	775	815	863	888	925	969	998	1,027
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	956,546	995,017	1,061,411	1,092,099	1,124,270	1,157,999	1,193,366	1,230,455	1,269,355	1,310,160
	Water Rate Revenues		5,510,136	5,671,084	6,043,965	6,339,687	6,688,805	6,902,495	7,195,628	7,527,768	7,769,190	8,020,239
	Water Non-Rate Revenues		306,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505
	Total Revenues		**5,819,068**	**6,284,064**	**6,675,334**	**6,989,997**	**7,358,625**	**7,592,409**	**7,906,240**	**8,259,698**	**8,523,078**	**8,796,744**
	Total Operating		3,591,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,365,864
	Net Revenues Available for Capital Outlays/Debt Service		2,227,205	2,530,798	2,752,787	2,889,879	3,072,210	3,110,511	3,219,184	3,357,296	3,394,597	3,430,880
	Debt Service -- Prin&Int		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
	Debt Service -- Reserve		-	-	-	-	-	-	-	-	-	-
	Total Debt Service		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
	Net Revenues Available for Capital Outlays		2,227,205	1,135,336	1,357,326	1,494,419	979,019	1,017,320	1,125,993	1,264,105	1,301,406	1,337,689
	Capital Outlays		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
	Total Cost of Service		**5,247,863**	**6,804,728**	**6,974,008**	**5,995,579**	**6,879,606**	**7,075,089**	**7,280,247**	**7,495,594**	**7,721,671**	**7,959,055**
	Net Cash Flow Available for Contingency		571,205	(520,664)	(298,674)	994,419	479,019	517,320	625,993	764,105	801,406	837,689
			9.8%	-8.3%	-4.5%	14.2%	6.5%	6.8%	7.9%	9.3%	9.4%	9.5%
	WATER Debt Coverage		-	**1.81**	**1.97**	**2.07**	**1.47**	**1.49**	**1.54**	**1.60**	**1.62**	**1.64**
	(NOTE: excludes reserve funding)											

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Revenue and Expense Summary -- CASH Basis

Scen: **2014 12 12 -- Scen 2 -- Conservation**

3	WASTEWATER Revenues and Expenses	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	WW Revenues										
	Residential City	$ 1,727,670	$ 2,120,695	$ 2,563,620	$ 2,915,260	$ 3,141,346	$ 3,323,115	$ 3,429,718	$ 3,539,348	$ 3,653,041	$ 3,769,931
	Residential Outside City	89,844	110,395	133,587	152,065	164,023	173,687	179,437	185,355	191,497	197,817
	Commercial City	760,783	939,149	1,141,559	1,305,266	1,414,136	1,504,152	1,560,809	1,619,012	1,679,497	1,742,116
	Commercial Outside City	2,538	3,109	3,750	4,255	4,575	4,830	4,975	5,123	5,275	5,432
	Industrial City	1,213,551	1,488,398	1,795,697	2,036,026	2,188,522	2,311,832	2,382,256	2,452,793	2,525,455	2,600,985
	Industrial Outside City	34,646	42,493	51,266	58,127	62,481	66,001	68,011	70,025	72,100	74,256
	Ind. Discounts City	(51,681)	(63,158)	(75,937)	(85,830)	(92,125)	(97,128)	(99,903)	(103,292)	(106,660)	(110,068)
	Public Authorities	221,378	273,148	331,565	378,284	409,111	434,733	450,634	466,759	483,461	500,853
	WW Rate Revenues	3,998,730	4,914,229	5,945,106	6,763,453	7,292,070	7,721,222	7,975,938	8,235,123	8,503,646	8,781,323
	WW Non-Rate Revenues	72,955	75,144	77,398	79,720	82,111	84,575	87,112	89,725	92,417	95,190
	Total Revenues	**4,071,685**	**4,989,372**	**6,022,504**	**6,843,173**	**7,374,181**	**7,805,797**	**8,063,050**	**8,324,849**	**8,596,064**	**8,876,513**
	Operating Expenses	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,898
	Net Revenues Available for Debt Service	1,234,203	2,024,346	2,923,739	3,604,148	3,988,039	4,265,319	4,360,640	4,452,511	4,545,378	4,638,616
	Debt Service -- Prin&Int	614,297	2,009,758	2,009,758	2,009,758	3,056,353	3,056,353	3,474,992	3,474,992	3,474,992	3,474,992
	Debt Service -- Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
	Total Debt Service	837,521	2,232,982	2,232,982	2,232,982	3,279,577	3,279,577	3,698,216	3,698,216	3,698,216	3,698,216
	Net Revenues Available for Capital Outlays	396,682	(208,635)	690,757	1,371,167	708,462	985,742	662,425	754,295	847,163	940,400
	Capital Outlays	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
	Total Cost of Service	**3,925,003**	**5,448,008**	**5,581,748**	**5,722,006**	**6,915,719**	**7,070,055**	**7,650,625**	**7,820,554**	**7,998,901**	**8,186,113**
	Net Cash Flow Available for Contingency	**146,682**	**(458,635)**	**440,757**	**1,121,167**	**458,462**	**735,742**	**412,425**	**504,295**	**597,163**	**690,400**
	WASTEWATER Debt Coverage	**2.01**	**1.01**	**1.45**	**1.79**	**1.30**	**1.40**	**1.25**	**1.28**	**1.31**	**1.33**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Total Expense:

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Division -- CASH BASIS										
NON-RATE REVENUES										
Total	$ 308,932	$ 612,980	$ 631,369	$ 650,310	$ 669,820	$ 689,914	$ 710,612	$ 731,930	$ 753,888	$ 776,505
OPERATING EXPENSES										
TOTAL OPERATING EXPENSES										
Supply	$ 159,313	$ 166,745	$ 174,542	$ 182,722	$ 191,307	$ 200,315	$ 209,770	$ 219,693	$ 230,110	$ 241,046
Pumping	211,949	223,344	235,379	248,091	261,519	275,704	290,693	306,530	323,267	340,956
Treatment	1,216,383	1,269,279	1,324,659	1,382,646	1,443,375	1,506,982	1,573,616	1,643,430	1,716,587	1,793,260
Transmission & Distribution	85,306	88,176	91,149	94,230	97,423	100,732	104,162	107,719	111,406	115,231
Maintenance	665,438	696,862	729,882	764,585	801,061	839,408	879,728	922,129	966,725	1,013,637
Customer Account	378,763	396,188	414,486	433,704	453,893	475,104	497,394	520,821	545,447	571,338
Administration and General	874,711	912,673	952,451	994,139	1,037,838	1,083,652	1,131,694	1,182,081	1,234,936	1,290,396
Depreciation and Amortization	-	-	-	-	-	-	-	-	-	-
Total	3,591,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,365,864
CAPITAL OUTLAYS										
Total	$ 1,656,000	$ 1,656,000	$ 1,656,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
DEBT SERVICE -- CURRENT										
Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-	-	-	-	-
Reserve	-	-	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-	-	-
DEBT SERVICE -- FUTURE										
Principal	$ -	$ 523,461	$ 544,399	$ 566,175	$ 850,553	$ 884,575	$ 919,958	$ 956,756	$ 995,026	$ 1,034,827
Interest	-	872,000	851,062	829,286	1,242,639	1,208,616	1,173,234	1,136,435	1,098,165	1,058,364
Reserve	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
TOTAL COST OF SERVICE										
Operating	$ 3,591,863	$ 3,753,267	$ 3,922,548	$ 4,100,118	$ 4,286,414	$ 4,481,898	$ 4,687,056	$ 4,902,402	$ 5,128,480	$ 5,365,864
Capital Outlays	1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
Debt service -- Current	-	-	-	-	-	-	-	-	-	-
Debt service -- Future	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
Total	5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Wastewater Division -- CASH BASIS

	Total Expense 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
NON-RATE REVENUES										
Total	$ 72,955	$ 75,144	$ 77,398	$ 79,720	$ 82,111	$ 84,575	$ 87,112	$ 89,725	$ 92,417	$ 95,190
OPERATING EXPENSES										
TOTAL OPERATING EXPENSES										
Pumping	$ 210,914	$ 220,172	$ 229,861	$ 240,003	$ 250,620	$ 261,737	$ 273,376	$ 285,565	$ 298,331	$ 311,702
Treatment	992,528	1,039,838	1,089,526	1,141,714	1,196,537	1,254,132	1,314,646	1,378,234	1,445,059	1,515,294
Collection	470,700	493,017	516,468	541,116	567,025	594,263	622,904	653,024	684,704	718,031
Customer Accounts	231,146	241,543	252,455	263,910	275,938	288,569	301,836	315,775	330,422	345,816
Administration	806,351	838,098	871,228	905,810	941,913	979,612	1,018,985	1,060,113	1,103,084	1,147,989
Pretreatment	125,843	132,358	139,227	146,470	154,108	162,165	170,662	179,627	189,085	199,065
Depreciation and Amortization	-	-	-	-	-	-	-	-	-	-
Total	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,898
CAPITAL OUTLAYS										
Total	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
DEBT SERVICE -- CURRENT										
Principal	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297
Interest	-	-	-	-	-	-	-	-	-	-
Reserve	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
TOTAL	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
DEBT SERVICE -- FUTURE										
Principal	$ -	$ 523,460.8	$ 544,399.2	$ 566,175.2	$ 981,417.8	$ 1,020,674.5	$ 1,218,539.7	$ 1,267,281.3	$ 1,317,972.6	$ 1,370,691.5
Interest	-	872,000	851,062	829,286	1,460,639	1,421,382	1,642,155	1,593,413	1,542,722	1,490,003
Reserve	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
TOTAL COST OF SERVICE										
Operating	$ 2,837,482	$ 2,965,026	$ 3,098,766	$ 3,239,024	$ 3,386,142	$ 3,540,477	$ 3,702,409	$ 3,872,338	$ 4,050,685	$ 4,237,898
Capital Outlays	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Debt service -- Current	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
Debt service -- Future	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
Total	3,925,003	5,448,008	5,581,748	5,722,006	6,915,719	7,070,055	7,650,625	7,820,554	7,998,901	8,186,113

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: **2014 12 12 -- Scen 2 -- Conservation**

Water Rates

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Month of Adjustment (Jul = 1)				7	7	7	7	7	7	7	7	7	7
Outside City Premium			50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
Annual Adjustment				2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Monthly Charge				7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.1	Residential	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.2	Residential	Outside City		na	na	na	na	na	na	na	na	na	na
W.3	Commercial	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.4	Commercial	Outside City		na	na	na	na	na	na	na	na	na	na
W.5	Industrial	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.6	Industrial	Outside City		na	na	na	na	na	na	na	na	na	na
W.7	Ind. Discounts	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.8	Public Authorities	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.9	Municipal	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.10	Fire Protection	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other	City		7.00%	9.00%	3.00%	6.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.11	Tri County	Outside City		na	na	na	na	na	na	na	na	na	na

WATER Monthly Charge

W.1	Residential	City												
	Base Charge	5/8" -- 3/4"		$ 8.69	$ 9.30	$ 10.14	$ 10.44	$ 11.28	$ 11.62	$ 11.97	$ 12.69	$ 13.07	$ 13.46	$ 13.86
	Base Charge	3/4"		8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	1"		12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	1 1/2"		22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	Base Charge	2"		29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	3"		49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	4"		157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	6"		194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.71	1.71	1.86	1.92	2.07	2.13	2.19	2.32	2.39	2.46	2.53
		2,001	5,000	1.94	2.05	2.23	2.30	2.48	2.55	2.63	2.79	2.87	2.96	3.05
		5,001	20,000	1.94	2.25	2.45	2.52	2.72	2.80	2.88	3.05	3.14	3.23	3.33
		20,001	Above	1.94	2.25	2.45	2.52	2.72	2.80	2.88	3.05	3.14	3.23	3.33
W.2	Residential	Outside City												
	Base Charge	5/8" -- 3/4"		$ 13.04	$ 13.95	$ 15.21	$ 15.66	$ 16.92	$ 17.43	$ 17.96	$ 19.04	$ 19.61	$ 20.19	$ 20.79
	Base Charge	3/4"		13.04	13.95	15.21	15.66	16.92	17.43	17.96	19.04	19.61	20.19	20.79
	Base Charge	1"		18.05	19.31	21.05	21.68	23.42	24.12	24.84	26.33	27.12	27.93	28.77
	Base Charge	1 1/2"		34.29	36.69	39.99	41.19	44.49	45.83	47.21	50.04	51.54	53.09	54.68
	Base Charge	2"		44.99	48.14	52.47	54.05	58.37	60.12	61.92	65.64	67.61	69.63	71.72
	Base Charge	3"		73.80	78.96	86.07	88.65	95.75	98.61	101.57	107.66	110.88	114.21	117.63
	Base Charge	4"		236.22	252.75	275.51	283.77	306.47	315.66	325.13	344.64	354.98	365.63	376.59
	Base Charge	6"		291.39	311.79	339.86	350.06	378.06	389.40	401.09	425.15	437.90	451.04	464.57
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	3.52	2.57	2.79	2.88	3.11	3.20	3.29	3.48	3.59	3.69	3.80
		2,001	5,000	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44	4.58
		5,001	20,000	3.90	3.38	3.68	3.78	4.08	4.20	4.32	4.58	4.71	4.85	5.00
		10,001	Above	3.90	3.38	3.68	3.78	4.08	4.20	4.32	4.58	4.71	4.85	5.00

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: **2014 12 12 -- Scen 2 -- Conservation**

W/S	Commercial	City		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Base Charge	5/8" -- 3/4"		$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	3/4"		8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	1"		12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	1 1/2"		22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	Base Charge	2"		29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	3"		49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	4"		157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	6"		194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
		2,001	10,000	1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
		10,001	20,000	1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
		10,001	Above	1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75	2.83
W/S	Commercial	Outside city												
	Base Charge	5/8" -- 3/4"		$ 13.04	$ 13.95	$ 15.21	$ 15.66	$ 16.92	$ 17.43	$ 17.96	$ 19.04	$ 19.61	$ 20.19	$ 20.78
	Base Charge	3/4"		13.04	13.95	15.21	15.66	16.92	17.43	17.96	19.04	19.61	20.19	20.78
	Base Charge	1"		18.05	19.31	21.05	21.68	23.42	24.12	24.84	26.33	27.12	27.93	28.77
	Base Charge	1 1/2"		34.29	36.69	39.99	41.19	44.49	45.83	47.21	50.04	51.54	53.09	54.68
	Base Charge	2"		44.99	48.14	52.47	54.05	58.37	60.12	61.92	65.64	67.61	69.63	71.72
	Base Charge	3"		73.80	78.96	86.07	88.65	95.75	98.61	101.57	107.66	110.88	114.21	117.63
	Base Charge	4"		236.22	252.75	275.51	283.77	306.47	315.66	325.13	344.64	354.98	365.63	376.59
	Base Charge	6"		291.39	311.79	339.86	350.06	378.06	389.40	401.09	425.15	437.90	451.04	464.57
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	2.67	2.85	3.11	3.20	3.45	3.56	3.66	3.89	4.01	4.13	4.25
		2,001	10,000	2.67	2.85	3.11	3.20	3.45	3.56	3.66	3.89	4.01	4.13	4.25
		10,001	20,000	2.67	2.85	3.11	3.20	3.45	3.56	3.66	3.89	4.01	4.13	4.25
		10,001	Above	2.67	2.85	3.11	3.20	3.45	3.56	3.66	3.89	4.01	4.13	4.25
W/S	Industrial	City												
	Base Charge	5/8" -- 3/4"		$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	3/4"		8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	1"		12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	1 1/2"		22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	Base Charge	2"		29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	3"		49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	4"		157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	6"		194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
		2,001	10,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
		10,001	20,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
		10,001	Above	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: **2014 12 12 -- Scen 2 -- Conservation**

W/S Industrial	Outside City		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	5/8" -- 3/4"		$ 13.04	$ 13.95	$ 15.21	$ 15.66	$ 16.92	$ 17.43	$ 17.96	$ 19.04	$ 19.61	$ 20.19	$ 20.79
Base Charge	3/4"		13.04	13.95	15.21	15.66	16.92	17.43	17.96	19.04	19.61	20.19	20.79
Base Charge	1"		18.05	19.31	21.05	21.68	23.42	24.12	24.84	26.33	27.12	27.93	28.77
Base Charge	1 1/2"		34.29	36.69	39.99	41.19	44.49	45.83	47.21	50.04	51.54	53.09	54.68
Base Charge	2"		44.99	48.14	52.47	54.05	58.37	60.12	61.92	65.64	67.61	69.63	71.72
Base Charge	3"		73.60	78.96	86.07	88.65	95.75	98.61	101.57	107.66	110.88	114.21	117.63
Base Charge	4"		236.22	252.75	275.51	283.77	306.47	315.66	325.13	344.64	354.98	365.63	376.59
Base Charge	6"		291.39	311.79	339.86	350.06	378.06	389.40	401.09	425.15	437.90	451.04	464.57
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44	3.54
	2,001	10,000	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44	3.54
	10,001	20,000	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44	3.54
	10,001	Above	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44	3.54

W/S Ind. Discounts	City												
Base Charge	5/8" -- 3/4"		$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge	3/4"		8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge	1"		12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
Base Charge	1 1/2"		22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
Base Charge	2"		29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
Base Charge	3"		49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
Base Charge	4"		157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
Base Charge	6"		194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
	2,001	10,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
	10,001	20,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29	2.36
	10,001	Above	1.49	1.59	1.73	1.78	1.82	1.98	2.04	2.16	2.22	2.29	2.36

W/S Split Authorities	City												
Base Charge	5/8" -- 3/4"		$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge	3/4"		8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge	1"		12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
Base Charge	1 1/2"		22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
Base Charge	2"		29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
Base Charge	3"		49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
Base Charge	4"		157.48	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
Base Charge	6"		194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
	2,001	10,000	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
	10,001	20,000	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08	3.17
	10,001	Above	1.99	2.13	2.32	2.39	2.58	2.68	2.74	2.90	2.99	3.08	3.17

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: **2014 12 12 -- Scen 2 -- Conservation**

W,S	Municipal	City			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Base Charge	5/8" -- 3/4"		$	8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	3/4"			8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	1"			12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	1 1/2"			22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	Base Charge	2"			29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	3"			49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	4"			157.46	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	6"			194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	8"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"			-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
		2,001	10,000		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
		10,001	20,000		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
		10,001	Above		1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38	2.45
W,S	Fire Protection	City													
	Base Charge	5/8" -- 3/4"		$	8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	3/4"			8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	1"			12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	1 1/2"			22.86	24.46	26.66	27.46	29.66	30.55	31.47	33.36	34.36	35.39	36.45
	Base Charge	2"			29.99	32.09	34.98	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	3"			49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	4"			157.46	168.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	6"			194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	8"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"			-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000		1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02	2.08	2.14
		2,001	10,000		1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02	2.08	2.14
		10,001	20,000		1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02	2.08	2.14
		10,001	Above		1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02	2.08	2.14
W	Other	City													
	Base Charge	5/8" -- 3/4"		$	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	3/4"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	1"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	1 1/2"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	2"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	3"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	4"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	6"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	8"			-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"			-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000		-	-	-	-	-	-	-	-	-	-	-
		2,001	10,000		-	-	-	-	-	-	-	-	-	-	-
		10,001	20,000		-	-	-	-	-	-	-	-	-	-	-
		10,001	Above		-	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 – Scen 2 -- Conservation

0 Outside	City		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	5/8" – 3/4"		$ -	-	-	-	-	-	-	-	-	-	-
Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	-	-	-	-	-	-	-	-	-	-	-
	2,001	10,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	20,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	Above	-	-	-	-	-	-	-	-	-	-	-

0 Other	City												
Base Charge	5/8" – 3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	-	-	-	-	-	-	-	-	-	-	-
	2,001	10,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	20,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	Above	-	-	-	-	-	-	-	-	-	-	-

0 Other	City												
Base Charge	5/8" – 3/4"		$ -	-	-	-	-	-	-	-	-	-	-
Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2,000	-	-	-	-	-	-	-	-	-	-	-
	2,001	10,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	20,000	-	-	-	-	-	-	-	-	-	-	-
	10,001	Above	-	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1	**In Town**	**Outside City**												
	Base Charge	5/8" -- 3/4"		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Base Charge	3/4"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	1"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	1 1/2"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	2"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	3"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	4"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	6"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	8"		-	-	-	-	-	-	-	-	-	-	-
	Base Charge	10"		-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
		2,001	10,000	1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
		10,001	20,000	1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
		10,001	Above	1.7400	1.7400	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
Wastewater Monthly Charges														
	Annual Adjustment			Draft Rpt	22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW1	Residential City				22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW2	Residential Outside City				na	na	na	na	na	na	na	na	na	na
WW3	Commercial City				22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW4	Commercial Outside City				na	na	na	na	na	na	na	na	na	na
WW5	Industrial City				22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW6	Industrial Outside City				na	na	na	na	na	na	na	na	na	na
WW7	Ind. Discounts City				22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW8	Public Authorities				22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%
WW1	**Residential City**													
	Base Charge			$ 8.87	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
	Usage Charge	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
		20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
WW2	**Residential Outside City**													
	Base Charge			$ 10.01	$ 12.26	$ 15.02	$ 17.78	$ 19.13	$ 20.57	$ 21.18	$ 21.81	$ 22.47	$ 23.15	$ 23.84
	Usage Charge	1,001	20,000	3.89	4.76	5.82	6.90	7.43	7.98	8.22	8.46	8.72	8.97	9.24
		20,001	Above	3.30	4.05	4.97	5.88	6.32	6.80	7.01	7.22	7.43	7.65	7.88

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW3 Commercial City													
Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
Usage Charge	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
	20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
WW4 Commercial Outside City													
Base Charge			$ 10.01	$ 12.26	$ 15.02	$ 17.79	$ 19.13	$ 20.57	$ 21.18	$ 21.81	$ 22.47	$ 23.15	$ 23.84
Usage Charge	1,001	20,000	3.89	4.76	5.82	6.90	7.43	7.98	8.22	8.46	8.72	8.97	9.24
	20,001	Above	3.30	4.05	4.97	5.88	6.32	6.80	7.01	7.22	7.43	7.65	7.88
WW5 Industrial City													
Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
Usage Charge	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
	20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25
WW6 Industrial Outside City													
Base Charge			$ 10.01	$ 12.26	$ 15.02	$ 17.79	$ 19.13	$ 20.57	$ 21.18	$ 21.81	$ 22.47	$ 23.15	$ 23.84
Usage Charge	1,001	20,000	3.89	4.76	5.82	6.90	7.43	7.98	8.22	8.46	8.72	8.97	9.24
	20,001	Above	3.30	4.05	4.97	5.88	6.32	6.80	7.01	7.22	7.43	7.65	7.88
WW7 Ind. Discounts City													
Base Charge		-15.6%	$ (1.05)	$ (1.28)	$ (1.58)	$ (1.87)	$ (2.01)	$ (2.16)	$ (2.22)	$ (2.29)	$ (2.36)	$ (2.43)	$ (2.50)
Usage Charge	1,001	20,000	$ (0.41)	(0.50)	(0.61)	(0.72)	(0.77)	(0.83)	(0.85)	(0.88)	(0.91)	(0.94)	(0.97)
	20,001	Above	$ (0.35)	(0.43)	(0.53)	(0.63)	(0.68)	(0.73)	(0.75)	(0.77)	(0.79)	(0.81)	(0.83)
WW8 Public Authorities													
Base Charge			$ 6.67	$ 8.17	$ 10.01	$ 11.86	$ 12.75	$ 13.71	$ 14.12	$ 14.54	$ 14.98	$ 15.43	$ 15.89
Usage Charge	1,001	20,000	2.59	3.17	3.88	4.60	4.95	5.32	5.48	5.64	5.81	5.98	6.16
	20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.10	5.25

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Summary of Results - Rate Calculator

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenues Less Revenue Requirement											
Water		571,205	(520,664)	(298,674)	994,419	479,019	517,320	625,993	764,105	801,406	837,689
Wastewater		146,682	(458,635)	440,757	1,121,167	458,462	735,742	412,425	504,295	597,163	890,460
Total		717,887	(979,300)	142,083	2,115,586	937,481	1,253,062	1,038,418	1,268,400	1,398,569	1,728,149
		7.5%	-9.2%	1.2%	18.0%	6.7%	8.5%	6.8%	8.0%	8.5%	9.9%
Debt Coverage Calculation											
Water		-	1.81	1.97	2.07	1.47	1.49	1.54	1.60	1.62	1.64
Wastewater		2.01	1.01	1.45	1.79	1.30	1.40	1.25	1.28	1.31	1.33
Total		5.63	1.34	1.67	1.91	1.37	1.43	1.36	1.40	1.43	1.45
WATER Rate Revenues											
W.1 **Residential**	**City**										
	Base Charge	$ 1,074,642	$ 1,161,764	$ 1,236,267	$ 1,304,167	$ 1,383,278	$ 1,427,784	$ 1,491,909	$ 1,565,312	$ 1,615,291	$ 1,666,678
	Volume Charge	1,112,666	1,197,234	1,275,271	1,343,051	1,422,418	1,466,538	1,531,061	1,605,667	1,656,412	1,708,806
	Total	$ 2,187,308	$ 2,358,998	$ 2,513,538	$ 2,647,238	$ 2,805,696	$ 2,894,322	$ 3,022,971	$ 3,170,980	$ 3,271,703	$ 3,375,483
	Scen 2	$ 2,155,462	$ 2,225,432	$ 2,296,931	$ 2,371,217	$ 2,449,550	$ 2,530,503	$ 2,613,045	$ 2,765,062	$ 3,022,153	$ 3,223,757
W.2 **Residential**	**Outside City**										
	Base Charge	$ 80,464	$ 87,009	$ 92,739	$ 97,876	$ 103,600	$ 106,934	$ 111,737	$ 117,235	$ 120,978	$ 124,827
	Volume Charge	113,530	101,636	108,261	114,018	120,754	124,500	129,976	136,311	140,620	145,068
	Total	$ 194,014	$ 188,645	$ 201,000	$ 211,892	$ 224,354	$ 231,433	$ 241,714	$ 253,546	$ 261,598	$ 269,895
	Scen 2	191,441	177,874	183,491	189,325	195,488	201,860	208,348	220,366	240,745	256,687
W.3 **Commercial**	**City**										
	Base Charge	$ 269,260	$ 191,601	$ 205,043	$ 216,825	$ 230,889	$ 239,258	$ 250,983	$ 264,354	$ 273,847	$ 283,639
	Volume Charge	518,950	562,265	601,323	635,495	676,568	701,038	735,547	775,587	803,900	832,489
	Total	$ 788,209	$ 753,866	$ 806,366	$ 852,320	$ 907,457	$ 940,296	$ 986,530	$ 1,039,941	$ 1,077,746	$ 1,116,128
W.4 **Commercial**	**Outside City**										
	Base Charge	$ 4,293	$ 3,141	$ 3,341	$ 3,512	$ 3,718	$ 3,830	$ 3,994	$ 4,182	$ 4,307	$ 4,435
	Volume Charge	9,761	10,512	11,175	11,739	12,424	12,797	13,348	13,993	14,420	14,846
	Total	$ 14,054	$ 13,654	$ 14,516	$ 15,251	$ 16,142	$ 16,627	$ 17,342	$ 18,175	$ 18,727	$ 19,282
W.5 **Industrial**	**City**										
	Base Charge	$ 45,233	$ 9,978	$ 10,614	$ 11,157	$ 11,810	$ 12,166	$ 12,687	$ 13,285	$ 13,682	$ 14,090
	Volume Charge	786,963	846,905	899,569	944,526	999,331	1,030,159	1,073,832	1,122,642	1,155,611	1,191,576
	Total	$ 832,196	$ 856,884	$ 910,183	$ 955,683	$ 1,011,141	$ 1,042,325	$ 1,086,519	$ 1,135,927	$ 1,169,293	$ 1,205,666
W.6 **Industrial**	**Outside City**										
	Base Charge	$ 5,320	$ 1,216	$ 1,293	$ 1,360	$ 1,439	$ 1,482	$ 1,546	$ 1,619	$ 1,667	$ 1,717
	Volume Charge	187,249	201,511	214,042	224,739	237,779	245,114	255,506	267,120	274,964	283,522
	Total	$ 192,568	$ 202,727	$ 215,335	$ 226,099	$ 239,218	$ 246,597	$ 257,052	$ 268,738	$ 276,631	$ 285,239
W.7 **Ind. Discounts**	**City**										
	Base Charge	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Volume Charge	-	-	-	-	-	-	-	-	-	-
	Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
W.8 **Public Authorities**	**City**										
	Base Charge	$ 61,481	$ 24,530	$ 26,217	$ 27,667	$ 29,445	$ 30,474	$ 31,927	$ 33,586	$ 34,749	$ 35,947
	Volume Charge	202,396	219,323	234,323	247,450	263,123	272,440	285,219	299,891	310,498	321,190
	Total	$ 263,877	$ 243,853	$ 260,540	$ 275,137	$ 292,568	$ 302,913	$ 317,146	$ 333,477	$ 345,247	$ 357,137
W.9 **Municipal**	**City**										
	Base Charge	$ 1,279	$ 347	$ 370	$ 388	$ 411	$ 424	$ 442	$ 463	$ 476	$ 491
	Volume Charge	52,152	56,344	59,930	62,963	66,685	68,672	71,623	75,098	77,415	79,731
	Total	$ 53,431	$ 56,692	$ 60,299	$ 63,352	$ 67,096	$ 69,096	$ 72,065	$ 75,561	$ 77,891	$ 80,222

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: **2014 12 12 -- Scen 2 -- Conservation**

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.10	Fire Protection	City											
		Base Charge		$ 7,597	$ 367	$ 390	$ 410	$ 434	$ 447	$ 466	$ 488	$ 503	$ 518
		Volume Charge		336	362	385	405	429	441	459	480	495	509
		Total		$ 7,933	$ 728	$ 775	$ 815	$ 863	$ 888	$ 925	$ 969	$ 998	$ 1,027
0	Other	City											
		Base Charge		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Volume Charge		-	-	-	-	-	-	-	-	-	-
		Total		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
0	Other	City											
		Base Charge		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Volume Charge		-	-	-	-	-	-	-	-	-	-
		Total		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
0	Other	City											
		Base Charge		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Volume Charge		-	-	-	-	-	-	-	-	-	-
		Total		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
0	Other	City											
		Base Charge		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Volume Charge		-	-	-	-	-	-	-	-	-	-
		Total		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
W.11	Tri County	Outside City											
		Base Charge		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Volume Charge		956,546	995,017	1,061,411	1,092,099	1,124,270	1,157,999	1,193,366	1,230,455	1,269,355	1,310,160
		Total		$ 956,546	$ 995,017	$ 1,061,411	$ 1,092,099	$ 1,124,270	$ 1,157,999	$ 1,193,366	$ 1,230,455	$ 1,269,355	$ 1,310,160
	Total Water Revenue			$ 5,510,138	$ 5,871,084	$ 6,043,965	$ 6,339,887	$ 6,688,805	$ 6,902,495	$ 7,195,628	$ 7,527,788	$ 7,769,190	$ 8,020,239

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Less Revenues to be Raised from Rates:												
W.1	Residential	City		$ 2,091,679	$ 2,701,420	$ 2,767,960	$ 2,259,086	$ 2,682,399	$ 2,759,914	$ 2,841,496	$ 2,927,371	$ 3,017,777	$ 3,112,968
W.2	Residential	Outside City		146,663	191,132	195,703	158,419	188,894	194,220	199,825	205,725	211,936	218,475
W.3	Commercial	City		434,221	573,176	588,841	474,740	570,638	586,627	607,560	627,491	648,476	670,579
W.4	Commercial	Outside City		14,180	18,752	19,138	15,226	18,263	18,717	19,194	19,697	20,226	20,783
W.5	Industrial	City		681,528	921,316	938,668	731,995	887,043	907,516	929,067	951,754	975,639	1,000,783
W.6	Industrial	Outside City		202,870	271,675	277,182	217,887	262,955	269,210	275,794	282,725	290,021	297,702
W.7	Ind. Discounts	City		-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City		267,929	358,445	367,348	291,837	352,772	363,026	373,814	385,167	397,118	409,702
W.9	Municipal	City		75,438	101,194	103,161	81,022	97,825	100,144	102,586	105,156	107,862	110,710
W.10	Fire Protection	City		4,088	5,398	5,510	4,390	5,261	5,393	5,531	5,676	5,830	5,991
	0 Other	City		159	162	169	171	182	190	199	208	218	228
	0 Other	City		-	-	-	-	-	-	-	-	-	-
	0 Other	City		-	-	-	-	-	-	-	-	-	-
	0 Other	City		-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City		1,020,175	1,048,876	1,078,960	1,110,404	1,143,555	1,178,220	1,214,570	1,252,693	1,292,681	1,334,630
	Sub-Total			**4,938,931**	**6,191,748**	**6,342,639**	**5,345,268**	**6,209,786**	**6,385,175**	**6,569,636**	**6,763,663**	**6,967,783**	**7,182,550**
	Rate Revenue Less RRRR:												
W.1	Residential	City		$ 95,629	$ (342,422)	$ (254,421)	$ 368,153	$ 123,297	$ 134,408	$ 181,475	$ 243,609	$ 253,926	$ 262,516
W.2	Residential	Outside City		47,351	(2,487)	5,297	53,273	35,460	37,213	41,689	47,821	49,662	51,420
W.3	Commercial	City		353,988	180,710	217,526	377,580	336,820	351,669	378,970	412,450	429,270	445,550
W.4	Commercial	Outside City		(126)	(5,099)	(4,622)	24	(2,121)	(2,090)	(1,852)	(1,522)	(1,499)	(1,501)
W.5	Industrial	City		150,668	(64,434)	(28,485)	223,689	124,088	134,809	157,452	184,173	193,654	204,883
W.6	Industrial	Outside City		(10,302)	(69,148)	(61,847)	8,212	(23,736)	(22,613)	(18,742)	(13,986)	(13,390)	(12,463)
W.7	Ind. Discounts	City		-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City		15,948	(114,592)	(106,808)	(16,700)	(60,204)	(60,112)	(56,668)	(51,690)	(51,872)	(52,565)
W.9	Municipal	City		(22,007)	(44,502)	(42,862)	(17,671)	(30,727)	(31,049)	(30,521)	(29,595)	(29,871)	(30,488)
W.10	Fire Protection	City		3,845	(4,670)	(4,735)	(3,575)	(4,399)	(4,505)	(4,606)	(4,708)	(4,832)	(4,964)
	0 Other	City		(159)	(162)	(169)	(171)	(182)	(190)	(199)	(208)	(218)	(228)
	0 Other	City		-	-	-	-	-	-	-	-	-	-
	0 Other	City		-	-	-	-	-	-	-	-	-	-
	0 Other	City		-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City		(63,629)	(53,859)	(17,549)	(18,395)	(19,285)	(20,221)	(21,204)	(22,239)	(23,326)	(24,470)
	Total			371,205	(520,664)	(298,674)	704,418	378,012	517,320	625,983	764,106	401,406	317,683

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

WW Rate Revenues

			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	WW Rate Revenue												
WW1	Residential City												
		Base Charge	$ 811,437	$ 996,188	$ 1,204,348	$ 1,369,266	$ 1,475,325	$ 1,560,650	$ 1,610,646	$ 1,662,441	$ 1,716,233	$ 1,771,372	
		Volume Charge	916,233	1,124,507	1,359,271	1,545,994	1,666,021	1,762,465	1,819,072	1,876,907	1,936,609	1,998,559	
		Total	1,727,670	2,120,695	2,563,620	2,915,260	3,141,346	3,323,115	3,429,718	3,539,348	3,653,041	3,769,931	
WW2	Residential Outside City												
		Base Charge	$ 41,286	$ 50,736	$ 61,402	$ 69,881	$ 75,369	$ 79,808	$ 82,446	$ 85,182	$ 88,025	$ 90,942	
		Volume Charge	48,558.23	59,657	72,185	82,184	88,653	93,879	96,991	100,173	103,472	106,876	
		Total	89,844	110,395	133,587	152,065	164,023	173,687	179,437	185,355	191,497	197,817	
WW3	Commercial City												
		Base Charge	$ 112,603	$ 139,260	$ 169,291	$ 193,528	$ 209,650	$ 222,968	$ 231,338	$ 240,035	$ 249,096	$ 258,429	
		Volume Charge	647,980	799,889	972,267	1,111,737	1,204,486	1,281,184	1,329,473	1,378,977	1,430,401	1,483,686	
		Total	760,783	939,149	1,141,559	1,305,266	1,414,136	1,504,152	1,560,809	1,619,012	1,679,497	1,742,116	
WW4	Commercial Outside City												
		Base Charge	$ 525	$ 843	$ 776	$ 881	$ 947	$ 999	$ 1,029	$ 1,060	$ 1,092	$ 1,125	
		Volume Charge	2,013	2,465	2,974	3,375	3,629	3,831	3,946	4,063	4,183	4,308	
		Total	2,538	3,109	3,750	4,255	4,575	4,830	4,975	5,123	5,275	5,432	
WW5	Industrial City												
		Base Charge	$ 4,589	$ 5,621	$ 6,781	$ 7,693	$ 8,271	$ 8,731	$ 8,992	$ 9,261	$ 9,540	$ 9,826	
		Volume Charge	1,208,963	1,482,777	1,788,916	2,028,332	2,180,251	2,303,101	2,373,265	2,443,532	2,515,915	2,591,159	
		Total	1,213,551	1,488,398	1,795,697	2,036,026	2,188,522	2,311,832	2,382,256	2,452,793	2,525,455	2,600,985	
WW6	Industrial Outside City												
		Base Charge	$ 525	$ 643	$ 776	$ 881	$ 947	$ 999	$ 1,029	$ 1,060	$ 1,092	$ 1,125	
		Volume Charge	34,121	41,849	50,489	57,247	61,534	65,001	66,982	68,985	71,008	73,131	
		Total	34,646	42,493	51,266	58,127	62,481	66,001	68,011	70,025	72,100	74,256	
WW7	Ind. Discounts City												
		Base Charge	$ (83)	$ (102)	$ (122)	$ (139)	$ (149)	$ (157)	$ (162)	$ (167)	$ (172)	$ (177)	
		Volume Charge	(51,598)	(63,057)	(75,814)	(85,691)	(91,975)	(96,970)	(99,741)	(103,125)	(106,508)	(109,691)	
		Total	(51,681)	(63,158)	(75,937)	(85,830)	(92,125)	(97,128)	(99,903)	(103,292)	(106,680)	(110,068)	
WW8	Public Authorities												
		Base Charge	$ 14,123	$ 17,409	$ 21,130	$ 24,119	$ 26,090	$ 27,706	$ 28,704	$ 29,741	$ 30,820	$ 31,931	
		Volume Charge	207,255	255,739	310,435	354,165	383,021	407,027	421,930	437,018	452,640	468,922	
		Total	221,378	273,148	331,565	378,284	409,111	434,733	450,634	466,759	483,461	500,853	
	Total WW Rate Revenues		**4,050,411**	**4,977,387**	**6,021,043**	**6,849,283**	**7,384,194**	**7,818,350**	**8,075,840**	**8,338,415**	**8,610,326**	**8,891,391**	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: 2014 12 12 -- Scen 2 -- Conservation

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Less Revenues to be Raised from Rates:											
Residential City		$ 1,354,207	$ 1,827,372	$ 1,874,982	$ 1,924,949	$ 2,299,883	$ 2,354,812	$ 2,541,254	$ 2,601,488	$ 2,664,759	$ 2,731,230
Residential Outside City		47,121	63,742	65,463	67,270	80,501	82,493	89,132	91,327	93,632	96,053
Commercial City		674,986	953,898	981,880	1,011,206	1,234,807	1,268,056	1,380,774	1,417,066	1,456,324	1,496,842
Commercial Outside City		1,472	2,050	2,095	2,142	2,589	2,640	2,852	2,908	2,966	3,026
Industrial City		1,236,793	1,760,508	1,798,801	1,834,690	2,236,783	2,277,996	2,465,191	2,510,383	2,557,878	2,607,793
Industrial Outside City		23,438	33,329	34,018	34,741	42,334	43,116	46,655	47,513	48,415	49,362
Ind. Discounts City		295,381	420,532	429,198	438,292	534,326	544,166	588,892	599,682	611,021	622,939
Public Authorities		218,651	311,436	319,913	328,797	402,364	412,401	449,765	459,881	471,458	483,676
Sub-Total		**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**8,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**
Rate Revenue Less RRRR:											
Residential City		$ 373,463	$ 293,324	$ 688,638	$ 890,311	$ 841,484	$ 988,503	$ 888,465	$ 937,880	$ 988,282	$ 1,038,702
Residential Outside City		42,724	46,653	68,124	84,795	83,521	91,195	90,306	94,029	97,865	101,764
Commercial City		85,797	(14,750)	159,678	294,060	179,329	236,096	180,035	201,344	223,173	245,274
Commercial Outside City		1,066	1,059	1,655	2,113	1,986	2,190	2,123	2,215	2,309	2,405
Industrial City		(23,241)	(272,107)	(1,104)	201,136	(48,261)	33,635	(62,934)	(57,589)	(32,423)	(6,608)
Industrial Outside City		11,208	9,164	17,248	23,386	20,147	22,885	21,356	22,512	23,685	24,894
Ind. Discounts City		(347,082)	(483,690)	(505,134)	(524,121)	(626,451)	(641,294)	(688,764)	(702,973)	(717,701)	(733,007)
Public Authorities		2,726	(35,288)	11,652	49,488	6,726	22,332	1,869	8,898	11,973	17,177
		146,662	(458,635)	440,757	1,121,167	458,482	735,742	412,425	504,295	597,163	690,400
Rate Revenue less Revenue Rqmt		**146,662**	**(458,635)**	**440,757**	**1,121,167**	**458,482**	**735,742**	**412,425**	**504,295**	**597,163**	**690,400**

WATER: Customer and Usage Data

Net Annual Volume after Minimum (000 gal)

				Rates								
W.1	**Residential**	**City**										
		-	2,000	50.0%	297,041	297,634	298,228	298,821	299,414	300,008	300,601	301,194	301,788	302,381
		2,001	5,000	20.0%	118,816	119,054	119,291	119,528	119,766	120,003	120,240	120,478	120,715	120,952
		5,001	20,000	25.0%	148,521	148,817	149,114	149,411	149,707	150,004	150,301	150,597	150,894	151,191
		20,001	Above	5.0%	29,704	29,763	29,823	29,882	29,941	30,001	30,060	30,119	30,179	30,238
		Avg Mthly Usage =	**4,945**	100.0%	594,082	595,269	596,455	597,642	598,829	600,015	601,202	602,389	603,575	604,762
W.2	**Residential**	**Outside City**										
		-	2,000	50.0%	16,811	16,845	16,878	16,912	16,946	16,979	17,013	17,046	17,080	17,114
		2,001	5,000	20.0%	6,724	6,738	6,751	6,765	6,778	6,792	6,805	6,819	6,832	6,845
		5,001	20,000	25.0%	8,406	8,422	8,439	8,456	8,473	8,490	8,506	8,523	8,540	8,557
		10,001	Above	5.0%	1,681	1,684	1,688	1,691	1,695	1,698	1,701	1,705	1,708	1,711
		Avg Mthly Usage =	**5,605**	100.0%	33,622	33,689	33,757	33,824	33,891	33,958	34,026	34,093	34,160	34,227
W.3	**Commercial**	**City**										
		-	2,000	30.0%	85,074	85,591	86,108	86,626	87,143	87,660	88,177	88,695	89,212	89,729
		2,001	10,000	40.0%	113,432	114,121	114,811	115,501	116,191	116,880	117,570	118,260	118,949	119,639
		10,001	20,000	15.0%	42,537	42,795	43,054	43,313	43,571	43,830	44,089	44,347	44,606	44,865
		10,001	Above	15.0%	42,537	42,795	43,054	43,313	43,571	43,830	44,089	44,347	44,606	44,865
		Avg Mthly Usage =	**14,389**	100.0%	283,579	285,303	287,028	288,752	290,476	292,201	293,925	295,649	297,374	299,098

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator

Scen: 2014 12 12 -- Scen 2 -- Conservation

					Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.4	Commercial	Outside City													
		-	2,000	30.0%	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067
		2,001	10,000	40.0%	1,422	1,422	1,422	1,422	1,422	1,422	1,422	1,422	1,422	1,422	1,422
		10,001	20,000	15.0%	533	533	533	533	533	533	533	533	533	533	533
		10,001	Above	15.0%	533	533	533	533	533	533	533	533	533	533	533
		Avg Mthly Usage =	16,387	100.0%	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556	3,556
W.5	Industrial	City													
		-	2,000	5.0%	25,690	25,690	25,690	25,690	25,690	25,690	25,690	25,690	25,690	25,690	25,690
		2,001	10,000	25.0%	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449
		10,001	20,000	25.0%	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449	128,449
		10,001	Above	45.0%	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208
		Avg Mthly Usage =	496,900	100.0%	513,795	513,795	513,795	513,795	513,795	513,795	513,795	513,795	513,795	513,795	513,795
W.6	Industrial	Outside City													
		-	2,000	5.0%	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075	4,075
		2,001	10,000	10.0%	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150
		10,001	20,000	10.0%	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150	8,150
		10,001	Above	75.0%	61,126	61,126	61,126	61,126	61,126	61,126	61,126	61,126	61,126	61,126	61,126
		Avg Mthly Usage =	970,250	100.0%	81,501	81,501	81,501	81,501	81,501	81,501	81,501	81,501	81,501	81,501	81,501
W.7	Ind. Discounts	City													
		-	2,000	5.0%	-	-	-	-	-	-	-	-	-	-	-
		2,001	10,000	10.0%	-	-	-	-	-	-	-	-	-	-	-
		10,001	20,000	10.0%	-	-	-	-	-	-	-	-	-	-	-
		10,001	Above	75.0%	-	-	-	-	-	-	-	-	-	-	-
		Avg Mthly Usage =	-	100.0%	-	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City													
		-	2,000	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640	25,757	
		2,001	10,000	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640	25,757	
		10,001	20,000	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640	25,757	
		10,001	Above	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640	25,757	
		Avg Mthly Usage =	39,055	100.0%	98,810	99,279	99,747	100,216	100,685	101,153	101,622	102,091	102,559	103,028	
W.9	Municipal	City													
		-	2,000	5.0%	1,655	1,655	1,655	1,655	1,655	1,655	1,655	1,655	1,655	1,655	1,655
		2,001	10,000	10.0%	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310
		10,001	20,000	10.0%	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310	3,310
		10,001	Above	75.0%	24,821	24,821	24,821	24,821	24,821	24,821	24,821	24,821	24,821	24,821	24,821
		Avg Mthly Usage =	919,306	100.0%	33,095	33,095	33,095	33,095	33,095	33,095	33,095	33,095	33,095	33,095	33,095
W.10	Fire Protection	City													
		-	2,000	30.0%	73	73	73	73	73	73	73	73	73	73	73
		2,001	10,000	40.0%	97	97	97	97	97	97	97	97	97	97	97
		10,001	20,000	15.0%	36	36	36	36	36	36	36	36	36	36	36
		10,001	Above	15.0%	36	36	36	36	36	36	36	36	36	36	36
		Avg Mthly Usage =	6,368	100.0%	242	242	242	242	242	242	242	242	242	242	242
8	Other	City													
		-	2,000	30.0%	-	-	-	-	-	-	-	-	-	-	-
		2,001	10,000	40.0%	-	-	-	-	-	-	-	-	-	-	-
		10,001	20,000	15.0%	-	-	-	-	-	-	-	-	-	-	-
		10,001	Above	15.0%	-	-	-	-	-	-	-	-	-	-	-
		Avg Mthly Usage =	-	100.0%	-	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0	Other	City												
		-	2,000	30.0%	-	-	-	-	-	-	-	-	-	-
		2,001	10,000	40.0%	-	-	-	-	-	-	-	-	-	-
		10,001	20,000	15.0%	-	-	-	-	-	-	-	-	-	-
		10,001	Above	15.0%	-	-	-	-	-	-	-	-	-	-
		Avg Mthly Usage =	-	100.0%	-	-	-	-	-	-	-	-	-	-
0	Other	City												
		-	2,000	30.0%	-	-	-	-	-	-	-	-	-	-
		2,001	10,000	40.0%	-	-	-	-	-	-	-	-	-	-
		10,001	20,000	15.0%	-	-	-	-	-	-	-	-	-	-
		10,001	Above	15.0%	-	-	-	-	-	-	-	-	-	-
		Avg Mthly Usage =	-	100.0%	-	-	-	-	-	-	-	-	-	-
0	Other	City												
		-	2,000	30.0%	-	-	-	-	-	-	-	-	-	-
		2,001	10,000	40.0%	-	-	-	-	-	-	-	-	-	-
		10,001	20,000	15.0%	-	-	-	-	-	-	-	-	-	-
		10,001	Above	15.0%	-	-	-	-	-	-	-	-	-	-
		Avg Mthly Usage =	-	100.0%	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City												
		-	2,000	1.0%	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497
		2,001	10,000	1.0%	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497
		10,001	20,000	1.0%	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497	5,497
		10,001	Above	97.0%	533,247	533,247	533,247	533,247	533,247	533,247	533,247	533,247	533,247	533,247
		Avg Mthly Usage =	6,544,512	100.0%	549,739	549,739	549,739	549,739	549,739	549,739	549,739	549,739	549,739	549,739
	Total				2,192,021	2,195,468	2,198,915	2,202,362	2,205,809	2,209,256	2,212,703	2,216,149	2,219,596	2,223,043
					2,192,021	2,195,468	2,198,915	2,202,362	2,205,809	2,209,256	2,212,703	2,216,149	2,219,596	2,223,043

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Customer Class Units - Total Bills				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	Residential	City			**120,150**	**120,390**	**120,630**	**120,870**	**121,110**	**121,350**	**121,590**	**121,830**	**122,070**	**122,310**
			5/8"		100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
					100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"		120,150	120,390	120,630	120,870	121,110	121,350	121,590	121,830	122,070	122,310
			3/4"		-	-	-	-	-	-	-	-	-	-
			1"		-	-	-	-	-	-	-	-	-	-
			1 1/2"		-	-	-	-	-	-	-	-	-	-
			2"		-	-	-	-	-	-	-	-	-	-
			3"		-	-	-	-	-	-	-	-	-	-
			4"		-	-	-	-	-	-	-	-	-	-
			6"		-	-	-	-	-	-	-	-	-	-
			8"		-	-	-	-	-	-	-	-	-	-
			10"		-	-	-	-	-	-	-	-	-	-
					120,150	120,390	120,630	120,870	121,110	121,350	121,590	121,830	122,070	122,310
W.2	Residential	Outside City			**5,999**	**6,011**	**6,023**	**6,035**	**6,047**	**6,059**	**6,071**	**6,083**	**6,095**	**6,107**
			5/8"		100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"		0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
					100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"		5,999	6,011	6,023	6,035	6,047	6,059	6,071	6,083	6,095	6,107
			3/4"		-	-	-	-	-	-	-	-	-	-
			1"		-	-	-	-	-	-	-	-	-	-
			1 1/2"		-	-	-	-	-	-	-	-	-	-
			2"		-	-	-	-	-	-	-	-	-	-
			3"		-	-	-	-	-	-	-	-	-	-
			4"		-	-	-	-	-	-	-	-	-	-
			6"		-	-	-	-	-	-	-	-	-	-
			8"		-	-	-	-	-	-	-	-	-	-
			10"		-	-	-	-	-	-	-	-	-	-
					5,999	6,011	6,023	6,035	6,047	6,059	6,071	6,083	6,095	6,107

