

CWB
Engineers, Inc.

Designing a Better Arkansas

March 22, 2016

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

Re: City Corporation – CAO
Final Report SSES Phase II (Basins RV09, RV15, RV25)
NPDES Permit No. AR0021768
CAO LIS No. 09-146
AFIN 58-00105

Dear Mr. Anderson,

I am pleased to submit a copy of the attached SSES Phase II Final Report for Basins RV09, RV15 & RV25 on behalf of City Corporation. The Phase II submittal shall fulfill the requirement of the Consent Administrative Order and the Corrective Action Plan dated May 28, 2010. The attached document is the final report prepared by RJN. Please review the document and respond with any concerns or comments.

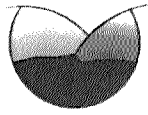
RJN is currently working in Basins RV13, RV16 & RV26 as stated in the latest Milestone Schedule that was submitted with the March 31, 2015 CMOM Update. Kajacs Contractors is currently constructing the City Mall Hydraulic Improvement project. Corgill Construction, Inc. is currently working on Manhole Rehab Phase I. Basin 7 & 14 Wastewater Improvements project will bid on March 8, 2016. City Corporation has continued to aggressively investigate and repair I/I issues throughout the system.

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

Sincerely,

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

Enclosure



CWB
Engineers, Inc.

Designing a Better Arkansas

March 22, 2016

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 2016 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, P.E.
CWB Engineers, Inc.

Enclosure



Capacity, Management, Operations, and Maintenance Program (CMOM)
MARCH 2016 UPDATE



Prepared By:



NPDES PERMIT No. AR0021768
CAO LIS No 09-146
AFIN 58-00105

Table of Contents

CHAPTER 1-PROGRAM INTRODUCTION	- 1 -
1.1 What is CMOM?	- 1 -
1.2 Purpose and Overview	- 1 -
1.3 Goals.....	- 2 -
1.4 Components	- 2 -
1.5 Consent Administrative Order	- 3 -
1.6 Corrective Action Plan.....	- 3 -
1.6.1 TSS & TRC.....	- 3 -
1.6.2 Comprehensive.....	- 3 -
CHAPTER 2-PERSONNEL	- 4 -
2.1 City Corporation Organization	- 4 -
2.1.1 History.....	- 4 -
2.1.2 System Profile	- 4 -
2.1.3 Organizational Structure.....	- 8 -
2.2 Job Descriptions	- 8 -
2.3 Public Relations.....	- 9 -
2.4 Training	- 9 -
CHAPTER 3-LEGAL AUTHORITY.....	- 11 -
3.1 Ordinances	- 11 -
3.2 ADEQ Permits.....	- 12 -
3.2.1 NPDES Permit.....	- 12 -
3.2.2 No Exposure Storm Water Permit	- 12 -
3.3 Industrial Stormwater Control	- 12 -
CHAPTER 4-MANAGEMENT.....	- 13 -
4.1 Maintenance Facilities and Equipment.....	- 13 -
4.1.1 Scheduling & Strategic Planning	- 13 -
4.1.2 SCADA	- 14 -
4.1.3 Replacement Parts.....	- 14 -
4.2 Engineering	- 14 -
4.2.1 Collection System Maps-GIS	- 14 -
4.2.2 Construction	- 15 -
4.2.3 Developer Funded	- 15 -
4.2.4 Construction/Recording Procedure.....	- 15 -
4.3 Safety Program.....	- 15 -
4.3.1 Safety Procedures.....	- 15 -
4.3.2 Vehicle Safety	- 16 -
4.3.3 Pharmaceutical Take-Back Program	- 16 -
4.4 Emergency Disaster Response Plan	- 16 -
4.5 City Corporation Master Plan 2003.....	- 16 -
CHAPTER 5-OPERATIONS AND MAINTENANCE.....	- 17 -
5.1 Critical Components.....	- 17 -
5.2 Collection System.....	- 19 -

5.3 Infiltration/Inflow Control.....	- 19 -
5.4 Lift Stations	- 20 -
5.4.1 Operation & Monitoring	- 20 -
5.4.2 Preventive & Routine Maintenance	- 21 -
5.4.3 Lift station details	- 22 -
5.5 Force Mains.....	- 24 -
5.5.1 Air Release Valves.....	- 24 -
5.5.2 Operating Practices.....	- 24 -
5.5.3 Design Practices.....	- 24 -
5.6 System Rehab.....	- 25 -
5.6.1 Main Lines.....	- 25 -
5.6.2 Manholes	- 25 -
5.6.3 Scheduling.....	- 26 -
5.6.4 Service Lateral Repairs.....	- 27 -
5.7 Cleaning/Television Inspection	- 28 -
5.8 Root Control.....	- 29 -
5.9 Grease Control	- 30 -
5.10 Aerial Stream Crossing Inspection	- 30 -
5.11 Pipe Patch.....	- 31 -
5.12 Treatment Facility	- 31 -
5.13 Private Defects	- 32 -
5.13.1 Private Defect Program SOP	- 32 -
5.14 Water Quality Monitoring.....	- 34 -
5.15 Rain Gauges.....	- 36 -
5.16 Inspection Procedures and Specifications	- 37 -
CHAPTER 6- SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN.....	- 39 -
6.1 System Wide Flow Monitoring/Capacity Analysis- Phase I.....	- 39 -
6.1.1 Flow Monitoring	- 39 -
6.1.2 Manhole Inspection	- 41 -
6.1.3 Lift Station Evaluation.....	- 43 -
6.1.4 Capacity Improvements.....	- 45 -
6.2 System Wide Flow Monitoring/Capacity Analysis- Phase II.....	- 46 -
6.2.1 Subbasins 7,14,23 SSES Findings & Design Plans.....	- 46 -
6.2.2 Subbasins 1,2,8,11 SSES Findings, Design, and Construction	- 47 -
6.2.3 Subbasins 3,5,6,21 SSES Findings & Design Plan	- 49 -
6.2.4 Subbasins 17,18,20 SSES Findings & Design Plan	- 50 -
6.2.5 Subbasins 9,15,25 SSES Findings & Design Plan	- 50 -
CHAPTER 7-OVERFLOW EMERGENCY RESPONSE PLAN	- 52 -
7.1 Awareness	- 52 -
7.2 Response	- 52 -
7.3 Official Notification	- 52 -
CHAPTER 8- FINANCIAL	- 55 -
8.1 User Rate/User Charge	- 55 -
8.2 Budget Process and Schedule	- 55 -
8.3 Rate Study	- 56 -
CHAPTER 9-PROGRAM AUDITS	- 57 -

9.1 Summary	- 57 -
9.2 Program Updates	- 57 -
CHAPTER 10-SUMMARY OF RECOMMENDATIONS.....	- 58 -
10.1 Public Education/Outreach	- 58 -
10.2 Easement Clearing	- 58 -
10.3 City Grid System	- 59 -
10.4 Schedule of Recommended Improvements.....	- 59 -

REFERENCES**APPENDICES**

Appendix A - Consent Administrative Order 09-146
Appendix B - Corrective Action Plans
Appendix C - Job Descriptions
Appendix D - Ordinances
Appendix E - Sanitary Sewer Overflow List
Appendix F - No Exposure Permit Renewal
Appendix G - Maintenance Vehicles and Major Equipment
Appendix H - Spare Parts Inventory
Appendix I - Workplace Safety Committee document
Appendix J - Safety & Health Manual
Appendix K - Vehicle Accident SOP
Appendix L - Parked Traffic Cone Procedure
Appendix M - Cone Positioning
Appendix N - Drug Terminator Poster
Appendix O - Prescription Disposal Guidelines
Appendix P – Rate Study
Appendix Q – Under Construction
Appendix R - Grease Trap Inspection Schedule
Appendix S - Private Defect List
Appendix T – PowerPoint on Rate Increase
Appendix U- Standard Specifications and Details
Appendix V - Permanent Rain Gauge Specifications
Appendix W- Policies and Procedures
Appendix X- Dry/Wet Weather Peaking
Appendix Y- Overflow Response Plan
Appendix Z- 24 Hour SSO Report
Appendix 1 - Budget Process and Schedule
Appendix 2 - Manhole Inspection Form
Appendix 3 - Food Service Brochure Example
Appendix 4 - Sewage Spill Brochure Example
Appendix 5 - Poster Example
Appendix 6 - Aerial Stream Crossing Inspection Form
Appendix 7- Sewer & Water Rate Flyer
Appendix 8 - NPDES Permit
Appendix 9 - Creek Crossing List with Inspections
Appendix 10 - Customer Complaint Form
Appendix 11 - Effluent Flow Spreadsheet
Appendix 12 - Newspaper Ads and Articles for 2012
Appendix 13 - Completed SSES Subbasins
Appendix 14- Organizational Chart
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 Flow Meter Locations
Appendix 20- Lift Station Locations
Appendix 21- Overflow Locations
Appendix 22- Strategic Planning Process
Appendix 23- Pipe Patch

LIST OF TABLES

Table 2-1: Sewer System Profile
Table 5-1: Collection System Routine Maintenance Schedule
Table 5-2: Pump Station Routine Maintenance Schedule
Table 5-3: Lift Station Details
Table 5-4: Lift Station Pumping Capacity
Table 5-5: Collection System Response and Repair Priority Hierarchy
Table 5-6: Temporary Rain Gauge Locations
Table 5-7: Permanent Rain Gauge Locations
Table 6-1: RJN Manhole Findings
Table 6-2: RJN Manhole Defects
Table 6-3: RJN Recommendation for Lift Station Improvements
Table 6-4: RJN Recommendations for Overall Capacity Improvements

LIST OF CHARTS

Chart 2-1: Pipe Type Breakdown for Gravity Sewer
Chart 2-2: Pipe Type Breakdown for Force Mains
Chart 2-3: Pipe Diameter Breakdown for Gravity Sewer
Chart 2-4: Pipe Diameter Breakdown for Force Mains
Chart 2-5: Pipe Age Summary
Chart 5-1: Mainlines Rehabbed
Chart 5-2: Manholes Rehabbed/Inspected
Chart 5-3: Cleaning/Television Inspection Completed
Chart 5-4: Root Control Completed
Chart 5-5: Private Defects Rehabbed
Chart 5-6: Smoke Testing Completed
Chart 7-1: Total Overflows
Chart 7-2: Total Overflow Locations

LIST OF FIGURES

Figure 2-1: System Profile
Figure 5-1: Basin Flow Diagram
Figure 6-1: Hydrograph
Figure 6-2: Parts of a Standard Manhole
Figure 10-1: Schedule of Recommended Improvements

ACRONYMS

ADEQ- Arkansas Department of Environmental Quality
CAO- Consent Administrative Order
CAP – Corrective Action Plan
CEU- Continuing Education Units
CMOM – Capacity, Management, Operations and Maintenance
CSR- Customer Service Representatives
EPA – Environmental Protection Agency
FOG- Fats, Oils & Grease
GIS – Geographical Information System
GPS- Global Positioning System
I/I – Infiltration and Inflow
MGD – Million Gallons per Day
NPDES- National Pollutant Discharge Elimination System
O&M – Operations and Maintenance
ORP – Overflow Response Plan
PCW -Pollution Control Works (Treatment Plant)
PDH- Professional Development Hours
PM – Preventive Maintenance
PPE – Personal Protective Equipment
SCADA – Supervisory Control and Data Acquisition
SECAP – System Evaluation and Capacity Assurance Plan
SOP – Standard Operating Procedure
SSES- Sanitary Sewer Evaluation Study
SSO – Sanitary Sewer Overflow or Sanitary Sewer Outfall
SSORP- Sanitary Sewer Overflow Response Plan
TMDL- Total Maximum Daily Load
TSS – Total Suspended Solids
WWTP – Wastewater Treatment Plant

CHAPTER 1-PROGRAM INTRODUCTION

1.1 What is CMOM?

CMOM stands for “Capacity, Management, Operations, and Maintenance”. It is a flexible, dynamic framework for municipalities to identify and incorporate widely accepted wastewater industry practices to:

- Better manage, operate, and maintain collection systems
- Identify and investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

In CMOM planning, the utility selects performance goal targets, and designs CMOM activities to meet the goals. Information collection and management practices are used to track how well each CMOM activity is meeting the performance goals, and whether overall system efficiency is improving.

1.2 Purpose and Overview

In an ideal world, sanitary sewer systems would be sized and maintained in a manner resulting in no unpermitted discharges and a high quality effluent released into the receiving stream. Unfortunately, sanitary sewer collection systems have limited hydraulic capacity to carry wastewater based on the size of the system components. The size of the components is based upon an analysis of the contributory flows into the system plus a factor for growth. The analysis considers residential, commercial and industrial sources of flow plus a designed leakage rate for the system components. With time, the design basis for the system may change resulting in flows in excess of the designed flow. Changes can include population increases beyond the anticipated growth factor, deterioration of the system components, inappropriate storm water connections, etc. These factors can eventually lead to overflows of the system as the increased flows exceed the ability of the collection system or lift stations to convey the wastewater.

Additionally, poor collection system maintenance can result in overflows irrespective of any flow increases. Materials such as grease, rags, roots and other foreign objects can create blockages within the system. Regular maintenance and cleaning can severely limit or even eliminate these occurrences, particularly grease and root development.

Overflows, regardless of the cause, release untreated sewage to surface waters, at times leading to substantial negative impacts on the receiving body. The majority of impaired waters in the United States are impaired due to nutrients, sediment, pathogens, metals and organic enrichment. Sewage overflows contribute to these impairments and can have acute impacts such as fish kills and beach closures. The CMOM provides the resources and information necessary to properly plan, manage, operate, and maintain the sanitary sewer system to minimize this environmental impact.

The CMOM shall enable the Permittee to:

- Properly manage, operate, and maintain, at all times, all parts of the collection system the Permittee 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 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.
- Provide notification to parties with a reasonable potential for exposure to pollutants associated with an overflow event.

1.3 Goals

City Corporation operates and maintains approximately two hundred (200) miles of sanitary sewer and eighteen (18) wastewater lift stations. Continuing growth, urbanization, changing hydrologic conditions, and age contribute to strain on this infrastructure. In addition, new regulations will impose additional issues and constraints. The purpose of this document is to detail a formal Capacity, Management, Operations and Maintenance (CMOM) Program. The Program's approach is environmentally conscientious and cost-effective. The Program elements outline and provide specific activities and reporting procedures to document the progress of the Program. Current and anticipated federal and state requirements will be evaluated and implemented throughout the program.

The Program's goals are:

- *Prevent*- Prevent sanitary sewer overflows. Take all steps feasible to eliminate current overflow locations and prevent new overflow locations.
- *Protect* - Protect the Environment. Take all feasible steps to eliminate and mitigate the impact of sanitary sewer overflows for all parts of the collection system and to develop and enforce appropriate ordinances that will enhance the performance of the collection system.
- *Prolong*- Prolong the life of City Corporations sanitary sewer system, through effective rehab methods and effective management of Inflow and Infiltration.
- *Provide*-
 - Provide effective resource management for the assets of City Corporation.
 - Provide adequate system capacity through the use of analytical and engineering methods through the development of a system to assess and prioritize maintenance, rehabilitation and replacement activities
 - Provide excellent service to our customers through effective communication, programs, and education.

1.4 Components

This CMOM contains chapters that address specific requirements of the CMOM Program. The chapters contain language addressing how City Corporation is applying CMOM principles to its conveyance and treatment facilities. The Program, including objectives, strategies, tactics and other activities will be subject to change and refinement as City Corporation continues implementing the CMOM Program. The CMOM will be updated annually for the first five years of the program.

1.5 Consent Administrative Order

City Corporation entered into Consent Administrative Order LIS No. 09-146 AFIN 58-00105 with the Arkansas Department of Environmental Quality (ADEQ). The CMOM document satisfies Section 8 of the Order and Agreement portion of the Consent Administrative Order (CAO). The CAO was executed November 6, 2009 and became effective December 25, 2009. The Executed CAO document is attached as Appendix A.

The CAO was amended on June 2nd 2014. An executed copy of the amended CAO can be found in Appendix A-1.

1.6 Corrective Action Plan

Corrective Action Plans were implemented as required by the CAO to guide City Corporation to implement improvements to the sanitary sewer collection system.

1.6.1 TSS & TRC

A Corrective Action Plan (CAP) was prepared by Garver LLC on behalf of City Corporation, Russellville, AR, to address the possible solutions for the 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. The CAP outlines proposed improvements to address TSS and TRC violations and proposes an implementation schedule for the said improvements. This document can be viewed in Appendix B.

1.6.2 Comprehensive

A Comprehensive Corrective Action Plan (CAP) was formulated to address paragraph Two (2.) of the Order and Agreement section of the Consent Administrative Order LIS No. 09-146. The entire Comprehensive Corrective Action Plan can be viewed in Appendix B.

CHAPTER 2-PERSONNEL

2.1 City Corporation Organization

2.1.1 History

WWTP/Storm Water Basin-The original Wastewater Treatment Plant was constructed in 1923 on the banks of Prairie Creek near Arkansas Tech University. In 1964 a modern plant was built at the current site on Jimmy Lile Road and was upgraded in 1974, 1978, and most recently in 1999. The recent improvements, including a new 21 million gallon equalization basin, have significantly increased the capacity of the plant. Extensive rehabilitation and replacement of the sewer collection system has also greatly reduced the number of overflows and volume at the plant.

The City of Russellville has been served by a community sanitary sewer system since approximately 1912. The sewers originally discharged to nearby creeks, but as the City grew the individual sewer lines were connected together to form a collection system. The sewers were maintained by the street department or other maintenance functions of the general City government until 1985, when City Corporation, the commission established by the City to operate the municipal water system, assumed responsibility for the sewer collection system, lift stations and treatment plant.

2.1.2 System Profile

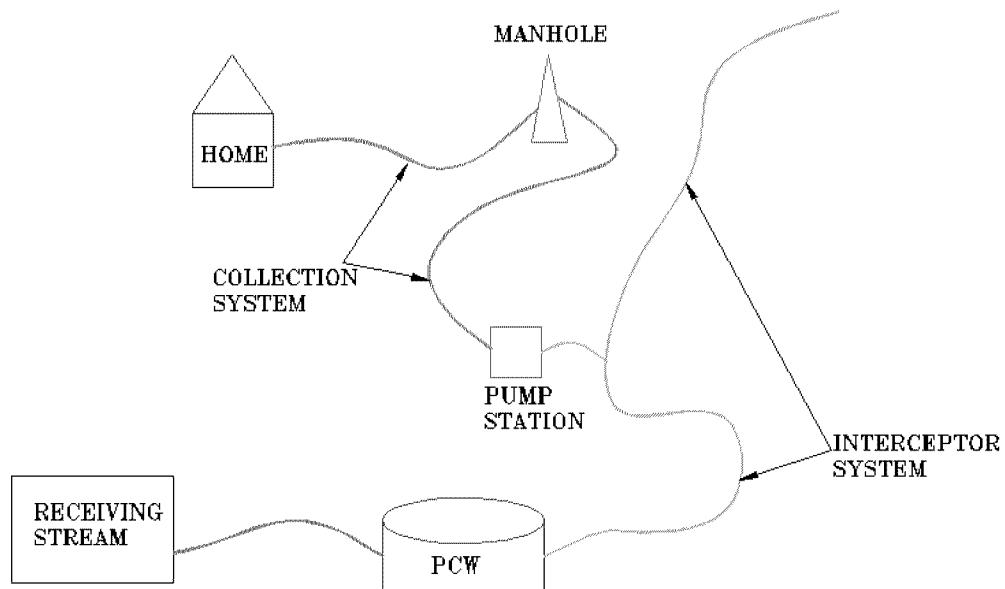
City Corporation's sanitary sewer system consists of gravity and force main components serving the community of Russellville and a satellite system of Dover. Maps of the system are maintained by the City Corporation at the Administration office located at 205 West 3rd Place in Russellville, AR. The system profile is as follows:

Table 2-1: Sewer System Profile

Total Population Served	25,011
Population of Russellville	27,586 (2010 Census)
Contributory Area	6,500 acres
Population of Dover	1,408 (2010 Census)
Total Customers	10,889
Residential Customers	9,389
Other Customers	1,500
Treatment Plant Name(s)	City Corporation Pollution Control Works
Plant Design Capacity	7.3 MGD
Average Daily Flow 2015	6.56 MGD
Miles of Public Gravity Sewers	181
Miles of Force Mains	18.2
Number of Pump Stations	18
Number of Public Manholes	3651
Number of Employees	63

As shown in the graphic below, in City Corporation's service area, wastewater leaving a house or business typically flows through a gravity pipeline toward the street, where it enters the city's collection system and continues to a pump station. At this point, the wastewater is pumped into a large interceptor pipeline, which is then transported to the Wastewater Treatment Plant. After being treated, the effluent water is then released into Whig Creek, and ultimately flows into the Arkansas River.

Figure 2-1: System Profile



As a result of the terrain in Russellville, the system consists of 18.2 miles of force mains, and 18 lift stations to transport wastewater to the treatment plants. These pipes are operated under pressure and typically have minimal inflow and infiltration (I/I) problems.

Chart 2-1: Pipe Type Breakdown for Gravity Sewer

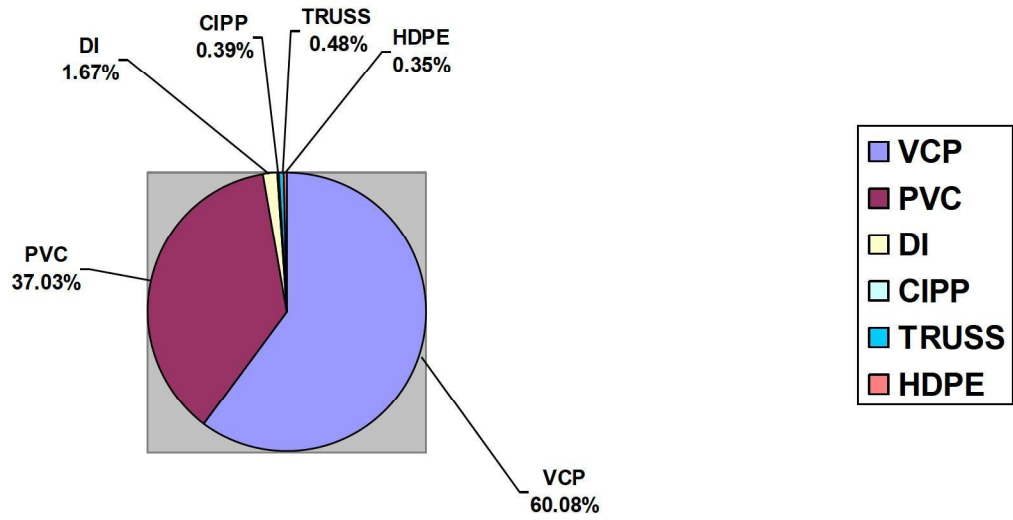


Chart 2-2: Pipe Type Breakdown for Force Mains

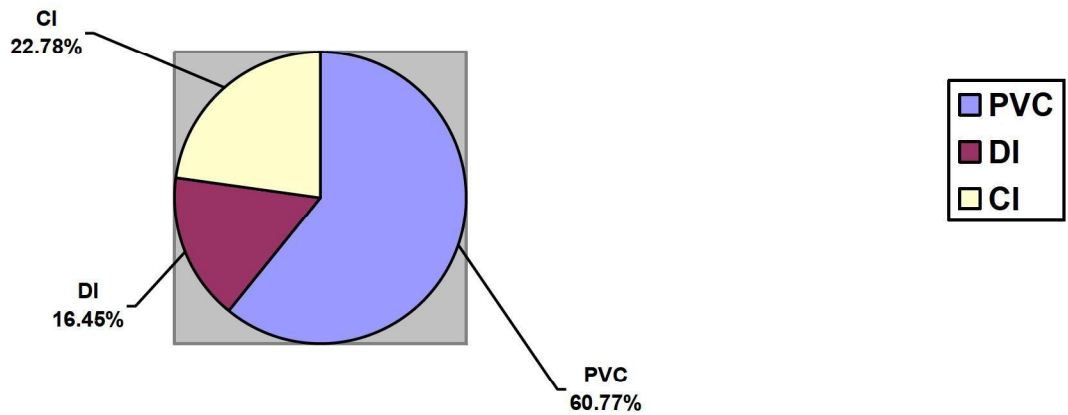


Chart 2-3: Pipe Diameter Breakdown for Gravity Sewer

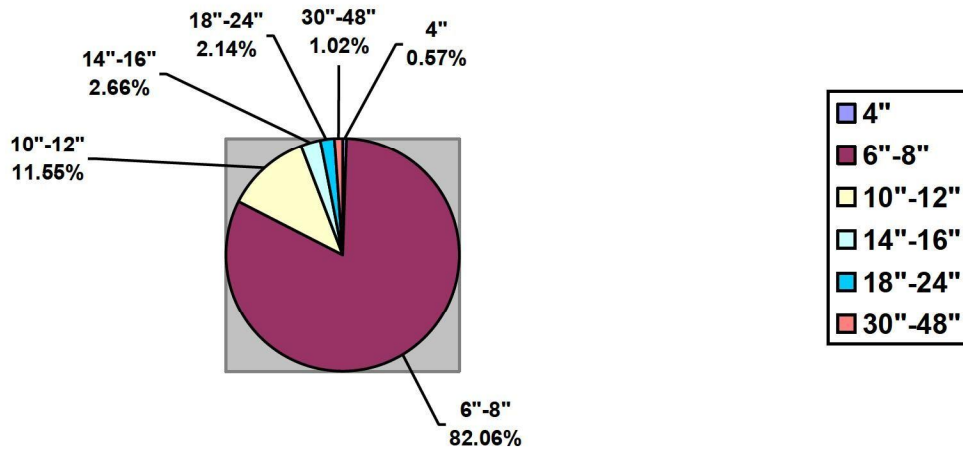


Chart 2-4: Pipe Diameter Breakdown for Force Mains

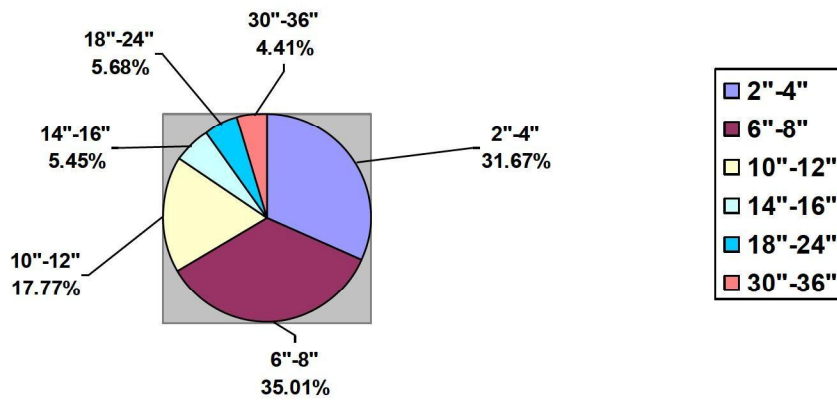
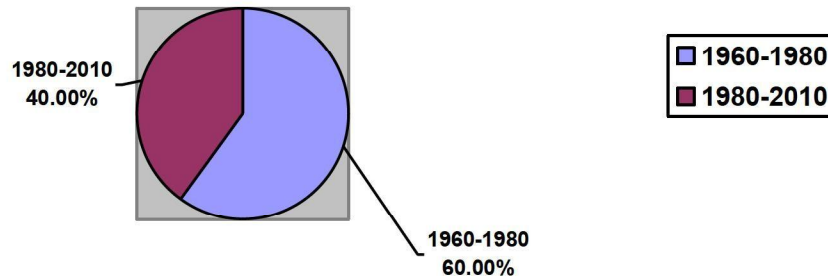


Chart 2-5: Pipe Age Summary



2.1.3 Organizational Structure

The sewer system is governed by City Corporation, a board established by the City of Russellville to operate the municipal water system both potable and sewerage. City Corporation assumed responsibility of the sewer system and treatment plant in 1985. The board is made up of five board members. City Corporation employs the service of a general manager, who oversees the entire utility and reports directly to the board. The following positions report to the General Manager: Chief Operations Officer, Chief Financial Officer, and the Engineering/Construction Director. The Chief Operations Officer oversees the WW Operations Manager and the Water Operations Manager located at Pollution Control Works. The Chief Financial Officer oversees the Customer Service Manager and the IT Manager. The Engineering/Construction Director oversees the Engineering Department and Construction Department. Please refer to Appendix 14 for the Organization Chart for City Corporation.

2.2 Job Descriptions

Job descriptions lay out the foundation for the requirements and responsibilities of each person within the organizational structure. Descriptions are reviewed every two years and updated as necessary to reflect new or changing requirements. Employees are expected to comply with the elements of the job descriptions including any requirements for professional licenses and continuing education. Failure to meet the basic elements of an employee's assigned job description may be reason for termination, demotion or other disciplinary action deemed appropriate. City Corporation has 63 current positions available. The individuals who fill them perform a variety of duties essential to their mission. The Human Resources Division maintains current job descriptions for all positions. The job descriptions define the nature of the work to be performed, minimum requirements for the position, necessary qualifications or certifications, common examples of the type of work and licenses required. Job descriptions are included as Appendix C.

2.3 Public Relations

City Corporation has a customer service department responsible for correspondence and complaints received through email, calls, or letters. The CSR's (Customer Service Representatives) take all the calls from customers and make work orders that are sent directly to the field technicians to confirm and address. The lobby hours for the CSR's are Monday through Friday; 8:00 a.m. to 4:30 p.m. However, the CSR's can be reached by telephone Monday through Friday; 8:00 a.m. to 5:30 p.m. Employees trained in customer service provide prompt and courteous responses to telephone inquiries regarding billing issues or other concerns. Drive up services are provided until 5:30 p.m. at the main office for City Corporation. During evenings, weekends and holidays, an emergency after hour's number is listed on the answering machine that directs them to a representative located at the water treatment plant. A copy of the customer complaint form is located in Appendix 10. City Corporation has completed a PR campaign in the newspaper, this helps to inform the public and talk about the CAO's and other issues City Corporation faces. A copy of the ads for the year 2015 are located in Appendix 12.

2.4 Training

Each licensed employee is required to obtain a minimum of 12 hours of professional/trades development training per year upon approval by an immediate supervisor. Training may be in the form of formal off-site or on-site training, on-the-job training, college/vocational course work or other approved education. The training must be directly relevant to the employee's duties as described in his/her job description. If an employee is required to obtain continuing education units (CEUs) or professional development hours (PDHs) for his/her license, the employee is required to determine if the license granting agency/board will accept the hours before the employee begins the course.

Within the first three months of employment, each employee is required to attend a course in Safety. The Manager or his/her designee will approve the course prior to attendance.

Other potential course topical areas include:

- Routine line maintenance including rodding, cabling, chemical and jet cleaning
- Traffic control
- Environmental/safety regulations
- Pump theory, operation, and maintenance
- Laboratory procedures, equipment calibration, sample collection and handling
- Electrical and instrumentation
- Public relations
- Sewer overflow response and reporting
- Collection system evaluation including smoke testing and closed circuit TV
- Pipe repair
- Collection system rehabilitation including pipe bursting, cured in place, slip lining, and trenching/shoring
- Heavy equipment operation
- Wastewater System Operations and Maintenance

City Corporation will include in the operating budget sufficient funds to provide a combination of on and off site training such that each employee can obtain a minimum of 12 hours of professional/trades development training per year inclusive of continuing education needed for license requirements. The funding will be

inclusive of course cost, travel, lodging, meals, and incidental expenses consistent with typical costs for the location. College and vocational tuition cost reimbursements will be consistent with the City Corporation's policy for such reimbursements.

CHAPTER 3-LEGAL AUTHORITY

3.1 Ordinances

City Corporation is provided legal authority through the ordinances enacted by the City of Russellville, Arkansas. The ordinances providing authority are summarized below and are included in their entirety in Appendix D.

- Ordinance 1075- Sewer Use Ordinance - Outlines the requirements for sewer design, installation, testing, and inspection of new sewer facilities. It also details illegal connections and materials which are illegal to discharge into the sewer. It gives the employees of City Corporation the right to access all system properties.
- Agreement with the City of Dover – This agreement provides the specific details of the arrangement between the City of Dover and City Corporation in regards to sanitary sewer treatment. The City of Dover is a satellite system of City Corporation. City Corporation is responsible for treating the sanitary sewer, but the collection system is maintained by the City of Dover. This agreement gives City Corporation the specific right to review plans and specifications for system improvements, to inspect the Dover system, and to require maintenance or repair work as may be necessary to prevent the infiltration of surface water or storm drainage.
- Ordinance 2105 – Pretreatment Ordinance – Current Ordinance outlines the details of the City Corporation pretreatment program.
- Ordinance 976-Service Line Responsibility- Amended Ordinance that outlines the requirements for sewer service line installation and responsibility for repairs.
- Ordinance 2060-Service Line Responsibility- Current Ordinance that outlines the requirements for sewer service line installation and responsibility for repairs.
- Ordinance 2043-Current Sewer User Rate Ordinance -This Ordinance establishes the current sewer rates for City Corporation.
- Ordinance 2194-Current Water User Rate Ordinance- This Ordinance establishes the current water rates for City Corporation.
- Ordinance 949-Original Sewer User Rate Ordinance
- Ordinance 1022-Amended Sewer User Rate Ordinance
- Ordinance 1294-Amended Sewer User Rate Ordinance
- Ordinance 1372-Amended Sewer User Rate Ordinance
- Ordinance 1388 – Amended Pretreatment Ordinance
- Ordinance 2044 -Amended Sewer User Rate Ordinance

3.2 ADEQ Permits

3.2.1 NPDES Permit

City Corporation is authorized to discharge through NPDES permit No. AR0021768. Discharge shall be in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit. The current permit was issued September 30, 2010 and became effective October 1, 2010. The expiration of the existing permit is September 30, 2015. The entire permit can be viewed in Appendix 8. City Corp has submitted a draft to ADEQ for renewal of the permit. Once a new permit has been filed it will be updated in the CMOM.