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.3	Commercial	City		19,735	19,855	19,975	20,095	20,215	20,335	20,455	20,575	20,695	20,815
			5/8"	90.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	17,762	19,855	19,975	20,095	20,215	20,335	20,455	20,575	20,695	20,815
			3/4"	-	-	-	-	-	-	-	-	-	-
			1"	395	-	-	-	-	-	-	-	-	-
			1 1/2"	395	-	-	-	-	-	-	-	-	-
			2"	395	-	-	-	-	-	-	-	-	-
			3"	395	-	-	-	-	-	-	-	-	-
			4"	395	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-
				19,737	19,855	19,975	20,095	20,215	20,335	20,455	20,575	20,695	20,815
W.4	Commercial	Outside City		217	217	217	217	217	217	217	217	217	217
			5/8"	90.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	2.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	195	217	217	217	217	217	217	217	217	217
			3/4"	-	-	-	-	-	-	-	-	-	-
			1"	4	-	-	-	-	-	-	-	-	-
			1 1/2"	4	-	-	-	-	-	-	-	-	-
			2"	4	-	-	-	-	-	-	-	-	-
			3"	4	-	-	-	-	-	-	-	-	-
			4"	4	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-
				215	217	217	217	217	217	217	217	217	217

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.5	Industrial	City		1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
			5/8"	25.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	259	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	207	-	-	-	-	-	-	-	-	-	-
			1 1/2"	207	-	-	-	-	-	-	-	-	-	-
			2"	103	-	-	-	-	-	-	-	-	-	-
			3"	103	-	-	-	-	-	-	-	-	-	-
			4"	103	-	-	-	-	-	-	-	-	-	-
			6"	52	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
W.6	Industrial	Outside City		84	84	84	84	84	84	84	84	84	84	84
			5/8"	25.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	21	84	84	84	84	84	84	84	84	84	84
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	17	-	-	-	-	-	-	-	-	-	-
			1 1/2"	17	-	-	-	-	-	-	-	-	-	-
			2"	8	-	-	-	-	-	-	-	-	-	-
			3"	8	-	-	-	-	-	-	-	-	-	-
			4"	8	-	-	-	-	-	-	-	-	-	-
			6"	4	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				83	84	84	84	84	84	84	84	84	84	84

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.7	Ind. Discounts	City		-	-	-	-	-	-	-	-	-	-	-
			5/8"	25.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	-	-	-	-	-	-	-	-	-	-	-
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City		2,538	2,542	2,554	2,566	2,578	2,590	2,602	2,614	2,626	2,638	
			5/8"	40.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			1"	20.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			1 1/2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			3"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			4"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			6"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			8"	5.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
			5/8"	1,012	2,542	2,554	2,566	2,578	2,590	2,602	2,614	2,626	2,638	
			3/4"	-	-	-	-	-	-	-	-	-	-	
			1"	506	-	-	-	-	-	-	-	-	-	
			1 1/2"	253	-	-	-	-	-	-	-	-	-	
			2"	253	-	-	-	-	-	-	-	-	-	
			3"	127	-	-	-	-	-	-	-	-	-	
			4"	127	-	-	-	-	-	-	-	-	-	
			6"	127	-	-	-	-	-	-	-	-	-	
			8"	127	-	-	-	-	-	-	-	-	-	
			10"	-	-	-	-	-	-	-	-	-	-	
				2,532	2,542	2,554	2,566	2,578	2,590	2,602	2,614	2,626	2,638	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.9	Municipal	City		36	36	36	36	36	36	36	36	36	36	36
			5/8"	50.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	10.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	18	36	36	36	36	36	36	36	36	36	36
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	4	-	-	-	-	-	-	-	-	-	-
			1 1/2"	4	-	-	-	-	-	-	-	-	-	-
			2"	4	-	-	-	-	-	-	-	-	-	-
			3"	4	-	-	-	-	-	-	-	-	-	-
			4"	4	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				36	36	36	36	36	36	36	36	36	36	36
W.10	Fire Protection	City		36	36	36	36	36	36	36	36	36	36	36
			5/8"	0.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	100.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	-	36	36	36	36	36	36	36	36	36	36
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	36	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				36	36	36	36	36	36	36	36	36	36	36

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0	Other	City		60	60	60	60	60	60	60	60	60	60	60
			5/8"	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	60	60	60	60	60	60	60	60	60	60	60
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				60	60	60	60	60	60	60	60	60	60	60
0	Other	City		-	-	-	-	-	-	-	-	-	-	-
			5/8"	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	-	-	-	-	-	-	-	-	-	-	-
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: **2014 12 12 -- Scen 2 -- Conservation**

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0	Other	City		-	-	-	-	-	-	-	-	-	-	-
			5/8"	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	-	-	-	-	-	-	-	-	-	-	-
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-
0	Other	City		-	-	-	-	-	-	-	-	-	-	-
			5/8"	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	-	-	-	-	-	-	-	-	-	-	-
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

				Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W-11	Tri County	Outside City		84	84	84	84	84	84	84	84	84	84	84
			5/8"	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
			3/4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			1 1/2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			2"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			3"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			4"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			6"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
			10"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
			5/8"	84	84	84	84	84	84	84	84	84	84	84
			3/4"	-	-	-	-	-	-	-	-	-	-	-
			1"	-	-	-	-	-	-	-	-	-	-	-
			1 1/2"	-	-	-	-	-	-	-	-	-	-	-
			2"	-	-	-	-	-	-	-	-	-	-	-
			3"	-	-	-	-	-	-	-	-	-	-	-
			4"	-	-	-	-	-	-	-	-	-	-	-
			6"	-	-	-	-	-	-	-	-	-	-	-
			8"	-	-	-	-	-	-	-	-	-	-	-
			10"	-	-	-	-	-	-	-	-	-	-	-
				84	84	84	84	84	84	84	84	84	84	84
	Total			149,967	150,351	150,735	151,119	151,503	151,887	152,271	152,655	153,039	153,423	
				149,967	150,351	150,735	151,119	151,503	151,887	152,271	152,655	153,039	153,423	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

WASTEWATER -- Customer & Usage Data

		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Customer Class Units -- Net Usage After Minimum (000 gallons)											
WW1	Residential City		338,760	339,491	340,222	340,953	341,684	342,415	343,146	343,876	344,607	345,338
WW2	Residential Outside City		11,969	12,007	12,045	12,083	12,121	12,159	12,197	12,235	12,274	12,312
WW3	Commercial City		243,388	245,277	247,166	249,054	250,943	252,832	254,721	256,610	258,498	260,387
WW4	Commercial Outside City		504	504	504	504	504	504	504	504	504	504
WW5	Industrial City		497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618
WW6	Industrial Outside City		9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363
WW7	Ind. Discounts City		117,127	117,115	117,103	117,091	117,079	117,067	117,055	117,043	117,031	117,019
WW8	Public Authorities		84,571	85,095	85,619	86,144	86,668	87,192	87,716	88,240	88,765	89,289
	Total Wastewater		1,303,300	1,306,470	1,309,640	1,312,810	1,315,980	1,319,150	1,322,320	1,325,490	1,328,660	1,331,830
	Net Annual Volume after Minimum:											
WW1	**Residential City** 1,001	20,000	70%	237,132	237,644	238,155	238,667	239,179	239,690	240,202	240,714	241,225	241,737
	20,001	Above	30%	101,628	101,847	102,067	102,286	102,505	102,724	102,944	103,163	103,382	103,602
	Total			338,760	339,491	340,222	340,953	341,684	342,415	343,146	343,876	344,607	345,338
	Avg Mthly Usage =	**4,046**											
WW2	**Residential Outside Cit** 1,001	20,000	70%	8,378	8,405	8,432	8,458	8,485	8,512	8,538	8,565	8,591	8,618
	20,001	Above	30%	3,591	3,602	3,614	3,625	3,636	3,648	3,659	3,671	3,682	3,693
	Total			11,969	12,007	12,045	12,083	12,121	12,159	12,197	12,235	12,274	12,312
	Avg Mthly Usage =	**4,172**											
WW3	**Commercial City** 1,001	20,000	60%	146,033	147,166	148,299	149,433	150,566	151,699	152,832	153,966	155,099	156,232
	20,001	Above	40%	97,355	98,111	98,866	99,622	100,377	101,133	101,888	102,644	103,399	104,155
	Total			243,388	245,277	247,166	249,054	250,943	252,832	254,721	256,610	258,498	260,387
	Avg Mthly Usage =	**16,740**											
WW4	**Commercial Outside Cit** 1,001	20,000	60%	302	302	302	302	302	302	302	302	302	302
	20,001	Above	40%	202	202	202	202	202	202	202	202	202	202
	Total			504	504	504	504	504	504	504	504	504	504
	Avg Mthly Usage =	**11,500**											
WW5	**Industrial City** 1,001	20,000	5%	24,881	24,881	24,881	24,881	24,881	24,881	24,881	24,881	24,881	24,881
	20,001	Above	95%	472,737	472,737	472,737	472,737	472,737	472,737	472,737	472,737	472,737	472,737
	Total			497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618	497,618
	Avg Mthly Usage =	**792,126**											
WW6	**Industrial Outside City** 1,001	20,000	5%	468	468	468	468	468	468	468	468	468	468
	20,001	Above	95%	8,895	8,895	8,895	8,895	8,895	8,895	8,895	8,895	8,895	8,895
	Total			9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363	9,363
	Avg Mthly Usage =	**196,063**											
WW7	**Ind. Discounts City** 1,001	20,000	90%	105,414	105,404	105,393	105,382	105,371	105,360	105,350	105,339	105,328	105,317
	20,001	Above	10%	11,713	11,712	11,710	11,709	11,708	11,707	11,706	11,704	11,703	11,702
	Total			117,127	117,115	117,103	117,091	117,079	117,067	117,055	117,043	117,031	117,019
	Avg Mthly Usage =	**1,653,653**											
WW8	**Public Authorities** 1,001	20,000	10%	8,457	8,510	8,562	8,614	8,667	8,719	8,772	8,824	8,876	8,929
	20,001	Above	90%	76,114	76,586	77,057	77,529	78,001	78,473	78,945	79,416	79,888	80,360
	Total			84,571	85,095	85,619	86,144	86,668	87,192	87,716	88,240	88,765	89,289
	Avg Mthly Usage =	**44,683**											
	Total Wastewater			1,303,300	1,306,470	1,309,640	1,312,810	1,315,980	1,319,150	1,322,320	1,325,490	1,328,660	1,331,830

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

	Customer Class Units - Total Bills	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1	Residential City		111,232	111,472	111,712	111,952	112,192	112,432	112,672	112,912	113,152	113,392
WW2	Residential Outside City		3,773	3,785	3,797	3,809	3,821	3,833	3,845	3,857	3,869	3,881
WW3	Commercial City		15,463	15,583	15,703	15,823	15,943	16,063	16,183	16,303	16,423	16,543
WW4	Commercial Outside City		48	48	48	48	48	48	48	48	48	48
WW5	Industrial City		629	629	629	629	629	629	629	629	629	629
WW6	Industrial Outside City		48	48	48	48	48	48	48	48	48	48
WW7	Ind. Discounts City		72	72	72	72	72	72	72	72	72	72
WW8	Public Authorities		1,936	1,948	1,960	1,972	1,984	1,996	2,008	2,020	2,032	2,044
	Total Wastewater		133,201	133,585	133,969	134,353	134,737	135,121	135,505	135,889	136,273	136,657

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

		Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
Test Year W 1.0 -- Water Department Cost Functionalization							
Scen:	**2014 12 12 -- Scen 2 -- Conservation**						
NON-RATE REVENUES							
	Water Division						
01.01.461100	Sales -- Residential	$ -	$ -	na	na	na	na
01.01.461200	Sales -- Commercial	-	-	na	na	na	na
01.01.461300	Sales -- Industrial	-	-	na	na	na	na
01.01.461400	Sales -- Public Authorities	-	-	na	na	na	na
01.01.461450	Sales -- Municipal	-	-	na	na	na	na
01.01.461500	Sales -- Wholesale	-	-	na	na	na	na
01.01.461550	Sales -- Donation	-	-	na	na	na	na
01.01.462000	Private Fire Protection Service	-	-	na	na	na	na
01.01.471100	Misc. Service Revenue	174,000	174,000	na	na	na	na
01.01.474100	Other Revenue (Sales of Supplies)	-	-	na	na	na	na
01.01.474200	London/Ark Nuclear One Revenue	13,282	13,282	na	na	na	na
01.01.475100	Tapping Fees	26,500	26,500	na	na	na	na
01.01.475200	Other Service Fees	-	-	na	na	na	na
01.01.475300	Cross Connection Fees	-	-	na	na	na	na
01.01.475500	Solid Waste Fees	64,200	64,200	na	na	na	na
01.01.419000	Interest Income	19,200	19,200	na	na	na	na
01.01.419100	Misc. Non-Operating Revenue	11,750	11,750	na	na	na	na
0	Revenue	-	-	na	na	na	na
0	Revenue	-	-	na	na	na	na
0	Revenue	-	-	na	na	na	na
0	Revenue	-	-	na	na	na	na
		308,932	308,932				
TOTAL NON-RATE REVENUES							
	Cash Basis	**308,932**	**308,932**	**na**	**na**	**na**	**na**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year W 1.0 -- Water Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Water Division

0		Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
	SUPPLY EXPENSES						
01.01.600000	Supervision	$ 5,574	$ 5,574	$ 2,787	$ 2,787	$ -	$ -
01.01.601000	Labor	1,764	1,764	882	882	-	-
01.01.603000	Licenses and Fees	3,913	3,913	1,957	1,957	-	-
01.01.604000	Reservoir Power	70,950	70,950	35,475	35,475	-	-
01.01.605000	Reservoir Other Utility Purchases	2,220	2,220	1,110	1,110	-	-
01.01.607000	Reservoir Transportation	1,950	1,950	975	975	-	-
01.01.609000	Reservoir Maint of Gen. Plant	-	-	-	-	-	-
01.01.611100	Labor -- Maint of Structures and Imp	22,872	22,872	11,436	11,436	-	-
01.01.611200	Materials -- Maint of Structures and Imp	2,880	2,880	1,440	1,440	-	-
01.01.611300	O/S Cont. Maint. Of Structures and Imp	9,477	9,477	4,739	4,739	-	-
01.01.621100	Employee Benefits -- Supply	9,817	9,817	4,909	4,909	-	-
01.01.666000	Safety Equipment & Supplies	960	960	480	480	-	-
01.01.672200	Materials -- Maint. of Dist. Reserve	1,350	1,350	675	675	-	-
01.01.672300	Maint. Dist. Reservoir Standpipe	-	-	-	-	-	-
01.01.903300	Postage	-	-	-	-	-	-
01.01.903400	Computer Expense	2,822	2,822	1,411	1,411	-	-
01.01.903600	Training Expense	2,324	2,324	1,162	1,162	-	-
01.01.921100	Office Supplies and Stationary	2,500	2,500	1,250	1,250	-	-
01.01.921200	Dues and Subscriptions	-	-	-	-	-	-
01.01.921400	Communication Services	6,000	6,000	3,000	3,000	-	-
01.01.921600	Transportation	4,850	4,850	2,425	2,425	-	-
01.01.921700	Travel and Personal Exp	4,320	4,320	2,160	2,160	-	-
01.01.932000	Maint. Of General Plant	2,770	2,770	1,385	1,385	-	-
		159,313	159,313	79,657	79,657	-	-
	PUMPING EXPENSES						
01.01.623100	Power Purchases for Pumping	124,493	124,493	124,493	-	-	-
01.01.623150	Power Purchases for Pumping L/and	3,000	3,000	3,000	-	-	-
01.01.623200	Other Utility Purchases	264	264	264	-	-	-
01.01.623300	Water Purchased	-	-	-	-	-	-
01.01.624000	Labor -- Pumping	-	-	-	-	-	-
01.01.626100	Misc. Pumping	1,080	1,080	1,080	-	-	-
01.01.630000	Supervision -- Pumping	5,574	5,574	5,574	-	-	-
01.01.631100	Employee Benefits -- Pumping	14,426	14,426	14,426	-	-	-
01.01.633100	Labor -- Maint. Of Pumping Equipment	28,910	28,910	28,910	-	-	-
01.01.633150	Labor -- Maint of Pump Equipment L/ano	9,901	9,901	9,901	-	-	-
01.01.633200	Materials -- Maint of Pumping Equip	5,700	5,700	5,700	-	-	-
01.01.633250	Materials -- Maint of Pump Equip L/ano	-	-	-	-	-	-
01.01.633300	O/S Cont -- Maint of Pumping Equip	18,301	18,301	18,301	-	-	-
01.01.633350	O/S Cont -- Maint of Pump Equip L/ano	300	300	300	-	-	-
	Total	211,949	211,949	211,949	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year W 1.0 -- Water Department Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
	TREATMENT EXPENSES						
01.01.640100	Labor -- Treatment	243,649	243,649	243,649	-	-	-
01.01.641000	Chemical Exp	369,840	369,840	369,840	-	-	-
01.01.642000	Laboratory	9,670	9,670	9,670	-	-	-
01.01.642100	Labor -- Laboratory	31,434	31,434	31,434	-	-	-
01.01.643000	Misc. Treatment Exp	-	-	-	-	-	-
01.01.644000	Power Purchases for Treatment	204,175	204,175	204,175	-	-	-
01.01.650000	Supervision -- Treatment	26,140	26,140	26,140	-	-	-
01.01.651100	Employee Benefits -- Treatment	109,415	109,415	109,415	-	-	-
01.01.652100	Labor -- Treatment Equipment	35,442	35,442	35,442	-	-	-
01.01.652200	Materials -- Treatment Equipment	18,850	18,850	18,850	-	-	-
01.01.652300	O/S Cont -- Treatment Equipment	166,648	166,648	166,648	-	-	-
01.01.662100	Labor -- Overhead	-	-	-	-	-	-
01.01.921600	Transportation	1,120	1,120	1,120	-	-	-
	Total	1,216,383	1,216,383	1,216,383	-	-	-
	TRANSMISSION AND DISTRIBUTION EXPENSES						
01.01.660000	Supervision -- T&D	8,796	8,796	-	8,796	-	-
01.01.661100	Employee Benefits -- T&D	2,855	2,855	-	2,855	-	-
01.01.662100	Labor -- Overhead	-	-	-	-	-	-
01.01.662200	Materials -- T&D	6,000	6,000	-	6,000	-	-
01.01.666000	Safety Equipment & Supplies	3,900	3,900	-	3,900	-	-
01.01.903400	Computer Expense	953	953	-	953	-	-
01.01.903600	Training Exp	8,592	8,592	-	8,592	-	-
01.01.921100	Office Supplies & Stationary	1,035	1,035	-	1,035	-	-
01.01.921200	Dues and Subscriptions	255	255	-	255	-	-
01.01.921400	Communication	4,800	4,800	-	4,800	-	-
01.01.921600	Transportation	39,000	39,000	-	39,000	-	-
01.01.921700	Travel and Personal	6,000	6,000	-	6,000	-	-
01.01.932000	Maint. Of General Plant	3,120	3,120	-	3,120	-	-
	Total	85,306	85,306	-	85,306	-	-
	MAINTENANCE EXPENSE						
01.01.666000	Safety Equipment	960	960	480	480	-	-
01.01.670000	Supervision -- Maintenance	8,796	8,796	4,398	4,398	-	-
01.01.673100	Labor -- Maint of Transmission Main	149,280	149,280	-	149,280	-	-
01.01.673200	Materials -- Maint of Transmission Main	99,000	99,000	-	99,000	-	-
01.01.673300	O/S Cont -- Main of Trans. Main	18,000	18,000	-	18,000	-	-
01.01.675100	Labor -- Maint of Services	126,260	126,260	63,130	63,130	-	-
01.01.675200	Materials -- Maint of Services	57,208	57,208	28,604	28,604	-	-
01.01.676100	Labor -- Maint of Meters	36,877	36,877	-	-	-	36,877
01.01.676200	Materials -- Maint of Meters	23,064	23,064	-	-	-	23,064
01.01.676300	O/S Cont -- Maint of Meters	5,000	5,000	-	-	-	5,000
01.01.677100	Labor -- Maint of Hydrants	15,272	15,272	-	15,272	-	-
01.01.677200	Materials -- Maint of Hydrants	3,300	3,300	-	3,300	-	-
01.01.680100	Employee Benefits -- Maint	109,356	109,356	54,678	54,678	-	-
01.01.903600	Training Exp	1,335	1,335	668	668	-	-
01.01.921100	Office Supplies and Stationary	820	820	410	410	-	-
01.01.921200	Dues and Subscriptions	44	44	22	22	-	-
01.01.921400	Communication Services	696	696	348	348	-	-
01.01.921600	Transportation	9,330	9,330	4,665	4,665	-	-
01.01.921700	Travel and Personal Exp	840	840	420	420	-	-
	Total	665,438	665,438	157,823	442,675	-	64,941

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

		Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
Test Year W 1.0 -- Water Department Cost Functionalization							
Scen:	**2014 12 12 -- Scen 2 -- Conservation**						
	CUSTOMER ACCOUNT EXPENSES						
01.01.666000	Safety Equipment and Supplies	-	-	-	-	-	-
01.01.901000	Supervision -- Customer Accounts	59,388	59,388	-	-	-	59,388
01.01.902100	Labor Meter Reading	31,029	31,029	-	-	-	31,029
01.01.902150	Labor Cross Connection	-	-	-	-	-	-
01.01.902200	Supplies -- Meter Reading	1,296	1,296	-	-	-	1,296
01.01.902300	Cross Connection Supplies	-	-	-	-	-	-
01.01.903100	Labor Customer Records	92,982	92,982	-	-	-	92,982
01.01.903200	Stationary and Supplies	3,828	3,828	-	-	-	3,828
01.01.903300	Postage	-	-	-	-	-	-
01.01.903400	Computer Expense	7,830	7,830	-	-	-	7,830
01.01.903500	Collection Costs/Uncollectible	39,100	39,100	-	-	-	39,100
01.01.903600	Training Costs	2,496	2,496	-	-	-	2,496
01.01.905000	Misc. Customer Accounting Exp	24	24	-	-	-	24
01.01.910100	Employee Benefits -- Cust Acct	59,604	59,604	-	-	-	59,604
01.01.921200	Dues and Subscriptions	96	96	-	-	-	96
01.01.921400	Communication Services	2,880	2,880	-	-	-	2,880
01.01.921600	Transportation	10,800	10,800	-	-	-	10,800
01.01.921700	Travel and Personal Exp	2,550	2,550	-	-	-	2,550
01.01.923000	Outside Services	63,600	63,600	-	-	-	63,600
01.01.932000	Maint of General Plant	1,260	1,260	-	-	-	1,260
		378,763	378,763	-	-	-	378,763
	ADMIN AND GENERAL EXPENSES						
01.01.666000	Safety Equipment and Supplies	330	330	-	-	330	-
01.01.903300	Postage	5,480	5,480	-	-	5,480	-
01.01.903400	Computer	43,947	43,947	-	-	43,947	-
01.01.903600	Training Exp	18,090	18,090	-	-	18,090	-
01.01.920100	Salaries -- General Management	75,870	75,870	-	-	75,870	-
01.01.920200	Salaries -- Accounting	59,195	59,195	-	-	59,195	-
01.01.920300	Salaries -- Other	52,862	52,862	-	-	52,862	-
01.01.920400	Salaries -- Engineering	165,405	165,405	-	-	165,405	-
01.01.920500	Supplies -- Engineering	1,776	1,776	-	-	1,776	-
01.01.921100	Office Supplies and Stationary	16,293	16,293	-	-	16,293	-
01.01.921200	Dues and Subscriptions	10,781	10,781	-	-	10,781	-
01.01.921300	Public Relations	8,255	8,255	-	-	8,255	-
01.01.921400	Communication Services	20,376	20,376	-	-	20,376	-
01.01.921500	Employee Relations	9,700	9,700	-	-	9,700	-
01.01.921600	Transportation	21,342	21,342	-	-	21,342	-
01.01.921700	Travel and Personal Exp	1,800	1,800	-	-	1,800	-
01.01.921800	Employee Benefits	114,831	114,831	-	-	114,831	-
01.01.921900	Payroll Tax	-	-	-	-	-	-
01.01.922000	Contributions	-	-	-	-	-	-
01.01.923000	Outside Services	150,912	150,912	-	-	150,912	-
01.01.924000	Insurance	67,932	67,932	-	-	67,932	-
01.01.925000	Payroll Penny Round Off	-	-	-	-	-	-
01.01.926000	CWIP FUTA Exp	-	-	-	-	-	-
01.01.927000	CWIP SUTA Exp	-	-	-	-	-	-
01.01.931000	Office Equipment Rental	2,160	2,160	-	-	2,160	-
01.01.932000	Maint. Of General Plant	27,374	27,374	-	-	27,374	-
01.01.950000	Loss on Sale of Assets	-	-	-	-	-	-
01.01.950100	Excess Costs on Retirement of Bond	-	-	-	-	-	-
01.01.950200	Gain/Loss -- Cont. In Aid of Const	-	-	-	-	-	-
	Total	874,711	874,711	-	-	874,711	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year W 1.0 -- Water Department Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
	DEPRECIATION AND AMORTIZATION						
01.01.426000	Interest Revenue Bonds 1992	-	-	-	-	-	-
01.01.426000	Paying Agent Fees	-	-	-	-	-	-
01.01.429000	Interest	-	-	-	-	-	-
01.01.403000	Depreciation	-	-	-	-	-	-
01.01.404000	Amortization	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-
	Total	-	-	-	-	-	-

TOTAL OPERATING EXPENSES

Cash Basis	$ 3,591,863	$ 3,591,863	$ 1,665,811	$ 607,637	$ 874,711	$ 443,704
		100.0%	46.4%	16.9%	24.4%	12.4%

CAPITAL OUTLAYS

WATER SYSTEM						
Treatment	$ 828,000	$ 828,000	828,000	-	-	-
Distribution	828,000	828,000	-	828,000	-	-
Administration	-	-	-	-	-	-
Customer	-	-	-	-	-	-
	1,656,000	1,656,000	828,000	828,000	-	-

TOTAL CAPITAL OUTLAYS

Cash Basis	$ 1,656,000	$ 1,656,000	$ 828,000	$ 828,000	$ -	$ -

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year W 1.0 -- Water Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

Test Year 2015	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
DEBT SERVICE -- CURRENT						
1 2013 Bond						
Principal	$ 614,297	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	223,224	-	-	-	-	-
Sub-Total	837,521	-	-	-	-	-
2 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
3 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
4 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
5 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
6 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
7 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
8 Debt						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
TOTAL CURRENT DEBT SERVICE						
Principal	$ 614,297	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	223,224	-	-	-	-	-
TOTAL	837,521	-	-	-	-	-
Cash Basis	$ 837,521	$ -	$ -	$ -	$ -	$ -

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
Test Year W 1.0 -- Water Department Cost Functionalization						
Scen: **2014 12 12 -- Scen 2 -- Conservation**						
DEBT SERVICE -- FUTURE						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-
Cash Basis	$ -	$ -	$ -	$ -	$ -	$ -
Utility Basis	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL EXPENSES						
Cash Basis	$ 6,085,384	$ 5,247,863	$ 2,493,811	$ 1,435,637	$ 874,711	$ 443,704
Less Non-Rate Revenues	$ 5,776,452	$ 4,938,931	na	na	na	na

Test Year
2015

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year W 2.0 -- Water Cost Allocations to Defined Customer Class Units
Scen: **2014 12 12 -- Scen 2 -- Conservation**

Customer Class Units -- Test Year Forecast Volume

			Base Annual Use	Base Daily Average	Capacity Factor	Max Day Total Capacity	Extra Capacity	Water Bills
W.1	Residential	City	594,082,000	1,627,622	150	2,434,058	806,436	120,150
W.2	Residential	Outside City	33,622,000	92,115	169	156,081	63,966	5,999
W.3	Commercial	City	283,579,000	776,929	114	881,988	105,059	19,735
W.4	Commercial	Outside City	3,556,000	9,742	168	16,373	6,630	217
W.5	Industrial	City	513,795,000	1,407,658	113	1,590,115	182,458	1,034
W.6	Industrial	Outside City	81,501,000	223,290	139	309,468	86,178	84
W.7	Ind. Discounts	City	-	-	-	-	-	-
W.8	Public Authorities	City	98,810,000	270,712	142	384,553	113,841	2,530
W.9	Municipal	City	33,095,000	90,671	134	121,479	30,808	36
W.10	Fire Protection	City	242,000	663	446	2,959	2,296	38
0	Other	City	-	-	-	-	-	60
0	Other	City	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-
W.11	Tri County	Outside City	549,739,000	1,506,134	149	2,239,003	732,868	84
	Total System		**2,192,021,000**	**6,005,537**		**8,136,078**	**2,130,541**	**149,957**

Allocation Factors

	Base	100.00%
	Maximum Day	50.00%
	Maximum Hour	25.00%

				50.00%	
				75.00%	

Customer Class Units -- Percent of Annual Volumes

W.1	Residential	City	27.10%	37.85%	80.12%
W.2	Residential	Outside City	1.53%	3.00%	4.00%
W.3	Commercial	City	12.94%	4.93%	13.16%
W.4	Commercial	Outside City	0.16%	0.31%	0.14%
W.5	Industrial	City	23.44%	8.56%	0.69%
W.6	Industrial	Outside City	3.72%	4.04%	0.06%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%
W.8	Public Authorities	City	4.51%	5.34%	1.69%
W.9	Municipal	City	1.51%	1.45%	0.02%
W.10	Fire Protection	City	0.01%	0.11%	0.03%
0	Other	City	0.00%	0.00%	0.04%
0	Other	City	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%
W.11	Tri County	Outside City	25.08%	34.40%	0.06%
	Total System		**100.00%**	**100.00%**	**100.00%**

SOURCE: Volume input spreadsheet

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

	Base	Max Day	Max Hour	Cust Billing	Total Water	Base	Max Day	Max Hour	Cust Billing
Test Year W 3.0 -- Water Cost Classification									
Scen: **2014 12 12 -- Scen 2 -- Conservation**									
CASH BASIS									
Treatment									
Operating Expenses	25.00%	0.00%	75.00%	0.00%	$ 1,865,811	$ 416,453	$ -	$ 1,249,358	$ -
Capital Outlays	25.00%	0.00%	75.00%	0.00%	828,000	207,000	-	621,000	-
Debt Service -- Current	25.00%	0.00%	75.00%	0.00%	-	-	-	-	-
Debt Service -- Future	25.00%	0.00%	75.00%	0.00%	-	-	-	-	-
Total Treatment					2,493,811	623,453	-	1,870,358	-
					100.00%	25.00%	0.00%	75.00%	0.00%
Distribution									
Operating Expenses	50.00%	50.00%	0.00%	0.00%	$ 607,637	$ 303,819	$ 303,819	$ -	$ -
Capital Outlays	50.00%	50.00%	0.00%	0.00%	828,000	414,000	414,000	-	-
Debt Service -- Current	50.00%	50.00%	0.00%	0.00%	-	-	-	-	-
Debt Service -- Future	50.00%	50.00%	0.00%	0.00%	-	-	-	-	-
Total Distribution					1,435,637	717,819	717,819	-	-
					100.00%	50.00%	50.00%	0.00%	0.00%
Customer Billing									
Operating Expenses	0.00%	0.00%	0.00%	100.00%	$ 443,704	$ -	$ -	$ -	$ 443,704
Capital Outlays	0.00%	0.00%	0.00%	100.00%	-	-	-	-	-
Debt Service -- Current	0.00%	0.00%	0.00%	100.00%	-	-	-	-	-
Debt Service -- Future	0.00%	0.00%	0.00%	100.00%	-	-	-	-	-
Total Customer Billing					443,704	-	-	-	443,704
					100.00%	0.00%	0.00%	0.00%	100.00%
Sub-Total					**4,373,152**	**1,341,271**	**717,819**	**1,870,358**	**443,704**
Percentage					**100.00%**	**30.67%**	**16.41%**	**42.77%**	**10.15%**
Administration									
Operating Expenses	30.67%	16.41%	42.77%	10.15%	874,711	268,279	143,577	374,106	88,749
Capital Outlays	30.67%	16.41%	42.77%	10.15%	-	-	-	-	-
Debt Service -- Current	30.67%	16.41%	42.77%	10.15%	-	-	-	-	-
Debt Service -- Future	30.67%	16.41%	42.77%	10.15%	-	-	-	-	-
Total Administration					874,711	268,279	143,577	374,106	88,749
						30.67%	16.41%	42.77%	10.15%
TOTAL OPERATING/CAPITAL					$ 5,247,863	$ 1,609,550	$ 861,395	$ 2,244,464	$ 532,453
Percentage					100.00%	30.67%	16.41%	42.77%	10.15%
Less Non-Rate Revenues	30.67%	16.41%	42.77%	10.15%	(368,932)	(94,751)	(50,709)	(132,127)	(31,345)
CASH BASIS -- WATER COST CLASSIFICATION					$ 4,878,931	$ 1,514,799	$ 810,687	$ 2,112,337	$ 501,108

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 4.0 -- Water Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

NON-RATE REVENUES

	Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Division										
Sales -- Residential	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sales -- Commercial	-	-	-	-	-	-	-	-	-	-
Sales -- Industrial	-	-	-	-	-	-	-	-	-	-
Sales -- Public Authorities	-	-	-	-	-	-	-	-	-	-
Sales -- Municipal	-	-	-	-	-	-	-	-	-	-
Sales -- Wholesale	-	-	-	-	-	-	-	-	-	-
Sales -- Donation	-	-	-	-	-	-	-	-	-	-
Private Fire Protection Service	-	-	-	-	-	-	-	-	-	-
Misc. Service Revenue	174,000	474,000	488,220	502,867	517,953	533,491	549,496	565,981	582,960	600,449
Other Revenue (Sales of Supplies)	-	-	-	-	-	-	-	-	-	-
London/Ark Nuclear One Revenue	13,282	13,680	14,091	14,514	14,949	15,397	15,859	16,335	16,825	17,330
Tapping Fees	26,500	27,295	28,114	28,957	29,826	30,721	31,642	32,592	33,569	34,576
Other Service Fees	-	-	-	-	-	-	-	-	-	-
Cross Connection Fees	-	-	-	-	-	-	-	-	-	-
Solid Waste Fees	64,200	66,126	68,110	70,153	72,258	74,425	76,658	78,958	81,327	83,766
Interest Income	19,200	19,776	20,369	20,980	21,610	22,258	22,926	23,614	24,322	25,052
Misc. Non-Operating Revenue	11,750	12,103	12,466	12,840	13,225	13,621	14,030	14,451	14,885	15,331
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
Revenue	-	-	-	-	-	-	-	-	-	-
	308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505
TOTAL NON-RATE REVENUES										
Cash Basis	$ 308,932	$ 612,980	$ 631,369	$ 650,310	$ 669,820	$ 689,914	$ 710,612	$ 731,930	$ 753,888	$ 776,505

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 4.0 -- Water Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Water Division

		Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	SUPPLY EXPENSES										
01.01.600000	Supervision	$ 5,574	$ 5,853	$ 6,145	$ 6,453	$ 6,775	$ 7,114	$ 7,470	$ 7,843	$ 8,235	$ 8,647
01.01.601000	Labor	1,764	1,852	1,945	2,042	2,144	2,251	2,364	2,482	2,606	2,737
01.01.603000	Licenses and Fees	3,913	4,030	4,151	4,275	4,404	4,536	4,672	4,812	4,957	5,106
01.01.604000	Reservoir Power	70,950	74,609	78,457	82,502	86,757	91,230	95,934	100,880	106,081	111,550
01.01.605000	Reservoir Other Utility Purchases	2,220	2,334	2,455	2,581	2,715	2,855	3,002	3,157	3,319	3,490
01.01.607000	Reservoir Transportation	1,950	2,051	2,156	2,268	2,384	2,507	2,637	2,773	2,916	3,066
01.01.609000	Reservoir Maint of Gen. Plant	-	-	-	-	-	-	-	-	-	-
01.01.611100	Labor -- Maint of Structures and Imp	22,872	24,016	25,216	26,477	27,801	29,191	30,651	32,183	33,792	35,482
01.01.611200	Materials -- Maint of Structures and Imp	2,880	2,971	3,065	3,161	3,261	3,364	3,470	3,580	3,693	3,809
01.01.611300	O/S Cont. Maint. Of Structures and Imp	9,477	9,776	10,085	10,403	10,732	11,070	11,420	11,780	12,152	12,535
01.01.621100	Employee Benefits -- Supply	9,817	10,504	11,239	12,026	12,868	13,769	14,733	15,764	16,867	18,048
01.01.666000	Safety Equipment & Supplies	960	990	1,022	1,054	1,087	1,121	1,157	1,193	1,231	1,270
01.01.672200	Materials -- Maint. of Dist. Reserve	1,350	1,393	1,437	1,482	1,529	1,577	1,627	1,678	1,731	1,786
01.01.672300	Maint. Dist. Reservoir Standpipe	-	-	-	-	-	-	-	-	-	-
01.01.903300	Postage	-	-	-	-	-	-	-	-	-	-
01.01.903400	Computer Expense	2,822	2,907	2,994	3,084	3,176	3,271	3,370	3,471	3,575	3,682
01.01.903600	Training Expense	2,324	2,394	2,466	2,539	2,616	2,694	2,775	2,858	2,944	3,032
01.01.921100	Office Supplies and Stationary	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	3,262
01.01.921200	Dues and Subscriptions	-	-	-	-	-	-	-	-	-	-
01.01.921400	Communication Services	6,000	6,180	6,365	6,556	6,753	6,956	7,164	7,379	7,601	7,829
01.01.921600	Transportation	4,850	5,003	5,161	5,324	5,492	5,665	5,844	6,029	6,219	6,415
01.01.921700	Travel and Personal Exp	4,320	4,450	4,583	4,721	4,862	5,008	5,158	5,313	5,472	5,637
01.01.932000	Maint. Of General Plant	2,770	2,857	2,948	3,041	3,137	3,236	3,338	3,443	3,552	3,664
	Total	159,313	166,745	174,542	182,722	191,307	200,315	209,770	219,693	230,110	241,046
	PUMPING EXPENSES										
01.01.623100	Power Purchases for Pumping	124,493	130,913	137,665	144,764	152,228	160,078	168,331	177,010	186,136	195,732
01.01.623150	Power Purchases for Pumping L/and	3,000	3,155	3,317	3,488	3,668	3,858	4,056	4,266	4,485	4,717
01.01.623200	Other Utility Purchases	264	278	292	307	323	339	357	375	395	415
01.01.623300	Water Purchased	-	-	-	-	-	-	-	-	-	-
01.01.624000	Labor -- Pumping	-	-	-	-	-	-	-	-	-	-
01.01.626100	Misc. Pumping	1,080	1,114	1,149	1,186	1,223	1,262	1,301	1,342	1,385	1,429
01.01.630000	Supervision -- Pumping	5,574	5,853	6,145	6,453	6,775	7,114	7,470	7,843	8,235	8,647
01.01.631100	Employee Benefits -- Pumping	14,426	15,436	16,516	17,672	18,910	20,233	21,650	23,165	24,787	26,522
01.01.633100	Labor -- Maint. Of Pumping Equipment	28,910	30,934	33,099	35,416	37,895	40,548	43,386	46,423	49,673	53,150
01.01.633150	Labor -- Maint of Pump Equipment L/ano	9,901	10,594	11,336	12,129	12,978	13,887	14,859	15,899	17,012	18,203
01.01.633200	Materials -- Maint of Pumping Equip	5,700	5,880	6,066	6,257	6,455	6,658	6,868	7,085	7,309	7,539
01.01.633250	Materials -- Maint of Pump Equip L/ano	-	-	-	-	-	-	-	-	-	-
01.01.633300	O/S Cont -- Maint of Pumping Equip	18,301	18,879	19,475	20,090	20,724	21,378	22,052	22,748	23,466	24,207
01.01.633350	O/S Cont -- Maint of Pump Equip L/ano	300	309	319	329	340	350	361	373	385	397
	Total	211,949	223,344	235,379	248,091	261,519	275,704	290,693	306,530	323,267	340,956
	TREATMENT EXPENSES										
01.01.640100	Labor -- Treatment	243,649	255,831	268,623	282,054	296,157	310,965	326,513	342,839	359,981	377,980
01.01.641000	Chemical Exp	369,840	381,517	393,561	405,985	418,800	432,018	445,653	459,717	474,223	489,187
01.01.642000	Laboratory	9,670	9,975	10,290	10,615	10,950	11,296	11,652	12,020	12,399	12,790
01.01.642100	Labor -- Laboratory	31,434	33,006	34,656	36,389	38,208	40,119	42,125	44,231	46,442	48,764
01.01.643000	Misc. Treatment Exp	-	-	-	-	-	-	-	-	-	-
01.01.644000	Power Purchases for Treatment	204,175	214,705	225,777	237,420	249,663	262,536	276,072	290,306	305,273	321,010
01.01.650000	Supervision -- Treatment	26,140	27,447	28,819	30,260	31,773	33,362	35,030	36,782	38,621	40,552
01.01.651100	Employee Benefits -- Treatment	109,415	117,074	125,269	134,038	143,421	153,460	164,202	175,697	187,995	201,155
01.01.652100	Labor -- Treatment Equipment	35,442	37,214	39,075	41,029	43,080	45,234	47,496	49,870	52,364	54,982
01.01.652200	Materials -- Treatment Equipment	18,850	19,445	20,059	20,692	21,345	22,019	22,714	23,431	24,170	24,933
01.01.652300	O/S Cont -- Treatment Equipment	166,648	171,909	177,337	182,935	188,709	194,665	200,809	207,146	213,683	220,425
01.01.662100	Labor -- Overhead	-	-	-	-	-	-	-	-	-	-
01.01.921600	Transportation	1,120	1,155	1,192	1,229	1,268	1,308	1,350	1,392	1,436	1,481
	Total	1,216,383	1,269,279	1,324,659	1,382,646	1,443,376	1,506,982	1,573,616	1,643,430	1,716,587	1,793,260

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 4.0 -- Water Utility Cost of Service

Scen: **2014 12 12 -- Scen 2 -- Conservation**

		Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	TRANSMISSION AND DISTRIBUTION EXPENSES										
01.01.660000	Supervision -- T&D	8,796	9,236	9,698	10,182	10,692	11,226	11,787	12,377	12,996	13,645
01.01.661100	Employee Benefits -- T&D	2,855	3,055	3,269	3,497	3,742	4,004	4,285	4,585	4,905	5,249
01.01.662100	Labor -- Overhead	-	-	-	-	-	-	-	-	-	-
01.01.662200	Materials -- T&D	6,000	6,189	6,385	6,586	6,794	7,009	7,230	7,458	7,693	7,936
01.01.666000	Safety Equipment & Supplies	3,900	4,023	4,150	4,281	4,416	4,556	4,699	4,848	5,001	5,159
01.01.903400	Computer Expense	953	982	1,011	1,041	1,073	1,105	1,138	1,172	1,207	1,243
01.01.903600	Training Exp	8,592	8,860	9,115	9,389	9,670	9,960	10,259	10,567	10,884	11,211
01.01.921100	Office Supplies & Stationary	1,035	1,066	1,098	1,131	1,165	1,200	1,236	1,273	1,311	1,350
01.01.921200	Dues and Subscriptions	255	263	271	279	287	296	304	314	323	333
01.01.921400	Communication	4,800	4,944	5,092	5,245	5,402	5,565	5,731	5,903	6,080	6,263
01.01.921600	Transportation	39,000	40,170	41,375	42,616	43,895	45,212	46,568	47,965	49,404	50,886
01.01.921700	Travel and Personal	6,000	6,180	6,365	6,556	6,753	6,956	7,164	7,379	7,601	7,829
01.01.932000	Maint. Of General Plant	3,120	3,219	3,320	3,425	3,533	3,645	3,760	3,878	4,001	4,127
	Total	**85,306**	**88,176**	**91,149**	**94,230**	**97,423**	**100,732**	**104,162**	**107,719**	**111,406**	**115,231**
	MAINTENANCE EXPENSE										
01.01.666000	Safety Equipment	960	990	1,022	1,054	1,087	1,121	1,157	1,193	1,231	1,270
01.01.670000	Supervision -- Maintenance	8,796	9,236	9,698	10,182	10,692	11,226	11,787	12,377	12,996	13,645
01.01.673100	Labor -- Maint of Transmission Main	149,280	156,744	164,581	172,810	181,451	190,523	200,049	210,052	220,555	231,582
01.01.673200	Materials -- Maint of Transmission Main	99,000	102,126	105,350	108,675	112,106	115,644	119,294	123,059	126,942	130,947
01.01.673300	O/S Cont -- Main of Trans. Main	18,000	18,568	19,155	19,759	20,383	21,026	21,690	22,374	23,080	23,809
01.01.675100	Labor -- Maint of Services	126,260	132,573	139,202	146,162	153,470	161,143	169,200	177,660	186,544	195,871
01.01.675200	Materials -- Maint of Services	57,208	59,014	60,877	62,799	64,781	66,826	68,935	71,110	73,354	75,669
01.01.676100	Labor -- Maint of Meters	36,877	38,721	40,657	42,690	44,824	47,065	49,419	51,890	54,484	57,208
01.01.676200	Materials -- Maint of Meters	23,064	23,792	24,543	25,318	26,117	26,942	27,792	28,669	29,574	30,507
01.01.676300	O/S Cont -- Maint of Meters	5,000	5,183	5,331	5,504	5,683	5,868	6,059	6,256	6,460	6,670
01.01.677100	Labor -- Maint of Hydrants	15,272	16,036	16,837	17,679	18,563	19,491	20,466	21,489	22,564	23,692
01.01.677200	Materials -- Maint of Hydrants	3,300	3,407	3,516	3,633	3,751	3,873	3,999	4,129	4,263	4,402
01.01.680100	Employee Benefits -- Maint	109,356	117,011	125,202	133,966	143,343	153,377	164,114	175,602	187,894	201,047
01.01.903600	Training Exp	1,335	1,375	1,416	1,459	1,503	1,548	1,594	1,642	1,691	1,742
01.01.921100	Office Supplies and Stationary	820	845	870	896	923	951	979	1,008	1,039	1,070
01.01.921200	Dues and Subscriptions	44	45	47	48	50	51	53	54	56	57
01.01.921400	Communication Services	696	717	738	761	783	807	831	856	882	908
01.01.921600	Transportation	9,330	9,634	9,947	10,271	10,605	10,950	11,307	11,674	12,054	12,446
01.01.921700	Travel and Personal Exp	840	865	891	918	945	974	1,003	1,033	1,064	1,096
	Total	**665,438**	**696,882**	**729,882**	**764,585**	**801,061**	**839,408**	**879,728**	**922,128**	**966,725**	**1,013,637**
	CUSTOMER ACCOUNT EXPENSES										
01.01.666000	Safety Equipment and Supplies	-	-	-	-	-	-	-	-	-	-
01.01.901000	Supervision -- Customer Accounts	59,388	62,357	65,475	68,749	72,186	75,796	79,586	83,565	87,743	92,130
01.01.902100	Labor Meter Reading	31,029	32,580	34,209	35,920	37,716	39,602	41,582	43,661	45,844	48,136
01.01.902150	Labor Cross Connection	-	-	-	-	-	-	-	-	-	-
01.01.902200	Supplies -- Meter Reading	1,296	1,338	1,382	1,427	1,473	1,521	1,571	1,622	1,674	1,729
01.01.902300	Cross Connection Supplies	-	-	-	-	-	-	-	-	-	-
01.01.903100	Labor Customer Records	92,982	97,631	102,513	107,638	113,020	118,671	124,605	130,835	137,377	144,246
01.01.903200	Stationary and Supplies	3,828	3,943	4,061	4,183	4,308	4,438	4,571	4,708	4,849	4,995
01.01.903300	Postage	-	-	-	-	-	-	-	-	-	-
01.01.903400	Computer Expense	7,830	8,065	8,307	8,556	8,813	9,077	9,349	9,630	9,919	10,216
01.01.903500	Collection Costs/Uncollectible	39,100	40,273	41,481	42,726	44,007	45,328	46,687	48,088	49,531	51,017
01.01.903600	Training Costs	2,496	2,577	2,661	2,748	2,837	2,930	3,025	3,123	3,225	3,330
01.01.905000	Misc. Customer Accounting Exp	24	25	25	26	27	28	29	30	30	31
01.01.910100	Employee Benefits -- Cust Acct	59,604	63,776	68,241	73,017	78,129	83,598	89,450	95,711	102,411	109,580
01.01.921200	Dues and Subscriptions	96	99	102	105	108	111	115	118	122	125
01.01.921400	Communication Services	2,880	2,966	3,055	3,147	3,241	3,339	3,439	3,542	3,648	3,758
01.01.921600	Transportation	10,800	11,124	11,458	11,801	12,155	12,520	12,896	13,283	13,681	14,092
01.01.921700	Travel and Personal Exp	2,550	2,627	2,705	2,786	2,870	2,956	3,045	3,136	3,230	3,327
01.01.923000	Outside Services	63,600	65,508	67,473	69,497	71,582	73,730	75,942	78,220	80,567	82,984
01.01.932000	Maint of General Plant	1,260	1,298	1,337	1,377	1,418	1,461	1,505	1,550	1,596	1,644
	Total	**378,763**	**396,188**	**414,486**	**433,704**	**453,893**	**475,104**	**497,394**	**520,821**	**545,447**	**571,338**

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 4.0 -- Water Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	ADMIN AND GENERAL EXPENSES										
01.01.666000	Safety Equipment and Supplies	330	341	352	363	375	387	400	413	426	440
01.01.903300	Postage	5,480	5,658	5,843	6,033	6,229	6,432	6,641	6,857	7,080	7,310
01.01.903400	Computer	43,947	45,265	46,623	48,022	49,463	50,947	52,475	54,049	55,671	57,341
01.01.903600	Training Exp	18,090	18,633	19,192	19,767	20,360	20,971	21,600	22,248	22,916	23,603
01.01.920100	Salaries -- General Management	75,870	79,664	83,647	87,829	92,220	96,831	101,673	106,757	112,095	117,699
01.01.920200	Salaries -- Accounting	59,195	62,155	65,262	68,526	71,952	75,549	79,327	83,293	87,458	91,831
01.01.920300	Salaries -- Other	52,862	55,505	58,280	61,194	64,254	67,467	70,840	74,382	78,101	82,006
01.01.920400	Salaries -- Engineering	165,405	173,675	182,359	191,477	201,051	211,103	221,658	232,741	244,379	256,597
01.01.920500	Supplies -- Engineering	1,776	1,834	1,894	1,955	2,019	2,084	2,152	2,222	2,295	2,369
01.01.921100	Office Supplies and Stationary	16,293	16,824	17,371	17,937	18,520	19,123	19,745	20,387	21,050	21,734
01.01.921200	Dues and Subscriptions	10,781	11,104	11,438	11,781	12,134	12,498	12,873	13,259	13,657	14,067
01.01.921300	Public Relations	8,255	8,503	8,758	9,020	9,291	9,570	9,857	10,153	10,457	10,771
01.01.921400	Communication Services	20,376	20,987	21,617	22,265	22,933	23,621	24,330	25,060	25,812	26,586
01.01.921500	Employee Relations	9,700	9,991	10,291	10,599	10,917	11,245	11,582	11,930	12,288	12,656
01.01.921600	Transportation	21,342	21,982	22,642	23,321	24,021	24,741	25,483	26,248	27,035	27,846
01.01.921700	Travel and Personal Exp	1,800	1,854	1,910	1,967	2,026	2,087	2,149	2,214	2,280	2,349
01.01.921800	Employee Benefits	114,831	122,869	131,470	140,673	150,520	161,056	172,330	184,393	197,301	211,112
01.01.921900	Payroll Tax	-	-	-	-	-	-	-	-	-	-
01.01.922000	Contributions	-	-	-	-	-	-	-	-	-	-
01.01.923000	Outside Services	150,912	155,439	160,103	164,906	169,853	174,948	180,197	185,603	191,171	196,906
01.01.924000	Insurance	67,932	69,970	72,069	74,231	76,458	78,752	81,114	83,548	86,054	88,636
01.01.925000	Payroll Penny Round Off	-	-	-	-	-	-	-	-	-	-
01.01.926000	CWIP FUTA Exp	-	-	-	-	-	-	-	-	-	-
01.01.927000	CWIP SUTA Exp	-	-	-	-	-	-	-	-	-	-
01.01.931000	Office Equipment Rental	2,160	2,225	2,292	2,360	2,431	2,504	2,579	2,657	2,736	2,818
01.01.932000	Maint. Of General Plant	27,374	28,195	29,041	29,912	30,810	31,734	32,686	33,667	34,677	35,717
01.01.950000	Loss on Sale of Assets	-	-	-	-	-	-	-	-	-	-
01.01.950100	Excess Costs on Retirement of Bond	-	-	-	-	-	-	-	-	-	-
01.01.950200	Gain/Loss -- Cont. in Aid of Const	-	-	-	-	-	-	-	-	-	-
	Total	874,711	912,673	952,451	994,139	1,037,838	1,083,662	1,131,694	1,182,081	1,234,938	1,290,396
	DEPRECIATION AND AMORTIZATION										
01.01.425000	Interest Revenue Bonds 1992	-	-	-	-	-	-	-	-	-	-
01.01.428000	Paying Agent Fees	-	-	-	-	-	-	-	-	-	-
01.01.429000	Interest	-	-	-	-	-	-	-	-	-	-
01.01.403000	Depreciation	-	-	-	-	-	-	-	-	-	-
01.01.404000	Amortization	-	-	-	-	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-	-	-	-	-
0	Expense	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

TOTAL OPERATING EXPENSES

	Cash Basis	$ 3,591,863	$ 3,753,267	$ 3,922,548	$ 4,100,118	$ 4,286,414	$ 4,481,898	$ 4,687,056	$ 4,902,402	$ 5,128,480	$ 5,365,864

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 4.0 -- Water Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

CAPITAL OUTLAYS

			Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WATER SYSTEM												
Replacement Reserv		0	1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
General	Other		-	-	-	-	-	-	-	-	-	-
Total			1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000

TOTAL CAPITAL OUTLAYS

		Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Cash Basis	$ 1,656,000	$ 1,656,000	$ 1,656,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 4.0 -- Water Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEBT SERVICE -- CURRENT											
1	2013 Bond										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
2	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
3	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
4	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
5	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
6	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
7	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
8	Debt										
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-
TOTAL DEBT SERVICE -- CURRENT											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-	-	-	-
	Cash Basis	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

	Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forecast W 4.0 -- Water Utility Cost of Service										
Scen: **2014 12 12 -- Scen 2 -- Conservation**										
DEBT SERVICE -- FUTURE										
Principal	$ -	$ 523,461	$ 544,399	$ 566,175	$ 850,553	$ 884,575	$ 919,958	$ 956,756	$ 995,026	$ 1,034,827
Interest	-	872,000	851,062	829,286	1,242,639	1,208,616	1,173,234	1,136,435	1,098,165	1,058,364
Reserve	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
Cash Basis	$ -	$ 1,395,461	$ 1,395,461	$ 1,395,461	$ 2,093,191	$ 2,093,191	$ 2,093,191	$ 2,093,191	$ 2,093,191	$ 2,093,191
TOTAL COST OF SERVICE										
Cash Basis	$ 5,247,863	$ 6,804,728	$ 6,974,008	$ 6,995,579	$ 6,879,606	$ 7,076,089	$ 7,280,247	$ 7,495,594	$ 7,721,671	$ 7,959,055

CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forecast W 5.0 -- Water Utility Cost Functionalization											
Scen: **2014 12 12 -- Scen 2 -- Conservation**											
OPERATING EXPENSES											
Water Division											
WATER - Total Operating Expenses											
Treatment	46.38%	1,665,811	1,740,666	1,819,174	1,901,526	1,987,926	2,078,585	2,173,733	2,273,604	2,378,453	2,488,546
Distribution	16.92%	607,637	634,942	663,579	693,619	725,135	758,205	792,911	829,341	867,587	907,745
Admin	24.35%	874,711	914,017	955,241	998,484	1,043,852	1,091,457	1,141,419	1,193,861	1,248,917	1,306,726
Customer	12.35%	443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
TOTAL		3,591,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,365,864
CAPITAL OUTLAYS											
Treatment		$ 828,000	$ 828,000	$ 828,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Distribution		828,000	828,000	828,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Admin		-	-	-	-	-	-	-	-	-	-
Customer		-	-	-	-	-	-	-	-	-	-
TOTAL		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
		1,656,000	1,656,000	1,656,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000

CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 5.0 – Water Utility Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE – CURRENT

		Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	2013 Bond											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
2	Debt											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
3	Debt											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
4	Debt											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
5	Debt											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 5.0 -- Water Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
6	**Debt**											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
7	**Debt**											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
8	**Debt**											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
	Total Debt Service -- Current											
	Treatment		-	-	-	-	-	-	-	-	-	-
	Distribution		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	TOTAL		-	-	-	-	-	-	-	-	-	-
			-	-	-	-	-	-	-	-	-	-
	DEBT SERVICE -- FUTURE											
	Treatment		$ -	$ 697,730	$ 697,730	$ 697,730	$ 1,046,596	$ 1,046,596	$ 1,046,596	$ 1,046,596	$ 1,046,596	$ 1,046,596
	Distribution		-	697,730	697,730	697,730	1,046,596	1,046,596	1,046,596	1,046,596	1,046,596	1,046,596
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	TOTAL		-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
			-	1,395,461	1,395,461	1,395,461	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191	2,093,191
	TOTAL EXPENSES											
	Treatment		$ 2,493,811	$ 3,266,396	$ 3,344,904	$ 2,849,257	$ 3,284,521	$ 3,375,181	$ 3,470,328	$ 3,570,200	$ 3,675,049	$ 3,785,141
	Distribution		1,435,637	2,160,672	2,189,309	1,641,349	2,021,730	2,054,800	2,089,507	2,125,937	2,164,183	2,204,341
	Admin		874,711	914,017	955,241	998,484	1,043,852	1,091,457	1,141,419	1,193,861	1,248,917	1,306,726
	Customer		443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
	TOTAL		5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
	CHECK		$ 5,247,863	$ 6,804,728	$ 6,974,008	$ 5,995,579	$ 6,879,606	$ 7,075,089	$ 7,280,247	$ 7,495,594	$ 7,721,671	$ 7,959,055
	CHECK WITH W4		5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
			-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast 2015-2024

Forecast W 6.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

WATER

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Customer Class Units -- Base Annual Usage												
W.1	Residential	City	594,082,000	595,268,681	596,455,361	597,642,042	598,828,723	600,015,403	601,202,084	602,388,765	603,575,445	604,762,126
W.2	Residential	Outside City	33,622,000	33,689,255	33,756,510	33,823,765	33,891,021	33,958,276	34,025,531	34,092,786	34,160,042	34,227,297
W.3	Commercial	City	283,579,000	285,303,321	287,027,643	288,751,964	290,476,285	292,200,606	293,924,928	295,649,249	297,373,570	299,097,891
W.4	Commercial	Outside City	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000
W.5	Industrial	City	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000
W.6	Industrial	Outside City	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	98,610,000	99,278,664	99,747,328	100,215,992	100,684,656	101,153,320	101,621,984	102,090,648	102,559,312	103,027,976
W.9	Municipal	City	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000
W.10	Fire Protection	City	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
	Sub-Total		1,642,282,000	1,645,728,921	1,649,175,842	1,652,622,763	1,656,069,685	1,659,516,606	1,662,963,527	1,666,410,448	1,669,857,369	1,673,304,290
W.11	Tri County	Outside City	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000
	TOTAL		**2,192,021,000**	**2,195,467,921**	**2,198,914,842**	**2,202,361,763**	**2,205,808,685**	**2,209,255,606**	**2,212,702,527**	**2,216,149,448**	**2,219,596,369**	**2,223,043,290**
	Percent Increase			0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Percent of Total												
W.1	Residential	City	27.10%	27.11%	27.12%	27.14%	27.15%	27.16%	27.17%	27.18%	27.19%	27.20%
W.2	Residential	Outside City	1.53%	1.53%	1.54%	1.54%	1.54%	1.54%	1.54%	1.54%	1.54%	1.54%
W.3	Commercial	City	12.94%	13.00%	13.05%	13.11%	13.17%	13.23%	13.28%	13.34%	13.40%	13.45%
W.4	Commercial	Outside City	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
W.5	Industrial	City	23.44%	23.40%	23.37%	23.33%	23.29%	23.26%	23.22%	23.18%	23.15%	23.11%
W.6	Industrial	Outside City	3.72%	3.71%	3.71%	3.70%	3.69%	3.69%	3.68%	3.68%	3.67%	3.67%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	4.51%	4.52%	4.54%	4.55%	4.56%	4.58%	4.59%	4.61%	4.62%	4.63%
W.9	Municipal	City	1.51%	1.51%	1.51%	1.50%	1.50%	1.50%	1.50%	1.49%	1.49%	1.49%
W.10	Fire Protection	City	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.11	Tri County	Outside City	25.08%	25.04%	25.00%	24.96%	24.92%	24.88%	24.84%	24.81%	24.77%	24.73%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Percent of Total -- Adjusted												
W.1	Residential	City	36.17%	36.17%	36.17%	36.16%	36.16%	36.16%	36.15%	36.15%	36.15%	36.14%
W.2	Residential	Outside City	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%
W.3	Commercial	City	17.27%	17.34%	17.40%	17.47%	17.54%	17.61%	17.67%	17.74%	17.81%	17.87%
W.4	Commercial	Outside City	0.22%	0.22%	0.22%	0.22%	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%
W.5	Industrial	City	31.29%	31.22%	31.15%	31.09%	31.02%	30.96%	30.90%	30.83%	30.77%	30.71%
W.6	Industrial	Outside City	4.96%	4.95%	4.94%	4.93%	4.92%	4.91%	4.90%	4.89%	4.88%	4.87%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	6.02%	6.03%	6.05%	6.06%	6.08%	6.10%	6.11%	6.13%	6.14%	6.16%
W.9	Municipal	City	2.02%	2.01%	2.01%	2.00%	2.00%	1.99%	1.99%	1.99%	1.98%	1.98%
W.10	Fire Protection	City	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 6.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Net Annual Volume after Minimum:											
W.1	Residential	City	594,082,000	595,268,681	596,455,361	597,642,042	598,828,723	600,015,403	601,202,084	602,388,765	603,575,445	604,762,126
W.2	Residential	Outside City	33,622,000	33,689,255	33,756,510	33,823,766	33,891,021	33,958,276	34,025,531	34,092,786	34,160,042	34,227,297
W.3	Commercial	City	283,579,000	285,303,321	287,027,643	288,751,964	290,476,285	292,200,606	293,924,928	295,649,249	297,373,570	299,097,891
W.4	Commercial	Outside City	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000	3,556,000
W.5	Industrial	City	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000	513,795,000
W.6	Industrial	Outside City	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000	81,501,000
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	98,810,000	99,278,664	99,747,328	100,215,992	100,684,656	101,153,320	101,621,984	102,090,648	102,559,312	103,027,976
W.9	Municipal	City	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000	33,095,000
W.10	Fire Protection	City	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000	242,000
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000
	TOTAL		**2,192,021,000**	**2,195,467,921**	**2,198,914,842**	**2,202,361,763**	**2,205,808,685**	**2,209,255,606**	**2,212,702,527**	**2,216,149,448**	**2,219,596,369**	**2,223,043,290**
	Base Daily Average											
W.1	Residential	City	1,627,622	1,630,873	1,634,124	1,637,375	1,640,627	1,643,878	1,647,129	1,650,380	1,653,631	1,656,883
W.2	Residential	Outside City	92,115	92,299	92,484	92,668	92,852	93,036	93,221	93,405	93,589	93,773
W.3	Commercial	City	776,929	781,653	786,377	791,101	795,825	800,550	805,274	809,998	814,722	819,446
W.4	Commercial	Outside City	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742	9,742
W.5	Industrial	City	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658	1,407,658
W.6	Industrial	Outside City	223,290	223,290	223,290	223,290	223,290	223,290	223,290	223,290	223,290	223,290
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	270,712	271,996	273,280	274,564	275,848	277,132	278,416	279,700	280,984	282,268
W.9	Municipal	City	90,671	90,671	90,671	90,671	90,671	90,671	90,671	90,671	90,671	90,671
W.10	Fire Protection	City	663	663	663	663	663	663	663	663	663	663
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134	1,506,134
	TOTAL		**6,005,537**	**6,014,981**	**6,024,424**	**6,033,868**	**6,043,311**	**6,052,755**	**6,062,199**	**6,071,642**	**6,081,086**	**6,090,530**
	Capacity Factor											
W.1	Residential	City	150	150	150	150	150	150	150	150	150	150
W.2	Residential	Outside City	169	169	169	169	169	169	169	169	169	169
W.3	Commercial	City	114	114	114	114	114	114	114	114	114	114
W.4	Commercial	Outside City	168	168	168	168	168	168	168	168	168	168
W.5	Industrial	City	113	113	113	113	113	113	113	113	113	113
W.6	Industrial	Outside City	139	139	139	139	139	139	139	139	139	139
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	142	142	142	142	142	142	142	142	142	142
W.9	Municipal	City	134	134	134	134	134	134	134	134	134	134
W.10	Fire Protection	City	446	446	446	446	446	446	446	446	446	446
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	149	149	149	149	149	149	149	149	149	149

Forecast 2015-2024

CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 6.0 -- Customer and Volume Totals

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Max Day Total Capacity											
W.1	Residential	City	2,434,058	2,438,920	2,443,782	2,448,644	2,453,506	2,458,368	2,463,230	2,468,092	2,472,954	2,477,816
W.2	Residential	Outside City	155,081	156,393	156,706	157,018	157,330	157,642	157,955	158,267	158,579	158,891
W.3	Commercial	City	881,988	887,351	892,714	898,077	903,440	908,803	914,166	919,529	924,892	930,255
W.4	Commercial	Outside City	16,373	16,373	16,373	16,373	16,373	16,373	16,373	16,373	16,373	16,373
W.5	Industrial	City	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115	1,590,115
W.6	Industrial	Outside City	309,468	309,468	309,468	309,468	309,468	309,468	309,468	309,468	309,468	309,468
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	384,553	386,377	388,201	390,025	391,849	393,673	395,497	397,321	399,145	400,969
W.9	Municipal	City	121,479	121,479	121,479	121,479	121,479	121,479	121,479	121,479	121,479	121,479
W.10	Fire Protection	City	2,959	2,959	2,959	2,959	2,959	2,959	2,959	2,959	2,959	2,959
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003	2,239,003
	TOTAL		**8,136,078**	**8,148,439**	**8,160,800**	**8,173,161**	**8,185,523**	**8,197,884**	**8,210,245**	**8,222,606**	**8,234,968**	**8,247,329**
	Extra Capacity											
W.1	Residential	City	806,436	808,047	809,658	811,269	812,880	814,490	816,101	817,712	819,323	820,934
W.2	Residential	Outside City	63,966	64,094	64,222	64,350	64,478	64,606	64,734	64,862	64,990	65,118
W.3	Commercial	City	105,059	105,698	106,337	106,976	107,615	108,254	108,892	109,531	110,170	110,809
W.4	Commercial	Outside City	6,630	6,630	6,630	6,630	6,630	6,630	6,630	6,630	6,630	6,630
W.5	Industrial	City	182,458	182,458	182,458	182,458	182,458	182,458	182,458	182,458	182,458	182,458
W.6	Industrial	Outside City	86,178	86,178	86,178	86,178	86,178	86,178	86,178	86,178	86,178	86,178
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	113,841	114,361	114,921	115,481	116,001	116,540	117,080	117,620	118,160	118,700
W.9	Municipal	City	30,808	30,808	30,808	30,808	30,808	30,808	30,808	30,808	30,808	30,808
W.10	Fire Protection	City	2,296	2,296	2,296	2,296	2,296	2,296	2,296	2,296	2,296	2,296
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
	Sub-Total		1,397,672	1,400,590	1,403,508	1,406,425	1,409,343	1,412,260	1,415,178	1,418,096	1,421,013	1,423,931
W.11	Tri County	Outside City	732,868	732,868	732,868	732,868	732,868	732,868	732,868	732,868	732,868	732,868
	TOTAL		**2,130,541**	**2,133,458**	**2,136,376**	**2,139,294**	**2,142,211**	**2,145,128**	**2,148,046**	**2,150,964**	**2,153,882**	**2,156,799**
	Percent of Total											
W.1	Residential	City	37.85%	37.87%	37.90%	37.92%	37.95%	37.97%	37.99%	38.02%	38.04%	38.06%
W.2	Residential	Outside City	3.00%	3.00%	3.01%	3.01%	3.01%	3.01%	3.01%	3.02%	3.02%	3.02%
W.3	Commercial	City	4.93%	4.95%	4.98%	5.00%	5.02%	5.05%	5.07%	5.09%	5.11%	5.14%
W.4	Commercial	Outside City	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%
W.5	Industrial	City	8.56%	8.55%	8.54%	8.53%	8.52%	8.51%	8.49%	8.48%	8.47%	8.46%
W.6	Industrial	Outside City	4.04%	4.04%	4.03%	4.03%	4.02%	4.02%	4.01%	4.01%	4.00%	4.00%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	5.34%	5.36%	5.38%	5.40%	5.41%	5.43%	5.45%	5.47%	5.49%	5.50%
W.9	Municipal	City	1.45%	1.44%	1.44%	1.44%	1.44%	1.44%	1.43%	1.43%	1.43%	1.43%
W.10	Fire Protection	City	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%	0.11%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.11	Tri County	Outside City	34.40%	34.35%	34.30%	34.26%	34.21%	34.16%	34.12%	34.07%	34.03%	33.98%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Forecast 2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 6.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Percent of Total -- Adjusted											
W.1	Residential	City	57.70%	57.69%	57.69%	57.68%	57.68%	57.67%	57.67%	57.66%	57.66%	57.65%
W.2	Residential	Outside City	4.58%	4.58%	4.58%	4.58%	4.58%	4.57%	4.57%	4.57%	4.57%	4.57%
W.3	Commercial	City	7.52%	7.55%	7.58%	7.61%	7.64%	7.67%	7.69%	7.72%	7.75%	7.78%
W.4	Commercial	Outside City	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%
W.5	Industrial	City	13.05%	13.03%	13.00%	12.97%	12.95%	12.92%	12.89%	12.87%	12.84%	12.81%
W.6	Industrial	Outside City	6.17%	6.15%	6.14%	6.13%	6.11%	6.10%	6.09%	6.08%	6.06%	6.05%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	8.15%	8.17%	8.19%	8.21%	8.23%	8.25%	8.27%	8.29%	8.32%	8.34%
W.9	Municipal	City	2.20%	2.20%	2.20%	2.19%	2.19%	2.18%	2.18%	2.17%	2.17%	2.16%
W.10	Fire Protection	City	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Customer Class Units -- Annual Bills											
	Total Bills											
W.1	Residential	City	120,150	120,390	120,630	120,870	121,110	121,350	121,590	121,830	122,070	122,310
W.2	Residential	Outside City	5,999	6,011	6,023	6,035	6,047	6,059	6,071	6,083	6,095	6,107
W.3	Commercial	City	19,735	19,855	19,975	20,095	20,215	20,335	20,455	20,575	20,695	20,815
W.4	Commercial	Outside City	217	217	217	217	217	217	217	217	217	217
W.5	Industrial	City	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034	1,034
W.6	Industrial	Outside City	84	84	84	84	84	84	84	84	84	84
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	2,530	2,542	2,554	2,566	2,578	2,590	2,602	2,614	2,626	2,638
W.9	Municipal	City	36	36	36	36	36	36	36	36	36	36
W.10	Fire Protection	City	38	38	38	38	38	38	38	38	38	38
0	Other	City	60	60	60	60	60	60	60	60	60	60
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
	Sub-Total		149,883	150,267	150,651	151,035	151,419	151,803	152,187	152,571	152,955	153,339
W.11	Tri County	Outside City	84	84	84	84	84	84	84	84	84	84
	TOTAL		**149,967**	**150,351**	**150,735**	**151,119**	**151,503**	**151,887**	**152,271**	**152,655**	**153,039**	**153,423**
	Percent Increase			0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	Percent of Total Bills											
W.1	Residential	City	80.12%	80.07%	80.03%	79.98%	79.94%	79.89%	79.85%	79.81%	79.76%	79.72%
W.2	Residential	Outside City	4.00%	4.00%	4.00%	3.99%	3.99%	3.99%	3.99%	3.98%	3.98%	3.98%
W.3	Commercial	City	13.16%	13.21%	13.25%	13.30%	13.34%	13.39%	13.43%	13.48%	13.52%	13.57%
W.4	Commercial	Outside City	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%
W.5	Industrial	City	0.69%	0.69%	0.69%	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%	0.67%
W.6	Industrial	Outside City	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	1.69%	1.69%	1.69%	1.70%	1.70%	1.71%	1.71%	1.71%	1.72%	1.72%
W.9	Municipal	City	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
W.10	Fire Protection	City	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%	0.02%
0	Other	City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.11	Tri County	Outside City	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 6.0 -- Customer and Volume Totals

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Percent of Total Bills -- Adjusted											
W.1	Residential	City	80.16%	80.12%	80.07%	80.03%	79.98%	79.94%	79.90%	79.85%	79.81%	79.76%
W.2	Residential	Outside City	4.00%	4.00%	4.00%	4.00%	3.99%	3.99%	3.99%	3.99%	3.98%	3.98%
W.3	Commercial	City	13.17%	13.21%	13.26%	13.30%	13.35%	13.40%	13.44%	13.49%	13.53%	13.57%
W.4	Commercial	Outside City	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%
W.5	Industrial	City	0.69%	0.69%	0.69%	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%	0.67%
W.6	Industrial	Outside City	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	1.69%	1.69%	1.70%	1.70%	1.70%	1.71%	1.71%	1.71%	1.72%	1.72%
W.9	Municipal	City	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
W.10	Fire Protection	City	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%	0.02%
0	Other	City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Average Accounts											
W.1	Residential	City	10,013	10,033	10,053	10,073	10,093	10,113	10,133	10,153	10,173	10,193
W.2	Residential	Outside City	500	501	502	503	504	505	506	507	508	509
W.3	Commercial	City	1,645	1,655	1,665	1,675	1,685	1,695	1,705	1,715	1,725	1,735
W.4	Commercial	Outside City	18	18	18	18	18	18	18	18	18	18
W.5	Industrial	City	86	86	86	86	86	86	86	86	86	86
W.6	Industrial	Outside City	7	7	7	7	7	7	7	7	7	7
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	211	212	213	214	215	216	217	218	219	220
W.9	Municipal	City	3	3	3	3	3	3	3	3	3	3
W.10	Fire Protection	City	3	3	3	3	3	3	3	3	3	3
0	Other	City	5	5	5	5	5	5	5	5	5	5
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	7	7	7	7	7	7	7	7	7	7
	TOTAL		12,497	12,529	12,561	12,593	12,626	12,657	12,689	12,721	12,753	12,785
	Percent Increase			0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 6.0 -- Customer and Volume Totals

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	New Accounts											
W.1	Residential	City		20	20	20	20	20	20	20	20	20
W.2	Residential	Outside City		1	1	1	1	1	1	1	1	1
W.3	Commercial	City		10	10	10	10	10	10	10	10	10
W.4	Commercial	Outside City		-	-	-	-	-	-	-	-	-
W.5	Industrial	City		-	-	-	-	-	-	-	-	-
W.6	Industrial	Outside City		-	-	-	-	-	-	-	-	-
W.7	Ind. Discounts	City		-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City		1	1	1	1	1	1	1	1	1
W.9	Municipal	City		-	-	-	-	-	-	-	-	-
W.10	Fire Protection	City		-	-	-	-	-	-	-	-	-
0	Other	City		-	-	-	-	-	-	-	-	-
0	Other	City		-	-	-	-	-	-	-	-	-
0	Other	City		-	-	-	-	-	-	-	-	-
0	Other	City		-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City		-	-	-	-	-	-	-	-	-
	TOTAL			32	32	32	32	32	32	32	32	32
	Average Monthly Usage Per Connection											
W.1	Residential	City	4,945	4,945	4,945	4,945	4,945	4,945	4,945	4,945	4,945	4,945
W.2	Residential	Outside City	5,605	5,605	5,605	5,605	5,605	5,605	5,605	5,605	5,605	5,605
W.3	Commercial	City	14,369	14,369	14,369	14,369	14,369	14,369	14,369	14,369	14,369	14,369
W.4	Commercial	Outside City	16,387	16,387	16,387	16,387	16,387	16,387	16,387	16,387	16,387	16,387
W.5	Industrial	City	496,900	496,900	496,900	496,900	496,900	496,900	496,900	496,900	496,900	496,900
W.6	Industrial	Outside City	970,250	970,250	970,250	970,250	970,250	970,250	970,250	970,250	970,250	970,250
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	39,055	39,055	39,055	39,055	39,055	39,055	39,055	39,055	39,055	39,055
W.9	Municipal	City	919,306	919,306	919,306	919,306	919,306	919,306	919,306	919,306	919,306	919,306
W.10	Fire Protection	City	6,368	6,368	6,368	6,368	6,368	6,368	6,368	6,368	6,368	6,368
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512	6,544,512
	TOTAL		14,617	14,602	14,588	14,574	14,560	14,545	14,531	14,517	14,503	14,490

CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forecast W 7.0 -- Water Cost Classification											
Scen: **2014 12 12 -- Scen 2 -- Conservation**											
CASH BASIS											
Total Water Costs											
Treatment		$ 2,493,811	$ 3,266,396	$ 3,344,904	$ 2,849,257	$ 3,284,521	$ 3,375,181	$ 3,470,328	$ 3,570,200	$ 3,675,049	$ 3,785,141
Distribution		1,435,637	2,160,672	2,189,309	1,641,349	2,021,730	2,054,800	2,089,507	2,125,937	2,164,183	2,204,341
Admin		874,711	914,017	955,241	998,484	1,043,852	1,091,457	1,141,419	1,193,861	1,248,917	1,306,726
Customer		443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
Net Water Costs		**5,247,863**	**6,804,728**	**6,974,008**	**5,995,579**	**6,879,606**	**7,075,089**	**7,280,247**	**7,495,594**	**7,721,671**	**7,959,055**
Water Cost Classification											
Treatment											
Base	25.00%	$ 623,453	$ 816,599	$ 836,226	$ 712,314	$ 821,130	$ 843,795	$ 867,582	$ 892,550	$ 918,762	$ 946,285
Max Day	0.00%	-	-	-	-	-	-	-	-	-	-
Max Hour	75.00%	1,870,358	2,449,797	2,508,678	2,136,942	2,463,391	2,531,386	2,602,746	2,677,650	2,756,287	2,838,856
Customer Billing	0.00%	-	-	-	-	-	-	-	-	-	-
Total Treatment		2,493,811	3,266,396	3,344,904	2,849,257	3,284,521	3,375,181	3,470,328	3,570,200	3,675,049	3,785,141
Distribution											
Base	50.00%	$ 717,819	$ 1,080,336	$ 1,094,655	$ 820,675	$ 1,010,865	$ 1,027,400	$ 1,044,753	$ 1,062,969	$ 1,082,091	$ 1,102,171
Max Day	50.00%	717,819	1,080,336	1,094,655	820,675	1,010,865	1,027,400	1,044,753	1,062,969	1,082,091	1,102,171
Max Hour	0.00%	-	-	-	-	-	-	-	-	-	-
Customer Billing	0.00%	-	-	-	-	-	-	-	-	-	-
Total Distribution		1,435,637	2,160,672	2,189,309	1,641,349	2,021,730	2,054,800	2,089,507	2,125,937	2,164,183	2,204,341
Customer Billing											
Base	0.00%	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Max Day	0.00%	-	-	-	-	-	-	-	-	-	-
Max Hour	0.00%	-	-	-	-	-	-	-	-	-	-
Customer Billing	100.00%	443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
Total Customer Billing		443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
Sub-Total											
Base		$ 1,341,271	$ 1,896,935	$ 1,930,881	$ 1,532,989	$ 1,831,995	$ 1,871,195	$ 1,912,335	$ 1,955,519	$ 2,000,854	$ 2,048,456
Max Day		717,819	1,080,336	1,094,655	820,675	1,010,865	1,027,400	1,044,753	1,062,969	1,082,091	1,102,171
Max Hour		1,870,358	2,449,797	2,508,678	2,136,942	2,463,391	2,531,386	2,602,746	2,677,650	2,756,287	2,838,856
Customer Billing		443,704	463,642	484,554	506,489	529,502	553,650	578,994	605,595	633,523	662,847
Sub-Total		4,373,152	5,890,711	6,018,767	4,997,095	5,835,753	5,983,632	6,138,829	6,301,732	6,472,755	6,652,329

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 7.0 -- Water Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage											
Base		30.67%	32.20%	32.08%	30.68%	31.39%	31.27%	31.15%	31.03%	30.91%	30.79%
Max Day		16.41%	18.34%	18.19%	16.42%	17.32%	17.17%	17.02%	16.87%	16.72%	16.57%
Max Hour		42.77%	41.59%	41.68%	42.76%	42.21%	42.31%	42.40%	42.49%	42.58%	42.67%
Customer Billing		10.15%	7.87%	8.05%	10.14%	9.07%	9.25%	9.43%	9.61%	9.79%	9.96%
Sub-Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Administration Allocation											
Base		$ 268,279	$ 294,333	$ 306,451	$ 306,311	$ 327,692	$ 341,319	$ 355,569	$ 370,472	$ 386,064	$ 402,381
Max Day		143,577	167,628	173,733	163,981	180,815	187,405	194,255	201,379	208,789	216,501
Max Hour		374,106	380,117	398,153	426,989	440,631	461,743	483,940	507,280	531,825	557,640
Customer Billing		88,749	71,940	76,904	101,203	94,713	100,990	107,655	114,730	122,238	130,204
Total Administration		874,711	914,017	955,241	998,484	1,043,852	1,091,457	1,141,419	1,193,861	1,248,917	1,306,726
Total Expenses											
Base		$ 1,609,550	$ 2,191,268	$ 2,237,332	$ 1,839,300	$ 2,159,688	$ 2,212,515	$ 2,267,904	$ 2,325,991	$ 2,386,918	$ 2,450,837
Max Day		861,395	1,247,964	1,268,388	984,656	1,191,680	1,214,805	1,239,009	1,264,348	1,290,881	1,318,671
Max Hour		2,244,464	2,829,914	2,906,832	2,563,931	2,904,022	2,993,129	3,086,686	3,184,930	3,288,112	3,396,496
Customer Billing		532,453	535,582	561,457	607,692	624,215	654,640	686,648	720,325	755,761	793,051
Total		5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
Less Non-Rate Revenues											
Base		$ 94,751	$ 197,393	$ 202,550	$ 199,500	$ 210,274	$ 215,749	$ 221,366	$ 227,128	$ 233,041	$ 239,110
Max Day		50,709	112,418	114,829	106,801	116,026	118,460	120,937	123,461	126,032	128,653
Max Hour		132,127	254,923	263,161	278,097	282,745	291,869	301,286	311,002	321,027	331,370
Customer Billing		31,345	48,246	50,830	65,913	60,776	63,836	67,022	70,338	73,787	77,372
Total		308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,868	776,505
Net Water Cost Classification											
Base		$ 1,514,799	$ 1,993,876	$ 2,034,782	$ 1,639,800	$ 1,949,414	$ 1,996,766	$ 2,046,538	$ 2,098,862	$ 2,153,877	$ 2,211,727
Max Day		810,687	1,135,545	1,153,558	877,855	1,075,655	1,096,346	1,118,071	1,140,886	1,164,848	1,190,019
Max Hour		2,112,337	2,574,991	2,643,671	2,285,834	2,621,278	2,701,260	2,785,400	2,873,928	2,967,084	3,065,126
Customer Billing		501,108	487,336	510,628	541,779	563,440	590,804	619,626	649,987	681,974	715,679
Total		4,938,931	6,191,748	6,342,639	5,345,268	6,209,786	6,385,175	6,569,635	6,763,663	6,967,783	7,182,550
Check to W5		5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,055
Difference		-	-	-	-	-	-	-	-	-	-

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast W 8.0 -- Tri-County Rate Calculation
Scen: 2014 12 12 -- Scen 2 -- Conservation

	2011 Audit	2012 Audit	Test Year 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TRI-COUNTY TREATMENT COST OF SERVICE												
Supply	$ 162,111	$ 108,706	$ 159,313	$ 166,745	$ 174,542	$ 182,722	$ 191,307	$ 200,315	$ 209,770	$ 219,693	$ 230,110	$ 241,046
Pumping	188,832	200,298	211,949	223,344	235,379	248,091	261,519	275,704	290,693	306,530	323,267	340,956
Treatment	1,295,827	1,030,947	1,216,383	1,269,279	1,324,659	1,382,646	1,443,375	1,506,982	1,573,616	1,643,430	1,716,587	1,793,260
Depreciation												
Distribution Mains -- 500 System	78,037	78,037	78,037	78,037	78,037	78,037	78,037	78,037	78,037	78,037	78,037	78,037
Huckleberry Impoundment	384,306	384,306	384,306	384,306	384,306	384,306	384,306	384,306	384,306	384,306	384,306	384,306
Water Treatment Plant	285,959	285,623	285,623	285,623	285,623	285,623	285,623	285,623	285,623	285,623	285,623	285,623
Weir Road Tank	38,664	38,664	38,664	38,664	38,664	38,664	38,664	38,664	38,664	38,664	38,664	38,664
	786,966	786,630	786,630	786,630	786,630	786,630	786,630	786,630	786,630	786,630	786,630	786,630
Total Treatment Cost	**2,433,736**	**2,126,581**	**2,374,275**	**2,445,998**	**2,521,210**	**2,600,090**	**2,682,830**	**2,769,632**	**2,860,708**	**2,956,283**	**3,056,594**	**3,161,892**
Total Water Sold by City Corporation	2,470,074,000	2,454,130,000	2,192,021,000	2,195,467,921	2,198,914,842	2,202,361,763	2,205,808,685	2,209,255,606	2,212,702,527	2,216,149,448	2,219,596,369	2,223,043,290
Treatment Cost/1,000 Gallons	**$ 0.9853**	**$ 0.8665**	**$ 1.0831**	**$ 1.1141**	**$ 1.1466**	**$ 1.1806**	**$ 1.2163**	**$ 1.2536**	**$ 1.2929**	**$ 1.3340**	**$ 1.3771**	**$ 1.4223**
TRI-COUNTY OPERATION AND MAINTENANCE COST OF SERVICE												
Transmission and Distribution	$ 74,388	$ 86,916	$ 85,306	$ 88,176	$ 91,149	$ 94,230	$ 97,423	$ 100,732	$ 104,162	$ 107,719	$ 111,406	$ 115,231
Maintenance	520,157	567,517	665,438	696,862	729,882	764,585	801,061	839,408	879,728	922,129	966,725	1,013,637
Administration and General	505,184	513,481	874,711	912,673	952,451	994,139	1,037,838	1,083,652	1,131,694	1,182,081	1,234,938	1,290,396
Depreciation	1,068,547	872,190	872,190	872,190	872,190	872,190	872,190	872,190	872,190	872,190	872,190	872,190
Sub-Total	2,168,276	2,040,104	2,497,645	2,569,901	2,645,672	2,725,144	2,808,512	2,895,982	2,987,774	3,084,119	3,185,259	3,291,454
Contract Adjustment Factor	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%	53.00%
Net Cost of Service	1,149,186	1,081,255	1,323,752	1,362,048	1,402,206	1,444,326	1,488,511	1,534,871	1,583,520	1,634,583	1,688,187	1,744,471
Total Water Sold by City Corporation	2,470,074,000	2,454,130,000	2,192,021,000	2,195,467,921	2,198,914,842	2,202,361,763	2,205,808,685	2,209,255,606	2,212,702,527	2,216,149,448	2,219,596,369	2,223,043,290
O&M Cost/1,000 Gallons	**$ 0.4652**	**$ 0.4406**	**$ 0.6039**	**$ 0.6204**	**$ 0.6377**	**$ 0.6558**	**$ 0.6748**	**$ 0.6947**	**$ 0.7156**	**$ 0.7376**	**$ 0.7606**	**$ 0.7847**
TRI-COUNTY RATE CALCULATION SUMMARY												
Treatment Cost	$ 0.9853	$ 0.8665	$ 1.0831	$ 1.1141	$ 1.1466	$ 1.1806	$ 1.2163	$ 1.2536	$ 1.2929	$ 1.3340	$ 1.3771	$ 1.4223
O&M Cost	0.4652	0.4406	0.6039	0.6204	0.6377	0.6558	0.6748	0.6947	0.7156	0.7376	0.7606	0.7847
Sub-Total	1.4505	1.3071	1.6870	1.7345	1.7843	1.8364	1.8911	1.9484	2.0085	2.0716	2.1377	2.2070
Contract Adjustment Factor	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
Tri-County Rate Per 1,000 Gallons	**$ 1.5956**	**$ 1.4378**	**$ 1.8557**	**$ 1.9080**	**$ 1.9627**	**$ 2.0200**	**$ 2.0802**	**$ 2.1432**	**$ 2.2094**	**$ 2.2787**	**$ 2.3514**	**$ 2.4278**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 9.0 -- CASH BASIS Net Water Cost Classification less Tri-County

Scen: 2014 12 12 -- Scen 2 -- Conservation

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Water System Cost Classification (W7)										
	Base	$ 1,514,799	$ 1,983,876	$ 2,034,782	$ 1,639,800	$ 1,949,414	$ 1,996,766	$ 2,046,536	$ 2,098,862	$ 2,153,877	$ 2,211,727
	Max Day	810,687	1,135,545	1,153,558	877,855	1,075,555	1,096,345	1,118,071	1,140,886	1,164,848	1,190,019
	Max Hour	2,112,337	2,574,991	2,643,671	2,285,834	2,621,276	2,701,260	2,785,400	2,873,928	2,967,084	3,065,126
	Customer Billing	501,108	487,336	510,628	541,779	563,440	590,804	619,626	649,987	681,974	715,679
	Total	4,938,931	6,181,748	6,342,639	5,345,268	6,209,786	6,385,175	6,569,635	6,763,663	6,967,783	7,182,550
	Percent of Total										
	Base	30.67%	32.20%	32.08%	30.68%	31.39%	31.27%	31.15%	31.03%	30.91%	30.79%
	Max Day	16.41%	18.34%	18.19%	16.42%	17.32%	17.17%	17.02%	16.87%	16.72%	16.57%
	Max Hour	42.77%	41.59%	41.68%	42.76%	42.21%	42.31%	42.40%	42.49%	42.58%	42.67%
	Customer Billing	10.15%	7.87%	8.05%	10.14%	9.07%	9.25%	9.43%	9.61%	9.79%	9.96%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Tri-County Revenue										
	Tri-County Volume (W6)	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000	549,739,000
	Contract Rate/1,000 Gallons (W8)	1.8557	1.9080	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514	2.4278
W.11	Tri County Outside City	$ 1,020,175	$ 1,048,876	$ 1,078,960	$ 1,110,494	$ 1,143,555	$ 1,178,220	$ 1,214,570	$ 1,252,693	$ 1,292,681	$ 1,334,630
	Allocated to:										
	Base	$ 312,894	$ 337,761	$ 346,141	$ 340,673	$ 356,992	$ 368,452	$ 378,356	$ 388,729	$ 399,593	$ 410,973
	Max Day	167,454	192,360	196,234	182,377	198,086	202,302	206,705	211,303	216,106	221,124
	Max Hour	436,320	436,201	449,720	474,888	482,718	498,448	514,955	532,278	550,461	569,548
	Customer Billing	103,508	82,554	86,864	112,556	103,760	109,018	114,554	120,384	126,522	132,984
	Total	1,020,175	1,048,876	1,078,960	1,110,494	1,143,555	1,178,220	1,214,570	1,252,693	1,292,681	1,334,630
	Net Water System Cost Classification										
	Base	$ 1,201,905	$ 1,656,115	$ 1,688,641	$ 1,299,127	$ 1,590,422	$ 1,628,314	$ 1,668,182	$ 1,710,134	$ 1,754,284	$ 1,800,754
	Max Day	643,233	943,185	957,324	695,478	877,569	894,043	911,367	929,584	948,743	968,895
	Max Hour	1,676,017	2,138,790	2,193,951	1,810,946	2,138,560	2,202,812	2,270,445	2,341,650	2,416,623	2,495,577
	Customer Billing	397,601	404,782	423,764	429,223	459,680	481,786	505,072	529,603	555,452	582,694
	Total	3,918,756	5,142,872	5,263,680	4,234,774	5,066,231	5,206,955	5,355,065	5,510,970	5,675,102	5,847,920

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
I.	**Net Water System Cost Classification**											
	Base		$ 1,201,905	$ 1,656,115	$ 1,688,641	$ 1,299,127	$ 1,590,422	$ 1,628,314	$ 1,668,182	$ 1,710,134	$ 1,754,284	$ 1,800,754
	Extra Capacity		2,319,250	3,081,975	3,151,275	2,506,424	3,016,128	3,096,855	3,181,812	3,271,233	3,366,366	3,464,472
	Sub-Total Non Customer		3,521,156	4,738,090	4,839,916	3,805,551	4,606,551	4,725,169	4,849,994	4,981,367	5,119,650	5,265,226
	Customer		397,601	404,782	423,764	429,223	459,680	481,786	505,072	529,603	555,452	582,694
	Total Cost Classification		3,918,756	5,142,872	5,263,680	4,234,774	5,066,231	5,206,955	5,355,065	5,510,970	5,675,102	5,847,920
	Base		30.7%	32.2%	32.1%	30.7%	31.4%	31.3%	31.2%	31.0%	30.9%	30.8%
	Extra Capacity		59.2%	59.9%	59.9%	59.2%	59.5%	59.5%	59.4%	59.4%	59.3%	59.2%
	Sub-Total Non Customer		89.9%	92.1%	91.9%	89.9%	90.9%	90.7%	90.6%	90.4%	90.2%	90.0%
	Customer		10.1%	7.9%	8.1%	10.1%	9.1%	9.3%	9.4%	9.6%	9.8%	10.0%
	Total Cost Classification		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
IV.	**Customer Class Allocation Factors:**											
	Base -- Percent Adjusted											
W.1	Residential	City	36.17%	36.17%	36.17%	36.16%	36.16%	36.16%	36.15%	36.15%	36.15%	36.14%
W.2	Residential	Outside City	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%	2.05%
W.3	Commercial	City	17.27%	17.34%	17.40%	17.47%	17.54%	17.61%	17.67%	17.74%	17.81%	17.87%
W.4	Commercial	Outside City	0.22%	0.22%	0.22%	0.22%	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%
W.5	Industrial	City	31.29%	31.22%	31.15%	31.09%	31.02%	30.96%	30.90%	30.83%	30.77%	30.71%
W.6	Industrial	Outside City	4.96%	4.95%	4.94%	4.93%	4.92%	4.91%	4.90%	4.89%	4.88%	4.87%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	6.02%	6.03%	6.05%	6.06%	6.08%	6.10%	6.11%	6.13%	6.14%	6.16%
W.9	Municipal	City	2.02%	2.01%	2.01%	2.00%	2.00%	1.99%	1.99%	1.99%	1.98%	1.98%
W.10	Fire Protection	City	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Extra Capacity – Adjusted												
W.1	Residential	City	57.70%	57.69%	57.69%	57.68%	57.68%	57.67%	57.67%	57.66%	57.66%	57.65%
W.2	Residential	Outside City	4.58%	4.58%	4.58%	4.58%	4.58%	4.57%	4.57%	4.57%	4.57%	4.57%
W.3	Commercial	City	7.52%	7.55%	7.58%	7.61%	7.64%	7.67%	7.69%	7.72%	7.75%	7.78%
W.4	Commercial	Outside City	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%
W.5	Industrial	City	13.05%	13.03%	13.00%	12.97%	12.95%	12.92%	12.89%	12.87%	12.84%	12.81%
W.6	Industrial	Outside City	6.17%	6.15%	6.14%	6.13%	6.11%	6.10%	6.09%	6.08%	6.06%	6.05%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	8.15%	8.17%	8.19%	8.21%	8.23%	8.25%	8.27%	8.29%	8.32%	8.34%
W.9	Municipal	City	2.20%	2.20%	2.20%	2.19%	2.19%	2.18%	2.18%	2.17%	2.17%	2.16%
W.10	Fire Protection	City	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%	0.16%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Customer – Adjusted												
W.1	Residential	City	80.16%	80.12%	80.07%	80.03%	79.98%	79.94%	79.90%	79.85%	79.81%	79.76%
W.2	Residential	Outside City	4.00%	4.00%	4.00%	4.00%	3.99%	3.99%	3.99%	3.99%	3.98%	3.98%
W.3	Commercial	City	13.17%	13.21%	13.26%	13.30%	13.35%	13.40%	13.44%	13.49%	13.53%	13.57%
W.4	Commercial	Outside City	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%
W.5	Industrial	City	0.69%	0.69%	0.69%	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%	0.67%
W.6	Industrial	Outside City	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%
W.7	Ind. Discounts	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
W.8	Public Authorities	City	1.69%	1.69%	1.70%	1.70%	1.70%	1.71%	1.71%	1.71%	1.72%	1.72%
W.9	Municipal	City	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
W.10	Fire Protection	City	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02%	0.02%	0.02%	0.02%
0	Other	City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	Other	City	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	TOTAL		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

V. Total Cost by Customer Class

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	**Residential City**										
	Base	$ 434,779	$ 599,025	$ 610,729	$ 469,806	$ 575,091	$ 588,734	$ 603,089	$ 618,194	$ 634,092	$ 650,825
	Extra Capacity	1,338,173	1,778,094	1,817,913	1,445,782	1,739,840	1,786,044	1,834,880	1,886,281	1,940,392	1,997,360
	Customer	318,727	324,301	339,318	343,497	367,668	385,136	403,528	422,895	443,294	464,783
	Total	2,091,679	2,701,420	2,767,960	2,259,084	2,682,599	2,759,914	2,841,496	2,927,371	3,017,777	3,112,968
W.2	**Residential Outside City**										
	Base	$ 24,606	$ 33,902	$ 34,564	$ 26,589	$ 32,548	$ 33,320	$ 34,132	$ 34,987	$ 35,887	$ 36,834
	Extra Capacity	106,143	141,038	144,197	114,680	137,989	141,670	145,544	149,622	153,915	158,434
	Customer	15,914	16,192	16,942	17,151	18,358	19,230	20,148	21,115	22,134	23,207
	Total	146,665	191,132	195,703	158,419	188,894	194,220	199,824	205,724	211,936	218,475
W.3	**Commercial City**										
	Base	$ 207,538	$ 287,104	$ 293,896	$ 226,988	$ 278,962	$ 286,707	$ 294,847	$ 303,406	$ 312,409	$ 321,879
	Extra Capacity	174,332	232,587	238,757	190,644	230,306	237,382	244,828	252,664	260,914	269,602
	Customer	52,352	53,484	56,187	57,107	61,369	64,538	67,885	71,420	75,151	79,098
	Total	434,221	573,176	588,841	474,740	570,636	588,627	607,560	627,491	648,476	670,579
W.4	**Commercial Outside City**										
	Base	$ 2,602	$ 3,578	$ 3,641	$ 2,795	$ 3,415	$ 3,489	$ 3,567	$ 3,649	$ 3,736	$ 3,827
	Extra Capacity	11,002	14,590	14,887	11,816	14,189	14,539	14,907	15,294	15,702	16,131
	Customer	576	585	610	617	659	689	720	753	788	825
	Total	14,180	18,752	19,138	15,228	18,263	18,717	19,194	19,697	20,226	20,783
W.5	**Industrial City**										
	Base	$ 376,021	$ 517,037	$ 526,090	$ 403,894	$ 493,428	$ 504,134	$ 515,407	$ 527,276	$ 539,772	$ 552,929
	Extra Capacity	302,764	401,495	409,669	325,162	390,477	400,099	410,228	420,889	432,112	443,925
	Customer	2,743	2,785	2,909	2,938	3,139	3,282	3,432	3,589	3,755	3,929
	Total	681,528	921,318	938,668	731,995	887,043	907,515	929,067	951,754	975,639	1,000,783
W.6	**Industrial Outside City**										
	Base	$ 59,647	$ 82,015	$ 83,451	$ 64,068	$ 78,270	$ 79,969	$ 81,757	$ 83,639	$ 85,622	$ 87,709
	Extra Capacity	143,001	189,633	193,494	153,580	184,429	188,974	193,758	198,794	204,094	209,674
	Customer	223	226	236	239	255	267	279	292	305	319
	Total	202,870	271,875	277,182	217,887	262,955	269,210	275,794	282,725	290,021	297,702

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W7	Int. Discounts City										
	Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Extra Capacity	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-
W8	Public Authorities City										
	Base	$ 72,314	$ 99,905	$ 102,134	$ 78,780	$ 96,693	$ 99,251	$ 101,941	$ 104,769	$ 107,745	$ 110,875
	Extra Capacity	188,903	251,693	256,030	205,765	248,252	255,554	263,237	271,324	279,838	288,802
	Customer	6,711	6,848	7,184	7,292	7,826	8,220	8,635	9,074	9,536	10,025
	Total	267,928	358,446	367,348	291,837	352,772	363,025	373,814	385,167	397,119	409,702
W9	Municipal City										
	Base	$ 24,221	$ 33,304	$ 33,887	$ 26,016	$ 31,783	$ 32,473	$ 33,199	$ 33,963	$ 34,768	$ 35,616
	Extra Capacity	51,122	67,793	69,173	54,904	65,933	67,557	69,268	71,068	72,963	74,957
	Customer	95	97	101	102	109	114	119	125	131	137
	Total	75,438	101,194	103,161	81,022	97,825	100,144	102,586	105,156	107,862	110,710