3.2.2 No Exposure Storm Water Permit

No exposure means all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snow melt and/or runoff. No Exposure Exclusions may be obtained for discharges composed entirely of storm water associated with industrial activity in lieu of this general permit as long as all of the required conditions for applicability can be certified. A Notice of Intent form can be obtained from the General Permits Section of the Water Division. The No Exposure Exclusion Certification must be renewed 120 days after the effective date of the renewal permit. A renewal form is located in Appendix F.

3.3 Industrial Stormwater Control

City Corporation experiences significant sources of Inflow and Infiltration from industries throughout the city. The recent system wide evaluation from RJN identified the industrial subbasins as some of the highest inflow problems in the entire collection system. Industries can have illegal taps and direct storm water connections that significantly add to the wastewater flows in the sewer system. It is recommended that City Corporation make a concerted effort to prevent industrial stormwater from entering the sewer system through active monitoring, enforcement of existing ordinances, and enactment of additional ordinances or regulations for stormwater.

CHAPTER 4-MANAGEMENT

4.1 Maintenance Facilities and Equipment

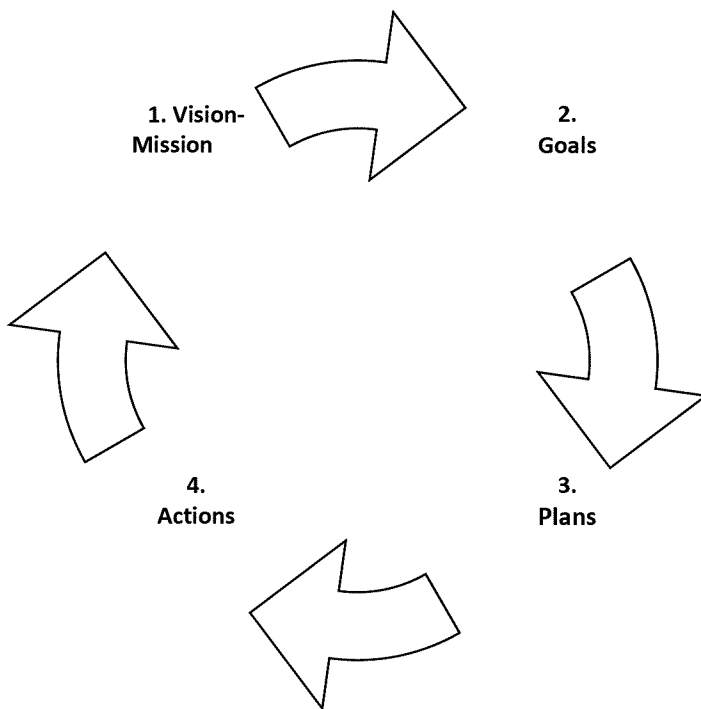
City Corporation maintains several facilities to support the collection system program. Administrative activities are conducted at the Administrative Office, which houses the Human Resources, Administration, Customer Service, and Engineering Department. The Pollution Control Works Facility houses all Pollution Control workers, Pretreatment Operations, and Laboratory Operations. The majority of facility and construction equipment is stored at the construction office or on site at the treatment plant facility. Adjacent to the Pollution Control Work-Treatment Plant is a Construction Office, which houses all Construction crews.

The Construction & Maintenance Operations uses a wide and extensive variety of equipment including backhoes, tractors, dump trucks, utility crew trucks with trailers, pickup trucks, utility vehicles, hydraulic jet cleaners, trailers, hydraulic pumps, video inspection trailers, portable video equipment, gas detectors, and safety equipment. A complete list of all Maintenance Vehicles and Major Equipment is located in Appendix G.

4.1.1 Scheduling & Strategic Planning

To schedule and maintain facilities and equipment City Corporation prints "Maintenance Tickets". Maintenance can be scheduled: every day, once a week, twice a month, once a month, quarterly, six months, and yearly. They are kept on file and can be reviewed upon request.

Strategic Planning will be done under the guidance of City Corporation's Mission-Vision Policy. The following graphic shows how the Strategic Planning Process works.



Strategic Planning defines the five-year business oriented goals and establishes a Strategic Plan to accomplish these goals. The Strategic Plan expresses the Vision of City Corporation and attempts to guide our efforts in that direction. Individual action items and action plans are developed to direct the work to be accomplished. The Strategic Planning Process is broken down in more detail in Appendix 22.

4.1.2 SCADA

The Maintenance Operations of City Corporation maintains 18 wastewater lift stations throughout the city. There are four employees assigned to monitor and repair lift stations. These lift stations are constantly monitored by the Supervisory Control and Data Acquisition (SCADA) system.

SCADA is a computer system for gathering and analyzing real time data. SCADA systems are used to monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining and transportation. A SCADA system gathers information, such as where a leak on a pipeline has occurred, transfers the information back to a central site, alerting the home station that the leak has occurred, carrying out necessary analysis and control, such as determining if the leak is critical, and displaying the information in a logical and organized fashion. SCADA systems can be relatively simple, such as one that monitors environmental conditions of a small office building, or incredibly complex, such as a system that monitors all the activity in a nuclear power plant or the activity of a municipal water system. All SCADA information is stored in Historian (a historical database) on the City Corporation's computers.

4.1.3 Replacement Parts

City Corporation maintains a construction shop with a supply yard that houses all necessary materials and equipment required to make emergency repairs. Appendix H is an inventory of all maintained spare parts. The program "AS/400" is used to keep inventory of all these spare parts. For those parts not kept in inventory, City Corp uses vendors such as River Valley Winwater, MS Wholesale, and others.

4.2 Engineering

4.2.1 Collection System Maps-GIS

Geographic Information System (GIS) technology has made the mapping and map updating process considerably more efficient. GIS is a computerized mapping program capable of combining mapping with detailed information about the physical structures within the collection system. City Corporation maintains a CAD-based map of the entire sewer system. The map is updated as additional information is received. To facilitate information storage and retrieval, the sewer system has been segmented into 27 individual basins. These basin labels were developed around 1965, and the underlying manhole numbering system was developed in 1986. A map of the basins is shown in Appendix 15.

City Corporation has successfully converted from a manually drawn, paper mapping system, to a Geographic Information System (GIS) based on aerial photography. All graphic information from the old system has been entered into the computerized mapping system, and the assignment of identifying labels to all manholes is complete.

Recognizing that significant error will likely be associated with the transfer of available graphic data (e.g. hand-drawn maps) into the GIS, City Corporation has also undertaken a program to obtain accurate positions for manholes within the system through the use of Global Positioning System (GPS) technology.

4.2.2 Construction

City Corporation's Construction Operation has crews that complete new services, maintenance, and repairs on the water and sewer system. Also crews perform Inflow & Infiltration work and repairs in the sewer system. The Inflow & Infiltration crew gets assistance from the other crews to keep up with the repairs to the sewer system. The Inflow & Infiltration crew is responsible for sewer stoppages during regular hours. City Corporation maintains 2 persons on call after hours for sewer stoppages and water leaks.

4.2.3 Developer Funded

City Corporation is involved with several Developer Funded Projects. The designs are reviewed by City Corporation staff for approval. Once approved, the construction site is supervised by qualified personnel to ascertain that the construction is in accordance with the plans and specifications. All new lines are televised and all new manholes are vacuum tested.

4.2.4 Construction/Recording Procedure

- Retrieved all drawings from Russellville and Engineers
- Labeled all with a numbering system (Example: Year-project name)
- Scanned all drawings
- Listed in an access database for easy searching and usage

4.3 Safety Program

The Safety Division is administered by the Safety Coordinator. The Safety Division is responsible for:

- Safety training
- Safety inspections
- Accident investigations
- Development of emergency response procedures
- Documentation of training, sampling, inspections, and medical information conducted by the Safety Division
- Safety Notices
- Communication of relevant safety information to all employees

4.3.1 Safety Procedures

Safety rules are written rules describing required practices and procedures to follow for performing routine and non-routine activities in a safe manner. City Corporation personnel are responsible for familiarizing themselves with all safety rules and are mandated to follow all safety rules in the performance of their daily activities while at City Corporation's facilities or when representing City Corporation off site. Supervisors are responsible for: informing, explaining, and publicizing all safety

rules to their personnel; enforcing observance of all safety rules by personnel; and ensuring each employee receives a copy of the safety rules. To view the Safety & Health Manual in full see Appendix J.

4.3.2 Vehicle Safety

City Corporation maintains an accurate log of all reportable accidents, both in the HR department for workers comp, and in the Safety Manual binder completed by the safety coordinator. All injuries have an accident investigation sheet completed and filed with the accident report. A chart of injuries with name, department, date, and type of injury listed is on file with the safety coordinator. The following are related to the safety program:

Appendix K- Vehicle Accident SOP (Standard Operating Procedures)

Appendix L- Parked Traffic Cone Procedure

Appendix M- Cone Positioning

4.3.3 Pharmaceutical Take-Back Program

City Corp assisted in the development of a new Pharmaceutical Take-Back Program. City Corp purchased the Drug Terminator incinerator and donated to the River Valley Operation Medicine Cabinet. It is our understanding that it is the second full-time program in the state. The Drug Terminator poster can be viewed in Appendix N. The Proper Drug Prescription Disposal Guidelines can be viewed in Appendix O.

4.4 Emergency Disaster Response Plan

Disasters/Emergencies that are likely to occur in the service area that are addressed are: earthquake, major fire emergencies, water outages do to loss of power, localized flooding, water contaminations and acts of sabotage. City Corporation has developed a COOP (Continuity of Operations Program). A team is currently working on a comprehensive emergency management plan that will be completed and in place by the end of the year.

4.5 City Corporation Master Plan 2003

There were several locations in the last master plan (2003) effort that reflected similar results and inadequate deficient areas as the 1997 Wastewater Collection System Master Plan. Flow data may have limited the accuracy of these collection system models. The master Plan recommended that City Corporation perform and I/I evaluation of its collection system and start a Clay Pipe replacement program. Improvements to Prairie Creek Pump Station, Pump Stations "A", "B" and 23rd St Pump Station were also included in the report. Because of the age and limitations of the existing 2003 Master Plan, City Corporation is considering the current SSES efforts and resulting data as the new comprehensive Master Plan for the sewer system. City Corporation is currently involved in a system wide flow study and extensive Sanitary Sewer Evaluation Studies throughout the system.

CHAPTER 5-OPERATIONS AND MAINTENANCE

Collection system operation and maintenance (O&M) consists of inspection, evaluation, preventative maintenance, and cleaning to maintain flow and mitigate inflow and infiltration. O&M varies by the equipment type, condition, age, and operating history. Chapter 4.1 describes City Corporation's maintenance equipment. Table 5-1 is a baseline O&M schedule. However, periodic factors may necessitate a more frequent O&M schedule for individual components. Appropriate corrective actions or temporary mitigation measures are initiated based upon the findings of the routine O&M activities.

Table 5-1: Collection System Routine Maintenance Schedule

Description	Known Problems/Issues	Every Other Week	Monthly	Semi-Annually	Annually	Every 5 years
Restaurant/Apartment Areas	Routine FOG issues	Monitor Line	Clean			Assess condition
Lines near Streams or Creeks	No known problems, but could be a larger source of I/I			Walk lines and visually inspect manholes for evidence of surcharging	Clean and Televisе lines	Assess condition
Lines in remote areas	No known problems but could present large I/I sources if undetected			Walk lines and visually inspect manholes for evidence of surcharging	Clean and Televisе lines	Assess condition
All other lines in system	No known problems					Clean and Televisе lines, assess condition

5.1 Critical Components



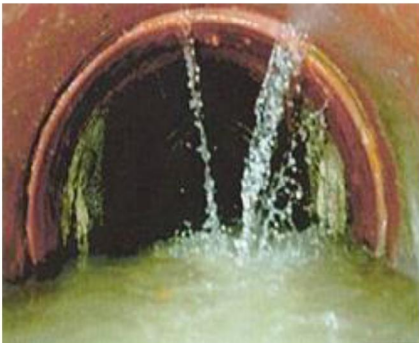
Grease-Grease and grease like products can be significant causes of sewer overflows. Restaurants and industrial facilities can discharge grease as part of their normal sanitary flows that can lead, in time, to blockages, backups, and overflows. The discharge of fats, oils, and grease (FOG) are regulated through the City Corporation FOG program, however, backups can sometimes occur. Typically, areas in which there is heavy industrial activity or large numbers of restaurants will be regularly monitored for accumulations of fats, oils, and grease (FOG).



Stream Crossings-Gravity sewers follow the natural topography of the land which often leads to stream bottoms. Several miles of City Corporation's collection system were constructed along streams making them critical components requiring greater monitoring. Also, several areas within the system are isolated from population centers and as such an overflow could go undetected for an extended period of time. These areas will be monitored by the Inflow & Infiltration crew to prevent an undetected overflow.



Deteriorating Sewer System- A significant amount of Russellville City Corporations sanitary sewer pipes are beyond their designed life. Deteriorating pipes are a major component in the operation and maintenance of the system. Planning and funding for long-term sewer rehabilitation and replacement projects will help address this critical component.



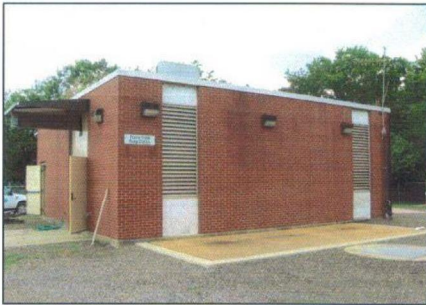
Infiltration and Inflow (I/I)- Rainfall and occasional snowmelt can infiltrate through the ground into leaky sanitary sewers. Roof drains connected to sewers, broken pipes, or poorly connected sewer service lines are also large contributors of I/I. Smoke Testing and Dye Testing will help to identify these areas of concern.



Undersized System-Undersized Force Mains or Outfall lines can cause a major problem in a Sanitary Sewer System. Through the use of Hydraulic Modeling and engineering tools the system shall be designed to handle the system flows without an overflow.



Pipe Failures-Pipe failures can result from cracked pipes, broken pipes, or blocked pipes. Identifying these failures before they occur through smoking or televising will help to prevent overflows and stoppages.



Prairie Creek Lift Station

Pump Station Failures-Pump failures, power failures or inadequate wet well capacity can cause an overflow. Power backup generators and scheduled O&M on the Pump Stations will help to prevent these overflows.

5.2 Collection System

The Russellville wastewater collections system consists of approximately 181 miles of publicly maintained gravity sewer ranging in size from 6" to 36" in diameter, approximately 3651 manholes, 18 lift stations of various pumping capacities and 18.2 miles of force main ranging in size from 2" through 48" in diameter.

5.3 Infiltration/Inflow Control

City Corporation has a more detailed and systematic program to address the infiltration/inflow issue through the completion of a city wide wastewater flow-monitoring program. This effort resulted in an estimate of sanitary flow, infiltration, and inflow for each of the 27 basins within the City. This study also identified the basins in which I/I reduction was deemed to be most cost-effective. This work serves as the basis for direction of the City Corporations infiltration and inflow reduction efforts.

An Inflow & Infiltration (I &I) crew was re-established at City Corporation in 2010. Currently staffed by 3 employees, there goal is to identify and mitigate sources of infiltration and inflow into the system. City Corporation has adjusted its approach to infiltration/inflow reduction by the following:

- Re-Establishing an I/I Program
- Developing a qualified crew
- Equipping the Crew
- Supporting the I/I team

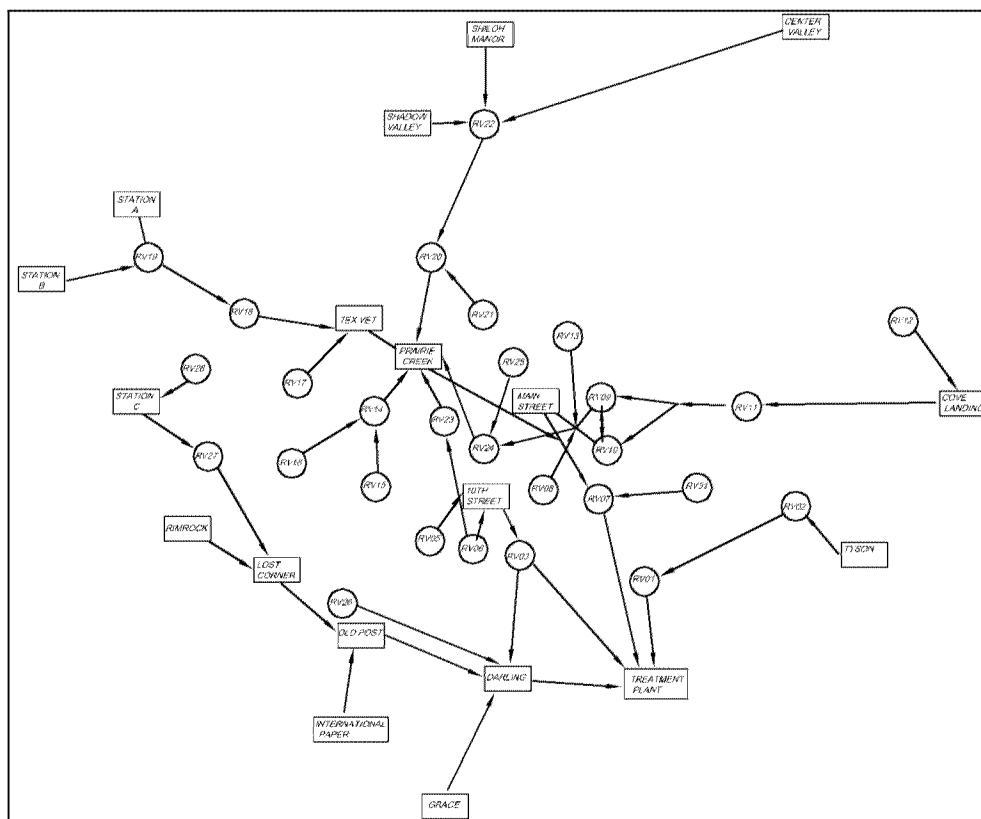
It is anticipated that an expansion of I/I reduction efforts, as outlined above, will be effective in reducing peak flow rates.

5.4 Lift Stations

5.4.1 Operation & Monitoring

The collection system includes 18 lift stations to move sewage from low elevation areas to higher elevation areas. Two (2) of the pump stations have auxiliary power with the remaining seventeen (16) capable of accepting a portable generator. All 18 lift stations have Genset quick connections installed. Fifteen of the eighteen stations have full Supervisory Control and Data Acquisition (SCADA) systems in place. SCADA system generates and stores critical operational information, such as pump run times, wet well status, power status, and other operational data. Utilizing advanced radio technology with extensive functionality, the system provides remote operational control of the facilities, a benefit during emergency or other abnormal conditions. The remaining four stations have notification by phone line. Periodic loss of power may occur due to storms and electrical grid equipment failures. The lift stations have limited storage capacity and as such are subject to overflows during a power loss. Therefore, the following lift stations are considered critical components due to a lack of auxiliary power and require more frequent monitoring: Tyson, Center Valley, Shiloh Manor, International Paper, and Shadow Valley. Please refer to Table 5-2 for the Pump Station Routine Maintenance Schedule. A basin flow diagram indicating direction of flow from one basin to another including pump stations is shown on Figure 5-1.

Figure 5-1: Basin Flow Diagram



5.4.2 Preventive & Routine Maintenance

Responsibility for lift station maintenance is divided among four employees. The removal of grease from each pump station is done at least twice a year. All equipment is to be maintained in accordance with the manufacturer's specifications. In addition, the following maintenance activities will be conducted:

Table 5-2: Pump Station Routine Maintenance Schedule

Description	Alarming /Known Issues	Daily	Weekly	Monthly	Annually	Every 5 years
Main St. Prairie Creek	Backup power available, full SCADA, no known issues – Large Flow Stations	Monitor SCADA Information	Check station for problems including security, Record pump pressure and pump run times	Check and record motor amperage, check mechanical and electrical, operate backup generator, check and top off all fluids	Exercise all valves	Disassemble and clean internal pump components, check impeller, disassemble and clean check valves, assess condition
Cove Landing International Paper South Frankfort (Darling) Tex Vet Old Post	No known problems, has back up power and SCADA or other notification system	Monitor SCADA information	Check station for problems including security, record pump pressure and run time	Check and record motor amperage, check mechanical and electrical connections, operate backup generator, check and top off all fluids	Exercise all valves	Disassemble and clean internal pump components, check impeller, disassemble and clean check valves, assess condition
Center Valley Rimrock Shadow Valley Tyson Grace Shiloh Manor Lost Corner Station A Station B Station C 10 th St.	SCADA or other notification system, no standby power but have the capability of backup power by a portable generator	Monitor SCADA information	Check station for problems including security, record pump pressure and run time	Check and record motor amperage, check mechanical and electrical connections	Exercise all valves	Disassemble and clean internal pump components, check impeller, disassemble and clean check valves, assess condition

5.4.3 Lift station details

Table 5-3 lists the lift station name, pump manufacturer, pump model, number of pumps, pump horsepower, force main diameter, and wet well dimensions.

Table 5-3: Lift Station Details

Name	Pump Manufacturer	Pump Model	# Pumps	Horsepower per Pump	Force Main Diameter	Wet Well Dimensions Diameter (ft)	Wet Well Dimensions Depth (ft)
10 th Street	Hydromatic	S6A300M4-4	2	30	10	13	22.5
Lift Station A	Hydromatic	UNK	2	25	8	6	21
Lift Station B	Hydromatic	S4Q3000M4-4	2	30	8	6	21
Lift Station C	Hydromatic	S4T1000M4-4	2	100	6	6	16
Center Valley	Goulds	1GA87J4BD	2	5	4	4	10.6
Cove Landing	Hydromatic	S4B200M4-4	2	20	8	6	21.5
South Frankfort (Darling)	Hydromatic	S6A4000M4-4	2	40	12	12	24
Grace	Pumpex	UNK	2	30	8	8	17.25
International Paper	Myers	4VC 150M4-43	2	15	6	6	11.1
Lost Corner	Myers	6VC 150M6-23	2	15	12	6	10
Main Street	Allis-Chalmers	1-69945	3	1-25HP / 2-50HP	30	11X9.4	22
Old Post	Myers	6VC 150M6-23	2	15	12	6	17.5
Prairie Creek	Flyght	3306.735	3	245	24	30X11	29.4
Rim Rock	Myers	4WHV50M4-21	2	5	6	5	11
Shadow Valley	Hydromatic	S4M750M3-4	2	7.5	4	6	15.1
Shiloh Manor	Myers	4VHA	2	10	4	6	12
Tex-Vet	Hydromatic	S8L1500M4-6	2	50	15	12	23.2
Tyson	Hydromatic	S4P1500M3/4-4	2	15	6	6	15.8

Table 5-4: Lift Station Pumping Capacity

Name	Total Dynamic Head	Pump 1 Flow Rate (gpm)	Pump 2 Flow Rate (gpm)	Pump 3 Flow Rate (gpm)	Pump 1 & 2 Flow Rate (gpm)	Pump 2 & 3 Flow Rate (gpm)
10 th Street	86	1,103	1,158	n/a	1,262	n/a
Lift Station A	102	261	310	n/a	395	n/a
Lift Station B	125	390	360	n/a	Low flow	n/a
Lift Station C	197	153	Not operating during visit	n/a	Not operating during visit	n/a
Center Valley	93	46	35	n/a	49	n/a
Cove Landing	105	202	219	n/a	234	n/a
South Frankfort (Darling)	76	835	763	n/a	1,108	n/a
Grace	134	211	242	n/a	267	n/a
International Paper	96.4	462	392	n/a	Not configured for dual pump	n/a
Lost Corner	75	696	564	n/a	942	n/a
Main Street	36	Not operating during visit	808	924	n/a	1,872
Old Post	45.2	852	948	n/a	1,140	n/a
Prairie Creek	98	2,123	2,293	Not operating during visit	3,976	n/a
Rim Rock	45	116	151	n/a	Not configured for dual pump	n/a
Shadow Valley	40	102	91	n/a	81	n/a
Shiloh Manor	96	127	124	n/a	137	n/a
Tex-Vet	50	1,520	1,595	n/a	2,256	n/a
Tyson	82	228	191	n/a	249	n/a

5.5 Force Mains

5.5.1 Air Release Valves

City Corporation maintenance crews operate air release valves every six months or more often as needed to release air that may accumulate in the system. Any accumulation is removed during the operation of the air release valves. Elimination of air entrainment in interceptor force mains is absolutely essential to reduce corrosion and failure of force mains due to sulfuric acid attack. Air entrainment in interceptor force mains is the result of improper design and/or operation of pump stations since air can only enter a force main via a pump station. Air entrainment in interceptor force mains must be eliminated by proper design and/or operation of pump stations and force mains as follows:

5.5.2 Operating Practices

- Minimize wet well turbulence and splash.
- Eliminate free discharge or falling jets from incoming sewers and force mains by:
 - Raising minimum wet well levels to minimize or eliminate drops.
 - Directing incoming flows below the minimum wet well level using chutes.
 - Directing incoming flow away from pump suction lines.
 - Relocating air relief discharges, sump pump discharges, and bubbler control discharges away from pump suction lines.
- Eliminate vortex formation at pump suction lines by raising minimum wet well level to submerge pump suction lines.
- Operate all installed force main air vents periodically with a frequency depending upon experience and air accumulation at each air vent.
- Install and operate additional air vents where needed and not originally installed.
- Pump Station preventative maintenance tickets are developed through MVP Plant software, and assigned to appropriate employee.

5.5.3 Design Practices

- Minimize wet well turbulence and splash.
 - Establish wet well levels as high as possible with respect to the incoming sewers and force mains.
 - Avoid free discharge or falling jets from incoming sewers and force mains onto the wet well liquid surface.
 - Locate air relief discharges and sump pump discharges as far away as possible from pump suction inlets.
 - Select force main profile to minimize the number of high points.
 - Provide air vents at profile changes from an upward slope to a relatively flat or downward slope
 - Provide air reliefs at one half-mile intervals on long ascents, descents or horizontal sections between defined high points.
-

5.6 System Rehab

Routine maintenance will identify repair needs within system components. The appropriate repair for any given problem is dependent upon the nature of the problem and cannot be prescribed in this plan. However a priority hierarchy has been established to structure when and how repairs are to be accomplished. The hierarchy is based upon identifying and repairing critical components first. Critical components are parts of the collection system which if failure occurs will result in system failure and sewer overflow. Such items may include failure of a pump, failure of a backup generator to start, or obstruction in the sewer line. Other problems identified by maintenance activities will be less acute and can be repaired on a lower priority basis. This may include loose or missing manhole bricks, broken manhole covers, lift station lighting, etc. When normal maintenance activities identify the need for component repairs or when problems are brought to the attention of the system by customers or others, the problem and corresponding repair will be assigned a priority ranking based on the following hierarchy. The response time and repair time goals are stated in the hierarchy. The goals shall be monitored and evaluated annually with the plan review.

5.6.1 Main Lines

City Corporation must identify and prioritize all structural deficiencies and set short-term and long-term rehabilitation actions to address each deficiency. Overall, the utility must provide a structured approach for gathering, storing and analyzing costs related to the planning, engineering, design, construction, start-up, operations, maintenance, energy use, rehabilitation, refurbishment and disposal of its assets. The structured approach is necessary to have the information available when making asset management decisions.

5.6.2 Manholes

Manholes are underground chambers to provide man-entry access to maintain utility pipelines. They usually are subjected to underground corrosive environments and traffic loads which accelerates the degradation process of these structures. As they are underground and out of general sight, degradation of these structures is not usually monitored unless a collapse or problem occurs.

With the advancement of pipeline rehabilitation techniques and technologies, defects and problems in manholes are now receiving increased attention. Engineers and municipalities have realized the benefits of rehabilitation repairs to manholes. As leaks which are prevented from repaired pipes are only re-directed to the next weakest part of the system which are usually the manholes. As manhole rehabilitation is an integral part of the whole pipeline rehabilitation process, neglecting it and only concentrating on the pipe, just shifts the problem and defeats the rehabilitation process. A benefit to manhole rehabilitation is that it is usually the easiest and the least costly repair process. The restoration of these manholes is done in less time that it would take to replace them and for a fraction of the cost. It can be carried out within two to three hours without much disruption to above ground activities and environment. By rehabilitation of these manholes, cities are able to prolong the lifespan of the structures. Appendix 2 contains an example of a Manhole Inspection form. It is recommended that Standard Specifications and Details for Manhole Rehabilitation should be included in the updated Standard Specifications and Details to be completed on a future date.

5.6.3 Scheduling

Table 5-5: Collection System Response and Repair Priority Hierarchy

Problem	Priority	Response Time	Action	Repair Time Goal
Active Sewer Overflow	1	Within 1 hour of receiving report	Stop overflow, return system to normal operation	Within 4 hours of arriving on site
Failure of Critical Component, Overflow/Bypass Will Occur if Not Repaired	1	Within 1 hour of receiving report or discovering problem	Repair or replace component, return system to normal operation	Within 4 hours of arriving on site
Unsafe Condition Poses Risk to Public or Employees	1	Within 1 hour of receiving report or discovering problem	Mitigate and repair to eliminate unsafe condition	Mitigate risk within 2 hours of arriving on site, repair within 8 hours if public risk, 7 days if employee risk
Evidence of System Surcharging and Intermittent Overflow	2	Within 1 day of receiving report or discovering problem	Clean sewer line and/or check for proper downstream pump station operation and repair as needed. Re-evaluate problem following cleaning/repair.	Within 8 hours of arriving on site for cleaning and station repairs. Initiate I&I evaluation within 30 days
Failure of Backup Power System	2	Within 3 days of receiving report or discovering problem	Repair or replace equipment as needed	Within 10 days of response
Evidence of Surcharging, No Overflow Evidence	3	Within 1 week of receiving report or discovering problem	Clean sewer line and/or check for proper downstream pump station operation and repair as needed. Re-evaluate problem following cleaning/repair.	Within 8 hours of arriving on site for cleaning and station repairs. I&I evaluation within 90 days
Failure of Monitoring or Measuring Equipment	3	Within 3 days of receiving report or discovering problem	Make repairs or replace as needed	Repairs within 7 days of response. Replacement within 30 days.
Evidence of I&I Non-surcharging	4	Complete evaluation of cause within 90 days of discovering problem.	Make corrective actions based on I&I evaluation findings	Within 360 days
Component failures non-critical and general non-routine maintenance	5	Evaluate repair/maintenance need within 180 days of discovering problem	Make repairs	Within 360 days

Chart 5-1: Mainlines Rehabbed

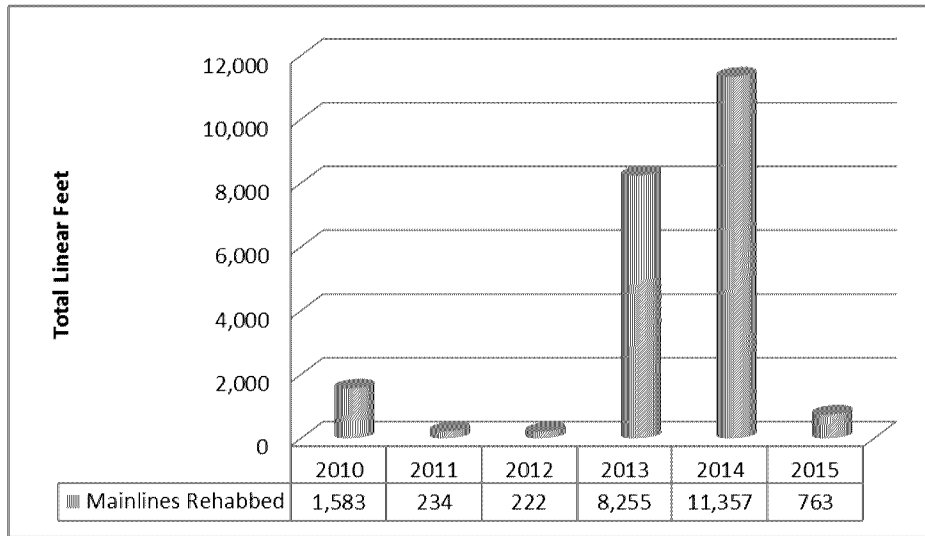
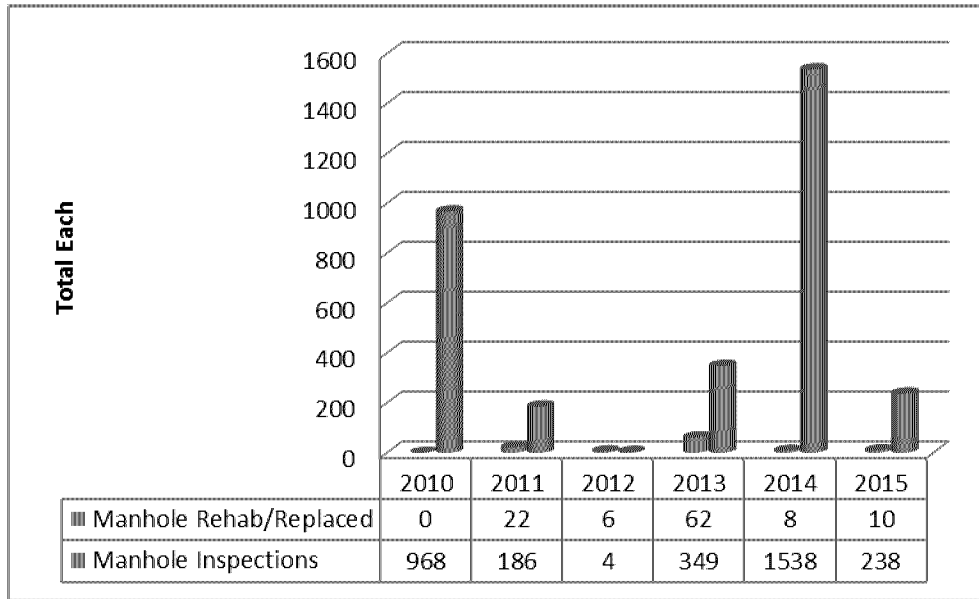


Chart 5-2: Manholes Rehabbed/Inspected



5.6.4 Service Lateral Repairs

City Corporation owns, maintains, and repairs all of the underground water and sewer lines up to the customers' property line. The customer owns and is responsible for the installation; maintenance, and repair of everything from the property line in the case of sewer service into the house. If a stoppage

occurs on the customer's portion of the line, the customer must have the leak repaired. Service Line Ordinance 2060 addresses the ownership of the service lateral, and can be found in Appendix D. An inspection is done on all service lines new or repaired. The inspector will inspect the sewer service connection between the house and the property line, and it must be installed according to Arkansas State Plumbing Code standards. The Arkansas State Plumbing Code standards states that the pipe used must be Schedule 40 piping and at least 4" in diameter with a fall of 1% or 1/2" every 10'. There also has to be a 2-way clean out installed within 3' of the building and the line has to be tested for leaks with water or air to pass inspection.