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast 2015-2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W10	Fire Protection City										
	Base	$ 177	$ 244	$ 248	$ 190	$ 232	$ 237	$ 243	$ 248	$ 254	$ 260
	Extra Capacity	3,810	5,052	5,155	4,092	4,913	5,035	5,162	5,296	5,437	5,586
	Customer	101	102	107	108	115	121	126	132	138	144
	Total	4,088	5,398	5,510	4,390	5,261	5,393	5,531	5,676	5,830	5,991
0	Other City										
	Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Extra Capacity	-	-	-	-	-	-	-	-	-	-
	Customer	159	162	169	171	182	190	199	208	218	228
	Total	159	162	169	171	182	190	199	208	218	228
0	Other City										
	Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Extra Capacity	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-
0	Other City										
	Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Extra Capacity	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-
0	Other City										
	Base	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Extra Capacity	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-
	Total										
	Base	$ 1,201,905	$ 1,656,115	$ 1,688,641	$ 1,299,127	$ 1,590,422	$ 1,628,314	$ 1,668,182	$ 1,710,134	$ 1,754,284	$ 1,800,754
	Extra Capacity	2,319,250	3,081,975	3,151,275	2,506,424	3,016,128	3,096,855	3,181,812	3,271,233	3,365,366	3,464,472
	Customer	397,601	404,782	423,764	429,223	459,680	481,786	505,072	529,603	555,452	582,694
	Total	3,918,756	5,142,872	5,263,680	4,234,774	5,066,231	5,206,955	5,355,066	5,510,970	5,675,102	5,847,920

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast W 11.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

I Water Cost Classification by Customer Class

			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	Residential	City	$ 2,091,679	$ 2,701,420	$ 2,767,960	$ 2,259,086	$ 2,682,399	$ 2,759,914	$ 2,841,496	$ 2,927,371	$ 3,017,777	$ 3,112,968
W.2	Residential	Outside City	146,663	191,132	195,703	158,419	188,894	194,220	199,825	205,725	211,936	218,475
W.3	Commercial	City	434,221	573,176	588,841	474,740	570,636	588,627	607,560	627,491	648,476	670,579
W.4	Commercial	Outside City	14,180	18,752	19,138	15,228	18,263	18,717	19,194	19,697	20,226	20,783
W.5	Industrial	City	681,528	921,318	936,668	731,995	887,043	907,516	929,067	951,754	975,639	1,000,783
W.6	Industrial	Outside City	202,870	271,875	277,182	217,887	262,955	269,210	275,794	282,725	290,021	297,702
W.7	Ind. Discounts	City	-	-	-	-	-	-	-	-	-	-
W.8	Public Authorities	City	267,929	358,445	367,346	291,837	352,772	363,026	373,814	385,167	397,118	409,702
W.9	Municipal	City	75,438	101,194	103,161	81,022	97,825	100,144	102,586	105,156	107,862	110,710
W.10	Fire Protection	City	4,088	5,398	5,510	4,390	5,261	5,393	5,531	5,676	5,830	5,991
0	Other	City	159	162	169	171	182	190	199	208	218	228
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
0	Other	City	-	-	-	-	-	-	-	-	-	-
W.11	Tri County	Outside City	1,020,175	1,048,876	1,078,960	1,110,494	1,143,555	1,178,220	1,214,570	1,252,693	1,292,681	1,334,630
	TOTAL		4,938,931	6,191,748	6,342,639	5,345,268	6,209,786	6,385,175	6,569,635	6,763,663	6,967,783	7,182,550

III Total Water Cost Classification -- Cash Basis

CASH Basis											
Total Cost of Service	$ 5,247,863	$ 6,804,728	$ 6,974,008	$ 5,995,579	$ 6,879,606	$ 7,075,089	$ 7,280,247	$ 7,495,594	$ 7,721,671	$ 7,959,055
Non-Rate Revenues	308,932	612,980	631,369	650,310	669,820	689,914	710,612	731,930	753,888	776,505
Net Revenue Requirement	4,938,931	6,191,748	6,342,639	5,345,268	6,209,786	6,385,175	6,569,635	6,763,663	6,967,783	7,182,550
Difference	-	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year 2015	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Test Year WW 1.0 -- Wastewater Department Cost Functionalization						
Scen: 2014 12 12 -- Scen 2 -- Conservation						
NON-RATE REVENUES						
Wastewater Division						
Sales -- Customer Billing	$ -	$ -	na	na	na	na
Sales -- Dumping	-	-	na	na	na	na
Sewer Surcharge	26,400	26,400	na	na	na	na
Grinder Pump Fees	3,360	3,360	na	na	na	na
Other Revenue	-	-	na	na	na	na
Tapping Fees	38,800	38,800	na	na	na	na
Other Service Fees	720	720	na	na	na	na
Interest Income	3,675	3,675	na	na	na	na
Revenue	-	-	na	na	na	na
Revenue	-	-	na	na	na	na
Revenue	-	-	na	na	na	na
Revenue	-	-	na	na	na	na
Revenue	-	-	na	na	na	na
Revenue	-	-	na	na	na	na
Total	72,955	72,955				
TOTAL NON-RATE REVENUES						
Cash Basis	**72,955**	**72,955**	**na**	**na**	**na**	**na**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Wastewater Division

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
	PUMPING						
01.02.623100	Power Purchases for Pumping	$ 83,120	$ 83,120	$ -	$ 83,120	$ -	$ -
01.02.623200	Other Utility Purchases	15,000	15,000	-	15,000	-	-
01.02.624000	Labor -- Pumping	-	-	-	-	-	-
01.02.626100	Misc. Pumping	1,800	1,800	-	1,800	-	-
01.02.630000	Supervision -- Pumping	5,574	5,574	-	5,574	-	-
01.02.631100	Employee Benefits -- Pumping	9,256	9,256	-	9,256	-	-
01.02.633100	Labor -- Maint of Pumping Equipment	22,912	22,912	-	22,912	-	-
01.02.633200	Materials -- Maint of Pumping Equipment	7,800	7,800	-	7,800	-	-
01.02.633300	O/S Cont -- Maint of Pumping Equipment	65,452	65,452	-	65,452	-	-
	Total	210,914	210,914	-	210,914	-	-
	TREATMENT						
01.02.640100	Labor -- Treatment	172,436	172,436	172,436	-	-	-
01.02.641000	Chemical Expense	81,600	81,600	81,600	-	-	-
01.02.642000	Laboratory	42,800	42,800	42,800	-	-	-
01.02.642100	Labor -- Laboratory	72,470	72,470	72,470	-	-	-
01.02.643100	Licenses and Fees -- Treatment	10,670	10,670	10,670	-	-	-
01.02.644000	Power Purchases for Treatment	321,190	321,190	321,190	-	-	-
01.02.650000	Supervision -- Treatment	26,983	26,983	26,983	-	-	-
01.02.651100	Employee Benefits -- Treatment	95,797	95,797	95,797	-	-	-
01.02.652100	Labor -- Treatment Equipment	22,872	22,872	22,872	-	-	-
01.02.652200	Materials -- Treatment Equipment	24,960	24,960	24,960	-	-	-
01.02.652300	O/S Cont -- Treatment Equipment	66,505	66,505	66,505	-	-	-
01.02.662100	Labor -- Overhead	-	-	-	-	-	-
01.02.666000	Safety Equipment and Supplies	2,620	2,620	2,620	-	-	-
01.02.903400	Computer	4,967	4,967	4,967	-	-	-
01.02.903600	Training	8,293	8,293	8,293	-	-	-
01.02.921100	Office Supplies and Stationary	5,040	5,040	5,040	-	-	-
01.02.921200	Dues and Subscriptions	31	31	31	-	-	-
01.02.921400	Communication Services	7,044	7,044	7,044	-	-	-
01.02.921600	Transportation	14,850	14,850	14,850	-	-	-
01.02.921700	Travel and Personal	7,800	7,800	7,800	-	-	-
01.02.932000	Maint. Of General Plant	3,600	3,600	-	3,600	-	-
	Total	992,528	992,528	992,528	-	-	-
	COLLECTION						
01.02.660000	Supervision -- T&D	8,796	8,796	-	8,796	-	-
01.02.662100	Labor -- Overhead	-	-	-	-	-	-
01.02.662200	Materials -- T&D	3,000	3,000	-	3,000	-	-
01.02.666000	Safety Equipment and Supplies	3,900	3,900	-	3,900	-	-
01.02.670100	Supervision -- Collection	8,796	8,796	-	8,796	-	-
01.02.672140	Labor -- I&I	-	-	-	-	-	-
01.02.672240	Materials -- I&I	30,000	30,000	-	30,000	-	-
01.02.903100	O&S Cont -- I&I	-	-	-	-	-	-
01.02.673150	Labor -- Maint of Collection Lines	196,180	196,180	-	196,180	-	-
01.02.673250	Materials -- Maint of Collection Lines	25,200	25,200	-	25,200	-	-
01.02.673400	O/S -- Maint of Collection Lines	18,000	18,000	-	18,000	-	-
01.02.676100	Labor -- Maint of Meters	24,589	24,589	-	24,589	-	-
01.02.676200	Materials -- Maint of Meters	15,376	15,376	-	15,376	-	-
01.02.680200	Employee Benefits -- Collection	77,469	77,469	-	77,469	-	-
01.02.903400	Computer Exp	1,248	1,248	-	1,248	-	-
01.02.903600	Training	5,972	5,972	-	5,972	-	-
01.02.921100	Office Supplies	1,415	1,415	-	1,415	-	-
01.02.921200	Dues and Subscriptions	35	35	-	35	-	-
01.02.921400	Communication	4,536	4,536	-	4,536	-	-
01.02.921600	Transportation	37,908	37,908	-	37,908	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year 2016		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Test Year WW 1.0 -- Wastewater Department Cost Functionalization							
Scen:	2014 12 12 -- Scen 2 -- Conservation						
01.02.921700	Travel and Personal	5,580	5,580	-	5,580	-	-
01.02.932000	Maint. Of General Plant	2,700	2,700	-	2,700	-	-
	Total	470,700	470,700	-	470,700	-	-
	CUSTOMER ACCOUNT						
01.02.666000	Safety Equipment and Supplies	-	-	-	-	-	-
01.02.901000	Supervision -- Cust Acct	38,161	38,161	-	-	-	38,161
01.02.902100	Labor -- Meter Reading	20,689	20,689	-	-	-	20,689
01.02.902200	Supplies -- Meter Reading	864	864	-	-	-	864
01.02.903100	Labor Customer Records	65,725	65,725	-	-	-	65,725
01.02.903200	Stationary and Supplies	2,552	2,552	-	-	-	2,552
01.02.903300	Postage	-	-	-	-	-	-
01.02.903400	Computer	5,220	5,220	-	-	-	5,220
01.02.903600	Training	3,304	3,304	-	-	-	3,304
01.02.910100	Employee Benefits -- Cust Acct	40,487	40,487	-	-	-	40,487
01.02.921200	Dues and Subscriptions	64	64	-	-	-	64
01.02.921400	Communication	1,920	1,920	-	-	-	1,920
01.02.921600	Transportation	7,200	7,200	-	-	-	7,200
01.02.921700	Travel and Personal	1,700	1,700	-	-	-	1,700
01.02.923000	Outside Services	42,420	42,420	-	-	-	42,420
01.02.932000	Maint. Of General Plant	840	840	-	-	-	840
	Total	231,146	231,146	-	-	-	231,146
	ADMINISTRATION						
01.02.666000	Safety Equipment and Supplies	220	220	-	-	220	-
01.02.903300	Postage	3,654	3,654	-	-	3,654	-
01.02.903400	Computer	29,298	29,298	-	-	29,298	-
01.02.903600	Training	10,020	10,020	-	-	10,020	-
01.02.920100	Salaries -- General Management	37,128	37,128	-	-	37,128	-
01.02.920300	Salaries -- Accounting/Other	68,998	68,998	-	-	68,998	-
01.02.920400	Salaries -- Engineering	101,176	101,176	-	-	101,176	-
01.02.921100	Office Supplies	11,962	11,962	-	-	11,962	-
01.02.921200	Dues and Subscriptions	7,193	7,193	-	-	7,193	-
01.02.921300	Public Relations	5,505	5,505	-	-	5,505	-
01.02.921400	Communication	13,584	13,584	-	-	13,584	-
01.02.921500	Employee Relations	6,460	6,460	-	-	6,460	-
01.02.921600	Transportation	14,236	14,236	-	-	14,236	-
01.02.921700	Travel and Personal	1,200	1,200	-	-	1,200	-
01.02.921800	Employee Benefits -- Admin and Gen	67,373	67,373	-	-	67,373	-
01.02.921900	Payroll Tax	-	-	-	-	-	-
01.02.922000	Contributions	-	-	-	-	-	-
01.02.922300	Outside Services	370,328	370,328	-	-	370,328	-
01.02.922400	Insurance	35,760	35,760	-	-	35,760	-
01.02.922600	CWIP FUTA Exp	-	-	-	-	-	-
01.02.922700	CWIP SUTA Exp	-	-	-	-	-	-
01.02.931000	Office Equipment Rental	1,440	1,440	-	-	1,440	-
01.02.932000	Maint of General Plant	20,816	20,816	-	-	20,816	-
01.02.95000	Loss on Sale of Assets	-	-	-	-	-	-
01.02.950200	Gain/Loss -- Cont in Aid of Const	-	-	-	-	-	-
	Total	806,351	806,351	-	-	806,351	-

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Test Year 2015	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL						

Test Year WW 1.0 -- Wastewater Department Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
	PRETREATMENT						
01.02.960000	Supervision -- Pretreatment	10,197	10,197	10,197	-	-	-
01.02.960100	Labor -- Pretreatment	72,825	72,825	72,825	-	-	-
01.02.960200	Laboratory Exp -- Pretreatment	15,840	15,840	15,840	-	-	-
01.02.961100	Employee Benefits -- Pretreatment	26,981	26,981	26,981	-	-	-
	Total	125,843	125,843	125,843	-	-	-
	DEPRECIATION AND AMORTIZATION						
01.02.426000	Interest Revenue Bonds 1992	-	-	-	-	-	-
01.02.428000	Paying Agent Fees	-	-	-	-	-	-
01.02.429000	Interest	-	-	-	-	-	-
01.02.403000	Depreciation	-	-	-	-	-	-
	Total	-	-	-	-	-	-

TOTAL OPERATING EXPENSES

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
	Cash Basis	$ 2,837,482	$ 2,837,482	$ 1,118,371	$ 681,614	$ 806,351	$ 231,146
			100.0%	39.4%	24.0%	28.4%	8.1%

CAPITAL OUTLAYS

			Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Wastewater Division								
Replacement Reserve		0	$ 250,000	$ 250,000	$ -	$ 250,000	$ -	$ -
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-
Other	Other		-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

Test Year 2016		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
Other	Other	-	-	-	-	-	-
General	Budget Future Projects	-	-	-	-	-	-
	TOTAL	250,000	250,000	-	250,000	-	-

TOTAL CAPITAL OUTLAYS

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
	Cash Basis	$ 250,000	$ 250,000	$ -	$ 250,000	$ -	$ -

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
DEBT SERVICE -- CURRENT							
1	2013 Bond						
	Principal	$ 614,297	$ 614,297	$ 614,297	$ -	$ -	$ -
	Interest	-	-	-	-	-	-
	Reserve	223,224	223,224	223,224	-	-	-
	Sub-Total	837,521	837,521	837,521	-	-	-
2	Debt						
	Principal	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
3	Debt						
	Principal	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
4	Debt						
	Principal	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
5	Debt						
	Principal	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year 2015	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Test Year WW 1.0 -- Wastewater Department Cost Functionalization						
Scen: **2014 12 12 -- Scen 2 -- Conservation**						
6 **Debt**						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
7 **Debt**						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
8 **Debt**						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
Sub-Total	-	-	-	-	-	-
TOTAL DEBT SERVICE -- CURRENT						
Principal	$ 614,297	$ 614,297	$ 614,297	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	223,224	223,224	223,224	-	-	-
TOTAL	837,521	837,521	837,521	-	-	-
Cash Basis	$ 837,521	$ 837,521	$ 837,521	$ -	$ -	$ -

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year 2015	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
Test Year WW 1.0 -- Wastewater Department Cost Functionalization						
Scen: 2014 12 12 -- Scen 2 -- Conservation						
DEBT SERVICE -- FUTURE						
Principal	$ -	$ -	$ -	$ -	$ -	$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-
Cash Basis	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL EXPENSES						
Cash Basis	$ 3,926,003	$ 3,926,003	$ 1,965,892	$ 931,614	$ 806,351	$ 231,146

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Test Year
2015

Test Year WW 2.0 -- Wastewater Cost Classification

Scen: 2014 12 12 -- Scen 2 -- Conservation

	Total Wastewater	Treatment	Collection	Administration	Cust Billing
CASH BASIS					
Operating Expenses	$ 2,837,482	$ 1,118,371	$ 681,614	$ 806,351	$ 231,146
Capital Outlays	250,000	-	250,000	-	-
Debt Service -- Current	837,521	837,521	-	-	-
Debt Service -- Future	-	-	-	-	-
TOTAL EXPENSES	$ 3,925,003	$ 1,955,892	$ 931,614	$ 806,351	$ 231,146
Percentage	100.00%	49.83%	23.74%	20.54%	5.89%
Allocation of Administration:					
Total WW less Admin	3,118,652	1,955,892	931,614	na	231,146
Percent of Total	100.00%	62.72%	29.87%	na	7.41%
Administration Allocation	806,351	505,711	240,876	na	59,765
Sub-Total	3,925,003	2,461,603	1,172,490	na	290,911
Sub-Total Percentage	100.00%	62.72%	29.87%	na	7.41%
Non-Rate Revenues	(72,955)	(45,754)	(21,793)	na	(5,407)
WASTEWATER COST CLASSIFICATION	$ 3,852,048	$ 2,415,848	1,150,696	na	$ 285,503

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

NON-RATE REVENUES

	Total Expense:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wastewater Division											
Sales -- Customer Billing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Sales -- Dumping	-	-	-	-	-	-	-	-	-	-	-
Sewer Surcharge	26,400	27,192	28,008	28,848	29,713	30,605	31,523	32,469	33,443	34,446	
Grinder Pump Fees	3,360	3,461	3,565	3,672	3,782	3,895	4,012	4,132	4,256	4,384	
Other Revenue	-	-	-	-	-	-	-	-	-	-	
Tapping Fees	38,800	39,964	41,163	42,398	43,670	44,980	46,329	47,719	49,151	50,625	
Other Service Fees	720	742	764	787	810	835	860	886	912	939	
Interest Income	3,675	3,785	3,899	4,016	4,136	4,260	4,388	4,520	4,655	4,795	
Revenue	-	-	-	-	-	-	-	-	-	-	
Revenue	-	-	-	-	-	-	-	-	-	-	
Revenue	-	-	-	-	-	-	-	-	-	-	
Revenue	-	-	-	-	-	-	-	-	-	-	
Revenue	-	-	-	-	-	-	-	-	-	-	
Revenue	-	-	-	-	-	-	-	-	-	-	
Sub-Total	72,955	75,144	77,398	79,720	82,111	84,575	87,112	89,725	92,417	95,190	

TOTAL NON-RATE REVENUES

Cash Basis	**$ 72,955**	**$ 75,144**	**$ 77,398**	**$ 79,720**	**$ 82,111**	**$ 84,575**	**$ 87,112**	**$ 89,725**	**$ 92,417**	**$ 95,190**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Wastewater Division

		Total Expense: 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	PUMPING										
01.02.623100	Power Purchases for Pumping	$ 83,120	$ 87,482	$ 92,073	$ 96,903	$ 101,987	$ 107,337	$ 112,966	$ 118,891	$ 125,125	$ 131,685
01.02.623200	Other Utility Purchases	15,000	15,787	16,616	17,487	18,405	19,370	20,386	21,455	22,580	23,764
01.02.624000	Labor -- Pumping	-	-	-	-	-	-	-	-	-	-
01.02.626100	Misc. Pumping	1,800	1,858	1,919	1,981	2,045	2,112	2,180	2,251	2,324	2,399
01.02.630000	Supervision -- Pumping	5,574	5,853	6,145	6,453	6,775	7,114	7,470	7,843	8,235	8,647
01.02.631100	Employee Benefits -- Pumping	9,256	9,904	10,597	11,339	12,133	12,982	13,891	14,863	15,904	17,017
01.02.633100	Labor -- Maint of Pumping Equipment	22,912	23,656	24,424	25,217	26,036	26,881	27,753	28,654	29,583	30,542
01.02.633200	Materials -- Maint of Pumping Equipment	7,800	8,053	8,315	8,585	8,863	9,151	9,448	9,755	10,071	10,398
01.02.633300	O/S Cont -- Maint of Pumping Equipment	65,452	67,578	69,772	72,038	74,376	76,790	79,282	81,854	84,509	87,249
	Total	210,914	220,172	229,861	240,003	250,620	261,737	273,376	285,665	298,331	311,702
	TREATMENT										
01.02.640100	Labor -- Treatment	172,436	181,058	190,111	199,616	209,597	220,077	231,081	242,635	254,767	267,505
01.02.641000	Chemical Expense	81,600	84,250	86,986	89,810	92,726	95,735	98,842	102,048	105,358	108,775
01.02.642000	Laboratory	42,800	44,190	45,625	47,106	48,636	50,214	51,843	53,525	55,262	57,054
01.02.642100	Labor -- Laboratory	72,470	76,094	79,898	83,893	88,088	92,492	97,117	101,973	107,071	112,425
01.02.643100	Licenses and Fees -- Treatment	10,670	10,990	11,320	11,659	12,009	12,369	12,741	13,123	13,516	13,922
01.02.644000	Power Purchases for Treatment	321,190	338,046	355,784	374,451	394,095	414,767	436,521	459,414	483,504	508,855
01.02.650000	Supervision -- Treatment	26,983	28,332	29,749	31,236	32,798	34,438	36,160	37,968	39,866	41,859
01.02.651100	Employee Benefits -- Treatment	95,797	102,503	109,678	117,355	125,570	134,360	143,765	153,829	164,597	176,119
01.02.652100	Labor -- Treatment Equipment	22,872	24,016	25,216	26,477	27,801	29,191	30,651	32,183	33,792	35,482
01.02.652200	Materials -- Treatment Equipment	24,960	25,771	26,608	27,471	28,363	29,284	30,234	31,215	32,227	33,272
01.02.652300	O/S Cont -- Treatment Equipment	66,505	68,685	70,895	73,197	75,573	78,025	80,557	83,171	85,868	88,653
01.02.662100	Labor -- Overhead	-	-	-	-	-	-	-	-	-	-
01.02.666000	Safety Equipment and Supplies	2,620	2,705	2,793	2,884	2,977	3,074	3,174	3,277	3,383	3,493
01.02.903400	Computer	4,967	5,116	5,269	5,428	5,590	5,758	5,931	6,109	6,292	6,481
01.02.903600	Training	8,293	8,542	8,798	9,062	9,334	9,614	9,902	10,199	10,505	10,820
01.02.921100	Office Supplies and Stationary	5,040	5,191	5,347	5,507	5,673	5,843	6,018	6,199	6,385	6,576
01.02.921200	Dues and Subscriptions	31	32	33	34	35	36	37	38	39	40
01.02.921400	Communication Services	7,044	7,255	7,473	7,697	7,928	8,166	8,411	8,663	8,923	9,191
01.02.921600	Transportation	14,850	15,332	15,830	16,344	16,875	17,422	17,988	18,571	19,174	19,795
01.02.921700	Travel and Personal	7,800	8,034	8,275	8,523	8,779	9,042	9,314	9,593	9,881	10,177
01.02.932000	Maint. Of General Plant	3,600	3,717	3,838	3,962	4,091	4,224	4,361	4,502	4,648	4,799
	Total	992,528	1,039,838	1,089,526	1,141,714	1,196,637	1,254,132	1,314,646	1,378,234	1,445,059	1,515,294

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Expense: 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	COLLECTION										
01.02.660000	Supervision -- T&D	8,796	9,236	9,698	10,182	10,692	11,226	11,787	12,377	12,996	13,645
01.02.662100	Labor -- Overhead	-	-	-	-	-	-	-	-	-	-
01.02.662200	Materials -- T&D	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914
01.02.666000	Safety Equipment and Supplies	3,900	4,027	4,157	4,292	4,432	4,576	4,724	4,877	5,036	5,199
01.02.670100	Supervision -- Collection	8,796	9,236	9,698	10,182	10,692	11,226	11,787	12,377	12,996	13,645
01.02.672140	Labor -- I&I	-	-	-	-	-	-	-	-	-	-
01.02.672240	Materials -- I&I	30,000	30,974	31,980	33,019	34,090	35,197	36,339	37,518	38,735	39,991
01.02.903100	O&S Cont -- I&I	-	-	-	-	-	-	-	-	-	-
01.02.673150	Labor -- Maint of Collection Lines	196,180	205,989	216,288	227,103	238,458	250,381	262,900	276,045	289,847	304,340
01.02.673250	Materials -- Maint of Collection Lines	25,200	26,018	26,863	27,736	28,636	29,565	30,525	31,515	32,537	33,592
01.02.673400	O/S -- Maint of Collection Lines	18,000	18,585	19,188	19,811	20,454	21,118	21,803	22,511	23,241	23,995
01.02.676100	Labor -- Maint of Meters	24,589	25,818	27,109	28,465	29,888	31,382	32,952	34,599	36,329	38,146
01.02.676200	Materials -- Maint of Meters	15,376	15,875	16,391	16,923	17,472	18,039	18,625	19,229	19,853	20,497
01.02.680200	Employee Benefits -- Collection	77,469	82,892	88,694	94,903	101,546	108,654	116,260	124,398	133,106	142,424
01.02.903400	Computer Exp	1,248	1,285	1,324	1,364	1,405	1,447	1,490	1,535	1,581	1,628
01.02.903600	Training	5,972	6,151	6,336	6,526	6,722	6,923	7,131	7,345	7,565	7,792
01.02.921100	Office Supplies	1,415	1,457	1,501	1,546	1,593	1,640	1,690	1,740	1,792	1,846
01.02.921200	Dues and Subscriptions	35	36	37	38	39	41	42	43	44	46
01.02.921400	Communication	4,536	4,672	4,812	4,957	5,105	5,258	5,416	5,579	5,746	5,918
01.02.921600	Transportation	37,908	39,139	40,410	41,722	43,077	44,475	45,918	47,407	48,945	50,533
01.02.921700	Travel and Personal	5,580	5,747	5,920	6,097	6,280	6,469	6,663	6,863	7,069	7,281
01.02.932000	Maint. Of General Plant	2,700	2,788	2,878	2,972	3,068	3,168	3,270	3,377	3,486	3,599
	Total	**470,700**	**493,017**	**516,468**	**541,116**	**567,025**	**594,263**	**622,904**	**653,024**	**684,704**	**718,031**
	CUSTOMER ACCOUNT										
01.02.666000	Safety Equipment and Supplies	-	-	-	-	-	-	-	-	-	-
01.02.901000	Supervision -- Cust Acct	38,161	39,416	40,712	42,050	43,431	44,858	46,331	47,853	49,423	51,045
01.02.902100	Labor -- Meter Reading	20,689	21,723	22,810	23,950	25,148	26,405	27,725	29,112	30,567	32,095
01.02.902200	Supplies -- Meter Reading	864	892	922	952	983	1,016	1,049	1,083	1,119	1,156
01.02.903100	Labor Customer Records	65,725	69,011	72,462	76,085	79,889	83,884	88,078	92,482	97,106	101,961
01.02.903200	Stationary and Supplies	2,552	2,629	2,707	2,789	2,872	2,958	3,047	3,139	3,233	3,330
01.02.903300	Postage	-	-	-	-	-	-	-	-	-	-
01.02.903400	Computer	5,220	5,377	5,538	5,704	5,875	6,051	6,233	6,420	6,613	6,811
01.02.903600	Training	3,304	3,403	3,505	3,610	3,719	3,830	3,945	4,064	4,185	4,311
01.02.910100	Employee Benefits -- Cust Acct	40,487	43,321	46,354	49,598	53,070	56,785	60,760	65,013	69,564	74,434
01.02.921200	Dues and Subscriptions	64	66	68	70	72	74	76	79	81	84
01.02.921400	Communication	1,920	1,978	2,037	2,098	2,161	2,226	2,293	2,361	2,432	2,505
01.02.921600	Transportation	7,200	7,416	7,638	7,868	8,104	8,347	8,597	8,855	9,121	9,394
01.02.921700	Travel and Personal	1,700	1,751	1,804	1,858	1,913	1,971	2,030	2,091	2,154	2,218
01.02.923000	Outside Services	42,420	43,693	45,003	46,353	47,744	49,176	50,652	52,171	53,736	55,348
01.02.932000	Maint. Of General Plant	840	868	896	926	956	987	1,020	1,053	1,088	1,124
		231,146	**241,543**	**252,455**	**263,910**	**275,938**	**288,569**	**301,836**	**315,776**	**330,422**	**345,816**

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Expense:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	ADMINISTRATION											
01.02.666000	Safety Equipment and Supplies	220	227	233	240	248	255	263	271	279	287	
01.02.903300	Postage	3,654	3,764	3,877	3,993	4,113	4,236	4,363	4,494	4,629	4,768	
01.02.903400	Computer	29,298	30,177	31,082	32,015	32,975	33,964	34,983	36,033	37,114	38,227	
01.02.903600	Training	10,020	10,321	10,630	10,949	11,278	11,616	11,964	12,323	12,693	13,074	
01.02.920100	Salaries -- General Management	37,128	38,984	40,934	42,980	45,129	47,386	49,755	52,243	54,855	57,598	
01.02.920300	Salaries -- Accounting/Other	68,998	72,448	76,070	79,874	83,868	88,061	92,464	97,087	101,941	107,039	
01.02.920400	Salaries -- Engineering	101,176	106,235	111,547	117,124	122,980	129,129	135,586	142,365	149,483	156,957	
01.02.921100	Office Supplies	11,962	12,321	12,690	13,071	13,463	13,867	14,283	14,712	15,153	15,608	
01.02.921200	Dues and Subscriptions	7,193	7,409	7,631	7,860	8,096	8,339	8,589	8,846	9,112	9,385	
01.02.921300	Public Relations	5,505	5,670	5,840	6,015	6,196	6,382	6,573	6,770	6,974	7,183	
01.02.921400	Communication	13,584	13,992	14,411	14,844	15,289	15,748	16,220	16,707	17,208	17,724	
01.02.921500	Employee Relations	6,460	6,654	6,853	7,059	7,271	7,489	7,714	7,945	8,183	8,429	
01.02.921600	Transportation	14,235	14,663	15,103	15,556	16,023	16,503	16,999	17,508	18,034	18,575	
01.02.921700	Travel and Personal	1,200	1,236	1,273	1,311	1,351	1,391	1,433	1,476	1,520	1,566	
01.02.921800	Employee Benefits -- Admin and Gen	67,373	72,069	77,135	82,535	88,312	94,494	101,109	108,186	115,759	123,863	
01.02.921900	Payroll Tax	-	-	-	-	-	-	-	-	-	-	
01.02.922000	Contributions	-	-	-	-	-	-	-	-	-	-	
01.02.922300	Outside Services	370,328	381,438	392,881	404,667	416,807	429,312	442,191	455,457	469,120	483,194	
01.02.922400	Insurance	35,760	37,548	39,425	41,397	43,467	45,640	47,922	50,318	52,834	55,475	
01.02.922600	CWIP FUTA Exp	-	-	-	-	-	-	-	-	-	-	
01.02.922700	CWIP SUTA Exp	-	-	-	-	-	-	-	-	-	-	
01.02.931000	Office Equipment Rental	1,440	1,483	1,528	1,574	1,621	1,669	1,719	1,771	1,824	1,879	
01.02.932000	Maint of General Plant	20,816	21,440	22,084	22,746	23,429	24,131	24,855	25,601	26,369	27,160	
01.02.95000	Loss on Sale of Assets	-	-	-	-	-	-	-	-	-	-	
01.02.950200	Gain/Loss -- Cont in Aid of Const	-	-	-	-	-	-	-	-	-	-	
	Total	806,351	838,098	871,228	905,810	941,913	979,612	1,018,985	1,060,113	1,103,084	1,147,989	
	PRETREATMENT											
01.02.960000	Supervision -- Pretreatment	10,197	10,707	11,242	11,804	12,395	13,014	13,665	14,348	15,066	15,819	
01.02.960100	Labor -- Pretreatment	72,825	76,466	80,290	84,304	88,519	92,945	97,592	102,472	107,596	112,975	
01.02.960200	Laboratory Exp -- Pretreatment	15,840	16,315	16,805	17,309	17,828	18,363	16,914	19,481	20,066	20,668	
01.02.961100	Employee Benefits -- Pretreatment	26,981	28,870	30,891	33,053	35,367	37,842	40,491	43,326	46,358	49,603	
	Total	125,843	132,358	139,227	146,470	154,108	162,165	170,662	179,627	189,085	199,065	
	DEPRECIATION AND AMORTIZATION											
01.02.426000	Interest Revenue Bonds 1992	-	-	-	-	-	-	-	-	-	-	
01.02.426000	Paying Agent Fees	-	-	-	-	-	-	-	-	-	-	
01.02.429000	Interest	-	-	-	-	-	-	-	-	-	-	
01.02.403000	Depreciation	-	-	-	-	-	-	-	-	-	-	
	Total	-	-	-	-	-	-	-	-	-	-	
TOTAL OPERATING EXPENSES												
	Cash Basis		$ 2,837,482	$ 2,965,026	$ 3,098,766	$ 3,239,024	$ 3,386,142	$ 3,540,477	$ 3,702,409	$ 3,872,338	$ 4,050,686	$ 4,237,898

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service
Scen: 2014 12 12 -- Scen 2 -- Conservation

CAPITAL OUTLAYS

			Total Expense: 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Wastewater Division												
Replacement Reserve		0	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
Other	Other		-	-	-	-	-	-	-	-	-	-
General	Budget Future Projects		-	-	-	-	-	-	-	-	-	-
			$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000	$ 250,000
TOTAL CAPITAL OUTLAYS												
	Cash Basis		**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**	**$ 250,000**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

		Total Expense	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEBT SERVICE -- CURRENT												
1	2013 Bond											
	Principal	$ 6,142,970	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	2,232,240	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
	Sub-Total	8,375,210	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
2	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
3	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
4	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
5	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
6	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
7	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
8	Debt											
	Principal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
TOTAL DEBT SERVICE -- CURRENT												
	Principal	$ 6,142,970	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297	$ 614,297
	Interest	-	-	-	-	-	-	-	-	-	-	-
	Reserve	2,232,240	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224	223,224
	TOTAL	8,375,210	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
	Cash Basis	$ 8,375,210	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service

Scen: 2014 12 12 -- Scen 2 -- Conservation

Total Expense:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEBT SERVICE -- FUTURE										
Principal	$ -	$ 523,461	$ 544,399	$ 566,175	$ 981,418	$ 1,020,674	$ 1,218,540	$ 1,267,281	$ 1,317,973	$ 1,370,691
Interest	-	872,000	851,062	829,286	1,460,639	1,421,382	1,642,155	1,593,413	1,542,722	1,490,003
Reserve	-	-	-	-	-	-	-	-	-	-
TOTAL	-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
Cash Basis	$ -	$ 1,395,461	$ 1,395,461	$ 1,395,461	$ 2,442,056	$ 2,442,056	$ 2,860,695	$ 2,860,695	$ 2,860,695	$ 2,860,695
TOTAL EXPENSES										
Cash Basis	$ 3,925,003	$ 5,448,008	$ 5,681,748	$ 5,722,006	$ 6,915,719	$ 7,070,055	$ 7,650,625	$ 7,820,554	$ 7,998,901	$ 8,186,113

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

Forecast WW 4.0 -- Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATING EXPENSES											
Treatment	39.41%	$ 1,118,371	$ 1,168,641	$ 1,221,354	$ 1,276,636	$ 1,334,621	$ 1,395,451	$ 1,459,275	$ 1,526,251	$ 1,596,546	$ 1,670,334
Collection	24.02%	681,614	712,252	744,379	778,072	813,412	850,486	889,385	930,205	973,047	1,018,019
Admin	28.42%	806,351	842,596	880,602	920,461	962,268	1,006,127	1,052,145	1,100,435	1,151,117	1,204,319
Customer	8.15%	231,146	241,536	252,431	263,856	275,841	288,413	301,604	315,447	329,976	345,226
TOTAL	100.00%	2,837,482	2,965,026	3,098,766	3,239,024	3,386,142	3,540,477	3,702,409	3,872,338	4,050,685	4,237,898
CAPITAL OUTLAYS											
Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Collection		250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Admin		-	-	-	-	-	-	-	-	-	-
Customer		-	-	-	-	-	-	-	-	-	-
TOTAL		250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 4.0 -- Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- CURRENT

		Forecast 2015-2024 Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1	2013 Bond											
	Treatment		$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
2	Debt											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
3	Debt											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
4	Debt											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
5	Debt											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-

CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 4.0 -- Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

	Forecast 2015-2024	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
6	**Debt**											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
7	**Debt**											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
8	**Debt**											
	Treatment		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	Sub-Total		-	-	-	-	-	-	-	-	-	-
	Total Debt Service											
	Treatment		$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521	$ 837,521
	Collection		-	-	-	-	-	-	-	-	-	-
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	TOTAL		837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
	DEBT SERVICE -- FUTURE											
	Total Debt Service											
	Treatment		$ -	$ 697,730	$ 697,730	$ 697,730	$ 1,221,028	$ 1,221,028	$ 1,430,347	$ 1,430,347	$ 1,430,347	$ 1,430,347
	Collection		-	697,730	697,730	697,730	1,221,028	1,221,028	1,430,347	1,430,347	1,430,347	1,430,347
	Admin		-	-	-	-	-	-	-	-	-	-
	Customer		-	-	-	-	-	-	-	-	-	-
	TOTAL		-	1,395,461	1,395,461	1,395,461	2,442,056	2,442,056	2,860,695	2,860,695	2,860,695	2,860,695
	TOTAL EXPENSES											
	Treatment		$ 1,955,892	$ 2,703,893	$ 2,756,605	$ 2,811,887	$ 3,393,170	$ 3,454,090	$ 3,727,144	$ 3,794,120	$ 3,864,414	$ 3,938,202
	Collection		931,614	1,659,983	1,692,109	1,725,802	2,284,440	2,321,514	2,569,732	2,610,552	2,653,395	2,698,366
	Admin		806,351	842,596	880,602	920,451	962,268	1,006,127	1,052,145	1,100,435	1,151,117	1,204,319
	Customer		231,146	241,536	252,431	263,856	275,841	288,413	301,604	315,447	329,976	345,226
	TOTAL		3,925,003	5,448,008	5,581,748	5,722,006	6,915,719	7,070,055	7,650,625	7,820,554	7,998,901	8,186,113
	Check with WW3		3,925,003 TRUE	5,448,008 TRUE	5,581,748 TRUE	5,722,006 TRUE	6,915,719 TRUE	7,070,055 TRUE	7,650,625 TRUE	7,820,554 TRUE	7,998,901 TRUE	8,186,113 TRUE

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast
2015-2024

	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Forecast WW 5.0 -- Wastewater Cost Classification											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
Total WW Costs											
Treatment		$ 1,955,892	$ 2,703,893	$ 2,756,605	$ 2,811,887	$ 3,393,170	$ 3,454,000	$ 3,727,144	$ 3,794,120	$ 3,864,414	$ 3,938,202
Collection		931,614	1,659,983	1,692,109	1,725,802	2,284,440	2,321,514	2,569,732	2,610,552	2,653,395	2,698,366
Admin		806,351	842,596	880,602	920,461	962,268	1,006,127	1,052,145	1,100,435	1,151,117	1,204,319
Customer		231,146	241,536	252,431	263,856	275,841	288,413	301,604	315,447	329,976	345,226
Total WW Costs		**$ 3,925,003**	**$ 5,446,008**	**$ 5,581,748**	**$ 5,722,006**	**$ 6,915,719**	**$ 7,070,055**	**$ 7,650,625**	**$ 7,820,554**	**$ 7,998,901**	**$ 8,186,113**
Non-Administration Costs:											
Treatment		$ 1,955,892	$ 2,703,893	$ 2,756,605	$ 2,811,887	$ 3,393,170	$ 3,454,000	$ 3,727,144	$ 3,794,120	$ 3,864,414	$ 3,938,202
Collection		931,614	1,659,983	1,692,109	1,725,802	2,284,440	2,321,514	2,569,732	2,610,552	2,653,395	2,698,366
Customer		231,146	241,536	252,431	263,856	275,841	288,413	301,604	315,447	329,976	345,226
Sub-Total		**$ 3,118,652**	**$ 4,605,411**	**$ 4,701,145**	**$ 4,801,546**	**$ 5,953,451**	**$ 6,063,928**	**$ 6,598,480**	**$ 6,720,119**	**$ 6,847,784**	**$ 6,981,794**
Allocation Percentages:											
Treatment		62.72%	58.71%	58.64%	58.56%	57.00%	56.96%	56.48%	56.46%	56.43%	56.41%
Collection		29.87%	36.04%	35.99%	35.94%	38.37%	38.28%	38.94%	38.85%	38.75%	38.65%
Customer		7.41%	5.24%	5.37%	5.50%	4.63%	4.76%	4.57%	4.69%	4.82%	4.94%
Sub-Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Allocation of Administration											
Treatment		$ 505,711	$ 494,698	$ 516,358	$ 539,041	$ 548,445	$ 573,088	$ 594,303	$ 621,296	$ 649,611	$ 679,317
Collection		240,876	303,707	316,960	330,838	369,239	385,186	409,750	427,484	446,037	465,452
Customer		59,765	44,191	47,284	50,581	44,585	47,854	48,092	51,655	55,469	59,550
Total		**$ 806,351**	**$ 842,596**	**$ 880,602**	**$ 920,461**	**$ 962,268**	**$ 1,006,127**	**$ 1,052,145**	**$ 1,100,435**	**$ 1,151,117**	**$ 1,204,319**
Allocation of Non-Rate Revenues											
Treatment		$ 45,754	$ 44,118	$ 45,384	$ 46,686	$ 46,799	$ 48,174	$ 49,205	$ 50,656	$ 52,154	$ 53,693
Collection		21,793	27,085	27,858	28,653	31,508	32,379	33,925	34,855	35,810	36,790
Customer		5,407	3,941	4,156	4,381	3,804	4,023	3,982	4,212	4,453	4,707
Total		**$ 72,955**	**$ 75,144**	**$ 77,398**	**$ 79,720**	**$ 82,111**	**$ 84,575**	**$ 87,112**	**$ 89,725**	**$ 92,417**	**$ 95,190**
Total WW Classification											
Treatment		$ 2,415,846	$ 3,154,473	$ 3,227,579	$ 3,304,243	$ 3,894,816	$ 3,978,914	$ 4,272,241	$ 4,364,757	$ 4,461,871	$ 4,563,825
Collection		1,150,696	1,936,605	1,981,211	2,027,986	2,622,171	2,674,321	2,945,558	3,003,181	3,063,622	3,127,029
Customer		285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
TOTAL		**$ 3,852,048**	**$ 5,372,864**	**$ 5,504,350**	**$ 5,642,286**	**$ 6,833,608**	**$ 6,985,480**	**$ 7,563,513**	**$ 7,730,828**	**$ 7,906,484**	**$ 8,090,923**

10 Year Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 6.0 -- WASTEWATER Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
Wastewater Cost Classification										
Treatment	$ 2,415,848	$ 3,154,473	$ 3,227,579	$ 3,304,243	$ 3,894,816	$ 3,978,914	$ 4,272,241	$ 4,364,757	$ 4,461,871	$ 4,563,625
Collection	1,150,696	1,936,605	1,981,211	2,027,986	2,622,171	2,674,321	2,945,558	3,003,181	3,063,622	3,127,029
Customer	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
Total	**$ 3,852,048**	**$ 5,372,864**	**$ 5,504,350**	**$ 5,642,286**	**$ 6,833,608**	**$ 6,985,480**	**$ 7,563,513**	**$ 7,730,828**	**$ 7,906,484**	**$ 8,090,923**
Functional Cost Components										
Treatment										
Volume	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
BOD	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%	43.0%
TSS	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Ammonia	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Customer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Collection										
Volume	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
BOD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TSS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ammonia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Customer	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Customer										
Volume	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BOD	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
TSS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ammonia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Customer	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

10 Year Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 6.0 -- WASTEWATER Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

Functionalized Cost

	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
Treatment										
Volume	$ 724,754	$ 946,342	$ 968,274	$ 991,273	$ 1,168,445	$ 1,193,674	$ 1,281,672	$ 1,309,427	$ 1,338,561	$ 1,369,148
BOD	1,038,815	1,356,424	1,387,859	1,420,824	1,674,771	1,710,933	1,837,064	1,876,846	1,918,604	1,962,445
TSS	603,962	788,618	806,895	826,061	973,704	994,729	1,068,060	1,091,189	1,115,468	1,140,956
Ammonia	48,317	63,089	64,552	66,085	77,896	79,578	85,445	87,295	89,237	91,277
Customer	-	-	-	-	-	-	-	-	-	-
Total	2,415,848	3,154,473	3,227,579	3,304,243	3,894,816	3,978,914	4,272,241	4,364,757	4,461,871	4,563,826
Collection										
Volume	$ 1,150,696	$ 1,936,605	$ 1,981,211	$ 2,027,986	$ 2,622,171	$ 2,674,321	$ 2,945,558	$ 3,003,181	$ 3,063,622	$ 3,127,029
BOD	-	-	-	-	-	-	-	-	-	-
TSS	-	-	-	-	-	-	-	-	-	-
Ammonia	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-
Total	1,150,696	1,936,605	1,981,211	2,027,986	2,622,171	2,674,321	2,945,558	3,003,181	3,063,622	3,127,029
Customer										
Volume	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
BOD	-	-	-	-	-	-	-	-	-	-
TSS	-	-	-	-	-	-	-	-	-	-
Ammonia	-	-	-	-	-	-	-	-	-	-
Customer	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
Total	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
Total										
Volume	$ 1,875,451	$ 2,882,947	$ 2,949,485	$ 3,019,259	$ 3,790,616	$ 3,867,996	$ 4,227,230	$ 4,312,608	$ 4,402,183	$ 4,496,177
BOD	1,038,815	1,356,424	1,387,859	1,420,824	1,674,771	1,710,933	1,837,064	1,876,846	1,918,604	1,962,445
TSS	603,962	788,618	806,895	826,061	973,704	994,729	1,068,060	1,091,189	1,115,468	1,140,956
Ammonia	48,317	63,089	64,552	66,085	77,896	79,578	85,445	87,295	89,237	91,277
Customer	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
Total	**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**6,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 7.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

WASTEWATER BILLING UNITS AND STRENGTHS

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Customer Class Units -- Base Annual Usage										
WW1	Residential City	449,992,000	450,962,926	451,933,853	452,904,779	453,875,705	454,846,632	455,817,558	456,788,484	457,759,411	458,730,337
WW2	Residential Outside City	15,742,000	15,792,067	15,842,135	15,892,202	15,942,269	15,992,337	16,042,404	16,092,471	16,142,539	16,192,606
WW3	Commercial City	258,851,000	260,359,803	262,868,606	264,377,409	266,886,212	268,395,015	270,903,818	272,912,621	274,921,424	276,930,227
WW4	Commercial Outside City	552,000	552,000	552,000	552,000	552,000	552,000	552,000	552,000	552,000	552,000
WW5	Industrial City	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000	498,247,000
WW6	Industrial Outside City	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000	9,411,000
WW7	Ind. Discounts City	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000	119,063,000
WW8	Public Authorities	86,507,000	87,043,200	87,579,401	88,115,601	88,651,802	89,188,002	89,724,202	90,260,403	90,796,603	91,332,804
	Total System	**1,438,365,000**	**1,441,930,997**	**1,445,496,994**	**1,449,062,991**	**1,452,628,988**	**1,456,194,985**	**1,459,760,982**	**1,463,326,979**	**1,466,892,976**	**1,470,458,973**
	Percent Increase		0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
	Percent of Total										
WW1	Residential City	31.28%	31.27%	31.26%	31.26%	31.25%	31.24%	31.23%	31.22%	31.21%	31.20%
WW2	Residential Outside City	1.09%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%
WW3	Commercial City	18.00%	18.09%	18.19%	18.28%	18.37%	18.47%	18.56%	18.65%	18.74%	18.83%
WW4	Commercial Outside City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW5	Industrial City	34.64%	34.55%	34.47%	34.38%	34.30%	34.22%	34.13%	34.05%	33.97%	33.88%
WW6	Industrial Outside City	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.64%	0.64%	0.64%	0.64%
WW7	Ind. Discounts City	8.28%	8.26%	8.24%	8.22%	8.20%	8.18%	8.16%	8.14%	8.12%	8.10%
WW8	Public Authorities	6.01%	6.04%	6.06%	6.08%	6.10%	6.12%	6.15%	6.17%	6.19%	6.21%
	Total System	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
	Net Annual Volume after Minimum:										
WW1	Residential City	338,760,000	339,490,926	340,221,853	340,952,779	341,683,705	342,414,632	343,145,558	343,876,484	344,607,411	345,338,337
WW2	Residential Outside City	11,969,000	12,007,067	12,045,135	12,083,202	12,121,269	12,159,337	12,197,404	12,235,471	12,273,539	12,311,606
WW3	Commercial City	243,388,000	245,276,803	247,165,606	249,054,409	250,943,212	252,832,015	254,720,818	256,609,621	258,498,424	260,387,227
WW4	Commercial Outside City	504,000	504,000	504,000	504,000	504,000	504,000	504,000	504,000	504,000	504,000
WW5	Industrial City	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000	497,618,000
WW6	Industrial Outside City	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000	9,363,000
WW7	Ind. Discounts City	117,127,000	117,115,000	117,103,000	117,091,000	117,079,000	117,067,000	117,055,000	117,043,000	117,031,000	117,019,000
WW8	Public Authorities	84,571,000	85,095,200	85,619,401	86,143,601	86,667,802	87,192,002	87,716,202	88,240,403	88,764,603	89,288,804
		1,303,300,000	**1,306,469,997**	**1,309,639,994**	**1,312,809,991**	**1,315,979,988**	**1,319,149,985**	**1,322,319,982**	**1,325,489,979**	**1,328,659,976**	**1,331,829,973**
	Forecast Plant Flows										
	Total WW Billing Units	1,438,365,000	1,441,930,997	1,445,496,994	1,449,062,991	1,452,628,988	1,456,194,985	1,459,760,982	1,463,326,979	1,466,892,976	1,470,458,973
	Inflow/Infiltration Percentage	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
	Total WW Flow	**1,510,283,250**	**1,514,027,647**	**1,517,771,844**	**1,521,516,141**	**1,525,260,438**	**1,529,004,734**	**1,532,749,031**	**1,536,493,328**	**1,540,237,625**	**1,543,981,922**
	Million Gallons/Day	**4.14**	**4.15**	**4.16**	**4.17**	**4.18**	**4.19**	**4.20**	**4.21**	**4.22**	**4.23**