5.7 Cleaning/Television Inspection

Pipeline hydraulic cleaning and television inspection are performed as a part of routine maintenance in areas where deposition issues are chronic or in response to immediate flow problems. The hydraulic cleaning is effective in reducing material that becomes deposited in lines with minimal slopes and in areas of high commercial activity. Television inspection is an aide in identifying lines with obstructions, with corrosion problems, and with potential failure possibilities. Both cleaning and television inspection are performed by crews from the Construction Department.

City Corporation will clean the sanitary sewer per the baseline maintenance schedule with the equipment listed below.

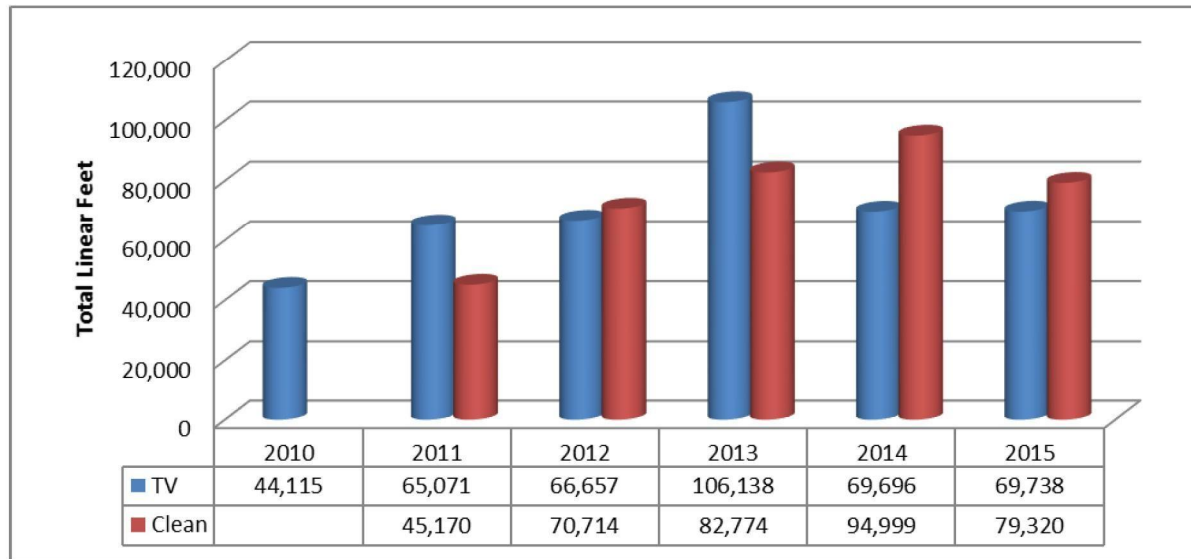
- (2) Jetters
- (1) Jetter/Camera Trailer
- (1) Tiger Vac
- (1) Easement Machine

Additional cleaning equipment and manpower are available via contract operations with several area vendors. City Corporation does not anticipate using contract services unless the following conditions exist:

- system equipment inoperable for extended period
- manpower shortage
- unusually high cleaning demand due to unforeseen circumstances
- large flows or difficult conditions requiring specialized expertise or equipment

RJN has begun to assess the condition of all City Corporations facilities and recommend upgrades, as necessary. As part of enhancing the integrity of City Corporations network of gravity mains, RJN uses a CCTV van to inspect parts of the gravity pipelines. CCTV inspection is a non-destructive, proactive approach to evaluate the pipeline infrastructure and is required to assess the condition of the pipeline interior. A CCTV inspection may be utilized to:

- Inspect conditions and determine the location of problem areas such as pipe or joint separations, drops, ruptures, leaks, obstructions, deterioration, pipe misalignment, and root intrusions.
- Locate infiltration and inflow sources.
- Look for damage to sewers caused by excavation and construction.
- Search for unrecorded connections, such as illegal taps.
- Evaluate effectiveness of pipeline repairs, replacement, and/or rehabilitation within the sewer system.
- Assess pipeline condition of new installation before the warranty period ends.

Chart 5-3: Cleaning/Television Inspection Completed

5.8 Root Control

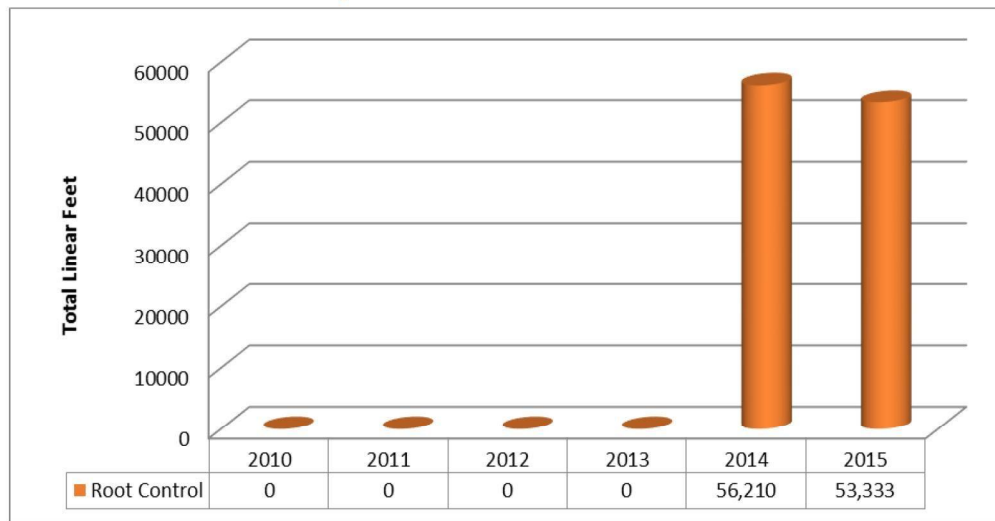
The intrusion of roots into sewer lines, particularly collector sewers, is always going to be an ongoing concern for City Corporation. Extensive root intrusion, if allowed to continue without attention, can result in reduced system capacity and, ultimately, blockage of the pipe. Problems associated with root intrusion are sometimes exacerbated by the presence of grease in the flow stream, which tends to attach to any roots present and cause more rapid impact on flow conditions.

City Corporation has obtained the service of Duke's Root Control, Inc. to apply a root control product to the collection system. Duke's will apply a product called "Razeroooter II", which contains the active ingredient diquat dibromide ("diquat"). "Razeroooter II" is the only diquat-based, sewer root control product that is registered with the US Environmental Protection Agency (EPA Registration No 64898-8) and the Arkansas State Plant Board. City Corp treated 56,210 linear feet of the collection system in 2014. The following is a breakdown of the targeted areas:

- 26,586 linear feet of 6" pipe
- 24,828 linear feet of 8" pipe
- 4,796 linear feet of 10" pipe

City Corp treated 53,333 linear feet of the collection system in 2015. The following is a breakdown of the targeted areas:

- 26,912 linear feet of 6" pipe
- 17,363 linear feet of 8" pipe
- 5,127 linear feet of 10" pipe
- 2,036 linear feet of 12" pipe
- 1,895 linear feet of 15" pipe

Chart 5-4: Root Control Completed

5.9 Grease Control

Ordinance 1075 was created in 1983. Sec. 6 of the ordinance addresses grease. It states “Grease, oil, and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Superintendent, and shall be located as to be readily and easily accessible for cleaning and inspection.” The entire ordinance is located in Appendix D.

City Corporation currently has 171 grease traps. Each food establishment that has a grease trap is put on an inspection schedule for cleanings. The schedule is located in Appendix R. City Corporation is in the process of amending the current grease ordinance to improve the FOG program. A current grease trap detail drawing is located in Appendix U.

5.10 Aerial Stream Crossing Inspection

City Corporation operates and maintains approximately 181 miles of gravity sanitary sewer with approximately 73 aerial sewer stream crossings of six-inch size and above. Parts of the system are over fifty years old.

City Corporation has developed a stream crossing log sheet that they use when inspecting aerial stream crossing. The log sheet and current findings are located in Appendix 9. City Corporation had developed an aerial sewer stream crossing inspection and operation & maintenance program. This program includes an inspection schedule with forms to identify required preventive and routine maintenance for City Corporation’s aerial sewer stream crossings.

The goal of the inspection program is to inspect, remove debris, and repair as required, all major sewer trunk crossings six inches or more in diameter within the major drainage basins, and then perform a scheduled, regular, preventive maintenance inspection. A copy of a sample inspection sheet is included in Appendix 6. City Corporation will use their Record System to store all inventory and inspection data, all digital photographs,

and to generate preventive maintenance work orders for periodic inspection of all sewer aerial crossings. From an initial inspection, each crossing will be graded to determine the frequency of future inspections. Larger line crossings suspended over major streams will be inspected more frequently than smaller line crossings that may only be partially exposed in smaller streams. The digital photographs from the initial inspection will be compared to subsequent inspections and photographs to adjust the inspection frequency in addition to the inspection grade. The work order system will automatically generate work orders to conduct repeat inspections.

5.11 Pipe Patch

City Corporation has bought a Pipe Patch “No dig” pipe repair system. A copy of the Brochure is located in Appendix 23. This allows City Corporation to make internal point repairs to pipes sized 6”-10” in diameter.

5.12 Treatment Facility

Pollution Control Works used to be located on the NW part of Russellville, around the Arkansas Tech area. However, around 1963, the Corp of Engineers developed the McClellan Kerr Navigation System which involved the building of a dike to keep Lake Dardanelle from flooding Russellville. This caused the water and wastewater utility to relocate their facilities to the southeast side of town. The Pollution Control Works (PCW) design capacity is 7.3 MGD with an additional 21 MG equalization basin for wet weather flows. The breakdown of the daily flows for the year 2015 are located in Appendix 11. Appendix 16 shows the layout of the treatment plant:



POLLUTION CONTROL WORKS

404 Jimmy Lile Rd.
Russellville, AR 72802

Receiving Stream: Whig Creek then into Arkansas River

Operation Startup: 1964

Capacity (Design Flow): 7.3 MGD

Average Daily Flow (2015): 6.56 MGD

Level of Treatment: three biological
treatment processes

Solids Management: Aerobic Digester with
Land Application

Disinfection Method: Chlorine Contact Chamber

Effluent Discharge Limitations: (reported monthly to the Arkansas Department of Environmental Quality):

Effluent Characteristics	Discharge Limitations Concentration Monthly Average	Discharge Limitations Concentration Daily Maximum
BOD	10 mg/L	15 mg/L
TSS	15 mg/L	22.5 mg/L
pH	6.0 S.U. Min to 9.0 S.U. Max	
Fecal Coliform	1000/100 mL	
Dechlorination	<0.1 mg/L	

Interim Limits: (established by CAO):

Effluent Characteristics	Discharge Limitations Mass (lbs/day) Monthly Average	Discharge Limitations Concentration (mg/L) Monthly Average	Discharge Limitations Concentration (mg/L) 7-day Average
Nitrates (NO ₃ -N)	919.3	15.1	20.4
Total Residual Chlorine (TRC)	N/A	0.55 (Inst. Max)	

5.13 Private Defects

In 2008, City Corporation started the "I&I Cleanout Cap Program". The goal of the program was to work through each pump station basin by smoke testing to identify broken or missing cleanout caps, and private service line defects throughout the entire collection system. The two-man I&I crew carried a supply of cleanout caps and replaced missing caps as they were discovered. A record was kept so that they could confirm each cap that was installed. The first cap for a particular residence would be installed for free; any subsequent caps installed during follow-up investigative smoke testing leads to a \$50 direct bill to the customer. The routine of the smoke testing operation was to first send out door hangers that gave the customers notification of the upcoming smoke testing to be performed. In 2010, City Corporation changed from door hanger notifications to newspaper ad notifications in hopes to add more production days for smoke testing and finding defects. The defects were marked in green paint, and added to a log for future repairs. The private defect list can be found in Appendix S.

5.13.1 Private Defect Program SOP

City Corp has developed a new program to help locate and rehab their private defects. The following is the procedure followed:

Send first letter and any attachments detailing defect with a 30 day repair request- If the owner notifies City Corp, we will work with them toward the goal of repair. This may include further investigation or testing at the expense of the customer/owner.

Send second notice only if no contact and/or attempt has been made to repair defect within the 30 days. The second notice says they must contact us within 5 business days with a plan of action or we will disconnect services and impose a penalty. City Ordinances and Policies and Procedures are included and is sent registered mail so a signature is required.

If there remains to be no attempt of contact, then we notify the code enforcement for the city and ask them to make a courtesy contact with the customer.

Last resort is to apply a \$50 penalty to account and/or disconnect services until repairs are made.

Fees:

Camera- \$25

Smoke- \$25

Crew- \$25

Verification of repair w/o request- \$25 (forced check after first 30 days and no contact is maintained)

Verification of repair with request- no charge (if repair completed)

Verification of repair with request- \$25 (if repair is not completed)

Please understand there are circumstances that may require deviation from this process. They have to be evaluated on a case by case basis.

In all cases with the exception of circumstances that would require a B report, the customer has a minimum of 40 days before disconnection. We are only required to give a written notice of 5 business days before disconnection.

Chart 5-5: Private Defects Rehabbed

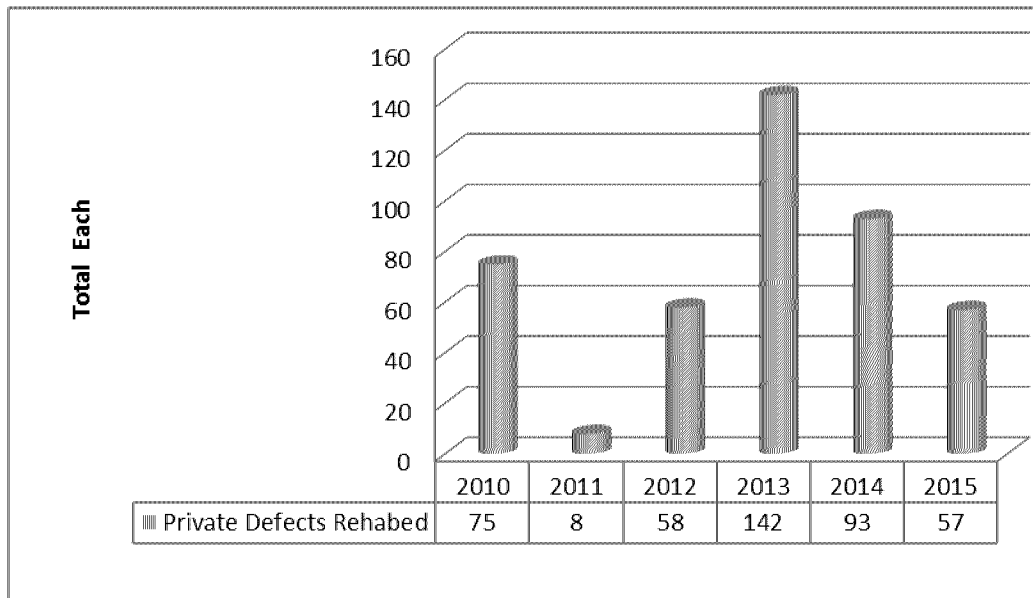
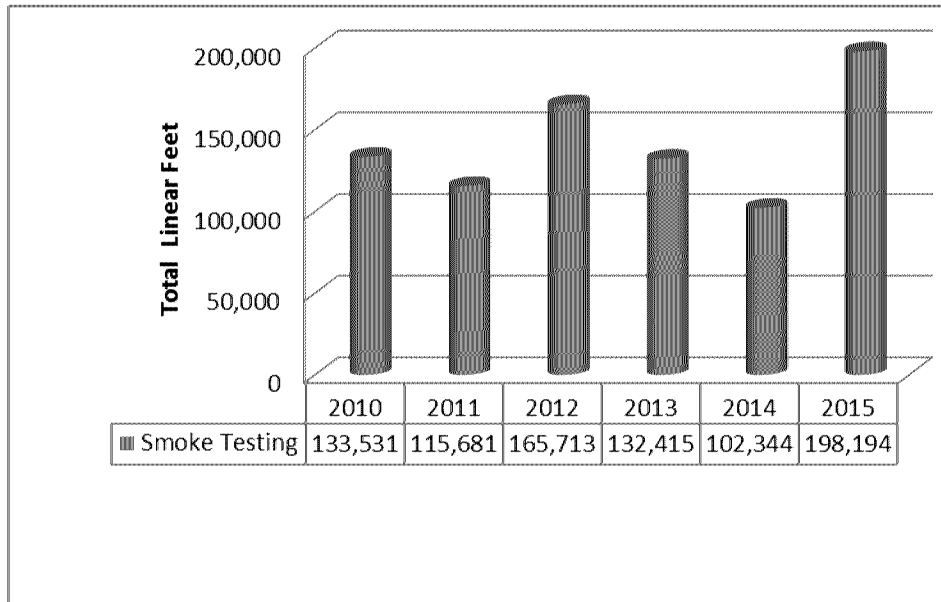


Chart 5-6: Smoke Testing Completed



5.14 Water Quality Monitoring

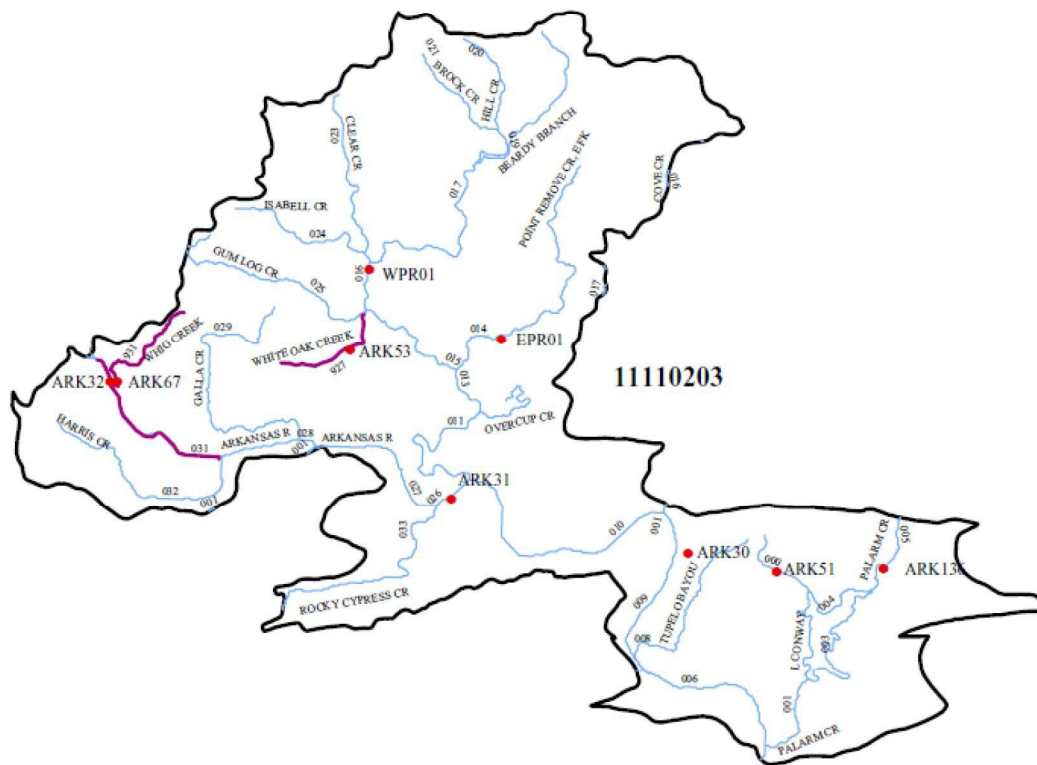
The Arkansas Department of Environmental Quality (ADEQ) has issued a report on the condition of the state’s waters. The 2010 list of Impaired Water bodies is the assessment used to determine the water quality standards throughout the state. City Corporation discharges into Whig Creek. Whig Creek is listed as an impaired water bodies (stream) with completed TMDLs. The ultimate receiving stream is the Arkansas River and it is listed as a water quality limited water bodies (streams).

The 2004 Integrated Water Quality Report by ADEQ states that “Region Whig Creek continues to be impaired by point source discharges. Both municipal and industrial discharges exist in Whig Creek. A TMDL has been completed for this water body.” The following table shows the report and the location of the sampling site.

ARK0067 Whig Creek Downstream of Russellville, AR

Parameter	Valid Data Points	Mean	Minimum	Maximum	Standard Deviation
Dissolved Oxygen (mg/L)	57	7.81	4.00	12.60	1.93
BOD5 (mg/L)	55	1.37	0.29	5.60	1.03
pH (standard units)	57	7.06	6.35	7.68	0.30
Total Organic Carbon (mg/L)	58	6.33	4.059	10.40	1.07
Ammonia as N (mg/L)	59	0.16	<0.005	1.69	0.27
NO ₂ +NO ₃ as N (mg/L)	59	8.51	0.168	23.90	4.37
Orthophosphate as P (mg/L)	59	3.48	<0.005	8.54	2.27
Total phosphorus as P (mg/L)	58	3.63	0.37	8.23	2.13
Total Hardness (mg/L)	29	56.17	17	124.00	19.09
Chloride (mg/L)	60	43.25	2.98	96.40	23.64
Sulfate (mg/L)	60	38.16	11.8	70.90	11.28
Total dissolved solids (mg/L)	47	262.99	35.5	424.50	103.15
Total Suspended Solids (mg/L)	48	48.9	<1.0	1348.00	206.77
Turbidity (NTU)	58	33.51	2.7	630.00	106.48

ARK0067 Sampling Site



5.15 Rain Gauges

Six temporary rain Gauges were installed to determine the amount of rainfall that occurred during the system wide flow monitoring study conducted by RJN Group in 2010. The temporary rain gauge locations are shown in Appendix 17. See Appendix V for Permanent Rain Gauge Specifications. In 2013, City Corporation ordered and installed eight permanent rain gauges around the city to monitor rainfall events. The permanent gauges are allowing City Corporation to track rainfall throughout the city. Furthermore, it will provide rainfall data for smaller portions of the system. City Corp will be able to isolate overflows and localized rainfall amounts at the time of the overflow. The permanent rain gauge locations are shown in Appendix 18.

Table 5-6: Temporary Rain Gauge Locations

Name	Location
RG01	2221 Skyline Dr (Western Hill Pump Station)
RG02	500 N. Glenwood Ave. (Prairie Creek Pump Station)
RG03	915 Arkansas (Steve Standridge Insurance)
RG04	404 Jimmy Lile Rd (Pollution Control Works)
RG05	2606 E Main St (Furniture Factory Outlet)
RG06	1920 N Arkansas (Station Fire Department)

Table 5-7: Permanent Rain Gauge Locations

Location
Shiloh Manor Pump Station
Prairie Creek Pump Station
10 th Street Pump Station
Lift Station "B"
Cove Landing Pump Station
Water Treatment Plant
Pollution Control Works
International Paper Lift Station

5.16 Inspection Procedures and Specifications

All Plans for proposed extensions of the sewage collection system shall be prepared by and bear the stamp of a Professional Engineer currently registered by the Arkansas State Board of Registration for Professional Engineers and Land Surveyors and shall conform to the latest edition of the "City Corporation Standard Specifications and Details and Policies and Procedures." Standard Specifications and Details are included in Appendix U. The current specifications were written in 1995 and are currently in the process of being revised. Revised standard specifications and details should be complete soon. Policies and Procedures are included in Appendix W.

City Corporation's approval of a plan for a particular sewer main extension is contingent on several standard conditions:

- The engineer of record must also submit the same plan to the Arkansas Department of Health and to any other agencies or local entities for approval. City Corporation does not submit proposed plans to regulatory agencies or local entities for approval.
- No construction is permitted on the proposed sewer main extension until City Corporation, the regulatory agencies and all local entities have approved the proposed plans in writing. In addition, approval of the Russellville City Council is required for any proposed service outside of the City limits.
- Approval of proposed plans for sewer main extensions by City Corporation is subject to the condition that all materials, construction procedures and tests are to be as specified in the latest edition of the City Corporation Standard Specifications. The only deviations from published City Corporations Standards, which are permitted, are those which are specifically approved in writing by City Corporation for particular sewer main extensions proposed.
- City Corporation inspectors do not have the authority to waive or modify City Corporations standard in the field.
- When City Corporation approves plans for sewer main extensions, the approval process does not stop with the plan approval. The City Corporation approval is with the express understanding that the engineer of record will remain responsible for the construction as shown on the approved plans, until all work is complete and the project has been " Accepted for Service" by the City Corporation.
- The engineer of record for an approved sewer main extension is responsible for advising City Corporations when construction is to begin on the proposed sewer main extensions. Please provide a minimum of 24 hours notice of commencement of construction. If construction is to be performed on a weekend, holiday or after normal working hours (8:00 a.m. to 4:30 p.m.), make arrangements in advance for a City Corporation inspector to be present.
- No permits for sewer taps will be issued for main extensions, which have not been "Accepted for Service" by City Corporation. "Accepted for Service" is defined as follows:
 1. All construction and cleanup is complete and all tests have been passed with the documentation in City Corporation files.
 2. Plans have been received by City Corporation and have been field checked and found acceptable.
 3. All appropriate agreements have been executed and filed with City Corporation. All applicable pro-rata rebates have been collected.
 4. Easements and/or street dedications have been filed for record in the Courthouse and copies furnished to City Corporation.
 5. City Corporation has by letter accepted the main extension for service and maintenance, subject only to the one-year's maintenance period.

CHAPTER 6- SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The concept of capacity for a wastewater system has two basic elements; the capacity of the wastewater plant and the capacity of the collection system. Inflow/infiltration and growth can result in wastewater flows exceeding the design capacity of either the plant or collection system or both. RJN Group has been contracted by City Corporation to complete a thorough evaluation of the capacity of the system. The Sanitary Sewer Evaluation Survey (SSES) will entail several key components to assist City Corporation with future repair efforts and hydraulic upgrades to the system. The components of this study are detailed below.

6.1 System Wide Flow Monitoring/Capacity Analysis- Phase I

Phase I of the Sanitary Sewer Evaluation Survey (SSES) includes a System Wide Inflow/Infiltration (I/I) Analysis. RJN divided the system into 27 distinct subbasins. Each subbasin was monitored through the installation of flow meters. Appendix 19 shows the locations of the flow meters. The meters were monitored and analyzed for a period of 53 days. Rain gauges were also installed throughout the system to correlate rainfall information with the resulting flow data. Areas that exhibited high amounts of I/I were listed as priority basins. These basins will be studied in more detail as described in 6.2 below.

Concurrent with the flow monitoring, RJN updated the system maps for all lines 10-inch in diameter and larger. All manholes on these lines were GPS surveyed to ensure accuracy and each manhole was inspected for signs of I/I and structural soundness. As a result of the survey information, a hydraulic model network was 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. Also included in Phase I of the SSES was a review of all 19 lift stations as discussed in 6.1.3 below.

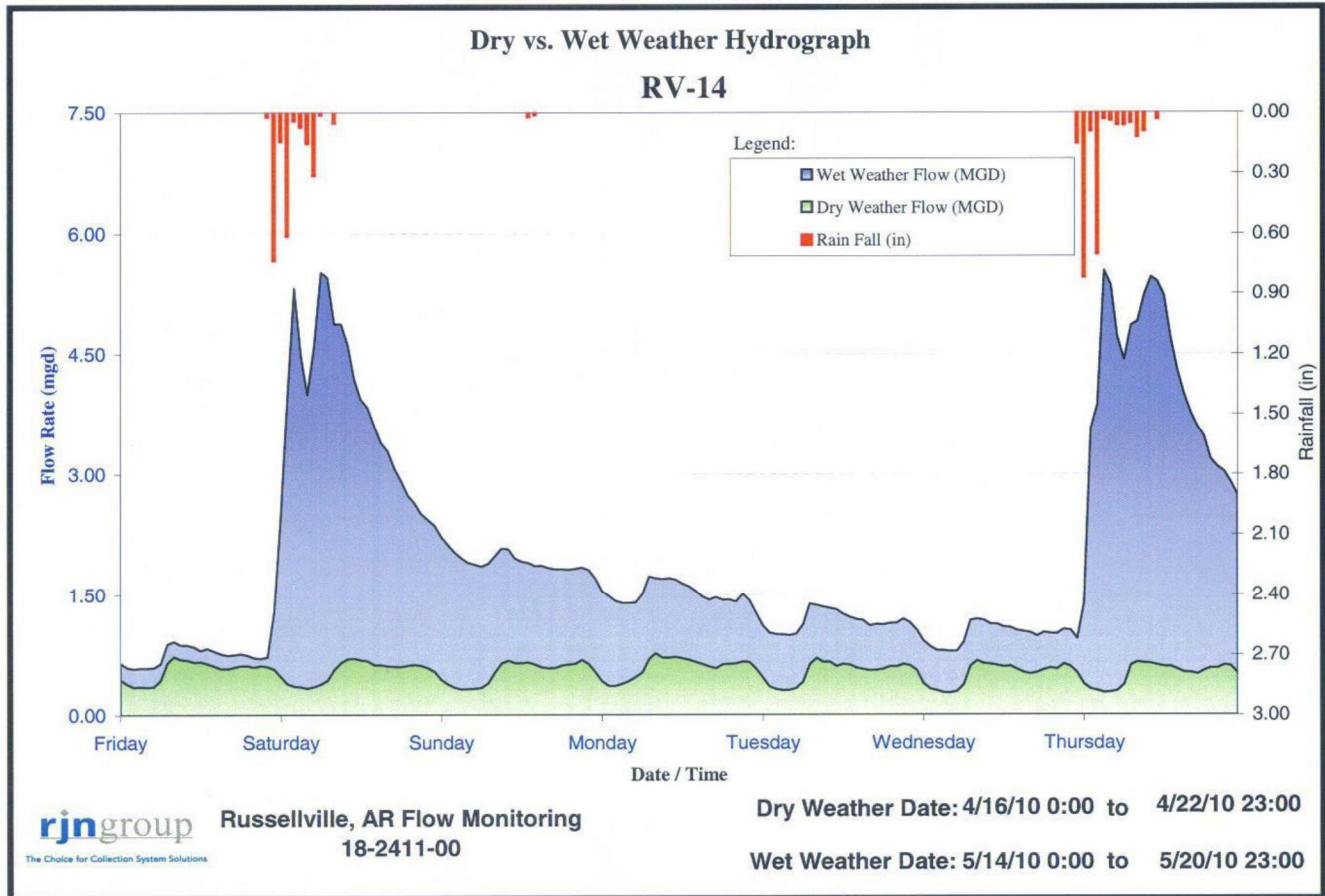
RJN has developed a detailed report for all Phase I activities. The report provides the results of the flow monitoring and capacity analysis including recommendations for further investigation. The recommendations are based on the amount of inflow and infiltration contribution from each subbasin. The I/I ranking was to be used to develop a prioritization for each basin, along with a milestone schedule for studying the high priority basins. Wet and Dry Peaking factor results of the study can be found in Appendix X.

6.1.1 Flow Monitoring

Concurrent with establishment of the I/I program, a comprehensive evaluation of I/I within the City was undertaken through a Consultant. RJN Group, Inc. performed a city-wide flow monitoring program during the spring of 2010. A total of 31 ADS flow meters were used to monitor wastewater flow from March 15, 2010 to May 24, 2010 for a period of 53 days. Six rain gauges were also installed to determine the amount of rainfall that occurred during this period. While the initial city-wide monitoring effort included basins comprising on the order of 939,871 linear feet of sewer, the follow-up monitoring effort included only about 30,000 linear feet per monitor. Each of these smaller basins was evaluated with respect to infiltration and to inflow, and a recommendation was made for each of the parameters. In general, if an area was considered cost-effective for inflow removal, manhole inspection, smoke testing, dye testing, and repair were recommended. If an area was considered cost-effective for infiltration removal, manhole inspection, sewer cleaning, television inspection, and repair

were recommended. For areas where both infiltration and inflow appeared excessive, all of these activities were recommended. Figure 6-1 is an example of Peak flow during a rain event.

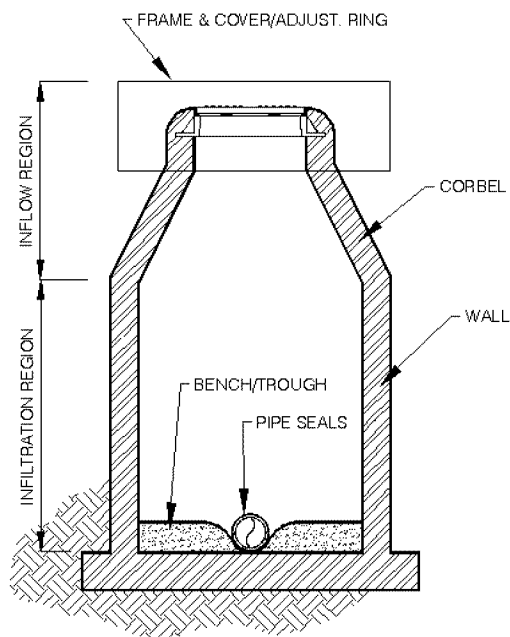
Figure 6-1: Hydrograph



6.1.2 Manhole Inspection

Manhole inspections were performed on selected manholes to verify system mapping, collect coordinates and invert elevations for construction the hydraulic model. All manholes were physically descended and visually inspected unless deemed unsafe or unable to descend. All manholes were inspected for defects and restrictions. Figure 6-2 shows the main parts of a standard manhole.