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 7.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Customer Class Units -- BOD Strength Levels (mg/l)										
WW1	Residential City	250	250	250	250	250	250	250	250	250	250
WW2	Residential Outside City	250	250	250	250	250	250	250	250	250	250
WW3	Commercial City	250	250	250	250	250	250	250	250	250	250
WW4	Commercial Outside City	250	250	250	250	250	250	250	250	250	250
WW5	Industrial City	250	250	250	250	250	250	250	250	250	250
WW6	Industrial Outside City	250	250	250	250	250	250	250	250	250	250
WW7	Ind. Discounts City	250	250	250	250	250	250	250	250	250	250
WW8	Public Authorities	250	250	250	250	250	250	250	250	250	250
	Total System	250	250	250	250	250	250	250	250	250	250
	Customer Class Units -- TSS Strength Levels (mg/l)										
WW1	Residential City	250	250	250	250	250	250	250	250	250	250
WW2	Residential Outside City	250	250	250	250	250	250	250	250	250	250
WW3	Commercial City	250	250	250	250	250	250	250	250	250	250
WW4	Commercial Outside City	250	250	250	250	250	250	250	250	250	250
WW5	Industrial City	250	250	250	250	250	250	250	250	250	250
WW6	Industrial Outside City	250	250	250	250	250	250	250	250	250	250
WW7	Ind. Discounts City	250	250	250	250	250	250	250	250	250	250
WW8	Public Authorities	250	250	250	250	250	250	250	250	250	250
	Total System	250	250	250	250	250	250	250	250	250	250
	Customer Class Units -- BOD Total mg										
WW1	Residential City	426,469,690,909	427,389,864,293	428,310,037,677	429,230,211,060	430,150,384,444	431,070,557,828	431,990,731,211	432,910,904,595	433,831,077,979	434,751,251,363
WW2	Residential Outside City	14,919,122,727	14,966,572,892	15,014,023,057	15,061,473,222	15,108,923,387	15,156,373,553	15,203,823,718	15,251,273,883	15,298,724,048	15,346,174,213
WW3	Commercial City	245,320,152,273	247,223,949,613	249,127,746,953	251,031,544,294	252,935,341,634	254,839,138,974	256,742,936,314	258,646,733,655	260,550,530,995	262,454,328,335
WW4	Commercial Outside City	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455
WW5	Industrial City	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455
WW6	Industrial Outside City	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364
WW7	Ind. Discounts City	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273
WW8	Public Authorities	81,985,043,182	82,493,214,937	83,001,386,692	83,509,558,448	84,017,730,203	84,525,901,958	85,034,073,713	85,542,245,469	86,050,417,224	86,558,588,979
	Total	1,363,177,738,636	1,366,557,331,281	1,369,936,923,925	1,373,316,516,569	1,376,696,109,214	1,380,075,701,858	1,383,455,294,502	1,386,834,887,147	1,390,214,479,791	1,393,594,072,435
	Customer Class Units -- TSS Total mg										
WW1	Residential City	426,469,690,909	427,389,864,293	428,310,037,677	429,230,211,060	430,150,384,444	431,070,557,828	431,990,731,211	432,910,904,595	433,831,077,979	434,751,251,363
WW2	Residential Outside City	14,919,122,727	14,966,572,892	15,014,023,057	15,061,473,222	15,108,923,387	15,156,373,553	15,203,823,718	15,251,273,883	15,298,724,048	15,346,174,213
WW3	Commercial City	245,320,152,273	247,223,949,613	249,127,746,953	251,031,544,294	252,935,341,634	254,839,138,974	256,742,936,314	258,646,733,655	260,550,530,995	262,454,328,335
WW4	Commercial Outside City	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455	523,145,455
WW5	Industrial City	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455	472,202,270,455
WW6	Industrial Outside City	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364	8,919,061,364
WW7	Ind. Discounts City	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273	112,839,252,273
WW8	Public Authorities	81,985,043,182	82,493,214,937	83,001,386,692	83,509,558,448	84,017,730,203	84,525,901,958	85,034,073,713	85,542,245,469	86,050,417,224	86,558,588,979
	Total	1,363,177,738,636	1,366,557,331,281	1,369,936,923,925	1,373,316,516,569	1,376,696,109,214	1,380,075,701,858	1,383,455,294,502	1,386,834,887,147	1,390,214,479,791	1,393,594,072,435

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 7.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Customer Class Units -- BOD Total Lbs.										
WW1	Residential City	938,233	940,258	942,282	944,306	946,331	948,355	950,380	952,404	954,428	956,453
WW2	Residential Outside City	32,822	32,926	33,031	33,135	33,240	33,344	33,448	33,553	33,657	33,762
WW3	Commercial City	539,704	543,893	548,081	552,269	556,458	560,646	564,834	569,023	573,211	577,400
WW4	Commercial Outside City	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151
WW5	Industrial City	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845
WW6	Industrial Outside City	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622
WW7	Ind. Discounts City	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246
WW8	Public Authorities	180,367	181,485	182,603	183,721	184,839	185,957	187,075	188,193	189,311	190,429
	Total	2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907
	Customer Class Units -- TSS Total Lbs.										
WW1	Residential City	938,233	940,258	942,282	944,306	946,331	948,355	950,380	952,404	954,428	956,453
WW2	Residential Outside City	32,822	32,926	33,031	33,135	33,240	33,344	33,448	33,553	33,657	33,762
WW3	Commercial City	539,704	543,893	548,081	552,269	556,458	560,646	564,834	569,023	573,211	577,400
WW4	Commercial Outside City	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151
WW5	Industrial City	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845
WW6	Industrial Outside City	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622
WW7	Ind. Discounts City	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246
WW8	Public Authorities	180,367	181,485	182,603	183,721	184,839	185,957	187,075	188,193	189,311	190,429
	Total	2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907
	Systemwide Strength Levels										
	BOD	250	250	250	250	250	250	250	250	250	250
	TSS	250	250	250	250	250	250	250	250	250	250
	Systemwide Total mg										
	BOD	1,431,336,625,568	1,434,885,197,845	1,438,433,770,121	1,441,982,342,398	1,445,530,914,674	1,449,079,486,951	1,452,628,059,227	1,456,176,631,504	1,459,725,203,780	1,463,273,776,057
	TSS	1,431,336,625,568	1,434,885,197,845	1,438,433,770,121	1,441,982,342,398	1,445,530,914,674	1,449,079,486,951	1,452,628,059,227	1,456,176,631,504	1,459,725,203,780	1,463,273,776,057
	Systemwide Total Lbs										
	BOD	3,148,941	3,156,747	3,164,554	3,172,361	3,180,168	3,187,975	3,195,782	3,203,589	3,211,395	3,219,202
	TSS	3,148,941	3,156,747	3,164,554	3,172,361	3,180,168	3,187,975	3,195,782	3,203,589	3,211,395	3,219,202
	Systemwide Excess Strength Lbs										
	BOD	149,950	150,321	150,693	151,065	151,437	151,808	152,180	152,552	152,924	153,295
	TSS	149,950	150,321	150,693	151,065	151,437	151,808	152,180	152,552	152,924	153,295

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 7.0 -- Customer and Volume Totals

Scen: 2014 12 12 -- Scen 2 -- Conservation

WASTEWATER ACCOUNTS

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	Customer Class Units -- Annual Bills										
WW1	Residential City	111,232	111,472	111,712	111,952	112,192	112,432	112,672	112,912	113,152	113,392
WW2	Residential Outside City	3,773	3,785	3,797	3,809	3,821	3,833	3,845	3,857	3,869	3,881
WW3	Commercial City	15,463	15,583	15,703	15,823	15,943	16,063	16,183	16,303	16,423	16,543
WW4	Commercial Outside City	48	48	48	48	48	48	48	48	48	48
WW5	Industrial City	629	629	629	629	629	629	629	629	629	629
WW6	Industrial Outside City	48	48	48	48	48	48	48	48	48	48
WW7	Ind. Discounts City	72	72	72	72	72	72	72	72	72	72
WW8	Public Authorities	1,936	1,948	1,960	1,972	1,984	1,996	2,008	2,020	2,032	2,044
	Total System	**133,201**	**133,585**	**133,969**	**134,353**	**134,737**	**135,121**	**135,505**	**135,889**	**136,273**	**136,657**
	Percent Increase		0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	Total Accounts	11,100	11,132	11,164	11,196	11,228	11,260	11,292	11,324	11,356	11,388
	Percentage of Total										
WW1	Residential City	83.51%	83.45%	83.39%	83.33%	83.27%	83.21%	83.15%	83.09%	83.03%	82.98%
WW2	Residential Outside City	2.83%	2.83%	2.83%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%
WW3	Commercial City	11.61%	11.67%	11.72%	11.78%	11.83%	11.89%	11.94%	12.00%	12.05%	12.11%
WW4	Commercial Outside City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW5	Industrial City	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.46%	0.46%	0.46%	0.46%
WW6	Industrial Outside City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW7	Ind. Discounts City	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
WW8	Public Authorities	1.45%	1.46%	1.46%	1.47%	1.47%	1.48%	1.48%	1.49%	1.49%	1.50%
	Total System	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
	Gallons/Account Per Month										
WW1	Residential City	4,046	4,046	4,046	4,046	4,046	4,046	4,046	4,046	4,046	4,046
WW2	Residential Outside City	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172	4,172
WW3	Commercial City	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740
WW4	Commercial Outside City	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500
WW5	Industrial City	792,126	792,126	792,126	792,126	792,126	792,126	792,126	792,126	792,126	792,126
WW6	Industrial Outside City	196,063	196,063	196,063	196,063	196,063	196,063	196,063	196,063	196,063	196,063
WW7	Ind. Discounts City	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653	1,653,653
WW8	Public Authorities	44,683	44,683	44,683	44,683	44,683	44,683	44,683	44,683	44,683	44,683

10 Year Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 8.0 -- WASTEWATER Cost of Service by Customer Class
Scen: 2014 12 12 -- Scen 2 -- Conservation

	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Functionalized Cost										
Volume	$ 1,875,451	$ 2,882,947	$ 2,949,485	$ 3,019,259	$ 3,790,616	$ 3,867,996	$ 4,227,230	$ 4,312,608	$ 4,402,183	$ 4,496,177
BOD	1,038,815	1,356,424	1,387,859	1,420,824	1,674,771	1,710,933	1,837,064	1,876,846	1,918,604	1,962,445
TSS	603,962	788,618	806,895	826,061	973,704	994,729	1,068,060	1,091,189	1,115,468	1,140,956
Ammonia	48,317	63,089	64,552	66,085	77,896	79,578	85,445	87,295	89,237	91,277
Customer	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
Total	**3,852,048**	**5,372,864**	**5,504,350**	**5,642,286**	**6,833,608**	**6,985,480**	**7,563,513**	**7,730,828**	**7,906,484**	**8,090,923**
Estimated Total Pounds Removed										
BOD	2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907
TSS	2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907
Unit Cost Per Pound -- Total System										
BOD	$ 0.35	$ 0.45	$ 0.46	$ 0.47	$ 0.55	$ 0.56	$ 0.60	$ 0.62	$ 0.63	$ 0.64
TSS	$ 0.20	$ 0.26	$ 0.27	$ 0.27	$ 0.32	$ 0.33	$ 0.35	$ 0.36	$ 0.36	$ 0.37

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 9.0 -- WASTEWATER Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

		10 Year Forecast 2015-2024	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
	Percent of Total Volume											
WW1	Residential City		31.28%	31.27%	31.26%	31.26%	31.25%	31.24%	31.23%	31.22%	31.21%	31.20%
WW2	Residential Outside City		1.09%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%
WW3	Commercial City		18.00%	18.09%	18.19%	18.28%	18.37%	18.47%	18.56%	18.65%	18.74%	18.83%
WW4	Commercial Outside City		0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW5	Industrial City		34.64%	34.55%	34.47%	34.38%	34.30%	34.22%	34.13%	34.05%	33.97%	33.88%
WW6	Industrial Outside City		0.65%	0.65%	0.65%	0.65%	0.65%	0.65%	0.64%	0.64%	0.64%	0.64%
WW7	Ind. Discounts City		8.28%	8.26%	8.24%	8.22%	8.20%	8.18%	8.16%	8.14%	8.12%	8.10%
WW8	Public Authorities		6.01%	6.04%	6.06%	6.08%	6.10%	6.12%	6.15%	6.17%	6.19%	6.21%
	Total		100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Total BOD Lbs											
WW1	Residential City		938,233	940,258	942,282	944,306	946,331	948,355	950,380	952,404	954,428	956,453
WW2	Residential Outside City		32,822	32,926	33,031	33,135	33,240	33,344	33,448	33,553	33,657	33,762
WW3	Commercial City		539,704	543,893	548,081	552,269	556,458	560,646	564,834	569,023	573,211	577,400
WW4	Commercial Outside City		1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151
WW5	Industrial City		1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845
WW6	Industrial Outside City		19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622
WW7	Ind. Discounts City		248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246
WW8	Public Authorities		180,367	181,485	182,603	183,721	184,839	185,957	187,075	188,193	189,311	190,429
	Total		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907
	Total TSS Lbs.											
WW1	Residential City		938,233	940,258	942,282	944,306	946,331	948,355	950,380	952,404	954,428	956,453
WW2	Residential Outside City		32,822	32,926	33,031	33,135	33,240	33,344	33,448	33,553	33,657	33,762
WW3	Commercial City		539,704	543,893	548,081	552,269	556,458	560,646	564,834	569,023	573,211	577,400
WW4	Commercial Outside City		1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151
WW5	Industrial City		1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845	1,038,845
WW6	Industrial Outside City		19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622	19,622
WW7	Ind. Discounts City		248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246	248,246
WW8	Public Authorities		180,367	181,485	182,603	183,721	184,839	185,957	187,075	188,193	189,311	190,429
	Total		2,998,991	3,006,426	3,013,861	3,021,296	3,028,731	3,036,167	3,043,602	3,051,037	3,058,472	3,065,907

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

	10 Year Forecast 2015-2024	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
	Forecast WW 9.0 -- WASTEWATER Cost of Service by Customer Class										
	Scen: **2014 12 12 -- Scen 2 -- Conservation**										
	Percent of Total Customer Bills										
WW1	Residential City	83.51%	83.45%	83.39%	83.33%	83.27%	83.21%	83.15%	83.09%	83.03%	82.98%
WW2	Residential Outside City	2.83%	2.83%	2.83%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%
WW3	Commercial City	11.61%	11.67%	11.72%	11.78%	11.83%	11.89%	11.94%	12.00%	12.05%	12.11%
WW4	Commercial Outside City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW5	Industrial City	0.47%	0.47%	0.47%	0.47%	0.47%	0.47%	0.46%	0.46%	0.46%	0.46%
WW6	Industrial Outside City	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
WW7	Ind. Discounts City	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
WW8	Public Authorities	1.45%	1.46%	1.46%	1.47%	1.47%	1.48%	1.48%	1.49%	1.49%	1.50%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Total Cost by Customer Class										
	Volume -- Total	1,875,451	2,882,947	2,949,485	3,019,259	3,790,616	3,867,996	4,227,230	4,312,608	4,402,183	4,496,177
	BOD -- Per Lb.	$ 0.35	$ 0.45	$ 0.46	$ 0.47	$ 0.55	$ 0.56	$ 0.60	$ 0.62	$ 0.63	$ 0.64
	TSS -- Per Lb.	$ 0.20	$ 0.26	$ 0.27	$ 0.27	$ 0.32	$ 0.33	$ 0.35	$ 0.36	$ 0.36	$ 0.37
	Ammonia -- Total	48,317	63,089	64,552	66,085	77,896	79,578	85,445	87,295	89,237	91,277
	Customer -- Total	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069
WW1	**Residential City**										
	Volume	$ 586,734	$ 901,640	$ 922,155	$ 943,670	$ 1,184,383	$ 1,208,179	$ 1,319,973	$ 1,346,213	$ 1,373,748	$ 1,402,646
	BOD	324,993	424,221	433,913	444,079	523,284	534,415	573,632	585,871	598,721	612,212
	TSS	188,949	246,640	252,275	258,185	304,235	310,706	333,507	340,623	348,093	355,937
	Ammonia	15,116	19,731	20,182	20,655	24,339	24,857	26,681	27,250	27,847	28,475
	Customer	238,415	235,140	246,456	258,360	263,642	276,455	287,460	301,531	316,350	331,960
	Total	**1,354,207**	**1,827,372**	**1,874,982**	**1,924,949**	**2,299,883**	**2,354,612**	**2,541,254**	**2,601,486**	**2,664,759**	**2,731,230**
WW2	**Residential Outside City**										
	Volume	$ 20,526	$ 31,574	$ 32,325	$ 33,113	$ 41,601	$ 42,479	$ 46,456	$ 47,427	$ 48,444	$ 49,512
	BOD	11,369	14,856	15,210	15,583	18,380	18,790	20,189	20,640	21,113	21,610
	TSS	6,610	8,637	8,843	9,060	10,686	10,924	11,738	12,000	12,275	12,564
	Ammonia	529	691	707	725	855	874	939	960	982	1,005
	Customer	8,087	7,984	8,377	8,790	8,979	9,425	9,810	10,300	10,817	11,362
	Total	**47,121**	**63,742**	**65,463**	**67,270**	**80,501**	**82,493**	**89,132**	**91,327**	**93,632**	**96,053**
WW3	**Commercial City**										
	Volume	$ 337,510	$ 521,554	$ 536,374	$ 551,897	$ 696,436	$ 714,248	$ 784,493	$ 804,308	$ 825,046	$ 846,761
	BOD	186,947	245,391	252,387	259,716	307,699	315,934	340,924	350,034	359,580	369,586
	TSS	108,690	142,669	146,737	150,997	178,895	183,683	198,212	203,508	209,058	214,875
	Ammonia	8,695	11,414	11,739	12,080	14,312	14,695	15,857	16,281	16,725	17,190
	Customer	33,143	32,871	34,644	36,518	37,465	39,497	41,288	43,537	45,915	48,430
	Total	**674,986**	**953,899**	**981,880**	**1,011,206**	**1,234,807**	**1,268,056**	**1,380,774**	**1,417,668**	**1,456,324**	**1,496,842**

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

10 Year Forecast 2015-2024

Forecast WW 9.0 -- WASTEWATER Cost of Service by Customer Class

Scen: **2014 12 12 -- Scen 2 -- Conservation**

		Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
WW4	Commercial Outside City										
	Volume	$ 720	$ 1,104	$ 1,126	$ 1,150	$ 1,440	$ 1,466	$ 1,599	$ 1,627	$ 1,657	$ 1,688
	BOD	399	519	530	541	636	649	695	708	722	737
	TSS	232	302	308	315	370	377	404	412	420	428
	Ammonia	19	24	25	25	30	30	32	33	34	34
	Customer	103	101	106	111	113	118	122	128	134	141
	Total	1,472	2,050	2,095	2,142	2,589	2,640	2,852	2,908	2,966	3,026
WW5	Industrial City										
	Volume	$ 649,653	$ 996,178	$ 1,016,655	$ 1,038,145	$ 1,300,169	$ 1,323,461	$ 1,442,842	$ 1,468,396	$ 1,495,252	$ 1,523,474
	BOD	359,844	468,701	478,380	488,537	574,441	585,407	627,028	639,046	651,676	664,950
	TSS	209,211	272,500	278,128	284,033	333,977	340,353	364,551	371,538	378,881	386,599
	Ammonia	16,737	21,800	22,250	22,723	26,718	27,228	29,164	29,723	30,311	30,928
	Customer	1,348	1,327	1,388	1,452	1,478	1,547	1,605	1,680	1,759	1,841
	Total	1,236,793	1,760,506	1,796,801	1,834,890	2,236,783	2,277,996	2,465,191	2,510,383	2,557,878	2,607,793
WW6	Industrial Outside City										
	Volume	$ 12,271	$ 18,816	$ 19,203	$ 19,609	$ 24,558	$ 24,998	$ 27,253	$ 27,735	$ 28,243	$ 28,776
	BOD	6,797	8,853	9,036	9,228	10,850	11,057	11,843	12,070	12,309	12,560
	TSS	3,952	5,147	5,253	5,365	6,308	6,429	6,886	7,018	7,156	7,302
	Ammonia	316	412	420	429	505	514	551	561	573	584
	Customer	103	101	106	111	113	118	122	128	134	141
	Total	23,438	33,329	34,018	34,741	42,334	43,116	46,655	47,513	48,415	49,362

CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL

Forecast WW 9.0 -- WASTEWATER Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

		10 Year Forecast 2015-2024	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024
WW7	Ind. Discounts City											
	Volume	$ 155,243	$ 238,050	$ 242,944	$ 248,079	$ 310,693	$ 316,259	$ 344,787	$ 350,894	$ 357,311	$ 364,055	
	BOD	85,990	112,002	114,315	116,743	137,271	139,891	149,837	152,709	155,727	158,899	
	TSS	49,994	65,118	66,462	67,874	79,808	81,332	87,115	88,784	90,539	92,383	
	Ammonia	4,000	5,209	5,317	5,430	6,385	6,507	6,969	7,103	7,243	7,391	
	Customer	154	152	159	166	169	177	184	192	201	211	
	Total	295,381	420,532	429,196	438,292	534,326	544,166	588,892	599,682	611,021	622,939	
WW8	Public Authorities											
	Volume	$ 112,794	$ 174,031	$ 178,703	$ 183,597	$ 231,336	$ 236,904	$ 259,827	$ 266,009	$ 272,483	$ 279,255	
	BOD	62,477	81,881	84,087	86,398	102,209	104,790	112,915	115,767	118,756	121,891	
	TSS	36,324	47,606	48,888	50,232	59,424	60,924	65,648	67,306	69,044	70,867	
	Ammonia	2,906	3,808	3,911	4,019	4,754	4,874	5,252	5,385	5,524	5,669	
	Customer	4,150	4,109	4,324	4,551	4,662	4,908	5,123	5,394	5,681	5,964	
	Total	218,651	311,436	319,913	328,797	402,384	412,401	448,765	459,861	471,488	483,676	
	Total Cash Basis Cost of Service											
	Volume	$ 1,875,451	$ 2,882,947	$ 2,949,485	$ 3,019,259	$ 3,790,616	$ 3,867,996	$ 4,227,230	$ 4,312,608	$ 4,402,183	$ 4,496,177	
	BOD	1,038,815	1,356,424	1,387,859	1,420,824	1,674,771	1,710,933	1,837,064	1,876,846	1,918,604	1,962,445	
	TSS	603,962	788,618	806,895	826,061	973,704	994,729	1,068,060	1,091,189	1,115,468	1,140,956	
	Ammonia	48,317	63,069	64,552	66,085	77,896	79,578	85,445	87,295	89,237	91,277	
	Customer	285,503	281,786	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069	
	Total	3,852,048	5,372,864	5,504,350	5,642,286	6,833,608	6,985,480	7,563,513	7,730,828	7,906,484	8,090,923	
	Check to WW8	3,852,048	5,372,864	5,504,350	5,642,286	6,833,608	6,985,480	7,563,513	7,730,828	7,906,484	8,090,923	
		-	-	-	-	-	-	-	-	-	-	

Emergency/Disaster Response Plan

To continue minimum service levels and mitigate the public health risks from drinking water contamination that may occur during a disaster or other emergency events and in order to provide reliable water service and minimize public health risks from unsafe drinking water during those events, CITY CORPORATION water system proposes the following plan that defines how it will respond to emergencies and/or disasters that are likely to affect its operation.

Disasters/emergencies that are likely to occur in the water system's service area that are addressed are: earthquake, major fire emergencies, water outages due to loss of power, localized flooding, water contamination and acts of sabotage.

1) **DESIGNATED RESPONSIBLE PERSONNEL:** For designated responsible personnel and chain of command and identified responsibilities, see the attached "Emergency and Disaster Personnel and Responsibilities".

2) **INVENTORY OF RESOURCES:** An inventory of system resources that are used for normal operations and available for emergencies; includes maps and schematic diagrams of the water system, lists of emergency equipment, equipment suppliers, and emergency contract agreements that are kept at the water system office.

3) **EMERGENCY OPERATIONS CENTER:** The water system office has been designated as the communication network emergency operations center. Emergency contact information for equipment suppliers is attached. The telephone and FAX will be the primary mode of communication in an emergency. In addition, the local fire department and law enforcement have a radio and we have made arrangements to use it to contact police, fire and other emergency response personnel should telephone communication be lost.

Agency	Address, City	Phone #	FAX #
Water System	205 West 3rd Pl Russellville, AR	479-968-2105	479-968-3265
Fire Department	203 W 2nd St Russellville, AR	479-968-2232	479-967-2087
Law Enforcement	115 W H St Russellville, AR	479-968-3232	479-968-8621

4) **OTHER AGENCY COORDINATION**: Coordination procedures with governmental agencies for health and safety protection; technical, legal, and financial assistance, and public notification procedures are continually being developed and updated through regulation and experience and will be added as necessary to this plan. (See attached sheet.)

5) **RESPONSE PROCEDURES**: Personnel will, as quickly as possible, determine the status of other employees, assess damage to water system facilities, provide logistics for emergency repairs, monitor progress of repairs and restoration efforts, communicate with health officials and water users according to the "Emergency Notification Plan" on file with the regulatory agency (i.e. Department of Health Services (DHS) or Local Primacy Agency (LPA)), and document damage and repairs.

6) **RESUME NORMAL OPERATIONS**: The steps that will be taken to resume normal operations and to prepare and submit reports to appropriate agencies will include identifying the nature of the emergency (e.g., earthquake-causing water outage/leaks, fire or power outage causing water shortage/outage, sabotage resulting in facility destruction or water contamination).

a. **Leaks or service interruption (Result of earthquake, etc.)**
   - i. Isolate leak. Turn power or flow off, if necessary, to control leak.
   - ii. Repair or isolate break to allow service to the maximum system population possible. Disinfect as per attached AWWA Standards; increase system disinfectant residual as precaution, until normal service is resumed.
   - iii. Do bacteriological sampling until 3 good consecutive samples are confirmed.
   - iv. Reestablish normal service.

b. **Low pressure (Result of earthquake, fire, storm)**
   - i. Increase production, if possible, to provide maximum system output.
   - ii. Increase disinfectant residual as precaution to potential contamination.

c. **Power outage**
   - i. Place emergency generator on-line to provide minimum water pressure to system.
   - ii. Increase disinfectant residual as precaution to potential contamination.

d. **Contamination**
   i. Identify location and source of contamination.
   ii. If contamination is from system source, isolate or treat source.
   iii. If contamination is an act of sabotage, take appropriate action based on nature of contamination. Immediately contact local law enforcement and your regulatory agency (DHS or LPA). Actions should be taken in consultation with the regulatory agency and could include shutting off water until all contaminants are identified.

e. **Physical destruction of facility (sabotage)**
   i. Immediately contact local law enforcement and regulatory agency for consultation.

All significant water outages (widespread and lasting more than eight hours) or disinfection failure will be reported to the Department of Health Services (DHS) District Office, or Local Primacy Agency (LPA) by telephone or equally rapid means. All emergencies will be documented along with action taken, and kept in the files of the water system office. Acts of sabotage will be reported to the local law enforcement agency.

EMERGENCY AND DISASTER PERSONNEL

City Corporation Board of Directors

Travis Adams, Chairman
PO Box 10
Russellville, AR 72811-0010
479-968-3278

Peggy Stratton, Vice-Chair
701 E. Main St., Ste 8
Russellville, AR 72801
479-967-7300

Dave Palfreeman, Secretary
1805 E Parkway Drive
Russellville, AR 72801
479-968-1361

Tommy Richardson, Senior Member
205 Quarry Road
Russellville, AR 72802
479-968-7540

Don Guess, Junior Member
308 Wisteria Ct
Russellville, AR 72801
479-967-3794

Craig Noble, General Manager
221 Hillview Cove
Russellville, AR 72802
479-747-2710

Larry Collins, Operations Manager
10475 Boyce Manor Cir
Dardanelle, AR 72834
479-968-5197

Additional Mutual Assistance or Emergency Resources

AGENCY	TELEPHONE # (DAY) TELEPHONE # (AFTER HOURS)
Russellville Fire Department	479-968-2332
911	479-968-0911
Emergency Response Commission	479-968-6937 or 479-968-1800
Russellville Police Department	479-968-3232
Arkansas Dept of Emergency Mgt	1-800-322-4012 or 501-683-6700
FBI Little Rock Office	501-221-9100
DHS District Office	479-968-3254

City Corporation Contact Information:

Craig Noble, General Manager
221 Hillview Cove
Russellville, AR 72802
479-747-2710

Larry Collins, Operations Manager
10475 Boyce Manor Cir
Dardanelle, AR 72834
479-968-5197

Emergency Contact Numbers and Operational Practices

A. List of equipment on hand for emergency repairs
   1. (Miscellaneous pipes and fittings, 2", 4", 6" & 8", valves, saddles, couplings, etc.
   2. Portable Generators: (1) 505 kw and (2) 125 kw.
   3. Backhoe, power tools and equipment

B. List of sources of needed equipment, not on hand
   1. Kirby Specialties (479) 968-5416
      (Sources for backhoe, jackhammer, technical support. Sources under contract.)
   2. Russellville Machine & Tool (479) 968-5790
      (Sources for electrical and pump repair.)
   3. CAT Rental (479) 968-3304
      (Sources for emergency generators in case of prolonged power outages.)

C. List of distributors or suppliers of replacement parts for the system
   1. HD Supply (800) 374-3727
      (Sources for PVC pipe, valves, and fittings.)
   2. Water Products (479) 361-2830
      (Sources for pumps, pressure tank, and gauges)
   3. River Valley Winwater (479) 967-0553
      (Sources for PVC pipe, valves, and fittings.)

D. List of emergency contact numbers:

	NAME	PHONE (DAY)	PHONE (AFTER HOURS)
DHS District Office	Pope County Health Dept	479-968-6004	479-890-5453
Local Environmental Health Agency (LPA)	Bill Bolin	479-968-3254	
Electrician	Eddie Woestman	479-967-1553	479-857-3300
Laboratory	EEG, Inc.	479-968-6767	
Electric & Pump (Repair Service)	Electric Motor Center	479-968-2532	
Chemical Disinfectant Supplier	Harcross	501-565-8446	
Other Water Agency (equipment support)	Conway Corp	501-450-6000	
Fire Department		479-968-2332	911
Law Enforcement	Local Police	479-968-3232	911
County Office of Emergency Services		479-968-1800	911

ALCAN PACKING (thermo-plate)
3606 E 16TH ST
880-8077

NIGHT RINGER
MAINTENANCE
880-8077

AMERICOLD LOGISTICS
203 INDUSTRIAL BLVD
967-2900

24 HOUR PLANT

JASON JOHNSON
479-970-5446

ARK NUCLEAR ONE
LONDON
858-5314
858-5315

LAB
858-3551

OUTAGE #
858-3555
964-6329 pager

ARKANSAS TECH
(Maintenance)
968-0261

DENNIS HILL
223-0048 cell

ATKINS WATER
641-7853

TREATMENT PLANT
968-2782

INTERNATIONAL PAPER SHEET FEEDER
3019 E 16TH
890-6634

PAUL TURNER
890-6634 EXT 18

BIBLER BRO LUMBER
2400 S ARKANSAS
968-4986

TERRY FREEMAN
PRES
967-8676

KEVAN FREEMAN
858-2311

CONAGRA
3100 E MAIN
968-2535

CLIFFORD DEPRIEST
MAINTENANCE MNGR
968-2535 EXT 211

JIM DUNN
886-1042

RICK MASKE
SAFETY & COMPLIANCE
MNGR
968-2535 EXT 205
CELL 970-7691

DARDANELLE WATER PLANT
479-229-3992
DARDANELLE WASTEWATER
479-229-4538

AFTER HOURS
479-229-2533

DOVER WATER PLANT
331-3270

YANCY POYNTER
331-3668
CELL 970-8118.

DOW CHEMICAL
3230 DOW RD
968-0982

AFTER HOURS
968-6028

ENTERGY
V.I.P. LINE
1-800-766-1648
1-501-396-4230

JIMMY FRYE
964-5754
964-5752

BRUCE TUCKER
964-5728

FIRESTONE
2700 E MAIN
968-1443

LORRIE CHESSER
964-0276

POWER HOUSE
968-1443

GOODY'S
500 INDUSTRIAL RD
967-3467

MIKE BRYANT
967-2680

GRACE MANUFACTURING
614 SR 247
968-5455

CONNIE RAGSDALE
968-5455 EXT 1033

HACKNEY LADISH
708 S EL MIRA
964-6203

ROBERT TAYLOR
HUMAN RES
964-6211

JOHN MONTGOMERY
ENGINEER
964-6220

HUCKLEBERRY CREEK
331-2953

INNOVATION INDUSTRIES
3500 E MAIN ST
968-2232

PAUL HORNEY
968-2232

AMBER DILDAY
CELL 479-857-2331

INTERNATIONAL PAPER
3900 INTERNATIONAL DR
964-2227

BRANDON MCDANIEL
964-2235

RON SANDERS
967-1507
OFC 964-2230

JW ALUMINUM PRODUCTS
777 TYLER RD
858-6700

JIMMY WARD
GENERAL MNGR
858-6724

JOHNNY EINERT
MAINTENANCE
858-6720

LONDON WATER
293-4513

MAHLE
2301 E 16TH
967-8797

DAVID SHEETS
EH&S
890-4414

JOE LOOPER
ENGINEER
890-4443

P.O.M
200 S EL MIRA
968-2880

BRENT HUNEYCUTT
968-2880

MELISSA OATES
968-2880

POTTSVILLE WATER
968-2782

PREMIUM PROTEIN
HWY 7T
968-2567
24 HOUR
968-2567
OPERATION

BENTLY HOLLINGSWORTH
968-2567

RUSSELLVILLE FIRE

RICHARD SETIAN
968-2332
CELL 264-7097

JOHN COCHRAN
968-2332

SUGAR CREEK (ESKIMO PIE)
500 W C
968-1005

LARRY DILDAY
968-1005
CELL 857-0651

SCOTT VAN HORN
968-1005
CELL 264-1118

SUPERIOR GRAFITE
3225 DOW RD
968-8810

STEVE CONDLEY
968-8810 OR
501-893-2047

CHARLIE MCCLURE
968-8810 EXT 13

TABER EXTRUSION
915 S EL MIRA
968-1021

CLINT HAWKINS
ENGINEER
968-1021 EXT 245

TRACER COMMUNICATION
890-6499

TRI-COUNTY WATER
5306 HWY 7 N
968-6268

HARRY WILLARD
CELL 970-3890

JOHN CHOATE
CELL 970-7571

TYSON HATCHERY
1115 ELMIRA AVE
964-4203

SUSAN DANZY
HATCHERY MNG
964-4203

PAT POLLACK
COMPLEX ENVIRO MNG
479-229-8727

TYSON
RDC
702 E MAIN
964-4307

MARK JOHNSON
968-8922 OR
964-0618

TYSON
TYLER RD
964-4465

FELECIA HARRIS
(501)945-7131
EXT 129

RICK OWENS
PRETREATMENT PLANT
498-0416

WOESTMAN ELEC
503 E THRID
967-1553

EDDIE WOESTMAN
CELL 857-3300

ZERO MNT
3210 SR 324
967-3898

STEVE ACORD
479-264-2413

COMPANY GASOLINE ACCOUNTS:

PDQ
TAYLOR OIL

Entergy outages VIP number 1-800-766-1648, below are the stations and the account numbers

Jimmy Fry's number is 479-964-5752. Please copy & post for emergency use.

WATER

STATION NAME	911 ADDRESS	ENTERGY ACCOUNT NUMBER	METER NUMBER
14TH & HOUSTON	803 W 14TH ST	36255263	3072565
7S PUMP STATION	803 W 14TH ST	36302180	3045302
ATKINS PUMP STATION	291 GALLA PARK RD	36302032	KC2082249S
BAYOU RIDGE TANK	510 GARDNER LN	none	none
BUNKER HILL TANK	398 BENNETT RD	36302065	CAA1109774
BUNKER HILL VALVE	HWY 331	36302073	CAA350496
E 2ND ST PUMP STATION	2306 E 2ND ST	36301935	KZD3169493K010355
FORREST HILLS TANK	1500 HILLTOP DR	36302024	K551057V6
HWY 7 SOUTH TANK	4027 S ARKANSAS	36302099	KBB912548M
I-40 TANK	350 FURNITURE RD		
INDUSTRIAL PUMP STATION	1898 E L ST	762070	3128234
LONDON PUMP STATION	20 WOODS LN	699041	3081003
NORRISTOWN TANK	608 SKYLINE DR	36302131	XKBB889363M
RAY LEE TANK	1400 E GUM ST	36302172	KBB995052
RAY LEE PUMP STATION	20 STEEL CITY LN	36302054	3040035
WEST MAIN PUMP STATION	3190 W MAIN PL	36301992	3024059
WEIR RD TANK	1795 WEIR RD	72825409	7386191
WESTERN HILLS TANK	2298 SKYLINE DR	36302123	3087779
WATER PLANT TRANSFORMER	99 WATER WORKS RD	36311561	NA
WATER PLANT BOOSTER	99 WATER WORKS RD	36310704	NA
CITY CORPORATION MAIN OFFICE	205 W 3RD PL		
CITY CORPORATION METER SHOP	326 S BOULDER AVE		
CONSTRUCTION OFFICE	3105 S MOBILE		

ARKANSAS VALLEY ELECTRIC CO-OP OUTAGE NUMBER 1-800-468-2176

STATION NAME	911 ADDRESS	ENTERGY ACCOUNT NUMBER	METER NUMBER
HCR MAINTENCE BUILDING	668 RESERVOIR LP	112957-002	4-045-839
HCR CHEMICAL BUILDING	748 RESERVOIR LP	112957-001	6-762-893

Entergy outages VIP number 1-800-766-1648, below are the stations and the account numbers
Jimmy Fry's number is 479-964-5752. Please copy & post for emergency use.

SEWER

STATION NAME	911 ADDRESS	ENTERGY ACCOUNT NUMBER	METER NUMBER
10TH STREET PUMP STATION	198 E 10TH ST	36302156	3072470
23RD STREET PUMP STATION	2320 S FRANKFORT	36302149	XKC582352V6M
CENTER VALLLEY PUMP STATION	5399 SR 124	36302198	3117307
COVE LANDING	1702 BRADLEY COVE RD	36301927	3161779
GRACE PUMP STATION	610 SR 247	761973	B7D3106295B014945
INTERNATIONAL PAPER	3995 INTERNATIONAL DR	36301885	3072516
LOST CORNERS	197 VISTA RIVER CT	36301943	TEG2070816KZ90658
MAIN ST PUMP STATION	610 E MAIN ST	36302164	Y8G3088079K010158
OLD POST PUMP STATION	802 LOCK & DAM RD	36301950	3138046
PRAIRIE CREEK PUMP STATION	797 N GLENWOOD AVE	757617	
PUMP STATION A	115 CLEAR LAKE DR	36302107	3081831
PUMP STATION B	2150 MARINA RD	36302115	KCC2000643S
PUMP STATION C	1204 MARINA WAY	36301976	3106636
RIMROCK PUMP STATION	1 RIMROCK RD	36301901	3118980
S FRANKFORT PUMP STATION	3102 S FRANKFORT	36302040	3097139
SHADOW VALLEY PUMP STATION	601 VALLEY DR	36302008	K1247548CV
SHILOH MANOR PUMP STATION	4007 SHILOH MANOR DR	57738108	TED3202897k010372
TEX VIT	495 N WACO AVE	36301984	3015275
TYSON 64 E PUMP STATION	5030 E MAIN ST	36301893	KC2009032S
CITYCORPORATION MAIN PLANT	404 JIMMY LYLE RD	36310423	
WWTP ACCOUNT TRANSFORMER	404 JIMMY LYLE RD	36311025	NONE
CONAGRA PTP	3100 E MAIN	36302081	3028238

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
7-40 Super Club	2807 N.Arkansas	P.O.Box 601 Rsvl.Ar.72811-0601	Bob Whorton 970-8030 (Francis)	GT 0061	12		inactive
Abu's Gyros	605 N,Arkansas	Rsvl. 72801	Marwan Aboul-Zelof 619/316-5710	GT 0014	6	TRS	inactive
Ahrens Fourt St. Laundry	320 E. 4th. St.			GT 0178	12	TRS.	9/18/2014
Arby"s	915 E.Main	U.S.Beef Corp.4923 E.49th.St, Tulsa, OK 74135	Wilma 501) 562-7106	GT 0029	6	Brooks	2/6/2014
Arby's (1000gal's)	2323 N.Arkansas	U.S.Beef Corp.4923 E.49th.St, Tulsa, OK 74135	Shelley Hughes 857-6824	GT 0054	6	Brooks	5/7/2014
Ark. State Highway Dept.	370 E. Aspen Ln.	P.O.Box 70 Rsvl. Ar. 72811	Monte 968-2286	GT 0012	12	Roto-Rooter	3/14/2013
ATU, Chambers	204 W. O St.	1000 gal's		GT 0187	?	?	?
ATU. Williamson Bldg. (nis)	1205 N.El Paso	1000 gal's	Brian Lasey 968-0261	GT 0157	?	?	?
ATU Techionery	306 W. O. St.	3000 gals.		GT-0175	12	TRS.	1/8/2014
ATU. Baswell Hall	1204 N. El Paso Ave.	1000 gals.		GT 0200	?	?	?
ATU Buerkle Field	1302 N.El Paso Ave.	1000gals.	under bleachers	GT 0146	0	inactive	inactive
ATU Doc Bryan	1605 Coliseum Dr.	1000 gal's		GT 0145	12	Darlin Evironmental	4/16/2014
Best Auto Sales	3015 S.Arkansas Ave.	1000 gals.	cleaned 12/20/13	GT 0203	0	inactive	inactive
Brangus	1509 E.Main	Russellville,Ar.72801-5326	Mike/Matt Brady 968-1999	GT 0147	3	TRS	10/16/2014
Brick Oven Pizza	401 S.Arkansas Ave.	owned by Pizza Pro	967-7900	GT 0125	6	Murdock	8/16/2014
Buffalo Wild Wings	2212 E.Parkway Dr.	Ernestine Brantley GM. 731/ 267-8015		GT0206	6	Darpro	12/2/2014
Panes Restaurant (nis)	115 N.ElPaso	Russellville,Ar. 70801	479/ 498-6466	GT 0159	12	Ford Mgt.	7/10/2014
Brookfield Inn	2407 N.Arkansas		Christy Millsaps 968-4300	GT 0052	6	TRS	12/3/2014
Brown's Catfish	1804 E.Main	Alvin Brown DBA. P.O.Box 487, Russellville, AR 72811	Alvin Brown 968-3360	GT 0037	12	Murdock	3/28/2014
Buffalo Wild Wings	2212 E. Parkway Dr.	Urnastine 967-1288		GT 0206	6		
Burger King	1420 E.Main	Circle N Investment 2900 Grand Ave.Ft. Smith, AR 72901 479(783-8880)	John 970-1602	GT 0034	6	Darpro	7/29/2014
Burger King 3064	2306 N.Arkansas	Circle N Investment 2900 Grand Ave.Ft. Smith, AR 72901 479(783-8880)	John Jennings 479/970-1602	GT 0055	6	Darpro	7/29/2014
Cash Saver (three guy's)	3301 W. Main St.	Skyline Joint Ventures	Diane Dollar 968-2559/264/4232	GT 0064	12	TRS	3/19/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
C.J.Burgers	2803 N.Arkansas	Russellville,Ar. 72802-8986	Richard Wilson 968-2300	GT 0060	2	Roto-Rooter	10/13/2014
The Carpet Shack	1512 S Arkansas Ave		Rick Latham 967-7748	GT 0122	0	inactive	Inactive
The Cake Place	311 W.B.St.	Russellville,Ar.72801 (cell 223-2319)		GT 0127	12	TRS.	3/19/2014
Central Presbyterian	400 W.Main	Russellville,Ar.72801-3794	Dough 968-1238	GT 0015	12	Murdock	4/15/2013
Central Rentals	105 N. Sidney	Sand/Oil separator	Mike Mayo 870/ 365-0401	GT 0197	12	Murdock	6/10/2014
Chick Fil A	3089 E.Main St.			GT-0171	6	TRS.	6/30/2014
Cogswell Colision Center	202 N. Sidney Ave.		Pat Johnson 968-4471	GT 0153	12	Murdock	6/10/2014
Cogswell River Valley Trucks	2911 S. Arkansas Ave.		Joey Barrett 479/ 498-7846	GT 0184	12	Roto-Rooter	5/13/2013
Save the Childrens(Head Start)	507 N. Elmira Ave.			GT 0149	12	Murdock	10/28/2014
Church of Christ West-Side	2300 W.C.st.	Russellville,Ar. 72801-2503	Frank Foster 880-6845	GT 0025	0	Murdock	inactive
Cici's Pizza (nis)	3063 E.Main Ste.C	BFE Pizza DBA. 217 Gate House Rd.Hot Springs, AR 71913	Mark Groff 501) 620-0626	GT 0155	3	Lyles Co.	12/2/2013
Colton's Steak House,	2320 N Arkansas	5 Shackleford Plz.Ste.100, Little Rock AR 72211-1889 Randy Bell	Alison Frazier 880-2333	GT 0056	6	Brooks	10/24/2014
Cracker Barrell	211 E.Harrell Dr.	P.O.Box 787 Lebanon,Tn.37088-0000	968/5983	GT 0022	6	TRS.	10/23/2014
Cracker Box	801 N.Arkansas	110 Cracker Box Ln.Hot Springs, AR 71913-		GT 0154	0	Inactive	Inactive
Cumberland Presbyterian	1200 N.Arkansas	Russellville,Ar. 72801-2939	Gene 968-1061	GT 0124	12	Murdock	4/22/2013
Cyclone Car Wash	2614 W. Main	Signature Bank of Arkansas	John Krochcke 964-9887	GT 0206	12	Reed's	7/17/2014
Cyclone Car Wash	1020 N.Arkansas Ave.	Signature Bank of Arkansas	John Krochcke 964-9887	GT 0179	12	Reed's	7/17/2014
Dairy Queen	2007 E. Main	Russellville,Ar.72802-5361	Christina 858-6420	GT 0048	3	Brooks	5/28/2014
Denny's Restaurant	43 Bradley Cove Rd.	Russellville,Ar. 72802 2000gals	Diana Brixley 498-2390	GT 0057	4	Lyles 501/227-9042	10/3/2014
Dixie Café	105 E.Harrell Dr.	1000gals.	968-4800	GT0023	6	TRS.	8/6/2014
Dos Rios Mexican	2211 N.Arkansas	Russellville,Ar.72802-2217	Juan Enriguez 903/217-4204	GT 0057	0	CLOSE	Inactive
El Parian	2621 W.Main	Ste.1 Russellville,Ar.72801-2551		GT 0028	0	CLOSE	Inactive
Exxon Tiger Mart	203 S Arkansas	P.O.Box 1330 Beebe,Ar.72012-1330	Corp. 501/ 882-5220	GT 0123	12	TRS.	9/5/2013

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
Exxon S & F Fuel	1103 E. 16th St.	P.O.Box 267 Rsvl. 72811-0267	Ali 967-2676	GT 0031	12	Roto-Rooter	4/25/2014
E-Z Mart (Shell)	3102 S.Arkansas Ave.		Not being use.No cooking				Inactive
Fat Daddy BBQ	104 N.Denver			GT0202	6	Darpro	10/9/2014
Firehouse Subs	2005 N.Arkansas Ave.		Robert Burnett 479) 264-2851	GT 0196	12	TRS.	10/15/2014
First Assembly of God	124 E. G. St.	Russellville,Ar. 72801-3822	Diane 968-2622	GT 0005	12	TRS.	10/17/2013
First Baptist Church	200 S.El Paso	P.O.Box 36 Rsvl. 72811	Darren Richardson 968-1316	GT 0017	3	Roto-Rooter	7/28/2014
First Cumberland Presbyterian	1200 N.Arkansas	Russellville,Ar. 72801-2939	Gene 968-1061	GT 0124	12	Murdock	4/16/2014
Fletcher Oil (Shell)	20 Bradley Cove Rd.			GT 0193	6	TRS.	10/30/2013
Freedom House	400 Lake Front Dr.	Rsvl.72802 Gary Rhodes 857-4369 cell	Martice 968-7086	GT 0069	6	TRS	9/11/2014
Friendship Apts.	1010 E. M St.	Grace House	Sam 264-0511	GT-0170	12	Roto-Rooter	11/5/2014
Flying J	43 Bradley Cove Rd.	Sand/oil separator tank farm	Keith Puttman	GT 0194	6	Tenn.General	10/21/2014
Gambino's Pizzeria	2410 E. Main St.	501/365-6805/6630	Michael/Marianne Warth	GT-0072	0	inactive	Inactive
Hardees	1201 W Main	Nicholas Shutgot Saddle Peak ILC., PO Box 7971 Madison, WI 53791	Kim 968-6300	GT 0026	6	Roto-Rooter	7/15/2014
Hardee's	3095 E. Main	" " " " " " " " "	1000 gal's.	GT 0043	6	Roto-Rooter	7/15/2014
Harps Foods	100 S.Knoxville	P.O.Box 48 Springdale,Ar.72765-0048	Donnie Sims 967/4345	GT 0030	6	Bud's Inc.	11/18/2014
Health Food Garden	2621 W.Main		Brenda/ Gene 498-2884	GT 0028	12	Murdock	2/6/2013
Hunt Properties	2212 E.Parkway Dr.	Buffallo Wild Wings		GT 0206	6	new	
Huynh Li Hua	1107 N.Arkansas		KC 954) 600-9826	GT 0009	6	TRS	5/31/2013
Inglesia LaLuz Mondo Church	1412 S Arkansas	Russellville,Ar. 72801-6767	Walter Morales 479/747-6271	GT 0101	12	TRS	3/23/2013
I-Hop	401 E.Harrell Dr.	Russellville,Ar. 72802-2276	Sandi Street 972) 420-1902	GT 0021	6	Value Stream	12/6/2014
Imperial Catering	1310 S.Elmira	Rsvl. 72802-9648	Bob Wylie 877/836-0155	GT 0038	12	Reed's Septic	4/13/2013
Iglesia La Luz Mundo	1412 S. Arkansas	David Mosqueda (Pastor)		GT 0101	12	Dar Pro Solutions	4/16/2014
Italian Gardens	315 W.Main	Rsvl. 72811	Spence 967-1707	GT 0016	6	TRS	10/22/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
Jackson Brothers Vending	1601 S Knoxville	CLOSE		GT 0032	0	Inactive	Inactive
Johnny's Ice Cream	2405 E.Parkway Dr.		John Bucher 857-4274	GT 0044	6	TRS	9/25/2014
Kentucky Fried	720 N.Arkansas	600 Edgewood Dr. Maumelle, Ar. 72113	Peachy 968-1568	GT 0006	6	Lyles	12/10/2014
Kroger 624	1111 W.Main	P.O.Box 290396, Nashville, TN 37229	Patsy Kenedy 901/765-4208	GT 0027	3	Lyles	12/10/2014
La Chiquita Meat&Deli	1509 E.Main St. Ste3	Russellville,Ar. 72801-5350	Maria Navarro 890-9402	GT 0050	6	TRS.	8/14/2014
La Huerta	1500 E.Main	Russellville,Ar. 72801-5327	Robert cell: 747-2105	GT 0036	3	Roto-Rooter	10/17/2014
La Huerta (Mathias Shopping)	2005 N.Arkansas	Ste.1 Russellville,Ar. 72802-2214	880-9111 (1000gals)	GT 0058	3	Roto-Rooter	10/17/2014
Latino Market	517 S.Arkansas Ave.		Jose 967-4188/4288	GT 0160	12	TRS	2/3/2014
La Villa Italian	1312 N.Arkansas	479) 968-6285	Ray Perolli	GT 0003	6	TRS.	10/16/2014
Las Palmas II	615 N Arkansas	Russellville,Ar. 72801-3845 886-2807	Jaime Atilano D.B.A.	GT 0013	6	TRS	11/12/2014
Legacy Heights Nursing	900 W.12th St.	Russellville,Ar. 72801-6699	Rebecca Brashear 968-5858	GT 0065	2	Murdock	9/2/2014
Little Caesars	407 N.Arkansas	Ste.14 7500 Landers Rd., North Little Rock, AR 72117-1609	Robin Rohloff 501/833-9444	GT 0067	6	Roto-Rooter	10/10/2014
Long John Silvers	916 N.Arkansas	Rsvl. 72801	968-6040 (Charale)	GT 0004	6	Brooks	2/6/2014
Madame Wu's	914 S.Arkansas	Russellville,Ar. 72801-6012	968-4569	GT 0018	2	TRS.	12/9/2014
West Main Street Donuts	3415 W.Main St.	Rsvl.		GT 0119	6	TRS	8/19/2014
Main Street Mission	1110 E.2st.	Jeff Jones	968-8303	GT 0033	12	Darlin Evironmental	12/9/2014
Market 311	311 S.Arkansas Ave.	Talkington Trust		GT 0181	6	Inactive (close)	
McAlister Deli	319 Weir Rd.	1000 gal.new grease trap 7/1/2010		GT 0046	6	Lyles Co.	9/8/2014
McDonald's	81 SR 331N	808 W .B.St Rsvl. 72801-3610	Vicky Sykes 967-9393	GT 0041	6	Roto-Rooter	12/11/2014
McDonald's	1122 N.Arkansas	808 W .B.St Rsvl. 72801-3610	Bradley Allen 968-2292	GT 0002	6	Roto-rooter	12/11/2014
MiChild Ruvl.(Friendship)	1301 Russell Rd.	P.O.Box 2109 Rsvl. 72811-2109	Sam Kreun 264-0511	GT 0063	3	TRS.	9/24/2014
MKJ	4480 E.Main St.	Rsvl. Ar. 72802	Roxanne DeMarco 967-0227	GT 0040	6	Roto-Rooter	10/28/2014
The Oak Tree Bistro	2725 E. Parkway Ave.	Special Stainless Steel GT.	Miller Susan	GT 0185	2	Brooks	8/6/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
Mulan's	2790 E. Parkway	Russellville,Ar. 72802-2006	Jim Ni 880-8080	GT 0107	3	Darpro	11/19/2014
Neighborhood Roofing	1122 Bradley Ln.	owner Jeff Hawkins 479/ 967-8768		GT-0176		inactive	
New China(MathiasShopping)	2005 N.Arkansas	203 E.Elm St.Rsvl. 72802-8913	Andy Zhang 968-8881	GT 0108	3	Darlin Evironmental	12/9/2014
New Prospect Baptist Church	321 S.Houston Pl.	P.O.Box 2021 Rsvl. 72811-2021	Andy Hatley 970-8315	GT 0020	12	Darlin Evironmental	2/25/2014
Old South	1330 E.Main	Russellville,Ar. 72801-5323	James Austin 968-3789	GT 0035	4	Darlin Evironmental	11/12/2014
AT.& T. Store	1107 N.Arkansas	Russellville,Ar. 72801-2937		GT 0009	12	inactive	Inactive
Oumami	304 N.Elmira Ave.	Rsvl. 72811	Amy 857-3464	GT 0111	12	Darlin Evironmental	10/9/2014
Outdoor Living Center RV.	10 Outdoor Ct.	Lint trap	Ricky 968-7705	GT 0141	12	Murdock	3/13/2013
Ozark Pizza (Papa John)	700 W.Main	Ark. Pizza Grp. Angie 858-7272 700 Northshore Pl. N.L.R 72118-5298	inside grease trap Roto Rooter	GT 0114	6	Roto-Rooter	1/8/2015
P.D.Q. East	2215 E.Main	Frank Griffin Oil PO Box 666 Rsvl. 72811	Sherrie Leavell 968-3939	GT 0112	12	Darlin Evironmental	9/18/2014
P.D.Q.South	2750 S Arkansas	P.O.Box 666 Rsvl. 72801	Tammy Brook 890-5392	GT 0113	12	Darlin Evironmental	3/20/2014
Panes Restaurant	111 N. El Paso Ave.		479/ 498-6466	GT 0159	12	Murdock	7/10/2014
Papa Murphy's	420 N.Arkansas Ave.	Rusl. Ar. 72801 968-7272		GT 0007	12	Darlin Evironmental	10/7/2014
Parker Place Apts.	1401 Parker Rd.	890-9708	Lint trap	GT 0199	12	Roto-Rooto	4/2/2014
Pho Linh Vietnames Noodle Sou	624 S.Knoxville	Russellville,Ar. 72801-6419	Phuong Linh Phan 479/ 221-0392	GT 0126	6	Roto-Rooter	11/20/2014
Pilot Travel (Sand/Oil Sep.)	215 SR.331 N.	P.O.Box 182181,Columbus,Oh.43218	Keith Putnam 967-7414	GT 0160	6	Tenn.General Const	10/21/2014
Pizza Hut	502 N.Arkansas	330 E.Madison Ave.Ste. B-10, Derby, KS. 67037	Nancy Pitt 479/890-5555	GT 0117	12	Darlin Evironmental	10/27/2014
Pizza Pro (1000 gal's)	218 E.Parkway	P.O.Box 1285 Cabot,Ar.72023-1285	Diane 1-800) 777-7554	GT0008	6	Murdock	7/29/2014
Pope County Detention Center	3 County Complex	Russellville,Ar. 72801	Kenneth Wells 968-2558	GT 0047	6	Roto-Rooter	11/6/2014
Popeyes Chicken (Pollo LLC)	2411 E.Parkway	Russellville,Ar. 72802	Steve Duvall 479/857-5573	GT 0068	3	Value Stream	10/6/2014
Pupuseria Xiomara	416 S.Knoxville	Rsvl. Ar. Behind bldg.in the grass (750gls)	970/5430	GT 0001	12	TRS.	6/19/2014
Quick Truck Wash (nis)	43 Interstate Ave.	Rsvl.72802	Ida Jackson 968-9131	GT 0152	3	Reed's	12/11/2014
Quiznos	407 N.Arkansas	Ste.3 P.O.Box 814 Rsvl.72811-0814	Robert Ford 479/970-9388	GT 0072	12	new trap	1/8/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
River Valley Equipment	2911 S.Arkansas Ave.				6	Roto-Rooter	11/21/2013
Ruby Tuesday	115 E Harrell Dr.	150 W. Church Ave.Maryville,Tn.37801	858-7151	GT 0073	3	Lyles	9/8/2014
Rsvl. Center Valley School	5401 SR. 124	Jaime Thomas 968-1306	Kelly 968-1650	GT 0151	12	TRS.	2/13/2014
Rsvl. High School	2203 S.Knoxville Ave.	Jaime Thomas 968-1306		GT 0039	6	TRS.	9/3/2014
Rsvl. Junior High	2000 W.Parkway Dr.	P.O.Box 928 Rsvl. Ar.	Jaime Thomas 968-1306	GT 0075	6	TRS.	9/3/2014
Rsvl. Middle School	1201 W 4 th.St.	P.O.Box 928 Jaime Thomas 968-1306	Wesley Roach 968-1650	GT 0076	6	TRS	9/3/2014
Rsvl..Nursing Rehab.	215 S.Portland	P.O.Box 1588 Rsvl. 72811-1588	Bro Price 968-5256	GT 0078	3	TRS	10/28/2014
Rsvl Nursing (ATU)	1700 W.C St.			GT 0077	0	Inactive	Inactive
Rsvl. Pediatric Plus	301 N. Sidney Ave.			GT 0212	12	Murdock	12/17/2014
Totally Star	1600 S.Elmira	Russellville,Ar. 72802-8452	498-2230	GT 0093	12	Lyles	3/28/2014
Save the Childrens(Head Start)	507 N. Elmira Ave.	2707 E. H.St.Rsvl, 728	Sandra Johnson 567-5629	GT 0045	12	Murdock	10/29/2014
Second Time Around	713 E.4th.St.	Used appliances	890-8045	GT 0082	0	Inactive	Inactive
Senior Center(Friendship)	1010 N.Rochester	Rsvl.Ar. 72801 968-5039	Kurt 264-0511	GT 0083	3	TRS.	12/9/2014
Shipley Donuts	407 N.Arkansas	1000 gals. Caetra Yok 880-0885		GT 0179	6	TRS	1/8/2014
SKK Italy	331 Weir Rd.			GT 0096	6		Inactive
Sonic	3003 E.Parkway	Rsvl.72802-2004	Ken Bilyeu 968-8631	GT 0084	12	TRS	6/2/2014
Sonic	806 E.4th.St	2505 W.Main Rsvl. 72801-2532	Ken Bilyeu 968-8631	GT 0085	12	TRS.	5/12/2014
Sonic	2505 W.Main St.	2505 W.Main Rsvl. 72801-2532	Ken Bilyeu 968-8631	GT 0086	12	TRS	5/12/2014
Southern Skies	1019 N.Arkansas	600 W. J St. #2 Rsvl.(hookah lounge)	Pranav Khera 747-3263	GT 0109		TRS	Inactive
Sportsworld	3700 W.Main	Russellville,Ar. 72802	David Hyde 968-1122	GT 0088	12	Murdock	5/1/2014
St.Mary Hospital	1800 W.Main St.	P.O.Box 3050 Rsvl. 72811-3050	Craig Neal 964-9269	GT 0089	6	Roto-Rooter	7/5/2014
Starbucks	2220 E Parkway	mcatudal@starbuck.com (Micheal)	Heather Hall 967-2488	GT 0090	3	Murdock	11/12/2014
Stella Manor	400 N.Vancouver	Russellville,Ar. 72801-2720	Brad 968-4141	GT 0091	6	Murdock	7/24/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
Subway's	2410 E.Parkway	56 Bowers Loop,Dover,Ar.72837-8777	Melisa Cross 968-7976	GT 0092	12	Roto-Rooter	7/29/2014
Sumo Japanese Steakhouse	2300 E.Parkway			GT0211	6	new trap due 5/15	
Superfast Lube & Oil	1301 E. Main St.	Rsvl. Ar. 72801	Bobby Gipson 968-8761	GT 0148	12	Roto_Rooter	1/15/2014
Sue Wee 2	422 S.Arkansas	Russellville,Ar.72801-5902		GT 0019	12	TRS	Inactive
Taco Bell # 346	301 N.ElMira Ave.	P.O.Box 6538 Ft.Smith 72906-6538	967-2121 Christa	GT 0094	6	Drain Master	12/15/2014
Taco Bell # 345	1308 N.Arkansas Ave.	Rsvl. 72801 968-7444	Chris Gosh 479/806-3894	GT 0095	6	Drain Master	12/15/2014
Taco John"s	1103 N.Arkansas	Russellville,Ar. 72801-2937	Jerome Minaham DBA 967-1985	GT 0097	12	Murdock	6/4/2014
Taco John's	1819 E.Main St.	Rsvl.72802	Patrick Minaham	GT 0098	12	Murdock	6/4/2014
Taco Villa	420 E.4th.St.	Russellville,Ar. 72801-5219	Kit Kitterman DBA. 968-1191	GT 0099	3	TRS.	12/23/2014
The Cake Place	411 W. Parkway Dr.		Patti 968-8945	GT 0191	12	TRS.	4/1/2013
The Oak Tree Bistro	2725 E. Parkway Ave.	Stainless Steel GT 500gals		GT 0192	6	Brooks	8/6/2014
The Vitamin Store Inc.	2621 W.Main		Brenda 964-9355	GT 0028	12	Murdock	2/11/2014
Three Guy's Inc.(Cash Saver)	3301 W. Main St.	Rsvl.	Jessie Emerson 967-4466	GT 0064	12	Williams	3/23/2013
Tiger Mart # 106 (Exxon)	2402 N. Arkansas Ave.	Rsvl. 72811	968-2966	GT 0053	12	TRS.	9/5/2013
Tyson (TVDC)	4820 E.Main	Rsvl. Ar. 72801	Mark Johnson 964-8124	GT0166	12	Roto-Rooter	7/28/2014
Tyson Truck Shop	5050 E.Main	ronnie.keene@tyson.com 964-8160	Crystal Clean 877/ 938-7948	GT 0183	6	Crytal Clean	8/5/2014
U-Like Oriental	107 N.ElMira Ave.	Russellvile,Ar. 72802	Amy 917) 251-9669 / 880/8887	GT 0080	6	TRS	7/11/2014
Varizon Phone(Mr.Burger)	1710 E.Main	Not in use	formerly Mr.Burger not in use	GT 0102	0	Inactive	Inactive
Venezia's Pizzeria &Pasta	1321 E.Main St.			GT 0051	6	TRS.	10/7/2014
Waffle House #1410	3085 E.Parkway	Ozark Waffles llc.P.O.Box 6450, Norcross, GA. 30091 Melony for both stores	Michelle Harness 1-866/327-4362, Local 968-3382	GT 0042	3	Value Stream	10/6/2014
Waffle House # 897	2408 N.Arkansas	5305 McClanaham Dr. Ste.1, North Little Rock, AR 72116-7001	1-866/327-4362, Local-968-3444 Crystal	GT 0103	3	Value Stream	10/6/2014
Wal-Mart	2409 E. Main	2000 gal's.West side		GT 0104	3	Liquid Enviromental	9/25/2014
Wal-Mart	2409 E. Main	1000 gal's North side		GT 0105	3	Liquid Enviromental	9/25/2014

GREASE TRAP - FACILITY LIST (2)

Customer	Address	Billing Address	Contact	Serial #		Pumper	Date Pumped
Wal-Mart Oil Separator	1000 gal's	Wendy Widner 479/204-2030	Oil- Water Separator	GT 0106	6	January Envir.	8/26/2014
Waste Mgmt.	88 Joyce Ln.	Sherry 968-0540	Oil-Separator	GT 0187	3	FCC	12/29/2014
Wendy's #45	215 SR.331 N.	42 Parkstone Cir.North Little Rock 72116	4000 gal's per 3-D Plumbing	GT 0059	6	3-D Plumbing	12/1/2014
Wendy's # 10	721 N Arkansas	Fourjay llc.42 Parkstone Cir.N.Little Rock 72116-7086	500 gal's	GT 0011	6	3-D Plumbing	11/25/2014
Western Sizzlin	1105 E.Main	3492 W.Sunset Ave.Springdale, AR 72762-4900	Joe 479/751-3663	GT 0118	3	TRS.	12/11/2014
West Main Donuts	3415 W.Main St.	Mark 880-9308		GT 0119	6	TRS	11/6/2014
West Side Church of Christ	2300 W.C.St. 72801	(201 N. Waco)	Frank 968-1121/6565	GT 0120	12	Murdock	12/30/2014
Wind Taste	715 N. Arkansas Ave.		Yung Yang Ni 857-6969	GT 0187	6	TRS.	9/3/2014
Wildflower Retirement	240 S.Inglewood	Emeritus Corp.3131 Elliott Ave.Ste.500	Roberta Gill 890-6709	GT 0121	3	TRS	12/17/2014
Yates Htg & A/C Inc.	1605 S.Elmira Ave.	owner Robert Simpson 886-0102	Carl & Mary Yates 495-9741/40	GT-0177	0	Inactive	Inactive

Cleanout Cap Program
Infiltration Contributors List

	Order #	Service Address	Customer	Req Repair	Notice	Due Date	Contact	Inspection	Compliant	CC Repair
200	546911	2111 S Ithaca Ave		cleanout cap			none	15-Nov-13	Yes	**pop-up**
201	546911	1819 S Cleveland Ave		cleanout cap			none	16-Dec-13	Yes	**plug**
202	551071	1321 W C St	Rodney Miller	service line	1-Aug-14	30-Aug-14	29-Aug-14	27-Jan-14	No	
203	551434	615 W B St		service line			none	28-Jan-14	Yes	**service**
204	551433	612 W B St		cleanout cap	1-Aug-14	30-Aug-14	6-Aug-14	29-Jan-14	Yes	
205	551438	1213 W C St		service line			none	29-Jan-14	Yes	**service**
206	551514	802 W 2nd St	US Forestry	service line	1-Aug-14	30-Aug-14	28-Aug-14	30-Jan-14	No	
207	551986	315 S Independence		service line	1-Aug-14	30-Aug-14	4-Aug-14	20-Aug-14	Yes	
208	552036	413 W 6th St		cleanout cap				7-Feb-14	Yes	**3" plug**
209	552038	504 S Commerce Ave	Yanci Walker	service line	1-Aug-14	30-Aug-14	27-Aug-14	7-Feb-14	No	
210	552039	607 S Boulder Ave		cleanout cap			none	7-Feb-14	Yes	**plug**
211	552040	616 S Boulder Ave		cleanout cap			none	7-Feb-14	Yes	**plug**
212	552053	119 W 6th St		cleanout cap			none	10-Feb-14	Yes	**pop-up**
213	552054	410 S Commerce Ave		service line	1-Aug-14	30-Aug-14	6-Aug-14	10-Feb-14	Yes	**service**
214	552240	702 W C St		cleanout assembly				11-Feb-14	No	
215	551570	819 W 2nd St		service line			none	13-Feb-14	Yes	**service**
216	552614	2109 E 12th St		service line			none	21-Feb-14	Yes	**service**
217	552853	2300 W C St		service line			none	5-Mar-14	Yes	**service**
218	552796	808 W E St		service line			none	7-Mar-14	Yes	**service**
219	554029	811 W 4th St		service line			none	10-Mar-14	Yes	**cap**
220	553633	2007 S Tampa Ave		cleanout cap				10-Mar-14	No	
221	553634	2103 S Tampa Ave		cleanout cap				10-Mar-14	No	
222	554461	915 E 4th St		cleanout cap			none	12-Mar-14	Yes	**cap**
223	554475	706 E 6th St		service line			none	12-Mar-14	Yes	**plug**
224		706 S Jackson Ave		cleanout cap			none	13-Mar-14	Yes	**cap**
225	551221	700 W B St		service line			none	8-Apr-14	Yes	**service**
226	557837	1404 S Detroit Ave		cleanout cap			none	1-May-14	Yes	**pop-up**
227	557838	314 E 14th St		cleanout cap			none	1-May-14	Yes	**pop-up**
228	557839	1109 S Boston Pl		cleanout cap			none	1-May-14	Yes	**pop-up**
229	557842	301 W 21st St		cleanout cap			none	1-May-14	Yes	**pop-up**
230	557943	1010 E F St		cleanout cap			none	2-May-14	Yes	**cap**
231	557840	2107 S Frankfort Ave		cleanout cap			none	2-May-14	Yes	**pop-up**
232	557843	2111 S Ithaca Ave		cleanout cap			none	2-May-14	Yes	**pop-up**
233	557920	1307 E 13th St		cleanout cap			none	2-May-14	Yes	**pop-up**
234	557917	1502 E 13th St		cleanout cap			none	2-May-14	Yes	**pop-up**
235	557918	1407 E 13th St		cleanout cap			none	2-May-14	Yes	**pop-up**
236	557844	1304 S Frankfort Ave		cleanout cap			none	5-May-14	Yes	**plug**
237	558069	1205 S Frankfort Ave		cleanout cap			none	5-May-14	Yes	**pop-up**
238	558064	2206 S Hartford Ave		cleanout cap			none	6-May-14	Yes	**pop-up**

Cleanout Cap Program
Infiltration Contributors List

	Order #	Service Address	Customer	Req Repair	Notice	Due Date	Contact	Inspection	Compliant	CC Repair
239	558062	606 E 23rd St		cleanout cap			none	7-May-14	Yes	**pop-up**
240	558252	401 E 11th St		cleanout cap			none	7-May-14	Yes	**pop-up**
241	565765	1412 S Greenwich Ave		cleanout assembly	1-Aug-14	30-Aug-14	6-Aug-14	26-Aug-14	Yes	
242	558470	1207 N Greeenwich Ave		cleanout cap			none	9-May-14	Yes	**plug**
243	566129	1311 N Erie Ave		cleanout assembly	1-Aug-14	30-Aug-14	none	2-Sep-14	Yes	
244	559137	1727 W 17th Cir		cleanout assembly			none	22-May-14	Yes	**plug**
245	559306	821 S Denver Ave		cleanout assembly			none	22-May-14	Yes	**plug**
246	559307	203 W 13th St		cleanout assembly			none	22-May-14	Yes	**plug**
247	559309	213 W 15th St		cleanout assembly			none	22-May-14	Yes	**pop-up**
248	559315	402 W 16th Ct, Apt A		cleanout assembly			none	23-May-14	Yes	**plug**
249	559311	403 W 19th St		cleanout assembly				4-Jun-14	No	
250	560238	211 S Commerce Ave		cleanout assembly			none	5-Jun-14	Yes	**cap**
251	560222	1019 S Glenwood Ave		cleanout assembly			none	5-Jun-14	Yes	**pop-up**
252	560223	1302 S El Paso Ave		cleanout assembly			none	5-Jun-14	Yes	**cap**
253	560225	1220 S El Paso Ave		cleanout assembly			none	5-Jun-14	Yes	**plug**
254	560226	1404 S El Paso Ave		cleanout assembly				5-Jun-14	No	
255	560228	503 W 19th St		cleanout assembly				5-Jun-14	No	
256	560229	1311 S Houston Ave		cleanout assembly			none	5-Jun-14	Yes	**plug**
257	560279	112 W 18th St		cleanout assembly			none	5-Jun-14	Yes	**plug**
258	560283	1819 S Boston Pl		cleanout assembly				6-Jun-14	No	
259	560284	1205 S Boston Ave		cleanout assembly			none	6-Jun-14	Yes	**plug**
260	560285	203 W 14th St		cleanout assembly			none	6-Jun-14	Yes	**pop-up**
261	560280	704 W 14th St		cleanout assembly			none	11-Jun-14	Yes	**plug**
262	560286	1711 S Boston		cleanout assembly			none	12-Jun-14	Yes	**pop-up**
263	560822	907 S Denver Ave		service line			none	13-Jun-14	Yes	**plug**
264	560830	705 W 18th Ter		service line				16-Jun-14	No	
265	560930	1122 N Arkansas Ave		cleanout cap			none	16-Jun-14	Yes	**plug**
266	560932	1014 N Boston Ave		cleanout cap			none	16-Jun-14	Yes	
267	560933	505 E K Pl		cleanout cap			none	16-Jun-14	Yes	**cap**
268	560936	1108 N Boston Ave		cleanout cap			none	16-Jun-14	Yes	**plug**
269	560937	3303 W Main Pl		metal cleanout				17-Jun-14	No	
270	560938	200 S Cumberland		cleanout cap			none	17-Jun-14	Yes	**cap**
271	560953	108 Hughes		cleanout cap			none	17-Jun-14	Yes	**cap**
272	561090	3505 W Main St		cleanout assembly			none	18-Jun-14	Yes	**cap**
273	561092	2402 N Arkansas Ave		metal cleanout				18-Jun-14	No	
274	561099	213 Reasoner Ln		cleanout cap			none	18-Jun-14	Yes	**plug**
275	561100	2814 W E St		cleanout cap				18-Jun-14	No	
276	561101	421 E K Pl		cleanout cap			none	18-Jun-14	Yes	**pop-up**
277	561102	602 Hunter Ridge		cleanout cap			none	18-Jun-14	Yes	**cap**

Cleanout Cap Program
Infiltration Contributors List

	Order #	Service Address	Customer	Req Repair	Notice	Due Date	Contact	Inspection	Compliant	CC Repair
278	560827	1006 S El Paso Ave		service line			none	19-Jun-14	Yes	**service**
279	561128	904 N Denver Ave		cleanout cap			none	19-Jun-14	Yes	**pop-up**
280	561177	918 N El Paso Ave		cleanout cap			none	19-Jun-14	Yes	**pop-up**
281	561179	312 W J St		cleanout cap			none	19-Jun-14	Yes	**cap**
282	561185	300 E Carthage Ave		cleanout assembly				19-Jun-14	No	
283	561190	205 W K St		cleanout cap			none	19-Jun-14	Yes	**pop-up**
284	561193	2611 W Main St		cleanout cap			none	19-Jun-14	Yes	**plug**
285	561187	822 N El Paso Ave		cleanout cap			none	19-Jun-14	Yes	**plug**
286	561180	414 Austin Cir		cleanout cap			none	20-Jun-14	Yes	**plug**
287	561266	901 W I St		cleanout cap			none	23-Jun-14	Yes	**cap**
288	561092	2407 N Arkansas		cleanout cap			none	24-Jun-14	Yes	**pop-up**
289	561778	300 E Holly St, Apt 1		cleanout cap			none	27-Jun-14	Yes	**plug**
290	561589	607 Twin Oaks Dr		cleanout assembly				27-Jun-14	No	
291	561589	613 Twin Oaks Dr		cleanout assembly				27-Jun-14	No	
292	561622	603 Shadow Dr		unknown				27-Jun-14	No	
293		1007 N Parker Rd		cleanout cap			none	28-Jul-14	Yes	**3" plug**

City Corporation

RW&SS Russellville Water & Sewer System

WATER AND WASTEWATER SYSTEM UPDATE

City Corporation Board/City Council
Joint Meeting
January 20, 2015

INTRODUCTIONS

Steve Mallett, PE
General Manager, City Corporation

OBJECTIVES

- Present a summary of the overall status of the Russellville water and wastewater systems
- Identify specific needs within both systems
  - Cost estimate
  - Priority
  - Schedule
  - Potential consequences of delaying/foregoing
- Discuss current financial status
- Identify and discuss funding options
- Discuss impact on rates

SYSTEM ASSESSMENT

- First order of business – perform assessment of the water and wastewater systems
  - Evaluate current condition of system components
  - Identify critical components that can affect safety and quality of products and/or services
  - Identify challenges related to growth and/or regulatory compliance
  - Develop specific plan to address those areas of concern
  - Develop and implement a 25 year planning cycle for those projects

WATER SYSTEM ASSESSMENT

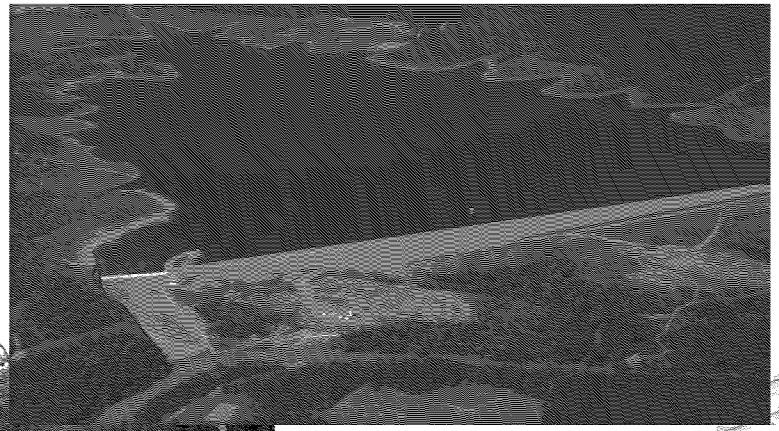
- In 2014, City Corporation decided to update the Water Master Plan as the previous version was eleven years old
- In efforts to reduce the amount of “Unaccounted For Water”, City Corporation elected to perform a system-wide leak detection survey and evaluate the accuracy of water metering infrastructure and consider improvements as needed

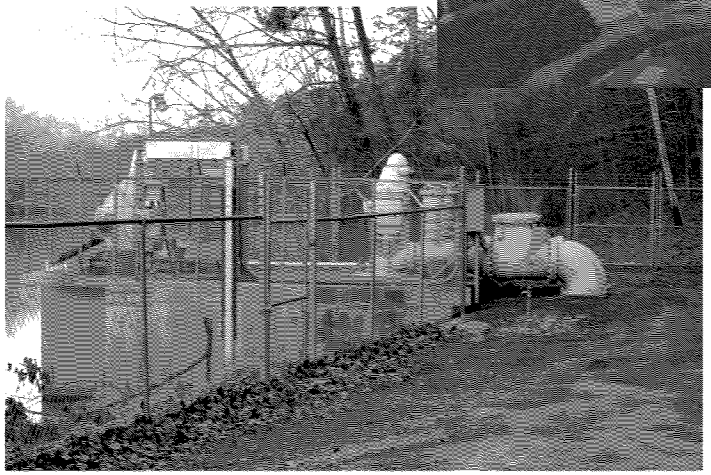
WATER SYSTEM ASSESSMENT

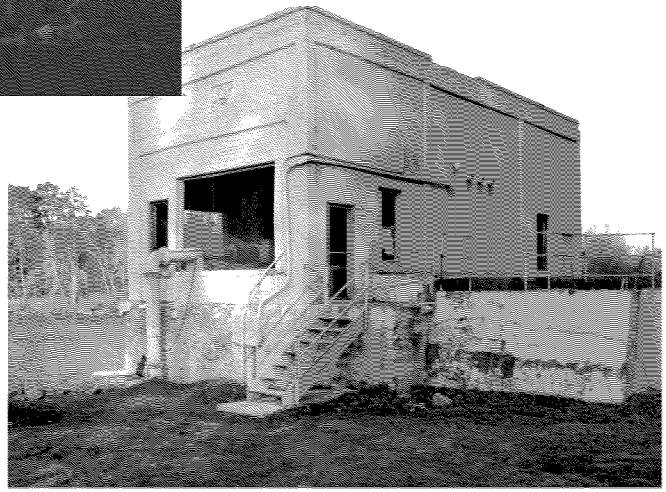
- Garver Engineers performed the task of updating the Water Master Plan which included evaluation of the raw water sources, treatment facilities, pump stations, storage tanks and distribution piping
  - Identified immediate areas/items of concern and made recommendations to resolve those issues
  - Projected system growth and identified items that could negatively impact that growth; and made recommendations to address those issues

WATER SYSTEM ASSESSMENT

WATER SOURCES

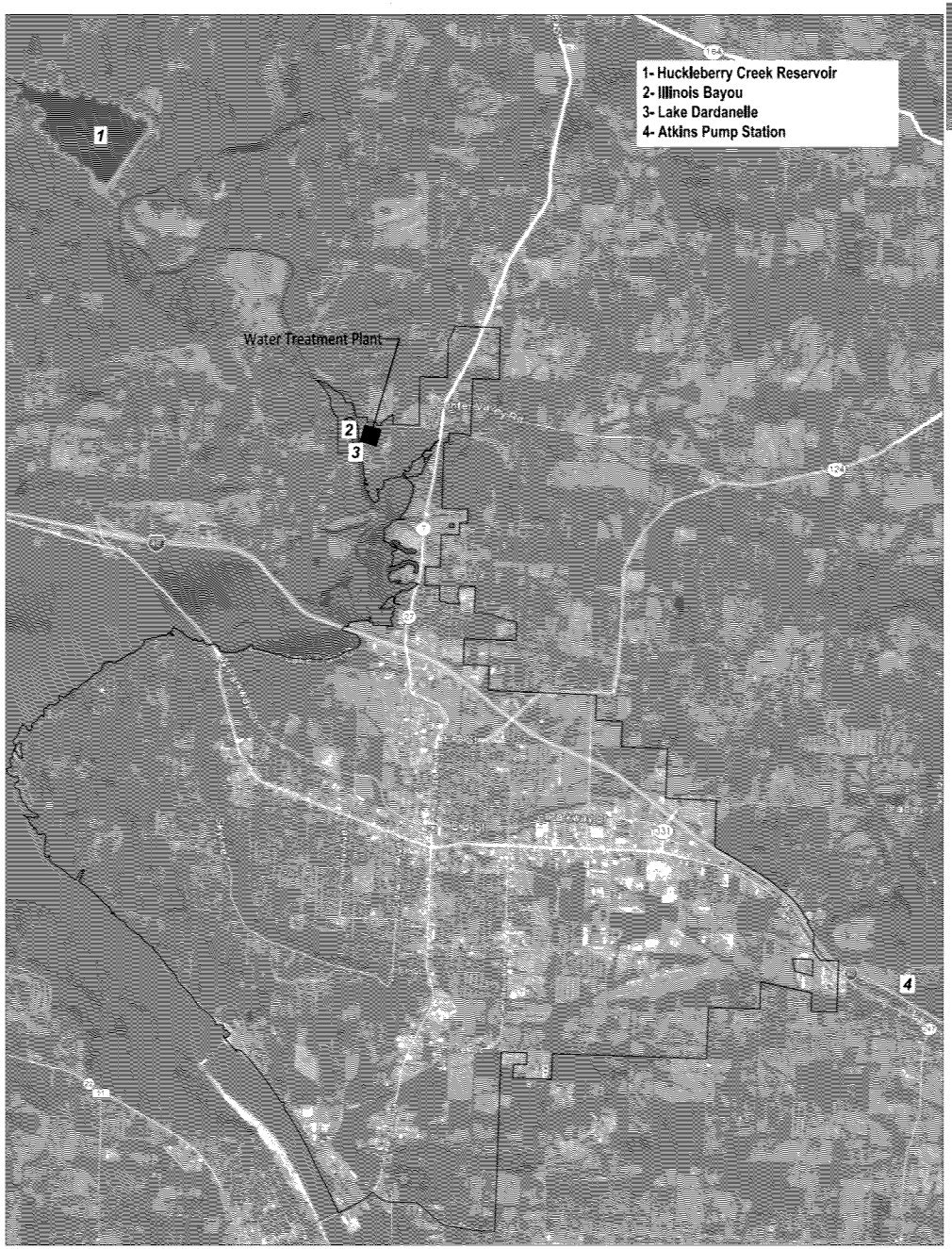






WATER SYSTEM ASSESSMENT

- CURRENT WATER SOURCES
  - Primary – Huckleberry Creek Reservoir
  - Secondary – Illinois Bayou at Water Treatment Plant
  - Third – Lake Dardanelle at Water Treatment Plant
  - Fourth – Atkins Emergency Pump Station
- None of the backup sources are capable of delivering volume of water to meet summer demand

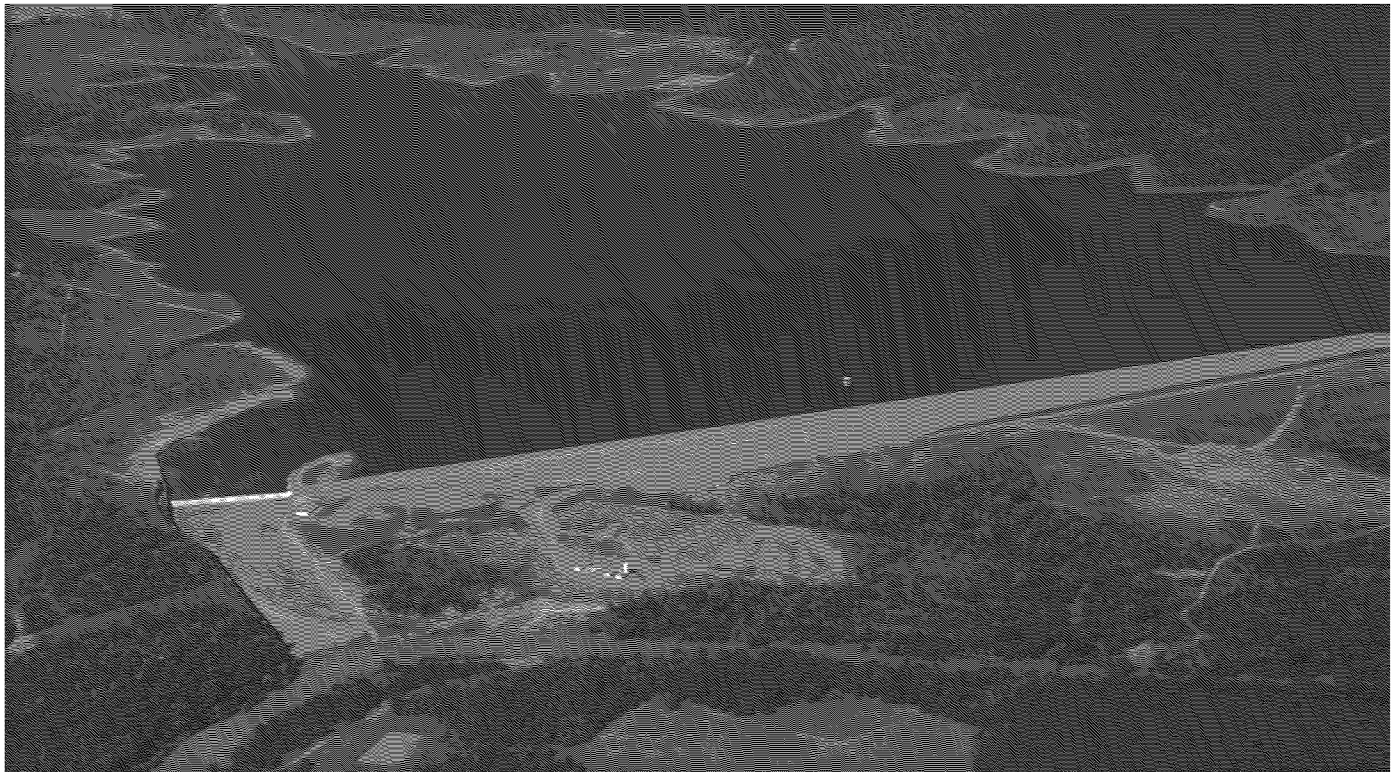

1- Huckleberry Creek Reservoir
2- Illinois Bayou
3- Lake Dardanelle
4- Atkins Pump Station
Water Treatment Plant
1
2
3
4

WATER SYSTEM ASSESSMENT

- Primary Source – Huckleberry Creek Reservoir
  - Huckleberry Creek Reservoir (HCR) was placed in service in 1996 and originally projected to serve the needs of the water system until 2035
  - HCR is constructed as a “side-stream storage” facility which means it’s watershed is not sufficient to keep the reservoir full, therefore, water can be pumped from the Illinois Bayou as needed and as conditions allow
    - We typically only fill the lake in late winter/early spring if needed in order to begin the summer season with a full lake
  - Raw water flows by gravity through approximately 4 miles of 48” welded steel pipe

WATER SYSTEM ASSESSMENT

- CURRENT WATER SOURCES
  - Primary – Huckleberry Creek Reservoir



WATER SYSTEM ASSESSMENT

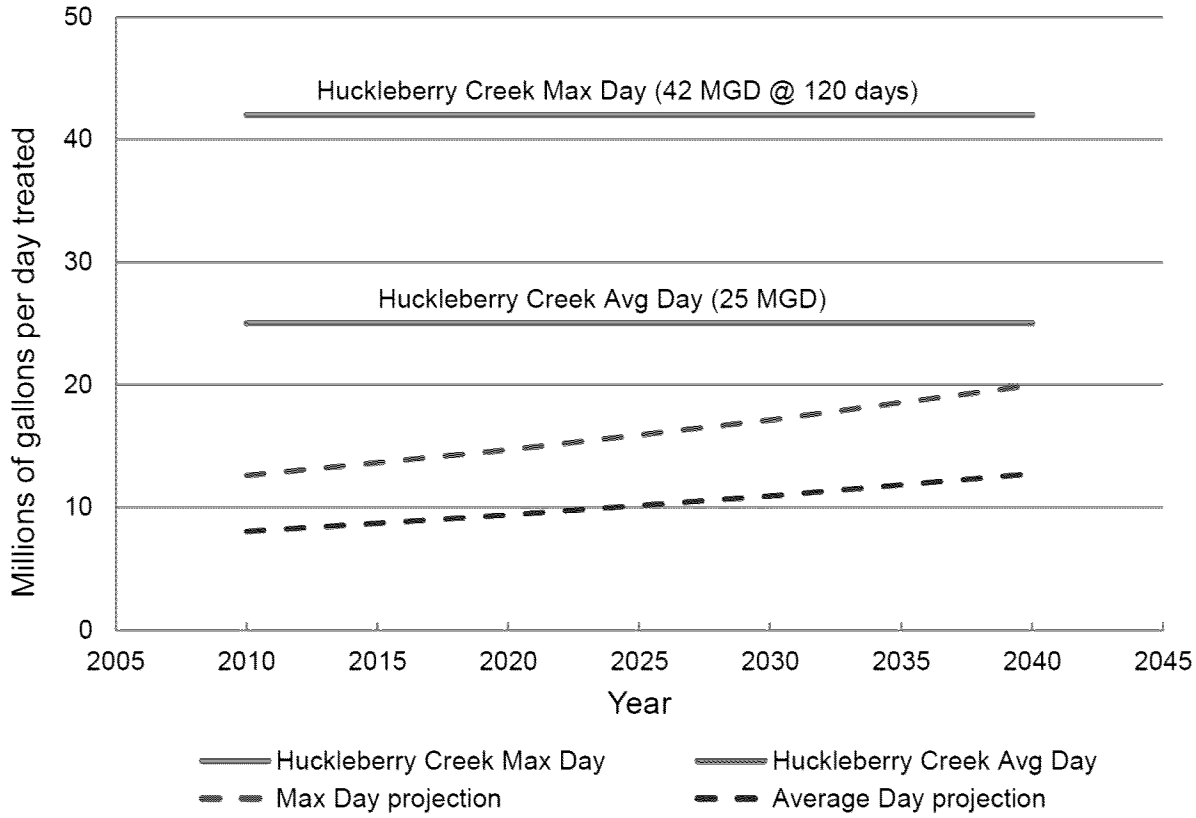
- Primary Source – Huckleberry Creek Reservoir
  - The reservoir was designed to provide 25 million gallons per day (MGD) of average day capacity and 42 MGD for 120 consecutive days of maximum day capacity
    - Assumes that the reservoir is full at beginning of year
    - Assumes that the Illinois Bayou is as low as the three worst drought years on record
    - Assumes that the reservoir is recharged by pumping from the Bayou when possible

WATER SYSTEM ASSESSMENT

- Based on historical and projected growth, the *Water Master Plan 2014* projects that the reservoir will now provide adequate capacity to 2040 and beyond

RESERVOIR CAPACITY/PROJECTION

Graph from *Water Master Plan 2014*



WATER SYSTEM ASSESSMENT

- CURRENT WATER SOURCES
  - Summary of Recommendations:
    - Continue to utilize Huckleberry Creek Reservoir as primary source
    - Decommission Lake Dardanelle intake due to structural and raw water quality concerns and upgrade Illinois Bayou and Atkins Pump Station as necessary to keep in service
    - Begin identifying and evaluating future water sources
  - Funding needed:
    - Nominal short term capital expenditures
    - Significant long term capital expenditures for additional water source estimated to begin around 2040

WATER SYSTEM ASSESSMENT

- CURRENT WATER SOURCES
  - Risks of foregoing/delaying recommended actions:
    - While we are not projected to need an additional source for at least 25 years, thoughts to consider:
      - Regulatory environment is more complex than when the Huckleberry Creek Reservoir was constructed and it took 20 years from concept to reality
      - The cost of acquiring land will likely be substantially greater in 20 years
      - Other water systems may be developing new water sources which could offer opportunities for partnerships

WATER SYSTEM ASSESSMENT

WATER TREATMENT

WATER SYSTEM ASSESSMENT

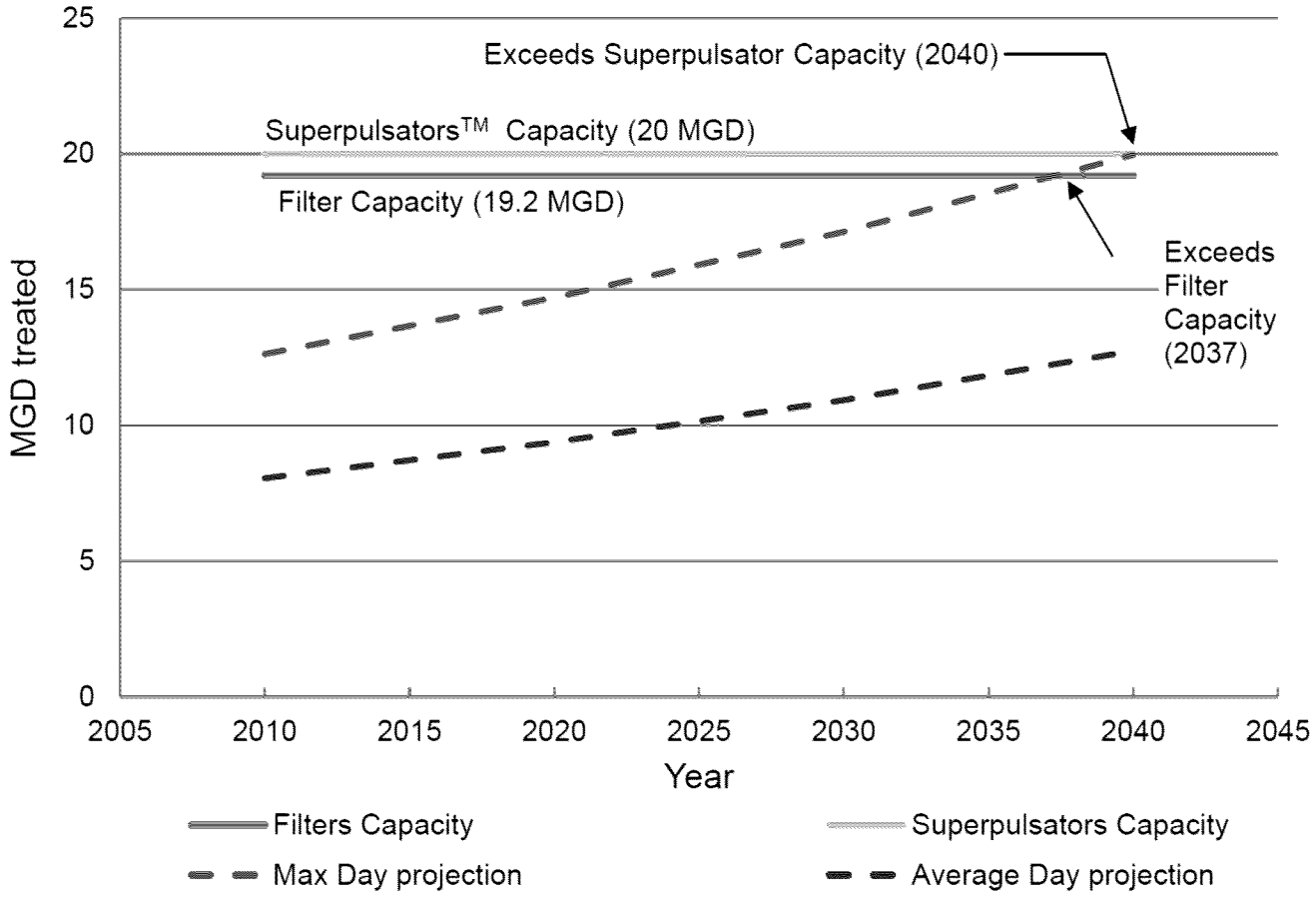
- WATER TREATMENT PLANT
  - Plant Rated Capacity – 19.2 MGD
  - Historical Peak Demand – 13.43 MGD (6/29/12)
  - Peak Production in 2014 – 11.04 MGD (7/09/14)
  - Design capacity of full build-out at current site – 42 MGD
    - Matches maximum yield of Huckleberry Reservoir

WATER SYSTEM ASSESSMENT

- Concerns Identified in *Water Master Plan 2014*
  - Filter capacity reached in 2040
  - Settling basins (Superpulsators™) reached in 2037
  - Single clearwell prevents taking out of service for maintenance/repair
  - Existing clearwell and high service pumps need rehabilitation/replacement
  - Structural concerns regarding banks and bottoms of sludge ponds

WATER SYSTEM ASSESSMENT

Graph from *Water Master Plan 2014*



WATER SYSTEM ASSESSMENT

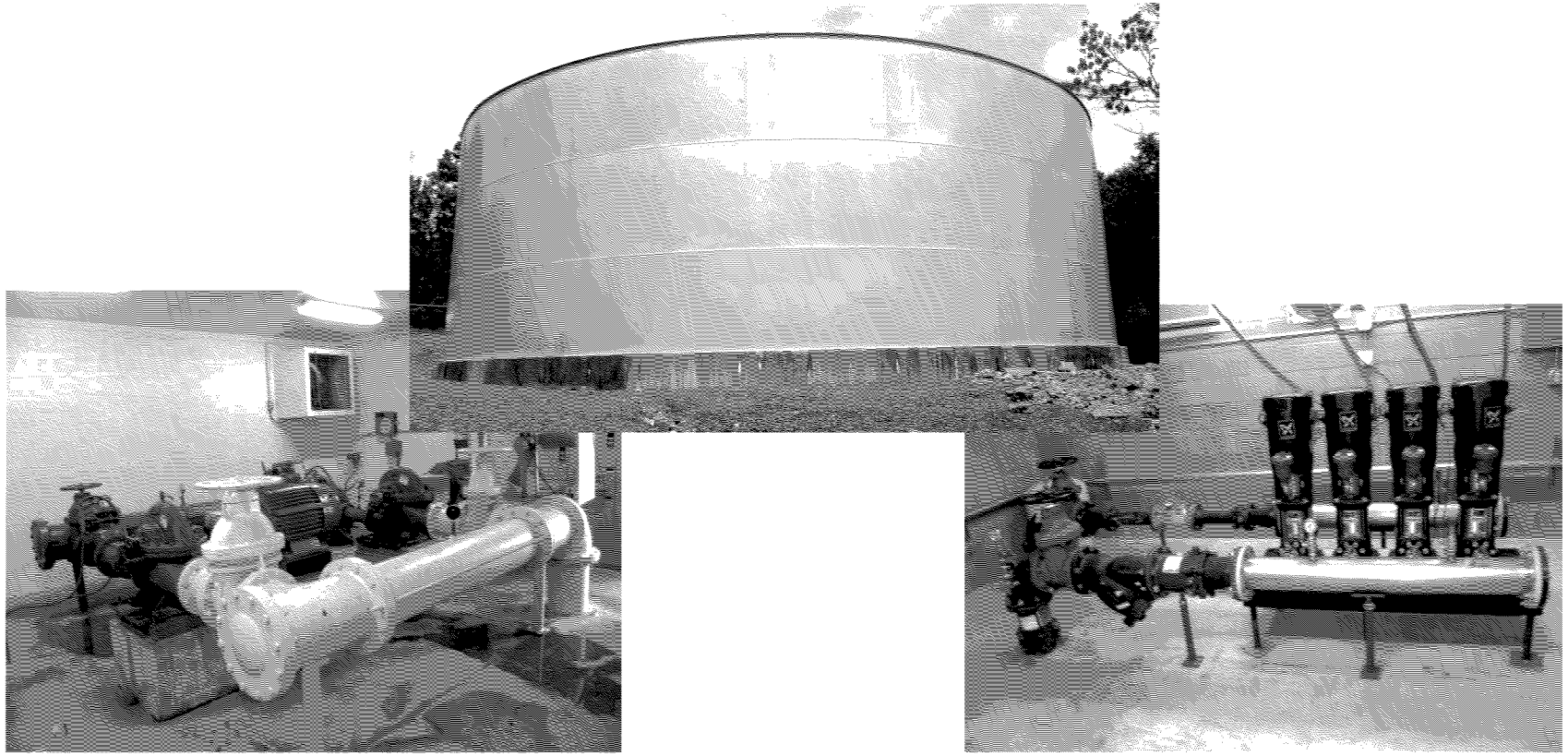
- WATER TREATMENT PLANT
  - Summary of Recommendations:
    - Begin process of re-rating filters and settling basins to increase capacity and/or for operational benefits
    - Consider construction of 4th filter ($2.9 million)
    - Consider Superpulsator One Improvements ($835K)
    - Sludge Pond Improvements ($600K)
    - Construction of second clearwell and high service pump station ($6.525 million)
    - Rehabilitation of existing clearwell ($1.004 million)
    - Replacement of existing high service pumps and addition of variable frequency drives ($1.35 million)
  - Total funding required: **$13.21 million**