Figure 6-2: Parts of a Standard Manhole



The following data was recorded for each manhole:

- Location and identification number
- Potential for ponding on manhole cover
- Cover type, fit, distance above or below grade, evidence of inflow
- Frame adjustment, type and condition of seal, evidence of inflow
- Corbel construction, condition, evidence of inflow
- Wall construction, condition, evidence of infiltration
- Bench/trough construction, condition, deposition, evidence of infiltration
- Pipe seal condition, evidence of infiltration
- Step and rung conditions
- Manhole inside diameter
- Surcharging or evidence of surcharging
- Indication of groundwater level at time of inspection
- Maintenance problems
- Line segment diameter and direction
- Line segment observations from manhole

Approximately 700 manholes serve as access structures for 10 inch and larger diameter pipes and selected 8 inch diameter pipes and were selected for inspection. RJN completed 659 of the 698 manhole inspections attempted and identified 11 inaccessible, 2 buried, and 26 not found manholes. Table 6-1 shows the findings in more detail.

Table 6-1: RJN Manhole Findings

Basin	Total	Inspected	Not Found	Buried	Inaccess- sible
RV01	16	14	2	0	0
RV02	42	39	3	0	0
RV03	32	29	3	0	0
RV05	21	20	0	1	0
RV07	96	93	1	0	2
RV08	2	2	0	0	0
RV09	51	47	3	0	1
RV11	65	62	2	0	1
RV13	4	4	0	0	0
RV14	65	57	5	0	0
RV15	21	20	1	0	0
RV16	17	17	0	0	0
RV17	5	5	0	0	0
RV18	34	32	1	0	1
RV19	10	10	0	0	0
RV20	34	34	0	0	0
RV21	27	26	0	0	1
RV22	31	31	0	0	0
RV23	11	10	0	0	1
RV24	60	56	3	0	1
RV26	19	17	0	0	2
RV27	22	18	2	1	1
RVUM	16	16	0	0	0
TOTAL	698	659	26	2	11

A total of 311 manholes were found to have evidence of surcharging during the manhole inspections activities. Table 6-2 shows the findings.

Table 6-2: RJN Manhole Defects

Type of Defect	Number of Defects
Pick Holes	304
Cover Missing Bolts	10
Broken Cover	24
Defective Frame Seal	96
Broken Frame	32
Manhole Rim Leaks	15
Defective Manhole Corbel	53
Defective Wall	122
Cracked Pipe Seal	86
Cracked Bench/Trough	32
Total	774

6.1.3 Lift Station Evaluation

RJN Group, Inc. evaluated all 19 lift stations from July 19, 2010 through July 23, 2010. The purpose of the evaluation was to assess the performance of each pump station and determine the firm pumping capacity of each station for use in the preparation of the hydraulic model. Appendix 20 shows the locations of lift stations.

Field information collected during site investigations at each of the lift stations uncovered an array of lift station types, including pump and wet well variations. Lift station configuration ranges from duplex, alternating pump to triplex, dual pump operation. The recommendations from the evaluation are in Table 6-3. City Corporation will continue to work on the upgrades until they are complete.

Table 6-3: RJN Recommendations for Lift Station Improvements

Lift Station	Improvements Needed	Improvements Completed
10 th Street	None	
23 rd Street	Redesign and Re-evaluate drainage system for the dry well	Removed & gravity to South Frankfort
Lift Station "A"	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Lift Station "B"	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Lift Station "C"	None	
Center Valley	None	
Cove Landing	None	
South Frankfort (Darling)	None	
Grace	None	
International Paper	Repair any corroded or rusted components	Pump Station was Rebuilt
Lost Corner	None	
Main Street	Replace Pump 1 and provide reliable emergency option, evaluate condition of wet well and ventilation system	Removed Comminutor and Cleaned Pump Station
Old Post	Rehab wet well	Pump Station was Rebuilt
Prairie Creek	Repair wall leak, Evaluate condition of wet well and ventilation system	
Rimrock	Schedule more frequent removal of Grease	
Shadow Valley	Investigate why pumps are not running at full power	
Shiloh Manor	Schedule more frequent removal of Grease	
Tex Vet	Alleviating the drainage issues within the vault and correcting rust concerns	Repairs were completed
Tyson	Schedule more frequent removal of Grease	

6.1.4 Capacity Improvements

RJN recommended improvements on the overall sanitary sewer system to reduce the I/I 30% and included proposed growth to the city of Russellville. Shown below on table 6-4 are the recommendations RJN has made and the future or current project the lines will be associated with and their proposed design time.

Table 6-4: RJN Recommendations for Overall Capacity Improvements

Project Name	Improvements Recommended	Status
10 th Street FM	Upsize 5,664 LF 10" Force Main to 12"	Design 2017
Prairie Creek FM	Upsize 8,616 LF Force Main to 24"	Design 2018
Hydraulic Capacity Improvements	Upsize 2,055 LF 8"-10" Upsize 1,676 LF 10"-12"	Design 2014 & 2015
East 2nd Street Wastewater Improvements	Upsize 597 LF 10" 14" Upsize 8,520 LF 10"-18"	Complete
City Mall Wastewater Improvements	Upsize 5,462 LF 8"-12" Upsize 2,729 LF 18"-24"	In Construction
7,14 & 23	Upsize 355 LF 15"-21"	Bidding Process
ATU North/South	Upsize 14,650 LF	Designed by Garver/2018

6.2 System Wide Flow Monitoring/Capacity Analysis- Phase II

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. The following field activities will be part of the Phase II investigations:

- Manhole Inspections
- Additional Flow Monitoring
- Smoke Testing
- Dyed Water Flooding
- Cleaning
- Television Inspection

A detailed report for each subbasin studied will be developed by the engineer at the conclusion of the Phase II activities. The report will include a capital improvement plan which includes a rehabilitation plan, capacity improvements, a staged priority schedule, and budget costs for the recommended improvements. The report will also include a narrative description of the hydraulic analysis and field investigations. Phase II will be included in more detail in future CMOM updates.

6.2.1 Subbasins 7,14,23 SSES Findings & Design Plans

The three subbasins included a total of 146,868 linear feet of sanitary sewer lines. A detailed map of the subbasins and the current study phase they are in is included in Appendix 13. RJN Group, Inc. has finished an extensive study of the collection system in subbasins 7,14,23. The following is a summary of the work performed and the defects found:

Work Performed

Manhole Inspections	338	EA
Smoke Testing	133,531	LF
Dyed Water Testing	32	Areas
TV Inspection	29,231	LF

Defects Found

Root Growth	60	Locations
Longitudinal Cracks	10	Locations
Circular Cracks	52	Locations
Collapsed Pipe	6	Locations
Offset Pipe	31	Locations
Broken Pipe	39	Locations
Manhole Defects	114	Locations
Building Lateral Defects	159	Locations
Defective Cleanout	142	Each

The goals for this project are:

- Improve overall sewer system
- Reduce I/I
- Eliminate Overflows
- Reduce Maintenance Calls
- Reroute main sewer line from under business and home

This study area was broken down into just Basins 7 & 14. Basin 23 is located in Downtown Russellville, and will be constructed during a water, wastewater project. The Basins 7,14 project estimated construction cost is \$2,700,000. The following is a brief description of the work to be performed:

<u>Description</u>	<u>Quantity</u>	<u>Units</u>
CIPP Existing 8"	2123	LF
CIPP Existing 10"	1270	LF
CIPP Existing 12"	889	LF
CIPP Existing 15"	1082	LF
CIPP Existing 18"	402	LF
CIPP Services	45	EA
Pipe Burst 6"-8"	2951	LF
Pipe Burst 10"-10"	1081	LF
Relay/Install 8"	5969	LF
Relay/Install 10"	408	LF
Reinstate Services	160	EA
Construct Manholes	54	EA
Stormwater Controls	1	LS
Bypass Pumping	1	LS
Trench & Safety	1	LS

Basin 23 is currently in design. The entire basin area was televised for defects and will be rehabbed during the Basin 23 Water & Wastewater project.

6.2.2 Subbasins 1,2,8,11 SSES Findings, Design, and Construction

The four subbasins included a total of 126,967 linear feet of sanitary sewer lines. A detailed map of the subbasins and the current study phase they are in is included in Appendix 13. RJN Group, Inc. has finished an extensive study of the collection system in subbasins 1,2,8,11. The following is a summary of the work performed and the defects found:

Work Performed

Manhole Inspections	376	EA
Smoke Testing	113,818	LF
Dyed Water Testing	53	Areas
TV Inspection	22,514	LF

Defects Found

Root Growth	21	Locations
Longitudinal Cracks	2	Locations
Circular Cracks	21	Locations
Collapsed Pipe	5	Locations
Offset Pipe	23	Locations
Broken Pipe	6	Locations
Manhole Defects	115	Locations
Building Lateral Defects	72	Locations
Defective Cleanout	89	Each

The goals for this project are:

- Improve overall sewer system
- Reduce I/I
- Eliminate Overflows
- Reduce Maintenance Calls
- Reroute main sewer line from under home

The projects bid price was \$1,141,322 and the projects final construction cost was \$1,106,569. The following is a brief description of the work completed:

<u>Description</u>	<u>Quantity</u>	<u>Units</u>
CIPP Existing 8"	1353	LF
CIPP Existing 24"	2842	LF
CIPP Services	16	EA
Pipe Burst 6"-8"	4410	LF
Pipe Burst 8"-10"	783	LF
Pipe Burst 8"-8"	375	LF
Relay/Install 6"-6"	112	LF
Relay/Install 6"-8"	1286	LF
Reinstate Services	99	EA
Construct Manholes	4	EA
Stormwater Controls	1	LS
Bypass Pumping	1	LS
Trench & Safety	1	LS

6.2.3 Subbasins 3,5,6,21 SSES Findings & Design Plan

The four subbasins included a total of 115,919 linear feet of sanitary sewer lines. A detailed map of the subbasins and the current study phase they are in is included in Appendix 13. RJN Group, Inc. has finished an extensive study of the collection system in subbasins 3,5,6,21. The following is a summary of the work performed and the defects found:

Work Performed

Manhole Inspections	361	EA
Smoke Testing	115,919	LF
Dyed Water Testing	22	Areas
TV Inspection	27,241	LF

Defects Found

Root Growth	53	Locations
Longitudinal Cracks	1	Locations
Circular Cracks	33	Locations
Collapsed Pipe	2	Locations
Offset Pipe	34	Locations
Broken Pipe	11	Locations
Manhole Defects	144	Locations
Building Lateral Defects	37	Locations
Defective Cleanout	76	Each

The goals for this project are:

- Improve overall sewer system
- Reduce I/I
- Eliminate Overflows
- Reduce Maintenance Calls
- Reroute main sewer line from under home

Basin 21 was removed from this project and placed with basin 17,18,20 because of the proximity to the basins. Basin 3,5,6 is currently in the design phase. The following is a brief description of the work to be performed:

Description	Quantity	Units
Pipe Burst 6"-8"	6002	LF
Pipe Burst 8"-8"	657	LF
Relay/Install 8"-12"	4248	LF
Relay/Install 24"	58	LF
Relay/Install 15" Force Main	1457	LF
Reinstate Services	147	EA
Construct Manholes	22	EA
Stormwater Controls	1	LS
Bypass Pumping	1	LS
Trench & Safety	1	LS

6.2.4 Subbasins 17,18,20 SSES Findings & Design Plan

The three subbasins included a total of 121,689 linear feet of sanitary sewer lines. A detailed map of the subbasins and the current study phase they are in is included in Appendix 13. RJN Group, Inc. has finished an extensive study of the collection system in subbasins 17,18,20. The following is a summary of the work performed and the defects found:

Work Performed

Manhole Inspections	483	EA
Smoke Testing	117,372	LF
Dyed Water Testing	11	Areas
TV Inspection	26,566	LF

Defects Found

Root Growth	51	Locations
Longitudinal Cracks	3	Locations
Circular Cracks	44	Locations
Collapsed Pipe	3	Locations
Offset Pipe	43	Locations
Broken Pipe	8	Locations
Manhole Defects	103	Locations
Building Lateral Defects	32	Locations
Defective Cleanout	51	Each

The goals for this project are:

- Improve overall sewer system
- Reduce I/I
- Eliminate Overflows
- Reduce Maintenance Calls
- Reroute main sewer line from under home

This project is in design phase. Basin 21 was added to this project because of the proximity to the basins.

6.2.5 Subbasins 9,15,25 SSES Findings & Design Plan

The three subbasins included a total of 128,987 linear feet of sanitary sewer lines. A detailed map of the subbasins and the current study phase they are in is included in Appendix 13. RJN Group, Inc. has finished an extensive study of the collection system in subbasins 9,15,25. The following is a summary of the work performed and the defects found:

Work Performed

Manhole Inspections	459	EA
Smoke Testing	128,987	LF
Dyed Water Testing	8	Areas
TV Inspection	6,388	LF

Defects Found

Root Growth	53	Locations
Longitudinal Cracks	1	Locations
Circular Cracks	44	Locations
Collapsed Pipe	2	Locations
Offset Pipe	0	Locations
Broken Pipe	2	Locations
Manhole Defects	223	Locations
Building Lateral Defects	7	Locations
Defective Cleanout	74	Each

The goals for this project are:

- Improve overall sewer system
- Reduce I/I
- Eliminate Overflows
- Reduce Maintenance Calls
- Reroute main sewer line from under buildings

This project is in preliminary phase. CWB Engineers is developing a scope of work and conceptual plan for the design.

CHAPTER 7-OVERFLOW EMERGENCY RESPONSE PLAN

7.1 Awareness

In order to respond effectively to a sewer overflow, a plan must be in place prior to the overflow and all personnel need to understand their role in the response and follow up. The following SSO Response Plan Summary describes the actions that will be taken in the event of an overflow of the collection system. The full Overflow Response Plan is located in Appendix Y.



7.2 Response

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 24 Hour SSO Report and the SSO Monthly Report are located in Appendix Z.

7.3 Official Notification

Official Notification of SSO during working hours

Customer Service Representative (CSR) receives notification of a possible SSO from the public. The CSR will collect relevant information, as outlined in Section IV-A. The appropriate Response Crew will be dispatched to the site to verify if an SSO has occurred.

Response Crew determines if SSO has occurred and attempts to resolve problem. Response Crew uses their tables to complete the application electronically. They then take 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.

On all public overflows, Response Crew begins cleanup and disinfection of the affected area. The Construction Supervisor will verify cleanup is completed, take photographs and remove warning signs.

All private overflow calls are directed directly to the field crews. The customer is then directed to contact their individual insurance carrier for coverage and is encouraged to work with insurance company to complete cleanup. Because of the nature of a private overflow, City Corporation recommends the use of a professional restoration service to complete the cleanup. City Corporation employees are not allowed to work inside private/commercial addresses.

Official Notification of SSO after working 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 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 uses tablet application and a report is generated electronically to the administrative staff.

On all public overflows, 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. Site visit is to be performed the first work day after the overflow occurrence.

All private overflow calls are directed to the field crews. The customer is then directed to contact personal insurance for coverage and restorations service for cleanup. City Corporation employees are not allowed to work inside private/commercial addresses.

Internal Notification of possible SSO

All City Corporation personnel are directed to immediately report any potential overflow 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 our Response Crews to investigate possible recurring SSO sites to verify if an overflow has occurred. These crews will be furnished a list of possible SSO sites (see appendix E), which has been determined as being locations that have potential to overflow. After crews have completed a check of the entire list, they will begin clean-up at each site. Appendix 21 is a map showing the recorded overflow locations.