WATER SYSTEM ASSESSMENT

- WATER TREATMENT PLANT
  - Risks of foregoing/delaying recommended actions:
    - The existing facility, while currently below maximum capacity, lacks redundancy of certain treatment equipment and therefore, cannot be shut down for emergency and/or planned maintenance and repair
    - Delaying rehabilitation of certain equipment could compromise the exceptional finished water quality and/or our ability to reliably deliver it to our customers
    - The existing sludge ponds are constructed immediately adjacent to Lake Dardanelle and the banks need to be stabilized to prevent collapsing into the lake and creating a contamination issue

WATER SYSTEM ASSESSMENT

WATER DISTRIBUTION



WATER SYSTEM ASSESSMENT

- Storage Tanks
  - Industry standard recommends having storage sufficient to supply 24 hrs average day demand, which is estimated at 7.3 MGD
  - Nine existing storage tanks
    - Seven ground storage and two elevated tanks
    - Ranging from 100,000 gallons (Ray Lee) to 2 MG (Weir Road)
    - Total storage 7.76 MG, meets recommended standard
  - Inspected three tanks in 2012
    - Performed necessary repairs/maintenance
  - Inspecting remaining six in 2014/15
    - Will schedule repairs/maintenance in 2015/16 budget

WATER SYSTEM ASSESSMENT

- Storage Tanks
  - Recommendation in *Water Master Plan 2014:*
    - Projected to need additional storage of approximately 1.6 MG by 2020 based on projected demand
    - Recommend constructing a second 1.0 MG tank in the I-40 pressure zone ($2.86 million)
    - Recommend constructing a 2.0 MG tank on old Bayou Ridge tank site at the water treatment plant to increase capacity and provide gravity service to town ($3.16 million)
  - Total funding required: **$5.16 million**

WATER SYSTEM ASSESSMENT

- Water Pump Stations
  - Ten existing pump stations
    - Largest pump station – Industrial pump station that feeds I-40 Tanks
    - Smallest pump station – Richland Hills pump station which provides service to a closed system with no storage tank
  - Main concerns noted in *Water Master Plan 2014*:
    - Lack of emergency power at critical pump stations
    - Lack of operational flexibility and energy inefficiencies
    - Two stations at or nearing capacity

WATER SYSTEM ASSESSMENT

- Water Pump Stations
  - Recommendation in *Water Master Plan 2014:*
    - Equip two pump stations with variable frequency drives for improved operational flexibility and efficiency ($369K)
    - Western Hills Pump Station Replacement ($751K)
    - 14th and Houston Pump Station Improvements ($830K)
    - Install permanent generators at six existing pump stations ($1 million)
  - Total funding required: **$2.95 million**

WATER SYSTEM ASSESSMENT

- Distribution Piping
  - 259 miles of piping from 1” to 36” of the following materials:
    - Cast Iron
    - Ductile Iron
    - PVC
    - Galvanized
    - Asbestos/Cement (AC)

UNACCOUNTED FOR WATER

- Currently estimated at 15%
- “Real Losses” – Leaks
  - Leak detection survey
  - Prioritize and repair leaks
- “Apparent Losses” – Non-metered use, under-registering meters
  - Existing meters largely past recommended life and not as accurate as newer technology

WATER SYSTEM ASSESSMENT

- Distribution Piping
  - Currently conducting a system-wide leak detection survey to locate, estimate and prioritize leaks
  - Main concerns noted in *Water Master Plan 2014*:
    - 41,550 ft of small diameter galvanized steel pipe estimated at **over 40 years old** that is past it's useful and responsible for a large number of leaks
    - 165,250 ft of varying sizes of cast iron pipe estimated at **over 60 years old** that is past it's useful life and responsible for a number of leaks that can cause major damage to property and buildings
    - 381,250 ft of varying size of asbestos cement pipe that is estimated **at over 50 years old** and presents safety concerns for staff during repairs as well as being responsible for an increasing number of leaks, some of which can damage property and builings
    - Construction of new water line across Interstate 40
    - High velocities in certain areas of the system

WATER SYSTEM ASSESSMENT

- Distribution Piping
  - Recommendation in *Water Master Plan 2014:*
    - Immediately begin replacing all 41,550 ft of small diameter galvanized steel pipe ($2.84 million)
    - Immediately begin replacing all 165,250 ft of varying sizes of cast iron pipe ($23.51 million)
    - Upon replacing galvanized and cast iron pipe, begin replacing 381,250 ft of varying size of asbestos cement pipe ($57.07 million)
    - I-40 Water Line Construction ($2.0 million)
    - Various system improvements ($600K)
  - Total funding required: **$86.0 million**

WATER SYSTEM ASSESSMENT

- WATER DISTRIBUTION
  - Risks of foregoing/delaying recommended actions:
    - Delaying storage/pumping improvements would allow us to drop below the recommended storage volume and compromise our ability to meet the demand of certain portions of our service area, most notably the east industrial area
    - Delaying piping replacement will expose us to the risk of disruption of service to our customers, some of which rely on a consistent flow to maintain plant operations
      - We are currently replacing a portion of 12” piping along Industrial Avenue that routinely ruptured putting several large industries out of service for extended periods of time
      - Our existing 16” cast iron main is over 60 years old and previously served as the primary feed to Russellville. It crosses under the interstate and travels through the heart of ATU campus. Rupture of this line in either of the areas noted could cause major property damage and/or disruption of service to a large area of Russellville.
    - Providing consistent and reliable water service is critical to attracting and retaining commercial and industrial customers
    - Delaying the inevitable, cost of materials and labor are only going to go up

WATER SYSTEM ASSESSMENT

- WATER DISTRIBUTION
  - Recently, a single 12” pipe break totally drained a 1 million gallon tank on the south side of Russellville before it could be contained, causing a boil water order for much of the area
  - Central Arkansas Water system has identified the need to spend $10 million annually on replacing water pipes; they currently spend $1.4 million per year
  - A recent EPA report notes that water systems will need to spend $334.8 billion in the next 20 years to keep pace
  - On July 30, 2014, a 93 year old water main burst beneath Sunset Boulevard in Los Angeles, sending up to 10 million gallons of drinking water into the streets flooding numerous buildings including several on the UCLA campus

SUNSET BLVD LEAK IN 2014

WATER SYSTEM ASSESSMENT

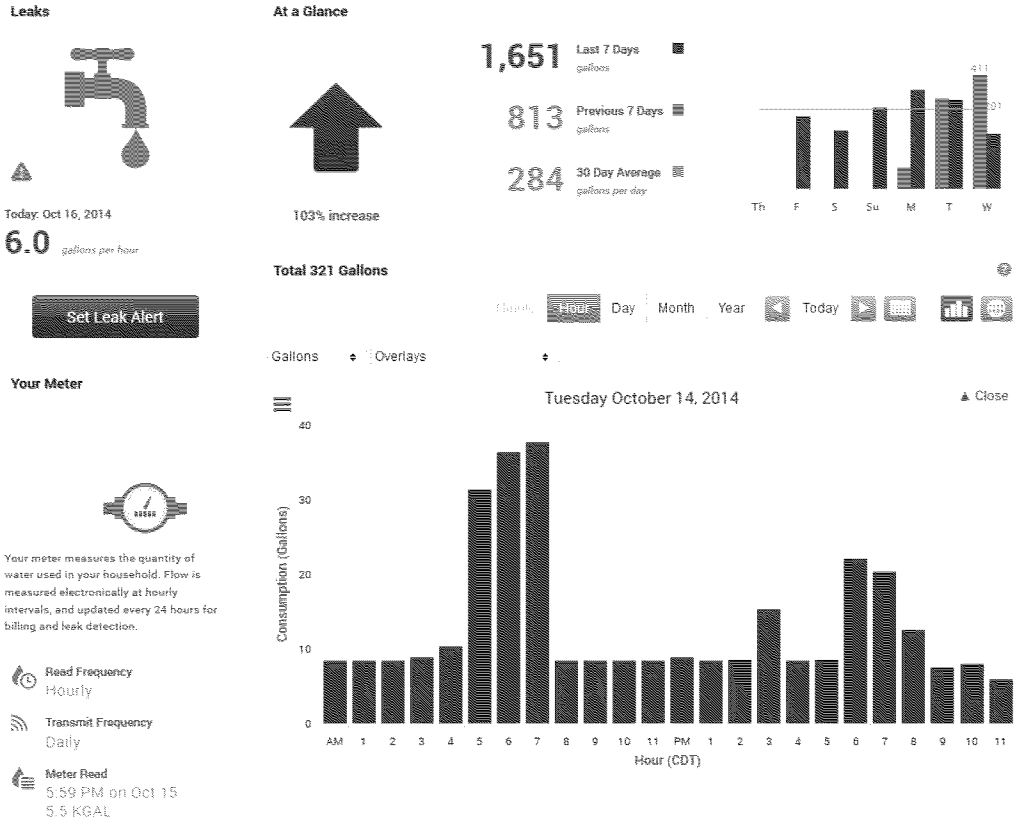
- WATER METERING
  - In efforts to reduce the amount of “Unaccounted For Water”, City Corporation elected to evaluate the accuracy of water metering infrastructure and consider alternatives
  - Existing low lead rule does not allow for us to replace our existing meters once removed from the box
  - Many of our meters are past the guaranteed accuracy period of ten years
  - Meter Study
    - Test approximately 200 existing meters
    - Pilot remote read meters at various residences
    - Evaluate options based on projected revenue increases and desired meter functionality

WATER SYSTEM ASSESSMENT

- Meter Study
  - Based on testing of selected meters, study projected a payback of 5.7 years, with an estimated annual financial benefit of $690,000 thereafter
  - New meters are guaranteed at a higher accuracy for 20 years
  - New meters read remotely, eliminating the need to manually read them
  - New meters provide the ability for the customer to monitor usage through the internet and set alarms based on desired parameters
  - New meters meet current low lead regulations
  - New meters allow customer service to troubleshoot meter issues from the office
- Recommendation is to move forward with full implementation of cellular based remote read meters ($3.97 million)

WATER SYSTEM ASSESSMENT

- PROPOSED WATER METERING SYSTEM



WATER SYSTEM SUMMARY

- NEEDS IDENTIFIED DURING ASSESSMENT
  - WATER SOURCES – Substantial future funding needed (2040)
  - WATER TREATMENT - $13.21 million identified
  - WATER DISTRIBUTION - $86.0 million identified
  - WATER METERING - $3.97 million identified
- TOTAL WATER SYSTEM NEEDS IDENTIFIED:
  - SHORT TERM (next 25 yrs): **$103.2 million**
  - LONG TERM (25 yrs +): **est. $20 – $80 million** depending on type of water source selected

WASTEWATER SYSTEM ASSESSMENT

WASTEWATER TREATMENT

WASTEWATER SYSTEM ASSESSMENT

- ADEQ ADMINSTRATIVE ORDER
  - Placed under Consent Administrative Order (CAO) in November, 2009
  - Consent Administrative Order is an official enforcement action taken by ADEQ/EPA to ensure compliance with treatment permit and state/federal regulations
  - Cited permit violations at Wastewater Treatment Plant
  - Cited chronic wastewater overflows during wet and dry weather periods
  - Imposed an initial civil penalty of $2,400 and imposed an additional penalty of $20,000 through an Amendment in May, 2014.
  - Required that the city provide “Capital Action Plan” to achieve compliance with both issues listed above
  - CAO has changed the historical focus from the water system to the wastewater system and dictates the majority of our wastewater capital improvements

WASTEWATER SYSTEM ASSESSMENT

- CONSENT ADMINISTRATIVE ORDER
  - Many cities in Arkansas and across the United States are currently under CAO facing very similar circumstances
  - City Corporation desires to "break the cycle" of dealing with repeated issues through good, sound planning and execution of that plan
    - Previous solution to treatment issues – pipeline to the Arkansas River
      - ADEQ no longer accepted a proposed pipeline to the Arkansas River as a response to address the permit limit issues due to the challenges facing that project
      - Required plant expansion to address violations
    - Previous solution to collection system issues – build facilities to handle increased flows during wet weather
      - Increased from 2 million gallons of on site stormwater storage to 20 million gallons
      - Increased pump station and pipeline sizes to move more stormwater to the plant
      - Treating the symptoms rather than addressing the source – leaks in system
      - Current plan addresses structural defects in the collection system to reduce the amount of rainwater entering our system, which leads to reduced flows and associated pumping and treatment costs
        - More expensive short term, but cost effective long term and addresses future compliance issues

WASTEWATER SYSTEM ASSESSMENT

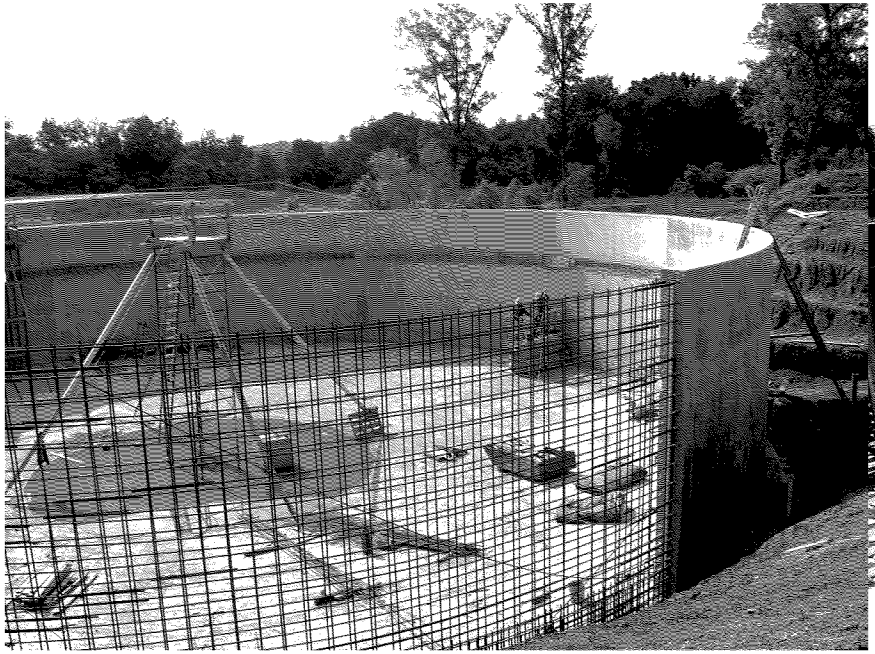
- CAO - TREATMENT PLANT ISSUES
  - Deadline for achieving compliance regarding treatment viloations is January 10 of 2016
    - Capacity of plant is 7.3 million gallons per day (MGD)
    - Maximum wet weather design flow is 15.0 MGD
    - Currently see wet weather flows exceeding 23 MGD
    - Current expansion is projected to increase wet weather design flow to 22.0 MGD

WASTEWATER SYSTEM ASSESSMENT

- CAO - TREATMENT PLANT ISSUES
  - Currently completing a $13 million plant expansion to address treatment violations cited in CAO
  - Expected completion in late spring of 2015
  - New plant produces substantially more sludge requiring the need to improve sludge handling capabilities ($5 million)

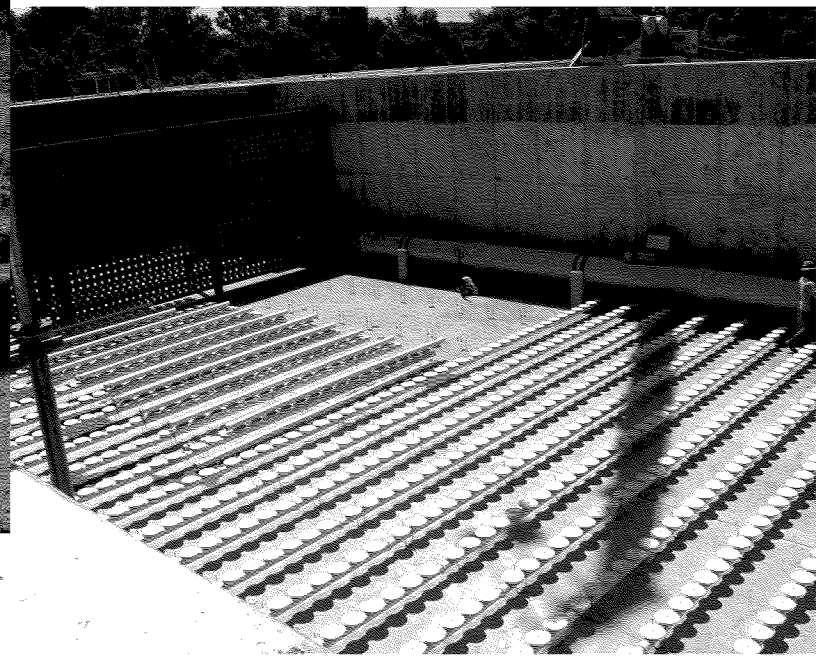
WASTEWATER SYSTEM ASSESSMENT

Wastewater Plant Expansion - $13 million



New Clarifier #3

New Aeration Basin #3



WASTEWATER SYSTEM ASSESSMENT

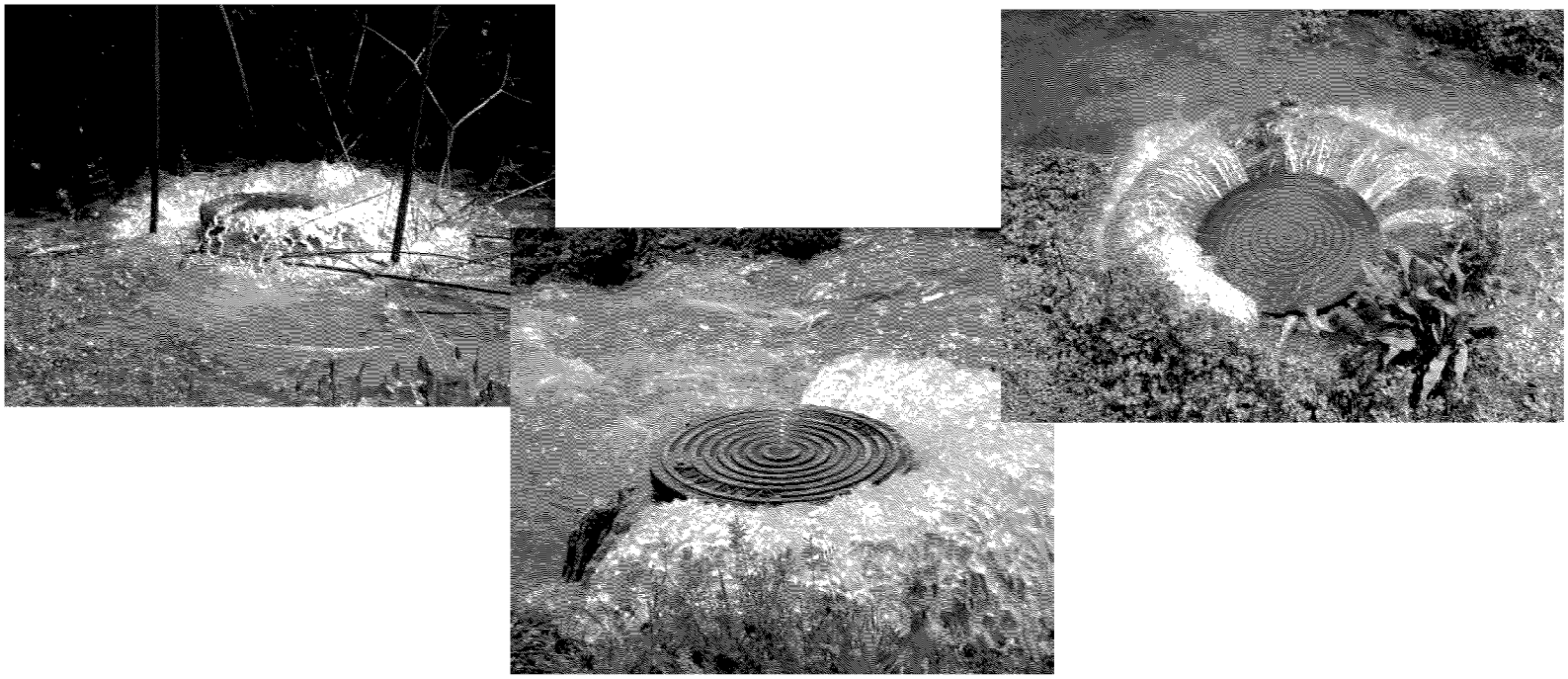
- Wastewater Treatment Plant
  - Recommendations from staff:
    - Immediately pursue selection, design and construction of improved sludge handling facilities
    - Total funding required: **$5 million**

WASTEWATER SYSTEM ASSESSMENT

WASTEWATER COLLECTION

WASTEWATER SYSTEM ASSESSMENT

- CAO – COLLECTION SYSTEM ISSUES
  - Deadline for achieving compliance regarding wastewater overflows is January, 2022



WASTEWATER SYSTEM ASSESSMENT

- WASTEWATER COLLECTION
  - Contains 17 wastewater lift stations
  - Contains 200 miles of gravity and pressure wastewater piping ranging from 2” to 48” consisting of the following materials:
    - Clay
    - PVC
    - Cement lined ductile
    - Cast Iron
    - HDPE
    - Reinforced concrete
  - 63 Grinder pumps

WASTEWATER SYSTEM ASSESSMENT

- Pump Stations
  - Recently eliminated one structurally deficient pump station
  - Currently rebuilding/replacing two pump stations
  - Planning to begin surveying remaining 15 pump stations with regard to mechanical, electrical and site issues
  - Repair/rehabilitation of remaining stations will be included in future budgets

WASTEWATER SYSTEM ASSESSMENT

- Collection piping and manholes
  - Began complete survey of collection system in 2009
  - RJN and Associates was hired to:
    - Conduct flow monitoring to determine areas of high wet weather flow
    - Build wastewater computer model to assist with pipe and pump station sizing
    - Visual inspection of manholes
    - Smoke/dye testing of main and service piping
    - Televised inspection of piping as needed
    - Develop list of prioritized deficiencies
    - Projected to be complete in 2017
  - CWB Engineers was hired to manage the repair effort and reporting to ADEQ

WASTEWATER SYSTEM ASSESSMENT

- Collection piping and manholes
  - Completed to date one (1) capacity related and one (1) piping repair/replacement projects at a cost of $2.9 million
  - Survey projected to yield eight (8) additional piping repair/replacement projects covering 26 different collection basins ($18.2 million)
  - Survey projected to yield four (4) additional capacity improvement projects to increase pipe size to accommodate increased flows ($9.9 million)
  - Survey projected to yield two (2) pressure main projects to improve pump station capacity at two large stations ($3.8 million)
  - Survey projected to yield three (3) manhole rehab projects to address deficient manholes ($2.55 million)
  - All of these projects are likely required to achieve compliance by January, 2022
- Total Funding Required: **$34.45 million**

WASTEWATER SYSTEM ASSESSMENT

- WASTEWATER TREATMENT
  - Risks of foregoing/delaying recommended actions:
    - Failure to process sludge as needed causes sludge to build up in the various treatment basins, which eventually interferes with the treatment process and results in plant permit violations. Deadline to achieve permit compliance is January 10, 2016
- WASTEWATER COLLECTION
  - Risks of foregoing/delaying recommended actions:
    - Failure to repair collection system facilities allows the continual entry of rainwater into our system, thus overwhelming the capacity of our piping and treatment facilities, creating overflows of raw sewage into the environment. Deadline to eliminate wastewater overflows is January, 2022
  - Failure to meet either of these deadlines is a violation of our current Consent Administrative Order and is punishable by substantial fines and additional orders from ADEQ/EPA

WASTEWATER SYSTEM ASSESSMENT

- City of Pine Bluff
  - Currently facing challenges with aging wastewater infrastructure, some of which is more than 120 years old
  - Implementing a 23% rate increase over the next 3 years

WASTEWATER SYSTEM ASSESSMENT

- City of Bauxite
  - Currently facing the challenge of addressing necessary wastewater plant and pump station improvements
  - Wastewater budget has been subsidized by water revenues and other city departments for years
  - Considering un-incorporating their town as an alternative to drastically raising rates

WASTEWATER SYSTEM ASSESSMENT

- City of Fort Smith
  - Perhaps the most notable example of what can happen when EPA is not satisfied with a system's progress to address a CAO
  - System contains 500 miles of sewer piping plus 23 pump stations
  - Placed under administrative order in 1993 for similar to those cited in City Corporation order in 2009
  - Fort Smith has spent $201.2 million since that time to address the order
  - EPA and the US Department of Justice superceded ADEQ's primacy and filed actions for continued violation of Clean Water Act as they were not satisfied with progress
  - Order filed on January 2, 2015 imposes civil penalty of $300,000 as well as requiring $400,000 spent towards assisting low income areas with private sewers
  - Ordered to spend an estimated $225 million in capital over next 12 years plus substantial O&M costs to implement program to keep pipelines free from debris, grease and roots
  - Subject to additional fines of up to $12,000 per day for failure to comply with provisions of the order

WASTEWATER SYSTEM SUMMARY

- NEEDS IDENTIFIED DURING ASSESSMENT
  - WASTEWATER TREATMENT – $5.0 million
  - WASTEWATER COLLECTION - $34.45 million
- TOTAL WASTEWATER SYSTEM NEEDS:
  - SHORT TERM (next 7 yrs): **$39.45 million**

TOTAL SYSTEM SUMMARY

- TOTAL WASTEWATER SYSTEM NEEDS:
  - SHORT TERM (next 7 yrs): **$39.45 million**
  - LONG TERM: NOT IDENTIFIED AT THIS TIME
- TOTAL WATER SYSTEM NEEDS IDENTIFIED:
  - SHORT TERM (next 25 yrs): **$103.2 million**
  - LONG TERM (25 yrs +): **est. $20 – $80 million** depending on type of water source selected

- SHORT TERM COMBINED CAPITAL NEEDS:
  - **$142.6 million** currently identified over next 25 years with approximately **$70 million** needed prior to 2022

- With 460 miles of water/wastewater piping in the ground and assuming a 50 year life cycle, we should be replacing 9.2 miles annually. Estimating $100 per foot yields $9.2 million per year, excluding pump stations, manholes, treatment plants, etc.

BUDGET UPDATE

- CURRENT FUNDS AVAILABLE - **$10.8 Million**
- MINIMUM RESERVE SET BY BOARD - **$6.4 Million**
  - Reserve set at amount of annual operations and maintenance expense budget excluding capital and debt service
- NEEDED TO MEET CURRENT CAPITAL BUDGET OBLIGATIONS - **$4.4 Million**
- CURRENT NON-RESERVE FUNDS REMAINING - **$0**

FUNDING OPTIONS

- Increase Revenues/Decrease Expenses
  - Replacement of meters is projected to provide an annual financial benefit of up to $690K
  - 2012-13 Expense Budget vs. Actual
    - $6,867,454 budget
    - $6,226,739 actual
    - $640,715 (9.3%) decrease
  - 2013-14 Expense Budget vs. Actual
    - $6,688,890 budget
    - $5,696,704 actual
    - $992,186 (14.8%) decrease

FUNDING OPTIONS

- Modify Water and/or Wastewater fees
  - Most have not been modified since the 1980's
  - Fee should offset the cost of providing service to individual customer
  - Currently, all customers are subsidizing the cost to provide these specific services such as new connections, shut-offs, reconnects, etc.
  - Recommend revising pretreatment surcharges to cover the cost of the pretreatment program
  - Recommend revising customer fees to cover cost of services rendered
  - Will present to Council for approval

FUNDING OPTIONS

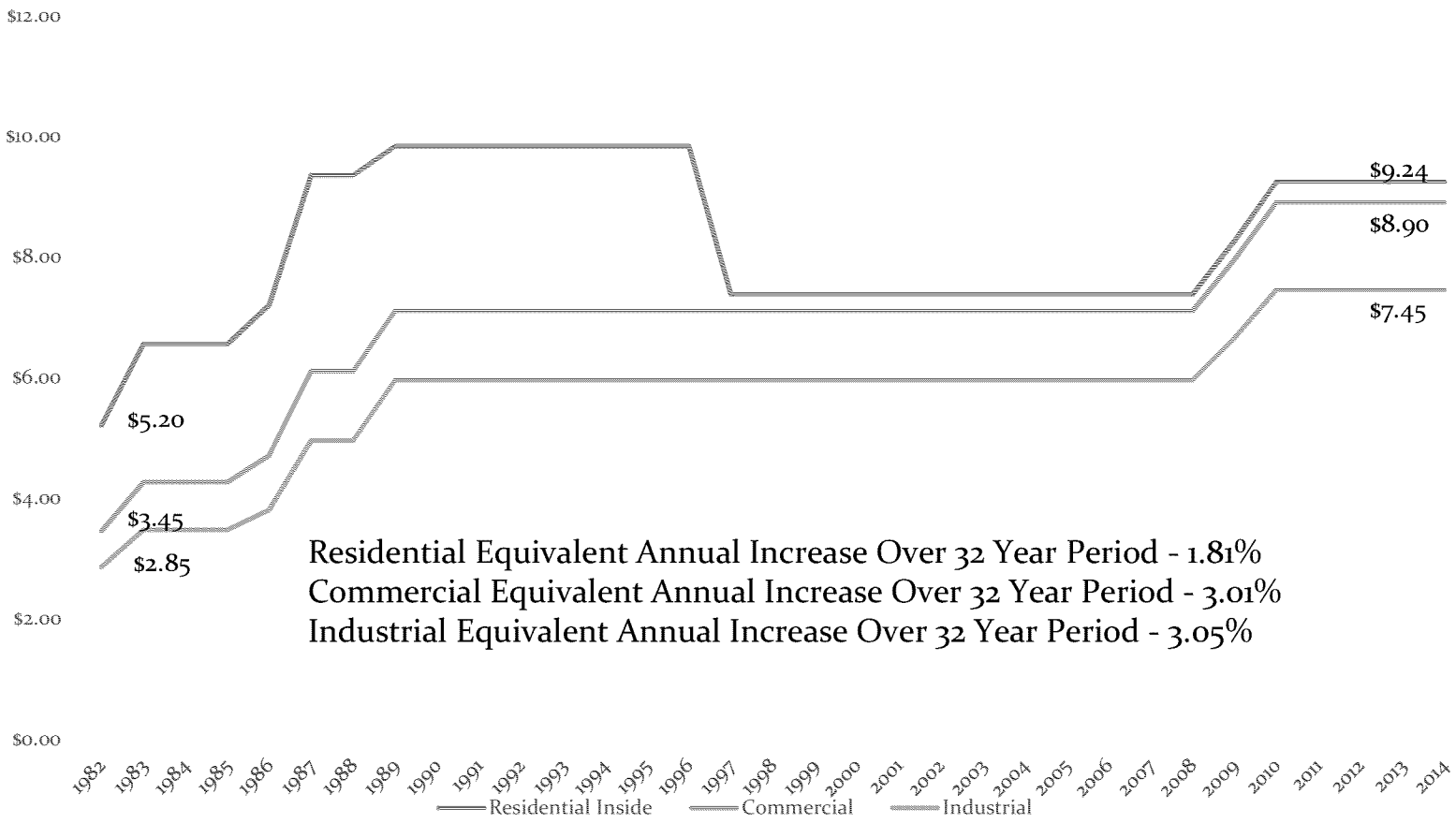
- Modify Water and/or Wastewater fees
  - Estimated to generate approximately $300K per year

Fee Description	Old Fee	Recommendation	Comparison Utility Fees
Connection Fee	$ 7.50	$ 25.00	HSW-$10.00, CCRWDD-$25.00, TCRWDD-$25.00, NEYCWA-$10.00
Returned Check Fee	$25.00	$25.00 + banking fee	HSW- max fee allowed, CCRWDD-$25.00, TCRWDD-$25.00, NEYCWA-$30.00
Tampering Fee	$ -	$ 100.00 Plus Time & Material and/or Related Expenses	HSW-$100.00, CCRWDD-equal to damage, TCRWDD-$100.00, NEYCWA-???
Late Fee	$10.00	$ 10.00	HSW-10%, CCRWDD-10%, TCRWDD-???, NEYCWA-10%
After Hours Service Call	$ -	$ 75.00	
Inspection Fee	$ -	1st Trip Included In Permit Cost	HSW-???, CCRWDD-$25.00, TCRWDD-$75.00, NEYCWA-???
Repeat Trip / Service Call	$ 7.50	$ 25.00	HSW-???, CCRWDD-$25.00, TCRWDD-$25.00, NEYCWA-???
Shut-Off Processing Fee	$10.00	$ 25.00	HSW-$10-$20, CCRWDD-$35-$60, TCRWDD-$25-$50, NEYCWA-$30-$35
Pressure / Volume check	$ 7.50	$ 25.00	HSW-$15.00, CCRWDD-$35.00, TCRWDD-$25.00, NEYCWA-$30.00
Meter Re-read	$ 7.50	$ 25.00	HSW-$15.00, CCRWDD-$35.00, TCRWDD-$25.00, NEYCWA-$30.00
Check Leak	$ 7.50	$ 25.00	HSW-$15.00, CCRWDD-$35.00, TCRWDD-$25.00, NEYCWA-$30.00
Turn Service On / Off	$ 7.50	$ 25.00	HSW-$15.00, CCRWDD-$35.00, TCRWDD-$25.00, NEYCWA-$30.00
Water Quality Reports	$ -	$ 25.00	HSW-$15.00, CCRWDD-$35.00, TCRWDD-$25.00, NEYCWA-$30.00
Sewer Cap Replacement	$50.00	$ 50.00	
Set Fire Hydrant Meter	$ 7.50	$ 50.00	

FUNDING OPTIONS

- Bond Issues
  - Current debt - $9 million Bond Issue from 2009
  - Propose $40 million issuance in 2015, dedicating half to water and half to wastewater per projected capital schedule
  - Propose $25 million issuance in 2018, dedicating $10 million to water and $15 million to wastewater
  - Propose $6 million issuance in 2020 to complete wastewater capital projects
  - Total of $71 million over next 6 years to address water and wastewater needs. This amount will not fully address water line replacements identified in the Master Plan nor address a future water source and/or water treatment plant
- Sales Tax
  - Possible extension of current sales tax in 6 yrs

FUNDING OPTIONS



Residential Equivalent Annual Increase Over 32 Year Period - 1.81%
Commercial Equivalent Annual Increase Over 32 Year Period - 3.01%
Industrial Equivalent Annual Increase Over 32 Year Period - 3.05%

FUNDING OPTIONS

- Rate Proposal
  - Conservation rate plan which charges more as usage increases
  - Variable annual increases over next five years, then 3.0% annual inflationary increase beyond 2019
  - Includes increases in operations and maintenance based on inflation rates
  - Includes $71 million in debt issuance through 2020
  - Includes increase in revenue from proposed fee increases
  - Includes current sales tax revenue
  - Includes cost and revenue increase from meter replacement project

2014 Water Rate Study
2014 Wastewater Rate Study

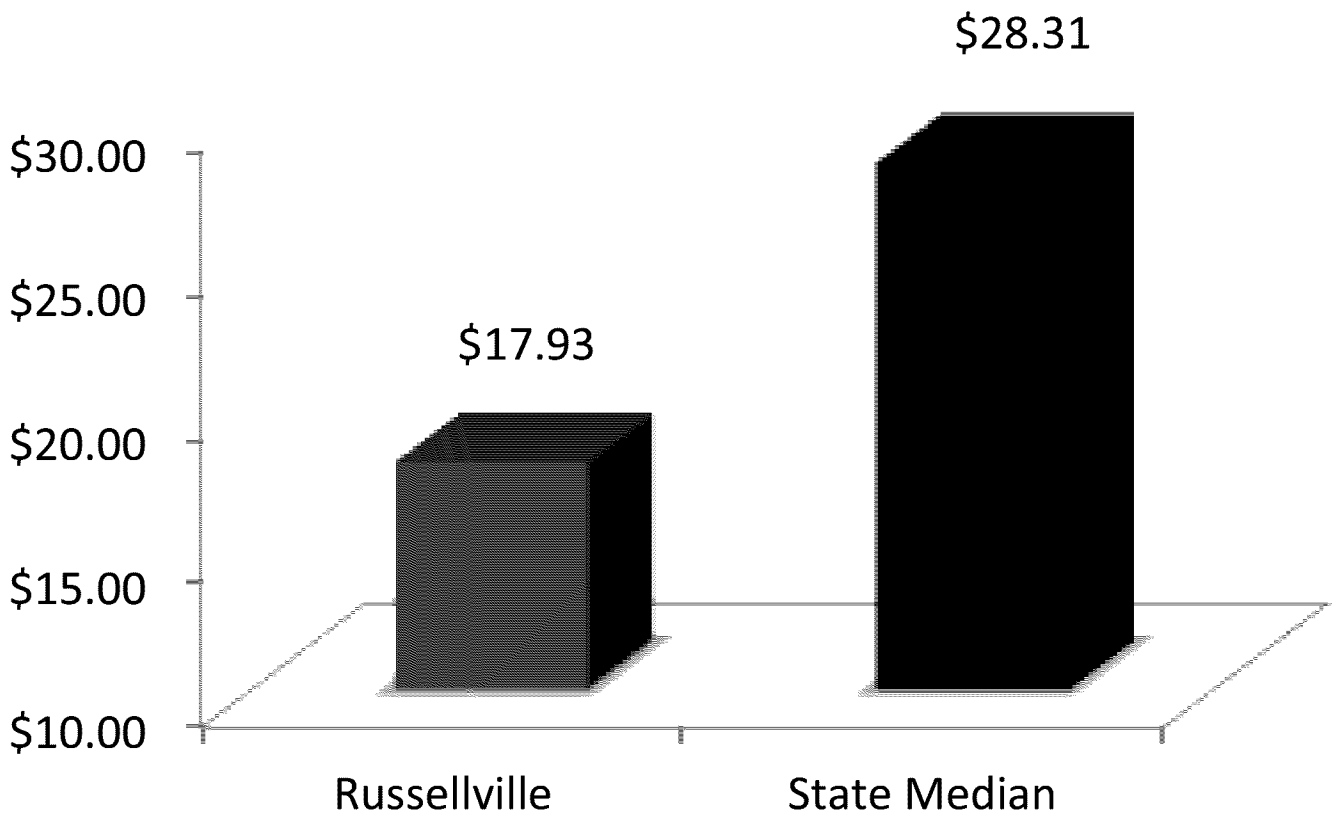
Board of Directors Presentation

City Council Presentation

economists.com

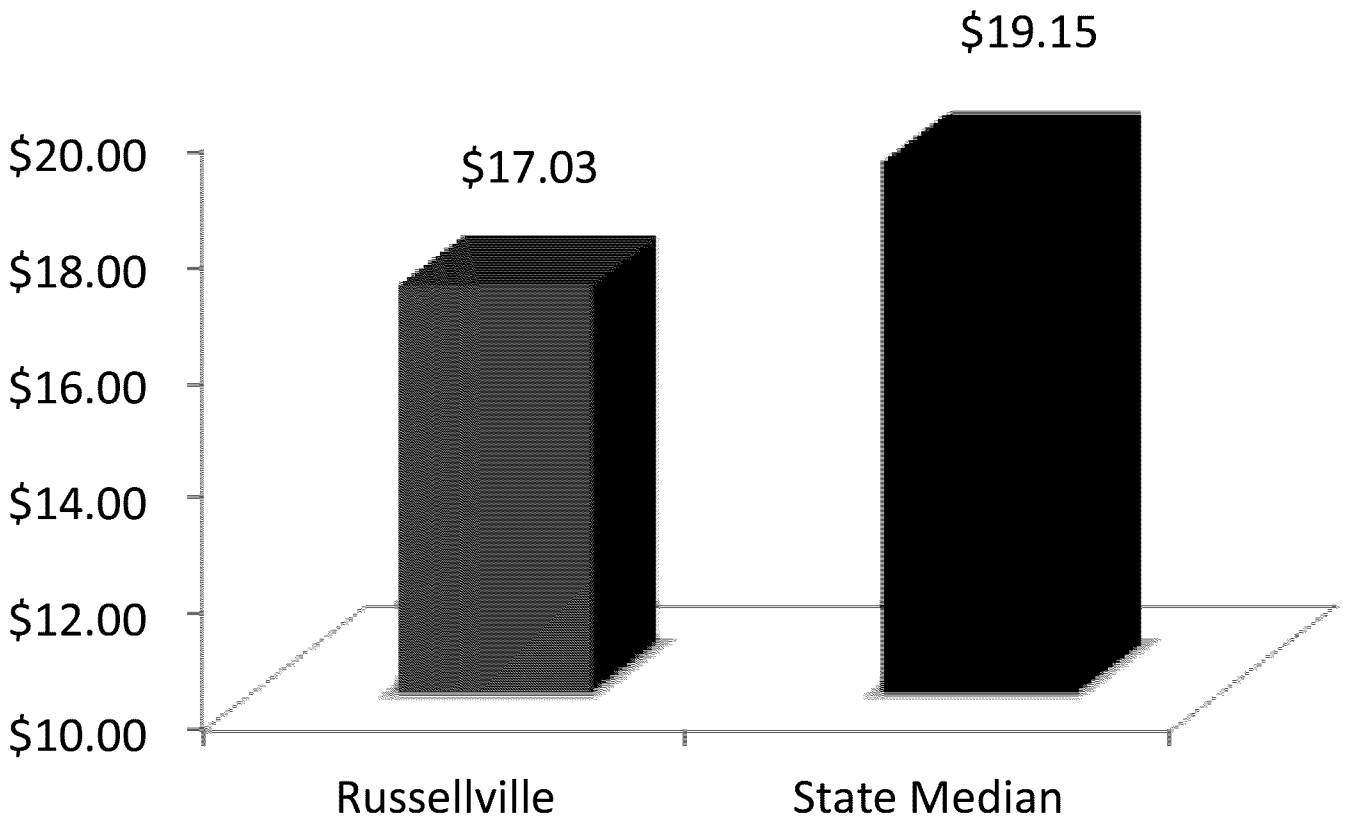
January 2015

Average Monthly Water Charges
Total Gallons = 5,000



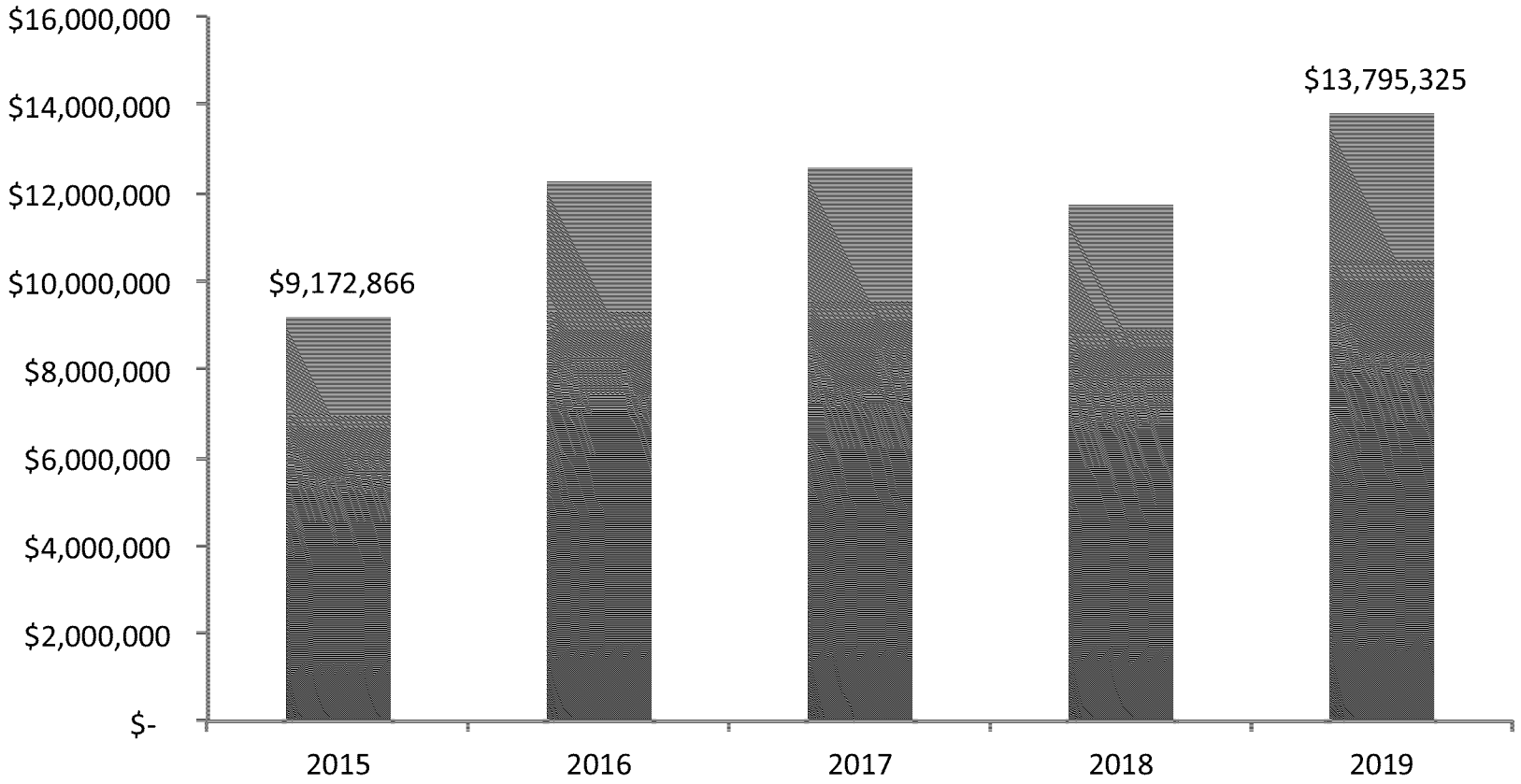
Note: Based on most recent state survey conducted in 2012
By Arkansas Natural Resources Commission

Average Monthly Wastewater Charges
Total Gallons = 5,000



Note: Based on most recent state survey conducted in 2012
By Arkansas Natural Resources Commission

Forecast Cost of Service
Water and Wastewater Utility



Water Utility
Proposed Rate Plan

	Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19
Monthly Charge						
5/8" -- 3/4"	$ 8.69	**$ 9.30**	$ 10.14	$ 10.44	$ 11.28	$ 11.62
1"	12.03	**12.87**	14.03	14.45	15.61	16.08
1 1/2"	22.86	**24.46**	26.66	27.46	29.66	30.55
2"	29.99	**32.09**	34.98	36.03	38.91	40.08
Vol Chg -- Per 1,000 Gal						
Residential **City**						
- 2,000	1.71	**1.71**	1.86	1.92	2.07	2.13
2,001 5,000	1.94	**2.05**	2.23	2.30	2.48	2.55
5,001 Above	1.94	**2.25**	2.45	2.52	2.72	2.80
Commercial	1.78	**1.90**	2.07	2.13	2.30	2.37
Industrial	1.49	**1.59**	1.73	1.78	1.92	1.98
Public Authorities	1.99	**2.13**	2.32	2.39	2.58	2.66
Municipal	1.53	**1.64**	1.79	1.84	1.99	2.05
Fire Protection	1.35	**1.44**	1.57	1.62	1.75	1.80

Water Utility Proposed Rate Plan
Residential Outside Rates

	Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19
Monthly Charge						
5/8" -- 3/4"	$ 13.04	**$ 13.95**	$ 15.21	$ 15.66	$ 16.92	$ 17.43
1"	18.05	**19.31**	21.05	21.68	23.42	24.12
1 1/2"	34.29	**36.69**	39.99	41.19	44.49	45.83
2"	44.99	**48.14**	52.47	54.05	58.37	60.12
Vol Chg -- Per 1,000 Gal						
Residential	**Outside City**					
-	2,000	3.52	**2.57**	2.79	2.88	3.11	3.20
2,001	5,000	3.90	**3.08**	3.35	3.45	3.72	3.83
5,001	Above	3.90	**3.38**	3.68	3.78	4.08	4.20

Wastewater Utility
Proposed Rate Plan

		Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19
Monthly Rates							
Monthly Charge		$ 6.67	**$ 8.17**	$ 10.01	$ 11.86	$ 12.75	$ 13.71
Volume Rate							
1,001	20,000	2.59	**3.17**	3.88	4.60	4.95	5.32
20,001	Above	2.20	**2.70**	3.31	3.92	4.21	4.53

NOTE: represents inside city customer bills

Proposed Rate Plan
Impact on Monthly Residential Charges – Inside City

	Current	Effective Jan-15
Residential -- 5,000 Gallons		
Water	$ 17.93	$ 18.87
Increase		**0.94**
Wastewater	17.03	20.85
Increase		**3.82**
Total	34.96	39.72
Increase		**4.76**
Residential -- 10,000 Gallons		
Water	27.63	29.12
Increase		**1.49**
Wastewater	29.98	36.70
Increase		**6.72**
Total	57.61	65.82
Increase		**8.21**

NOTE: represents inside city customer bills

Proposed Rate Plan
Impact on Monthly Residential Charges – Inside City

	Current	Effective Jan-15	Effective Jan-16	Effective Jan-17	Effective Jan-18	Effective Jan-19
Residential -- 5,000 Gallons						
Water	$ 17.93	$ 18.87	$ 20.55	$ 21.18	$ 22.86	$ 23.53
Increase		**0.94**	**1.68**	**0.63**	**1.68**	**0.67**
Wastewater	17.03	20.85	25.53	30.26	32.55	34.99
Increase		**3.82**	**4.68**	**4.73**	**2.29**	**2.44**
Total	34.96	39.72	46.08	51.44	55.41	58.52
Increase		**4.76**	**6.36**	**5.36**	**3.97**	**3.11**
Residential -- 10,000 Gallons						
Water	27.63	29.12	31.70	32.68	35.26	36.28
Increase		**1.49**	**2.58**	**0.98**	**2.58**	**1.02**
Wastewater	29.98	36.70	44.93	53.26	57.30	61.59
Increase		**6.72**	**8.23**	**8.33**	**4.04**	**4.29**
Total	57.61	65.82	76.63	85.94	92.56	97.87
Increase		**8.21**	**10.81**	**9.31**	**6.62**	**5.31**

Rate Comparison

- City Corporation Water Rate – 5,000 gallons
  - $34.96 current, increase of $23.96 over 5 years
    - Increase 67% over next 5 yrs, 3% annually after
- Hot Springs – 5,000 gallons
  - $53.53 current, min. increase of $4.72 over 5 years
  - Already substantially increased rates to address capital items
  - Increase 13% over next 5 yrs, 3% annually thereafter
  - Also has impact fee of min. $500 to max. of $14,500 per connection
  - Over 50% of customers are outside city limits which pay 1.5x
  - Facing $80 to $100 million cost in next 3-10 years for water supply
- Fort Smith
  - $40.00 average current bill
  - Expected to increase to $120 over next 12 years to fund $480 million of wastewater needs only
  - Required to add 82 new employees to the 92 existing

Rate Comparison

- City Corporation Water Rate – 5,000 gallons
  - $34.96 current, increase of $23.96 over 5 years
    - Increase 67% over next 5 yrs, 3% annually after
- Pine Bluff
  - Current wastewater only bill average of $16.21
  - Proposing a 23% increase over next two years to begin addressing wastewater improvements
- Bauxite
  - $40.66 current bill
  - Proposing immediate increase of $18.55 (46%) to begin addressing wastewater issues
  - Considering alternative of un-incorporating
- Compton water association
  - Increased average bill in 2010 from $32 to $73 to address issues related to poor planning

Presentation Summary

- Rate adjustments are necessary to fund new debt for capital improvements and increases in operating expenses
- Residential outside rates are readjusted to conform with 1.5x inside rates policy; results in volume rate reduction for Residential Outside in 2015
- Greater conservation is encouraged through establishment of a third tier conservation rate

MOVING FORWARD

- Timeline for Ordinance consideration
- Public Education opportunities
  - Civic Clubs, radio/newspaper, City/City Corp website, town hall meeting

- Questions?

Texas Electronics, Inc.

The Gold Standard in Weather Instrumentation Since 1957

Rain Gauge Tipping Bucket — TR-525USW Rainfall Sensor

Description

The Texas Electronics, Inc. TR-525USW Rainfall Sensor is a remote tipping bucket style rain gauge that measures the amount of liquid precipitation.

The Rain Gauge is a freestanding receptacle for measuring precipitation. It contains an open top, which allows rainfall to fall into the upper portion, which is called the collector. Collected water is funneled to a mechanical device (tipping bucket), which incrementally measures the rainfall accumulation and causes a momentary closure of a switch. As water is collected, the tipping bucket fills to the point where it tips over. This action empties the bucket in preparation for additional measurement. Water discharged by the tipping bucket passes out of the rain gauge with no need for emptying.

The TR-525USW was specifically designed to meet the National Weather Service's requirements for rainfall measurement.

Features & Benefits

- Meets government requirements for an 8" collector
- Interfaces to virtually all data acquisition systems
- Knife-edge collector optimizes rainfall catch
- Exceptional splash-out protection reduces wind errors
- Easy installation and maintenance
- Over 30 years in production
- Lightweight spun Aluminum Exterior
- Anodized aluminum collector for weather resistance
- Integral Bubble Level

Specifications

Resolution:	0.01" English	
Accuracy:	1.0% up to 2"/hr (50 mm/hr)	
Collector diameter:	8.00" (203 mm) with knife-edge	
Funnel depth:	6.4" (163 mm)	
Splash out protection:	>2" (50 mm)	
Operating Temp:	32 to 125° F	(0 to 50° C)
Storage Temp:	-40 to 160° F	(-40 to 70° C)
Humidity Limits:	0 to 100%	
Weight:	2.5 lbs. (1.2 kg)	
	6 lbs. (2.7 kg) shipping	
Height:	11" (280 mm)	
Cable:	25', 22 gauge 2 conductor	
Switch:	Momentary potted reed switch	
Switch rating:	30 VDC @ 2 A, 115 VAC @ 1 A	
Switch Closure Time:	135 ms	
Bounce Settling Time:	0.75 ms	
Pivot:	Hardened SS Jewel & Pivot	
Bucket:	Black ABS injection molded	
Level:	Integral Bubble Level	
Warranty:	3 years	

Installation & Maintenance

Installation consists of attaching the three sensor support legs to a firm platform (such as our MB-525 Mounting Base). Pole mounting on the mast of a weather station is available by securing to the included side bracket.

Maintenance consists of routine cleaning of debris from the filter screen, and occasional calibration verification with our FC-525 Field Calibration Kit.

Ordering Information

Model #	Description
TR-525USW	Rain Gauge, 8.00" collector, English

Optional Parts / Accessories

HOBO	Event Datalogger and Software
MB-525	Pole Mounting Base
FC-525	Field Calibration Kit
BB-525	Bird Repellant
HT-525	Heater, 120 VAC
Cable	Additional Cable

Texas Electronics, Inc.
5529 Redfield Street • Dallas, TX 75235
Tel.214.631.2490 • Fax.214.631.4218 • 800.424.5651
www.texaselectronics.com • email: info@texaselectronics.com

Table 2-D

DRY-WEATHER FLOW PEAKING FACTOR
DRY WEEK 04/16/2010 TO 04/22/2010

Meter Number	Cumulative Average Daily Dry-Weather Flow (mgd)	Cumulative Peak Hourly Flow Rate (mgd)	Cumulative Average Daily Dry-Weather Peaking Factor
RV01	1.097	1.874	1.71
RV02	0.657	1.651	2.51
RV03	0.310	0.492	1.59
RV04A	0.000	1/	1/
RV05	0.138	0.202	1.46
RV06	0.019	0.029	1.53
RV07	2.754	3.986	1.45
RV08	0.054	0.084	1.56
RV09	0.186	0.276	1.48
RV10	0.172	0.232	1.35
RV09 and RV10	0.358	0.508	1.42
RV11	0.148	0.262	1.77
RV12	0.034	0.078	2.29
RV13	0.095	0.193	2.03
RV14	0.542	0.768	1.42
RV15	0.148	0.259	1.75
RV16	0.084	0.195	2.32
RV17	0.089	0.140	1.57
RV18	0.280	0.416	1.49
RV19	0.098	0.143	1.46
RV20	0.523	0.827	1.58
RV21	0.142	0.204	1.44
RV22	0.124	0.204	1.65
RV23	0.159	0.306	1.92
RV24	0.232	0.334	1.44
RV25	0.101	0.140	1.39
RV26	0.213	0.465	2.18
RV27	0.028	0.088	3.14
RV28	0.018	0.054	3.00
RV29	0.000	1/	1/
RV30	0.000	1/	1/
RV31	0.134	0.282	2.10
Total			**1.79** (Average)

1/ *Overflow meter - no dry weather data.*

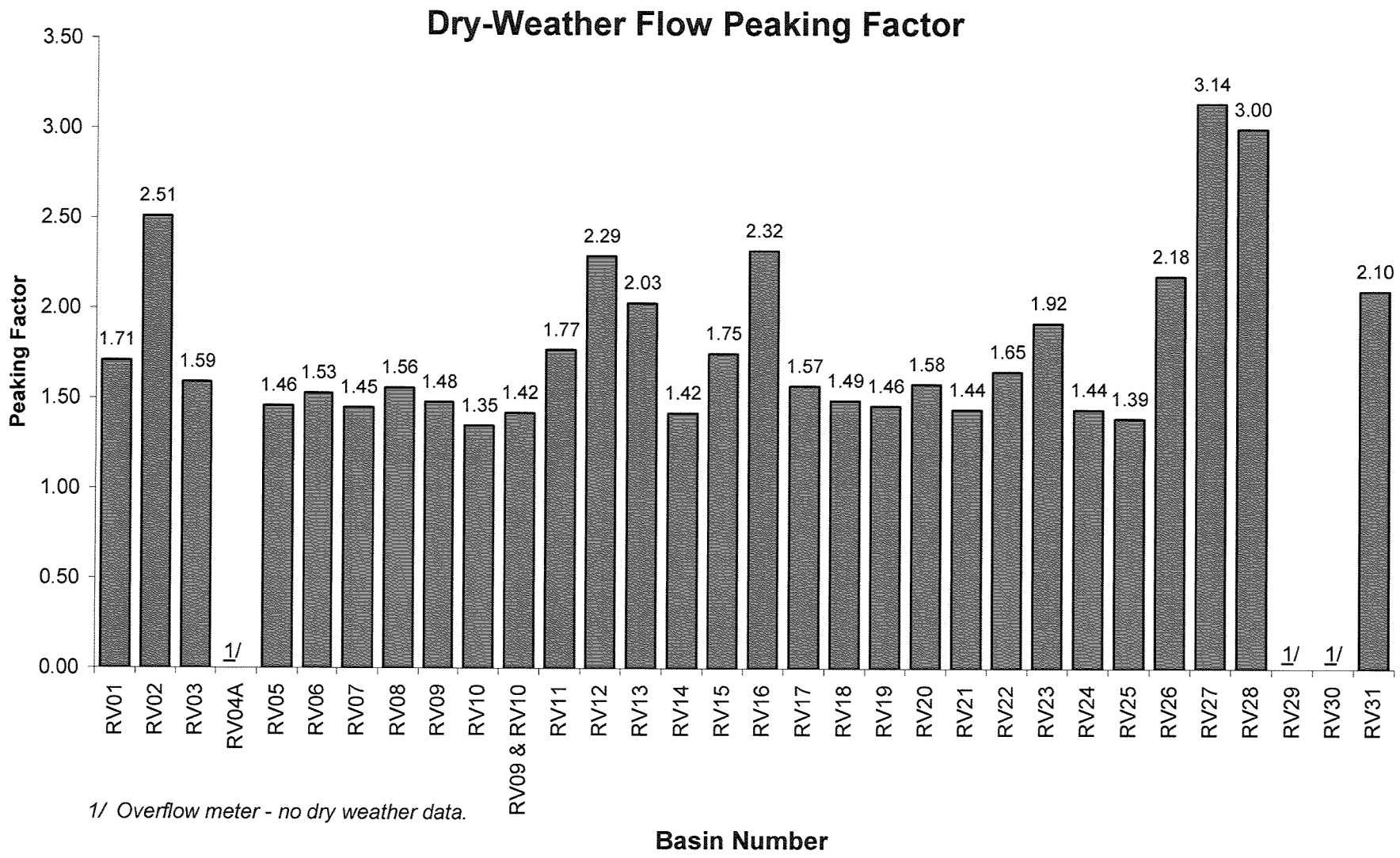
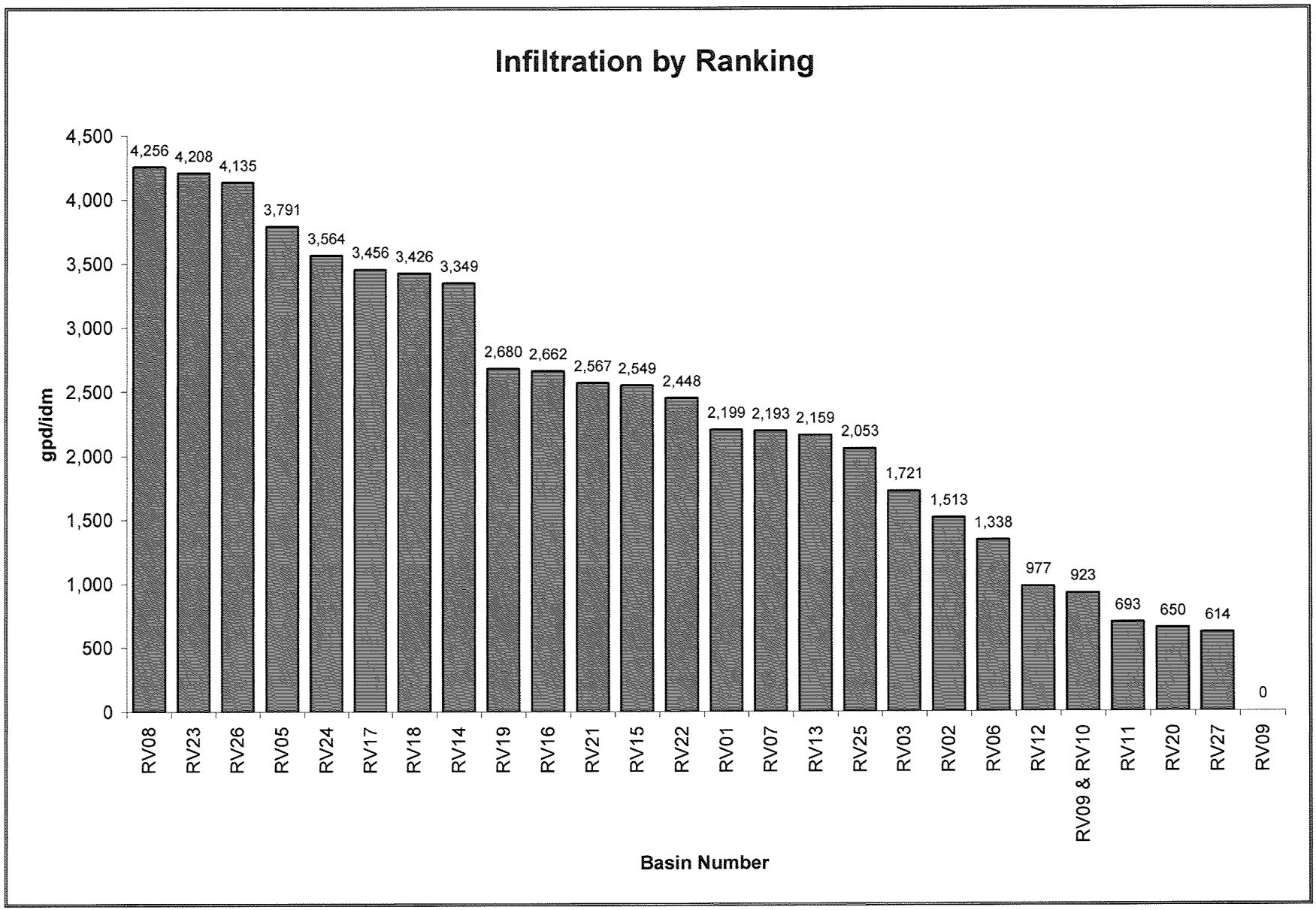

Dry-Weather Flow Peaking Factor
Peaking Factor
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
1.71
2.51
1.59
1/
1.46
1.53
1.45
1.56
1.48
1.35
1.42
1.77
2.29
2.03
1.42
1.75
2.32
1.57
1.49
1.46
1.58
1.44
1.65
1.92
1.44
1.39
2.18
3.14
3.00
1/
1/
2.10
RV01
RV02
RV03
RV04A
RV05
RV06
RV07
RV08
RV09
RV10
RV09 & RV10
RV11
RV12
RV13
RV14
RV15
RV16
RV17
RV18
RV19
RV20
RV21
RV22
RV23
RV24
RV25
RV26
RV27
RV28
RV29
RV30
RV31
1/ Overflow meter - no dry weather data.
Basin Number

Table 2-E

SUMMARY OF INFILTRATION RATES

Meter Number	Inch-Diameter-Miles (idm)	Cumulative Peak Monitored infiltration (mgd)	Basin Peak Monitored infiltration (mgd)	Basin Peak Unit Infiltration (gpd/idm)	Basin Peak Unit Infiltration Ranking
RV01	50.03	0.216	0.110	2,199	14
RV02	70.30	0.106	0.106	1,513	19
RV03	68.58	0.296	0.118	1,721	18
RV04A	N/A	0.000	N/A	1/	N/A
RV05	42.61	0.162	0.162	3,791	4
RV06	12.33	0.017	0.017	1,338	20
RV07	150.39	2.595	0.330	2,193	15
RV08	23.11	0.098	0.098	4,256	1
RV09	67.53	0.098	N/A	0	N/A
RV10	N/A	0.066	N/A	1/	N/A
RV09 & RV10	67.53	0.164	0.062	923	22
RV11	54.57	0.070	0.038	693	23
RV12	32.42	0.032	0.032	977	21
RV13	41.99	0.091	0.091	2,159	16
RV14	91.11	0.684	0.305	3,349	8
RV15	76.45	0.195	0.195	2,549	12
RV16	69.06	0.184	0.184	2,662	10
RV17	23.68	0.082	0.082	3,456	6
RV18	81.63	0.412	0.280	3,426	7
RV19	49.32	0.132	0.132	2,680	9
RV20	60.72	0.298	0.039	650	24
RV21	30.71	0.079	0.079	2,567	11
RV22	73.46	0.180	0.180	2,448	13
RV23	26.78	0.113	0.113	4,208	2
RV24	63.69	0.301	0.227	3,564	5
RV25	34.59	0.071	0.071	2,053	17
RV26	43.73	0.196	0.181	4,135	3
RV27	24.42	0.015	0.015	614	25
RV28	37.04	0.000	0.000	0	26
RV29	N/A	0.000	N/A	1/	N/A
RV30	N/A	0.003	N/A	1/	N/A
RV31	N/A	0.023	0.023	4/	N/A
Total	**1,467.77**		**3.268**	**2,227** (average)	

1/ *Overflow meter.*
2/ *Not significant source of infiltration.*
3/ *Combined flow meter due to location.*
4/ *Monitored outside City.*


Infiltration by Ranking
gpd/idm
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
4,256
4,208
4,135
3,791
3,564
3,456
3,426
3,349
2,680
2,662
2,567
2,549
2,448
2,199
2,193
2,159
2,053
1,721
1,513
1,338
977
923
693
650
614
0
RV08
RV23
RV26
RV05
RV24
RV17
RV18
RV14
RV19
RV16
RV21
RV15
RV22
RV01
RV07
RV13
RV25
RV03
RV02
RV06
RV12
RV09 & RV10
RV11
RV20
RV27
RV09
Basin Number

CITY CORPORATION

RUSSELLVILLE, ARKANSAS

CITY CORPORATION –
RUSSELLVILLE WATER AND SEWER SYSTEM

CAO LIS No 09-146
AFIN 58-00105

NPDES Permit No. AR0021768

OVERFLOW RESPONSE PLAN

Prepared By:

CWB Engineers, Inc.

March 2015

City Corporation – Russellville Water and Sewer System
SANITARY SEWER OVERFLOW RESPONSE PLAN

I. BACKGROUND INFORMATION

City Corporation entered into a Consent Administrative Order (CAO) with the Arkansas Department of Environmental Quality (ADEQ) with an effective date of December 25, 2009. As a result of this CAO, City Corporation was required to establish and implement an Overflow Response Plan. The following document establishes the Overflow Response Plan of Russellville City Corporation.

II. NPDES PERMIT

National Pollutant Discharge Elimination System ("NPDES")
NPDES Permit # AR0021768
AFIN 58-00105
CAO LIS No. 09-146
Issued by Arkansas Department of Environmental Quality

III. GENERAL

The Sanitary Sewer Overflow Response Plan (SSORP) is designed to ensure that every report of a confirmed sewage overflow is immediately dispatched to the appropriate crew so that the effects of the overflow can be minimized with respect to impacts to public health, beneficial use, quality of surface waters, and customer service. The SSORP further includes provisions to ensure safety pursuant to the directions provided by the ADEQ and that notification and reporting is made to the appropriate local, state, and federal authorities. For purposes of this SSORP, "confirmed sewage spill" is also sometimes referred to as "sewer overflow," "overflow," or sanitary sewer overflow "SSO". The effective date of the SSORP was **February 23, 2010**.

A. Objectives

The objectives of the SSORP are as follows:

- Protect public health and the environment
- Comply with regulatory agencies and waste discharge permit conditions
- Minimize risk of enforcement actions against Russellville City Corporation.
- Provide appropriate customer service
- Protect wastewater treatment plant and collection system personnel
- Protect the collection system, wastewater treatment facilities, and all appurtenances
- Protect private and public property beyond the collection and treatment facilities.

B. SSO Tracking

A spreadsheet listing assets which have overflowed due to wet or dry weather conditions is maintained and updated annually.

IV. SSO MONITORING AND TRACKING

The procedure to track the frequency and location of SSOs will be as defined below:

A. All SSOs will be tracked in the Russellville City Corporation Overflow database.

B. SSOs will be defined as Wet-Weather: (SOW = Sewer Overflow Wet-Weather), Dry-Weather: (SOD = Sewer Overflow Dry-Weather), or Private: (SOP = Sewer Overflow Private). The definition of a dry-weather overflow will be one that overflows due to an obstruction in the main line or equipment failures. The definition of a wet-weather overflow is one that has insufficient carrying capacity to handle inflow and/ or infiltration during a storm event. The definition of a private overflow is one that occurs prior to reaching the public sewer main, such as an overflow from a cleanout cap. City Corporation will maintain and update a list of SSOs.

C. The database will include the manhole number to identify the overflow locations.

D. The SSO database will contain all information required for regulatory reporting. Reports generated from the database will have the capability of pulling SSO locations based upon dates, locations, and number of occurrences annually.

E. Monthly reports will be prepared from the database giving the number of wet-weather and dry-weather SSOs.

F. Table 1 provides each potential capacity related SSO location by its respective Storm Level. Two levels have been defined for simplicity in tracking the collection system's response to varying rainfall intensities. Storm Level A indicates an event that exceeds one inch but less than 4.14 inches of rainfall in a 24-hour period. These SSO manholes are early indicators of the collection system's response to wet weather conditions. Storm Level B are SSO's that occur when a rain event is in excess of a two year 24-hour (4.14 inches) or more. Rainfall amounts will be monitored by City Corporation and respond when Storm Level A or B has been reached. Additional information will be gathered to properly categorize the manholes with their respective Storm Levels.

Table 1: Historical Recorded SSO's

Status	Manhole	Address
Investigate	1030	West C st
Active	1043	400 N Vancouver
Active	1108	W 2nd Place & S Phenoix
Active	1200	1105 Resimont
Active	1219	601 G St
Active	1295	812 E Parkway
Active	1315	3rd & Vancouver
Active	1323	2220 W 2nd Pl
Active	1333	4th & Waco
Active	1341	1310 Ridgewood Dr
Active	1465	ATU
Investigate	1466	Prairie Creek Lift Station
Active	1468	ATU
Active	1487	410 W Parkway
Investigate	1510	413 S. Commerce
Active	1513	5th & Commerce
Active	1567	C and Boston
Active	1568	107 N Boston Pl
Active	1593	601 E 7th St
Active	1608	E B St & N Detroit Ave
Investigate	1624	115 E. Parkway
Investigate	1675	E. Main and Nashville
Active	1704	E L st & Parker Rd
Active	1705	1025 Parker Rd
Active	1706	1022 Parker
Active	1709	1008 N Jackson Ave
Active	1711	1003 E J St
Active	1725	E G & Greenwich
Active	1728	904 N Frankfort Ave
Investigate	1735	1317 N. Frankfort
Active	1823	City Mall
Active	1825	N. Arkansas Ave
Investigate	1848	1500 N. Jackson
Active	1850	1506 Knoxville Ave
Active	1852	1506 N Jackson Ave
Active	1996	906 W 16th St
Investigate	2023	Cedar and N. Commerce
Active	2024	108 W Birch St
Investigate	2028	Birch and Commerce
Investigate	2032	Birch and Commerce
Active	2035	Honda of Rsvl, Lakefront Dr
Active	2036	220 Lakefront Dr
Active	2040	ATU
Active	2042	Red Hill & N Phoenix Ave
Active	2043	ATU Softball Field
Active	2046	West R & N Glenwood
Active	2048	ATU Pasture
Active	2050	ATU Pasture
Active	2146	1007 W 17th Terrace
Investigate	2155	North Glenwood
Active	2276	O & Glenwood
Active	2314	ATU
Active	2808	415 S Erie Ave
Active	2814	N Phoenix & W 2nd St

Active	2815	Arkansas Tech
Active	2816	Arkansas Tech
Investigate	2817	N Glenwood
Investigate	2859	321 W. B
Active	2874	718 S Arkansas Ave
Active	3026	2502 W 2nd St.
Active	3027	2502 W 2nd St.
Active	3034	220 S Cumberland Ave
Investigate	3043	N Hunter Ridge Ln
Active	3052	102 N Fairbanks
Active	3075	3801 W Main
Active	3093	3515 Main St
Active	3094	215 S. Portland
Investigate	3114	106 S. Hastings
Active	3133	243 Enid Ave
Investigate	3187	West Main St
Active	3191	John Trusty Lane
Active	3193	John Trusty Lane
Investigate	3203	West Parkway Ave
Active	3283	104 Sunset Dr
Active	4009	2005 E Main St
Pending	4015	1900 E. Main
Investigate	4019	1611 E. Main St.
Active	4020	E Main & N Sydney
Active	4022	2007 E Main St
Investigate	4023	2209 E. Main
Investigate	4043	N. Glenwood
Active	4058	1400 E F St
Active	4078	1002 E I St
Investigate	4080	Behind Walgreens
Active	4090	1611 E Main St
Pending	4107	200 S El Mira
Pending	4116	806 E. 4th St.
Pending	4127	515 S Ithaca
Pending	4138	807 S Ithaca
Active	4182	1200 East E St.
Pending	4213	88 Joyce Lane
Pending	4214	Flying J Truck Stop
Active	5005	909 Sequoyah Way
Active	5018	1203 S Commerce Ave
Active	5032	E. 11th and Boston
Active	5043	109 E 13th Street
Investigate	5054	14th and Boston
Active	5102	105 Western Drive
Investigate	5120	11th and Glenwood
Investigate	5136	111 E. 8th St.
Active	5164	Eat 11th St & Boston Ave
Investigate	5668	710 E. 23rd
Active	6035	1106 12th St
Active	6085	1336 S Sidney Ave
Investigate	6088	1312 S Sidney Ave
Active	6108	1206 S Utica Ave
Pending	6231	3509 E. 4th St.
Active	6399	1519 Knoxville Ave
Pending	6415	300 Industrial
Active	6478	404 Jimmy Lile Rd
Investigate	7017	106 Lakeshore Dr.
Active	7035	110 Lakeview Dr
Investigate	7053	Lift Station B
Investigate	8046	Pollution Control Works

Investigate	8048	Pollution Control Works
Active	9016	Shadow Valley PS
Active	Old Post	Old Post Lift Station
Active	PCW	Pollution Control Works

Status provides an indication of the confidence level in the potential for this manhole to experience an SSO. "Active" means a confirmed SSO was experienced. "Investigate" means the manhole has not overflowed in over 5 years, but will continue to be monitored until the area has been studied. "Pending" indicates a rehabilitation effort has been conducted with field conformation to follow to conclude positive mitigation.

G. An annual report will be prepared by City Corporation, which shall include a review of all capacity related overflows, as well as determine updates to the two tables above for permanent signage and potential capacity related SSO manholes. These updated capacity related SSO lists shall be included for amendment to this SSORP.

V. STANDARD OPERATING PROCEDURE

The standard operating procedure is for Russellville City Corporation Personnel to follow after an SSO is documented.

A. Receipt of Information Regarding an SSO

An SSO may be reported by residents, employees, or anyone that has witnessed an SSO. All City Corporation employees receiving SSO notification shall report the SSO to the designated supervisor.

Generally, CSR receive telephone calls from the public reporting possible SSOs. However, a telephone call received after hours will be directed to the 24-hour emergency phone line. A phone call of this type will be received by the After Hours Emergency Crew, which will be the Response Crew.

1. The Engineering Department records all relevant information available regarding the possible overflow including:

    a. Time and date call was received;

    b. Specific location;

    c. Description of problem;

    d. Time and date overflow was observed;

e. Caller's name and phone number;

f. Observations of the caller (e.g., odor, duration, back, or front of property); and

g. Other relevant information that will enable the responding crews to quickly locate, assess and analyze the SSO.

The Engineering Department then records the SSO information and creates a service request for assignment to the proper Response Crew.

2. Pump station failures are monitored and received by operators on duty at the Wastewater Treatment Plant. The operator on duty immediately conveys all information regarding alarms to the Operations Manager to initiate the investigation. The Investigating Crew determines if failure resulted in an overflow and reports to Engineering Department. If an SSO has occurred, a completed overflow form shall be sent, via e-mail or interoffice mail, to the Engineering Department for documentation.

3. SSOs detected by any personnel in the course of their normal duties are reported immediately to the Engineering Department who records all relevant SSO information and dispatches a crew and additional response crews, as needed.

4. Response crew confirms the SSO. Until verified, the report of a possible spill will not be referred to as a "sewer overflow."

If an overflow has occurred, the designated individual in Engineering will complete the appropriate Overflow Report form Figure V-1.

FIGURE V-1. 24-HOUR SANITARY SEWER OVERFLOW REPORT

After the overflow is detected, this completed form must be faxed or e-mailed to the address below within 24 hours.
Send Overflow Report to: Water Enforcement by: Phone: 501-682-0639; Fax: 501-682-0910 or E-Mail: WaterEnfSSO@adeq.state.ar.us

Facility Permit Number: _____ **Facility Name:** _____
Date Overflow Began: _____ **Time:** _____ **Date Overflow Ended:** _____ **Time:** _____

Description: **Comments** **Cause of SSO** **Additional Comments**
(Give address, manhole number-if numbered. Include where the overflow went-yard, ditch, stream, storm sewer, building, other).

(☐) Manhole Overflow _____
(☐) Lift Station Overflow _____
(☐) Main Line Overflow _____
(☐) Service Line Overflow _____
(☐) Other: Describe _____

Volume: _____ *(Give an estimate in gallons)*

(☐) I & I – Rainfall _____
(☐) Roots _____
(☐) Grease _____
(☐) Debris _____
(☐) Equipment Failure _____
(☐) Construction _____
(☐) Vandalism _____
(☐) Power Failure _____
(☐) Line Failure/Break _____
(☐) Other – Describe _____

Action Taken – Check all that apply
(Short term and long-term action, including clean-up and any plans to remediate I & I)

(☐) Machine rodded
(☐) Jet-Vac
(☐) Hand rodded
(☐) Used Generator To Power Pumps/Equipment
(☐) Other – Describe**:** _____
(☐) Disinfected and Deodorized
(☐) Hydro Cleaned
(☐) Spread Lime on Affected Area
(☐) Public Notification

Environmental Damage:
(☐) OEHC – Observed or Evidence of Human Contact
(☐) OEEI – Observed or Evidence of Environmental Impact
(☐) NEAH – No Evidence of Adverse Health/Environmental Impact
(☐) EFK – Evidence of Fish Kill

_____

Reported By **Title** **Telephone Number**

TABLE 2. SSO RESPONSE TRACKING PROTOCOL

SSO RESPONSE TRACKING

1. Rainfall event
2. Construction Superintendent checks local precipitation data
3. >1" in 24 hours triggers SSO response.
4. Construction Superintendent sends crew to Historical Recorded SSO's (Table 1)
5. Crew documents Yes or No Spreadsheet Log for Overflow Evidence
6. If yes, crew will fill out SSO Report Figure V-1.
7. Crews will return all documents (Spreadsheet Log and SSO Reports) to Engineering.
8. Engineering will provide SSO Report to General Manager for signature and submit it to ADEQ.
9. Engineering will return spreadsheet log of overflow evidence to CWB Engineers, Inc. for use in monitoring the Historical Recorded SSO's.

B. Overflow Correction, Containment, and Clean-Up

SSOs of various volumes occur from time to time in spite of concerted prevention efforts. Spills may result from blocked sewer lines, pipe failures, or mechanical malfunctions among other natural or man-made causes.

The objectives of these actions are:

- To protect public health, environment and property from sewage overflows and restore surrounding area back to normal as soon as possible;
- To promptly notify the regulatory agency's communication center of preliminary overflow information and potential impacts;
- To contain the SSO to the maximum extent possible including preventing the discharge of sewage into surface waters; and

- To minimize the Russellville City Corporation exposure to any regulatory agency penalties and fines.

Under most circumstances, Russellville City Corporation handles all response actions with its own maintenance forces. They have the skills and experience to respond rapidly and in the most appropriate manner. An important issue with respect to an emergency response is to ensure that the temporary actions necessary to divert flows and repair the problem do not produce a problem elsewhere in the system.

Circumstances may arise when the Russellville City Corporation could benefit from the support of private-sector construction assistance. This is especially true in the case of large diameter pipes buried to depths requiring sheet piling and dewatering. Russellville City Corporation may also choose to use private contractors for open excavation operations that might exceed one day to complete.

1. Responsibilities of Response Crew Upon Arrival

   It is the responsibility of the first personnel who arrive at the site of an SSO to protect the health and safety of the public by mitigating the impact of the SSO to the extent possible. If the SSO is discovered to be a private overflow and not the responsibility of Russellville City Corporation, the Response Crew will notify the resident of the situation and recommend they contact a private plumber to mitigate the problem. Russellville City Corporation will dispatch a Plumbing Inspector to inspect and monitor the site to insure the resident has taken the appropriate action to correct the problem.

   Upon arrival at an SSO, the response crew (the below items may not apply to Sanitary Overflow Wet "SOW's"):

   - Determines the cause of the overflow: sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc.;

   - Identifies and requests, if necessary, assistance or additional resources to correct the overflow or to assist in the determination of its cause;

   - Takes immediate steps to stop the overflow, e.g. relieves pipeline blockage, manually operates pump station controls, etc. Extraordinary steps may be considered where overflows from private property threaten public health and safety (e.g., an overflow running off of private property into the public right-of-way); and

   - Requests additional personnel, materials, supplies, or equipment that will expedite and minimize the impact of the SSO.

2. Initial Measures for Containment

The crew shall initiate measures to contain and/or recover the overflowing sewage in order to minimize the impact to public health or the environment.

3. Additional Measures - Prolonged Overflow Conditions

In the event of a prolonged sewer line blockage or a sewer line collapse, it may be necessary to set up a portable bypass pumping operation around the obstruction. The Engineering Department shall initiate and administer the bypass pumping operations.

4. Cleanup

SSO sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g., sewage solids, papers, rags, plastics, rubber products) is to remain. The site shall be treated with approved material after cleanup is completed.

C. Overflow Report

Response crew completes an Overflow Report Form (See Figure V-1). Response crew promptly notifies the Engineering Department when the SSO has stopped overflowing. Information regarding the SSO is provided in Figure V-1.

D. Customer Satisfaction

When a SSO is reported by a citizen, the Engineering Department will notify the Front Office or CSR when all work is completed on the SSO. The CSR will then contact the reporting citizen and discuss the actions taken and the resolution of the problem.

VI. SSO RESPONSE PLAN SUMMARY

Public Notification of possible SSO

Notification during working hours

Customer Service Representatives (CSR) receive notification of a possible SSO from the public. The CSR will route the call to the Engineering Department at which time all relevant information is collected, as outlined in Section IV-A. ENGINEERING DEPARTMENT will then dispatch the appropriate Response Crew to the site to verify if an SSO has occurred. The Response Crew will report findings back to ENGINEERING DEPARTMENT.

Response Crew determines if SSO has occurred and attempts to resolve problem. Response Crew completes the Overflow Report Form, takes photographs before clean-up is started, and places warning sign(s) at the site, as required. Construction Supervisor verifies Overflow Report, problem resolution, and signage have been appropriately addressed.

Response Crew begins cleanup and disinfection of the affected area. Response crew will notify Engineering Department when cleanup is complete. ENGINEERING DEPARTMENT will dispatch Construction Supervisor to verify cleanup is completed, take photographs and remove warning signs.

Notification after hours

After Hours Emergency Crew receives direct notification of possible SSO from public at which time they collect all relevant information as outlined in Section IV-A and proceed to location. (After Hours Emergency Crew mans emergency phone after business hours)

Emergency crew determines if SSO has occurred and attempts to resolve problem then takes photographs before cleanup and places warning signs at site, as required. Emergency Crew is to fill out Overflow Report Form and turn in with their paper work at the beginning of the next workday.

Emergency crew then begins clean-up and disinfection of the affected area. When cleanup is completed, crew is to take photographs and remove warning signs.

If the SSO occurred within a structure the Construction Supervisor is to verify cleanup has been completed in a satisfactory manner. Site visit is to be performed the first work day after the overflow occurrence.

Internal Notification of possible SSO

All City Corporation personnel are directed to immediately report any potential overflow to the Engineering Department and provide all relevant information as outlined in Section IV-A. After the overflow has been reported, all procedures will be the same as with a public notification of possible SSO above.

Rain events that are one-inch or greater will trigger the Response Crews to investigate SSO sites to verify if an overflow has occurred. These crews will be furnished a list of possible SSO locations (see Table 1). After crews have completed a check of the entire list, they will begin clean-up at each site.

VII. PUBLIC ADVISORY PROCEDURE

This section describes the appropriate actions of Russellville City Corporation, in cooperation with ADEQ and the Arkansas Department of Health to limit public access to areas potentially impacted by unpermitted discharges of pollutants to surface water bodies from the wastewater collection system. Temporary and permanent public notice will be provided as indicated below. The following is an example of a public notice.

The following language shall be used on signs located on existing SSO sites during cleanup and on notices attached to homes adjacent to SSO sites:

NOTICE OF

SANITARY SEWER OVERFLOW

Please avoid contact with this

sanitary sewer facility due to the

possibility of adverse health effects

until cleanup can be completed.

For Additional Information
Contact Steve Reves – City Corporation
(479) 968-2080 ext 134

The following language shall be used on signs located on potential SSO sites that occur more than once in a twelve-month period:

NOTICE OF

SANITARY SEWER OVERFLOWS
WHICH MAY OCCUR AT THIS LOCATION

Please avoid contact with this

sanitary sewer facility during an

Overflow condition due to the

possibility of adverse health effects

until cleanup can be completed.

For Additional Information
Contact Steve Reves – City Corporation
(479) 968-2080 ext 134

A. Temporary Public Notice

Russellville City Corporation has primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from uncontrolled wastewater discharges from its facilities. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to sewage contamination.

B. Permanent Public Notice

Russellville City Corp shall place a permanent notice at manholes located on City owned property that may experience SSO's more than once in any twelve-month period. Currently, no MH's in public owned property meet this criteria.

C. Other Public Notification

If the General Manager determines additional public notification is needed, the Engineering Department will make said notifications under the General Manager's direction.

IIX. REGULATORY AGENCY NOTIFICATION PLAN

The Regulatory Agency Notification Plan establishes procedures that Russellville City Corporation follows to provide formal notice to ADEQ as necessary in the event of SSOs. The reporting criteria below explains to whom various forms of notification should be made, and lists agencies/individuals to be contacted.

Agency notifications will be performed in parallel with other internal notifications. The procedures for notifying the media of an SSO is presented in Section VII - Media Notification Procedure. Internal notification and mobilization of personnel are detailed in Section IV - Overflow Response Procedure.

A. Immediate Notification

Upon data entry of a SSO event, the Engineering Department will make the proper notifications as detailed in the following section. For reference, the applicable NPDES Permit reporting requirements are reprinted below.

> "The permittee shall report all overflows with the Discharge Monitoring Report (DMR) submittal. These reports shall be summarized and reported in tabular format. The summaries shall include: The date, time, duration, location, estimated volume, and cause of overflow; observed environmental impacts from the overflow; action taken to address the overflow; and ultimate discharge location if not contained (e.g. storm sewer system, ditch, tributary). Overflows, which endanger health or the environment, shall be orally reported to this department (Enforcement Section of Water Division) within 24 hours from the time the permittee becomes aware of the circumstance. A written report of overflows which endanger health or the environment, shall be provided within 5 days of the time the permittee becomes aware of the circumstance."

The Engineering Department is responsible for meeting the 24-hour oral or fax notification requirement. The name, mailing address, e-mail address, telephone and fax number for 24-hour reporting to ADEQ is provided below:

ADEQ – Water Enforcement
P.O. Box 8913
Little Rock, Arkansas 72219-8913
Telephone: (501) 682-0639
Fax: (501) 682-0910
Email: WaterEnfSSO@adeq.state.ar.us

B. Secondary Notifications

After those parties identified in *Section A. Immediate Notification* have been contacted, the Engineering Department will notify other federal, state, and local agencies, as well as other interested and possibly impacted parties as directed by the General Manager.

IX. MEDIA NOTIFICATION PROCEDURE

When an SSO has been confirmed and is a threat to public health, take the following actions, if necessary, to notify the media:

A. Response Crew verifies overflow and reports back to the Engineering Department.

B. The Engineering Department informs the General Manager. The primary contact should be the General Manager. Table 3 provides contact names and numbers for the appropriate notification.

C. All media requests received should be referred immediately to the General Manager.

D. The following personnel are authorized to be interviewed by the media and are the designated spokespersons:

1. Steve Mallett, General Manager

2. Lance Bartlett, Utility Engineering Manager

Table 3. Russellville City Corporation Media Contacts

Contact	Contact Name	Office	Mobile
Primary	Steve Mallett, General Manager	(479) 968-2080 Ext 113	
Backup	Lance Bartlett, Utility Engineering Manager	(479) 968-2080 Ext 122	

X. DISTRIBUTION AND MAINTENANCE OF SSORP

Annual updates to the SSORP reflect all changes in policies and procedures as may be required to achieve its objectives.

A. Submittal and Availability of SSORP

Distribute copies of the SSORP and any amendments to personnel involved in the I/I program.

B. Review and Update of SSORP

Review the SSORP annually and amend as appropriate

C. Practical Resources

There will be small laminated pocket guides printed and furnished to all employees that are involved with the SSO Response Plan, which will provide an overview of the of procedures as well as essential phone numbers.

D. Training

A copy of the SSO Response Plan will be distributed to all employees involved in the Overflow process. A review of the plan will be conducted with each employee in a group setting or individually as determined by the employee's supervisor. This training should take place annually or when revisions occur, so that all personnel are brought up to date of any changes that may occur. Each division should also review their response efforts at these annual training sessions and take suggestions to revise procedures. These suggestions will then be submitted to all divisions for review to determine if revisions are required.

XI. SSO FLOW AND VOLUME DETERMINATION

As indicated previously in this SSORP, each SSO actively discharging shall be evaluated for flow and ultimately total volume discharged, each of which is to be included as part of the reporting requirements. City Corporation has included a flow estimating system that is derived from the reaction of the manhole lid in relation to the amount of flow exiting the collection system. This system is easily field estimated without the need for measuring devices, which in most instances provide inadequate data.

The three-category rating system is outlined below:

0 – 10 gpm (gallons per minute)
This rate covers the light discharge experienced in the upper reaches of the collection system, usually with a small number of residential connections. The visual indicator would be a light flow (about the rate of a standard faucet) from

around the manhole lid with no visible release of debris or solids, and no movement or lifting of the lid itself.

10 – 100 gpm

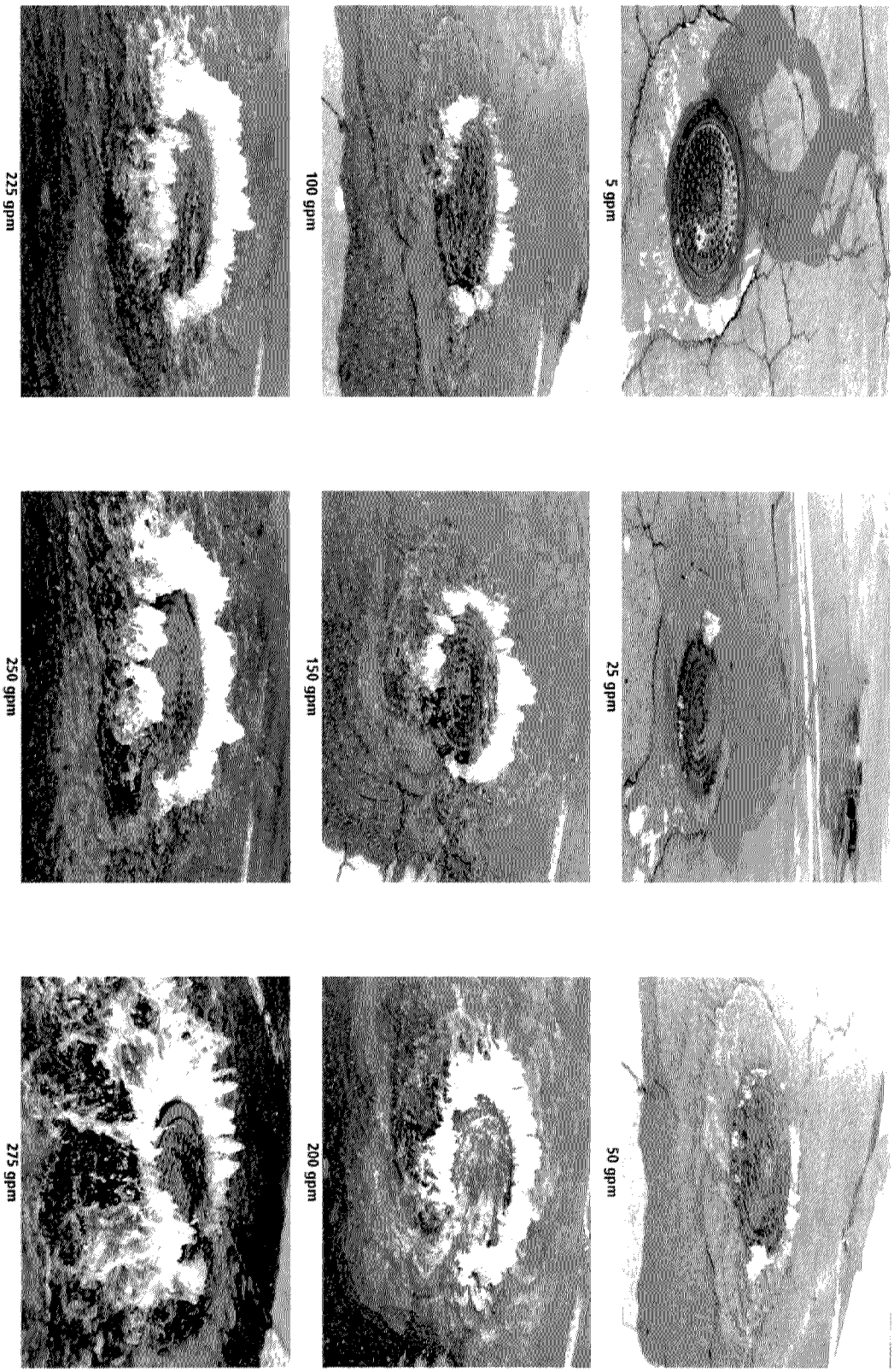
This rate covers the moderate discharge experienced in the lower reaches of the collection system, usually along the larger collector or outfall type sewer mains (typically 10" and larger mains) and in some capacity related SSOs. The visual indicator would be a noticeable flow from around the manhole lid, slight debris or solids release, and a rocking or slight lifting of the manhole lid.

Greater than 100 gpm

This rate covers the heavy discharge experienced along the major outfall sewers and larger capacity related SSOs. The visual indicator is the definite release of debris or solids, and the complete lifting or displacement of the manhole lid.

SSO volumes are computed by estimating the flow from the above data and multiplying by the duration of discharge. See Figure XI-1.

Figure XI-1


225 gpm
100 gpm
5 gpm
250 gpm
150 gpm
25 gpm
275 gpm
200 gpm
50 gpm

24-HOUR SANITARY SEWER OVERFLOW REPORT

After the overflow is detected, this completed form must be faxed or e-mailed to the address below within 24 hours.
Send Overflow Report to: Water Enforcement by: Phone: 501-682-0639; Fax: 501-682-0910 or E-Mail: WaterEnfSSO@adeq.state.ar.us

Facility Permit Number: _____ **Facility Name:** _____
Date Overflow Began: _____ **Time:** _____ **Date Overflow Ended:** _____ **Time:** _____

Description: **Comments** **Cause of SSO** **Additional Comments**
(Give address, manhole number-if numbered. Include where the overflow went-yard, ditch, stream, storm sewer, building, other).

(☐) Manhole Overflow _____
(☐) Lift Station Overflow _____
(☐) Main Line Overflow _____
(☐) Service Line Overflow _____
(☐) Other: Describe _____

Volume: _____ *(Give an estimate in gallons)*

(☐) I & I – Rainfall _____
(☐) Roots _____
(☐) Grease _____
(☐) Debris _____
(☐) Equipment Failure _____
(☐) Construction _____
(☐) Vandalism _____
(☐) Power Failure _____
(☐) Line Failure/Break _____
(☐) Other – Describe _____

Action Taken – Check all that apply
(Short term and long-term action, including clean-up and any plans to remediate I & I)

(☐) Machine rodded
(☐) Jet-Vac
(☐) Hand rodded
(☐) Used Generator To Power Pumps/Equipment
(☐) Other – Describe**:** _____
(☐) Disinfected and Deodorized
(☐) Hydro Cleaned
(☐) Spread Lime on Affected Area
(☐) Public Notification

Environmental Damage:

(☐) OEHC – Observed or Evidence of Human Contact
(☐) OEEI – Observed or Evidence of Environmental Impact
(☐) NEAH – No Evidence of Adverse Health/Environmental Impact
(☐) EFK – Evidence of Fish Kill

_____

Reported By **Title** **Telephone Number**

Sanitary Sewer Overflow (SSO) Monthly Report

Facility Name: _____ **NPDES Permit No.:**_____ **Monitoring Period (Month/Year):**____/_____

☐ No Sanitary Sewer Overflows This Monitoring Period

Summary Report Code Descriptions				
Cause(s) of SSO		**SSO Impact**	**Action(s) Taken**	**Ultimate Discharge Location**
CO-Construction	**D**-Debris	**NEAH**-No Evidence Adverse Health/ Environmental. Impact		**CR**-Creek/Stream/River (specify)
E-Equipment Failure	**G**-Grease	**OEHC**-Observed or Evidence of Human Contact	**EC**-Environmental Cleanup	**DI**-Ditch
HC-Hydro Clean	**LF**-Line Failure	**EFK**-Evidence of Fish Kill	**HC**-Hydro Cleaned	**DR**-Drop Inlet
R-Rainfall	**RG**-Roots / Grease		**HR**-Hand Rodded	**GR**-Ground Surface
RO-Roots	**V**-Vandalism		**EN**-Referred to Engineering	**PA**-Paved Area
			PN-Public Notification	**CB**-Contained in Building

Location	Manhole #	Start Date of SSO	End Date of SSO	Estimated Volume (in gallons)	Cause of SSO	Environmental Impact	Action (s) Taken to Address SSO	Discharge Location

Signature of Cognizant or Ranking Official **Date**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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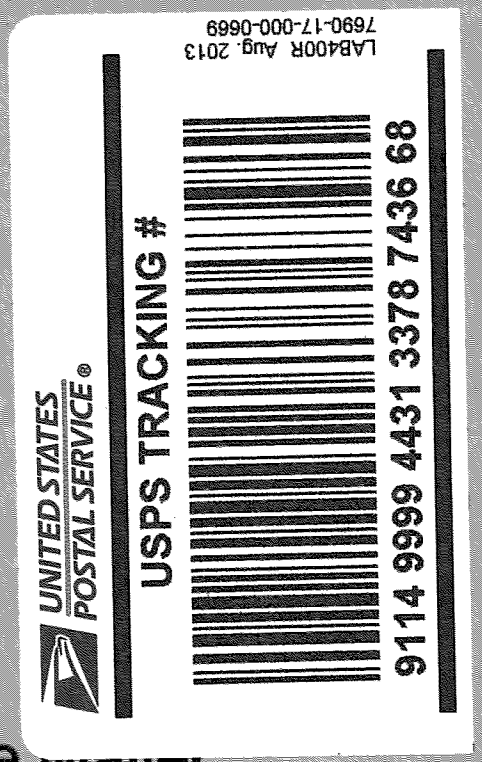

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