Chart 7-1: Total Overflows

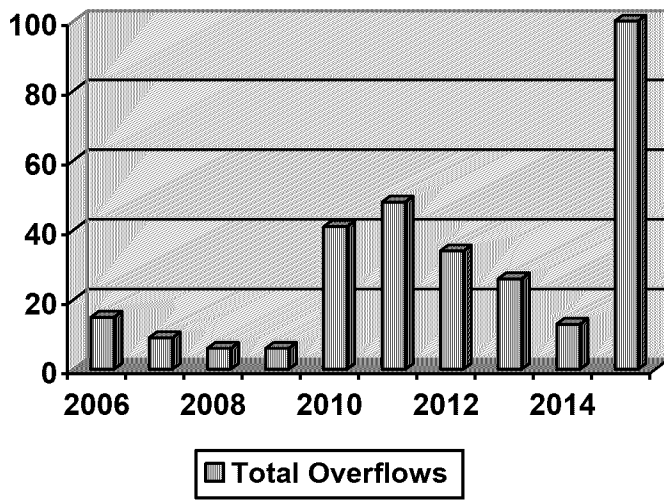
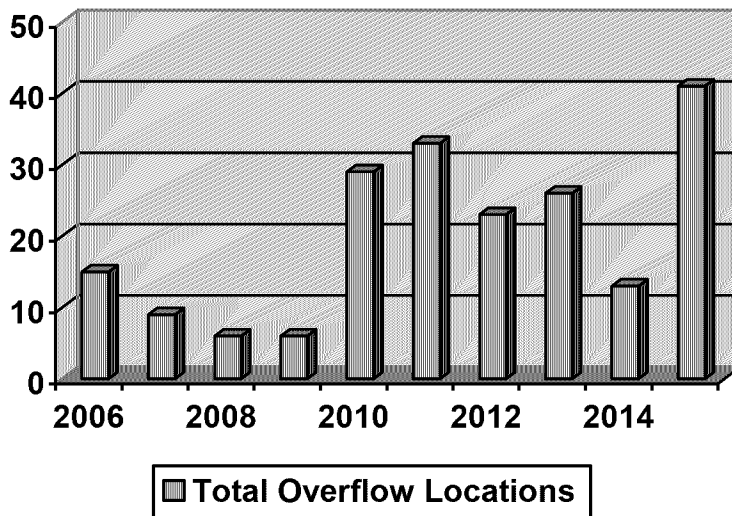


Chart 7-2: Total Overflow Locations



CHAPTER 8- FINANCIAL

8.1 User Rate/User Charge

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:

Usage	Inside City Limits	Outside City Limits
First 1,000 Gallons Per Month	\$10.01 Per Month	\$15.02 Per Month
1,001-20,000 Gallons Per Month	\$3.88 Per 1,000 Gallons	\$5.82 Per 1,000 Gallons
20,001- and Over Per month	\$3.31 per 1,000 Gallons	\$4.97 Per 1,000 Gallons

There will be an additional monthly charge of \$15.45 to those customers who require a grinder pump system.

This charge is in addition to the initial purchase price of the grinder pump and normal installation cost.

See Appendix 7 for the Sewer & Water Rate Flyer.

8.2 Budget Process and Schedule

Budget preparation begins approximately 6 months prior to new fiscal year. Authorized employees are capable of keying in their Operations & Maintenance Expenses into the Budget program screen. Capital budget items are submitted to the Administrative Manager with these items then being compiled into a report. This capital budget is then reviewed by management at a meeting scheduled after completion of the operations and maintenance budget. This allows management to have the dollars available for capital work after operations and maintenance expenses are addressed.

Authorization is given to the individual employees involved in preparation for account numbers of a designated department. The employee can print out work sheets for these accounts and compile the budgeted numbers with assistance of their manager. They are then able to key these budget figures into the mainframe budget

program. At the deadline given for budget entry, this authorization is revoked to protect any numbers from being changed without approval of the General Manager. Meetings are scheduled (see attached schedule example) with General Manager, Department Manager, Department Lead, Accountant and Administrative Manager to review the projected budget numbers. Any changes made at that time are keyed into the program by Accountant and budget is reprinted and reviewed with auditor and Board member. Final version is then printed and presented for review at the next scheduled Board meeting with Board approval given in the June Board meeting each year. The Budget process and schedule can be found in Appendix 1.

8.3 Rate Study

City Corporation completed a rate study in 2014. The study is located in Appendix P. Economist.com was hired to analyze the existing water and sewer rates, and to make recommendation for implementing City Corp's Capital Improvement Plan for the next ten years. City Corp has developed a ten-year Capital Improvement Plan with the help of staff and consulting engineers. The plan has identified \$41 Million in improvements to water infrastructure and \$54 million in wastewater infrastructure improvements. Economist.com has recommend funding the needed improvements through a combination of rate increases and bonds. City Corporation is currently working with the City Council and civic organizations to garner support for the needed improvements. The council approved the necessary rates and the initial bonds for the first three years of the plan have been issued. The capital improvement plan and rate study presentation is including the Appendix T.

CHAPTER 9-PROGRAM AUDITS

9.1 Summary

The foregoing Capacity, Management, Operation and Maintenance Program for the sanitary sewer system owned by City Corporation reflects the commitment to the protection of the environment and continued provision of exemplary customer service. As indicated throughout this document, City Corporation has committed and is prepared to further commit the resources necessary to provide vigilance over the wastewater system. Necessary funds and staffing are available through operating and capital budgets and required contractual arrangements are either already in place or can be readily accomplished. This document will be updated annually through revisions to reflect the City Corporations commitment to its mission and to satisfy federal and state regulatory requirements. This CMOM document, appendices, and supporting documents are presented on the CMOM link on the City Corporation web site. The CMOM Program is viewed as a working document with the most current data available that reflects the latest collection system conditions.

9.2 Program Updates

This plan lays out metrics for employee training, routine maintenance, repairs, and system monitoring. The plan is essentially the business plan for the sewer system of City Corporation. The program is developed as a guidance manual for the entire staff and customers of City Corporation. City Corporation, along with their consulting engineer, will evaluate adherence to these metrics and the goals of this program on an annual basis. The plan will be modified to incorporate new information from current studies, new technology, and any additional changes, at City Corp's discretion, based on the annual evaluation. The General Manager is expected to require all employees to adhere to this plan in the performance of their individual duties.

CHAPTER 10-SUMMARY OF RECOMMENDATIONS

10.1 Public Education/Outreach

The City's Fats, Oils and Grease (FOG) Public Education program has been designed to reach as many local residents and businesses as possible. City Corporation is committed to minimizing FOG and other pollutants from entering the sanitary sewer system.

Residential and commercial activities such as the disposal of cooking grease, oil, food scraps, household and industrial strength chemicals, and even pharmaceuticals into the sanitary sewer, can have an impact on the City's ability to protect human health and the environment. Through the reduction and potential elimination of Sanitary Sewer Overflows (SSOs), the streets, surface waters, and ultimately the ocean are at less risk of containing harmful levels of bacteria, viruses or chemicals that have the potential to cause harm.

As part of the City Corporations program to educate and assist city residents and businesses in implementing Best Management Practices to reduce pollutants entering the sanitary sewer system, the City should use a variety of tools such as brochures, posters, videos, public service announcements, community events, commercial and industrial inspections, and partnering with other agencies to promote the FOG program. The materials available are shown below.

Brochures

An educational brochure has been developed for city residents through a program with the goal of preventing SSOs. The brochures are free and are available at many city facilities including, City Hall and libraries. The brochures contain information that can be used by residents and businesses to educate employees, tenants, neighbors, and family members. An example of a Food Service Brochure is shown in Appendix 3. An example of a Sewage Spill Brochure is shown in Appendix 4.

Posters

An educational poster has been developed for restaurant use with the goal of preventing SSOs. The poster is free and has been made available to all city restaurants. The poster contains information that can be used by owner to educate their employees. An example is shown in Appendix 5. Posting this poster in an area that is frequently visited by the employees will help to educate them on the correct ways to dispose of FOG.

10.2 Easement Clearing

City Corporation generally holds a ten-foot-wide permanent easement along its sewer lines. While some other individual or entity normally owns the underlying property, City Corporation has the right to access and maintain the line. This is not an issue in areas where sewers cross undeveloped property; however, issues have arisen from homeowners when easement clearing is needed in developed areas.

In response to an increasing need for access to remote sewer lines, it is recommended that City Corporation adopts a more aggressive approach to easement clearing using a ten-foot path. It is anticipated that this program will enhance the ability to effectively operate its sewer system. In addition, cleared areas should be mowed annually. Currently there is not an easement clearing procedure in place for City Corporation. However, City Corporation began an overall system assessment in 2015. The line segments needing Right of Way clearing will be added to a ROW Clearing Contract. The city will be divided into 5 gridded areas. Each year in the contract 1 area will be cleared. Taking a total of 5 years to complete the entire city, then the contract will be

repeated for the next 5 years. The first 5 years will be a heavy clearing contract including bush hogging and brush clearing with the years following being just a mowing and maintaining the right of way contract.

The development of a trail system in conjunction with sewer easements is growing in popularity around the country. We feel City Corporation could see tremendous benefits from partnering with the city to provide trails along existing sewer easements. It provides some key benefits for the city, including:

- A great way to improve the city
- Enables maintenance and easement access
- Provides recreational activities

10.3 City Grid System

City Corporation currently utilizes a manhole numbering system. The method for numbering the manholes is not based on geography, and therefore is difficult to use when locating manholes in the system. It is recommended that City Corporation evaluate a new Grid System to help break down large unmanageable areas into smaller easily identified areas of the city. City Corporation is currently in the process of creating a new numbering system, which should be in place by next year. The city grid will be ¼ mile grids with direction and #. The system assets will be numbered as follows, AN-N1E1-0000. Where AN= asset name (MH, V, FH, etc.), N1E1= direction and quadrant of location and 0000 will be number assigned. We elected to have the number assigned match the originals for existing assets so we can preserve the historical data.

10.4 Schedule of Recommended Improvements

Figure 10-1 is a schedule that has been created to give City Corporation and ADEQ a milestone to the activities of the recommended improvements throughout the city, as required by the Consent Administrative Order. The schedule reflects a 10 year comprehensive program including a study phase, a design phase, and a construction phase. The program and corresponding dates may be revised as the program is implemented.

FIGURE 10-1 (3-07-2016)

SSES SCHEDULE OF EVENTS

SCHEDULE

SSES PHASE II

CITY CORPORATION

The following schedule is a milestone schedule for SSES Phase II activities as required by the Consent Administrative Order. The schedule reflects a 10 year comprehensive program including a study phase, a design phase, and a construction phase. The program and corresponding dates may be revised as the program is implemented.

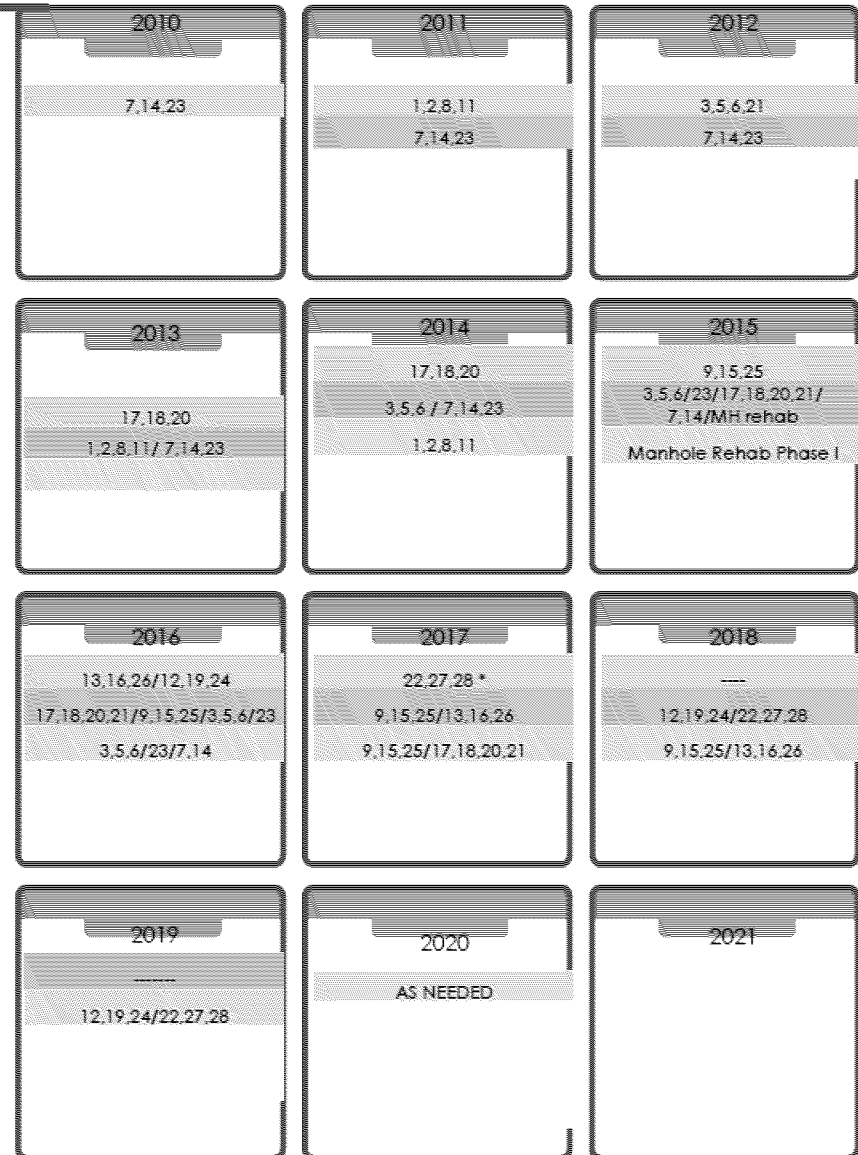
PROJECT PHASE

SSES (start year)

DESIGN

CONSTRUCTION

BASINS	TOTAL LINEAR FEET GRAVITY
7,14,23	146,868
1,2,8,11	126,967
3,5,6,21	120,979
17,18,20	122,371
9,15,25	124,812
13,16,26	133,437
12,19,24	122,329
22,27,28	105,826
----	----



*This SSES Project is not required by the Consent Administrative Order

A-09-146 (Signed CAO)

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:

<u>DATE</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>REPORTED</u>	<u>PERMITTED</u>
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

<u>DATE</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>REPORTED</u>	<u>PERMITTED</u>
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

<u>DATE</u>	<u>OUTFALL</u>	<u>PARAMETER</u>	<u>REPORTED</u>	<u>PERMITTED</u>
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 $\pm 10\%$ 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.
Nitrates (NO ₃ -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.

<u>Effluent Characteristics</u>	<u>Discharge Limitations</u>		
	Mass (lbs/day, unless otherwise specified)	Concentration (mg/L, unless otherwise specified)	
		Monthly Avg.	Monthly 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

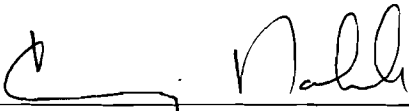
Permittee from any past, present, or future conduct which is not expressly addressed herein, nor does it relieve the Permittee of its responsibilities for obtaining any necessary permits.

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


Teresa Marks, 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

A-1 AR0021768_Russellville LIS 09-
146-001_20140602

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

IN THE MATTER OF:

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

LIS No. 09-146-001
Permit No. AR0021768
AFIN 58-00105

AMENDED CONSENT ADMINISTRATIVE ORDER

By mutual agreement of City Corporation, a/k/a Russellville City Corporation, and a/k/a City Corporation - Russellville Water and Sewer System (hereinafter "Respondent") and the Arkansas Department of Environmental Quality (hereinafter "ADEQ" or "Department"), the Consent Administrative Order (hereinafter "CAO") LIS 09-146 is hereby amended as follows:

AMENDED FINDINGS OF FACT

1. Paragraph 9 of the Order and Agreement Section of CAO LIS 09-146 established July 31, 2012 as the date on which the Respondent was required to achieve compliance with Total Suspended Solids (hereinafter "TSS").
2. Since August 1, 2012, the Respondent reported violations of the permitted effluent limits for TSS for the months of February, March, and April, 2013.
3. On September 27, 2013, the Respondent submitted a letter to ADEQ requesting that CAO LIS 09-146 be amended to revise the compliance date for TSS to January 10, 2016 to coincide with the compliance date for Nitrates.

4. Additionally, from August 1, 2012 to September 30, 2013, the Respondent reported thirty-eight (38) violations of the permitted effluent limits as documented on the Discharge Monitoring Reports submitted by the Respondent for discharge 001A. The violations are as follows:

a. The Respondent reported four (4) violations of the permitted effluent limits for Carbonaceous Biochemical Oxygen Demand in violation of Part I, Section A of the Permit. This permit condition violation therefore violates Ark. Code Ann. § 8-4-217(a)(3).

b. The Respondent reported five (5) violations of the permitted effluent limits for Total Residual Chlorine in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

c. The Respondent reported one (1) violation of the permitted effluent limits for Fecal Coliform in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

d. The Respondent reported thirteen (13) violations of the permitted effluent limits for Total Recoverable Copper in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

e. The Respondent reported six (6) violations of the permitted effluent limits for Ammonia Nitrogen in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

f. The Respondent reported one (1) violation of the permitted effluent limits for Dissolved Oxygen in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

g. The Respondent reported eight (8) violations of the permitted effluent limits for TSS in violation of Part I, Section A of the Permit and therefore violated Ark. Code Ann. § 8-4-217(a)(3).

5. On May 28, 2013, ADEQ sent a warning letter to the Respondent which detailed the effluent violations reported by the Respondent from August 1, 2011 thru March 31, 2013. The Respondent submitted a response letter to ADEQ on June 4, 2013.

AMENDED ORDER AND AGREEMENT

1. Except as specifically set out herein, all other provisions of CAO LIS 09-146 shall remain in full force and effect.

2. The Respondent shall achieve compliance with the permitted effluent limits for TSS and Nitrates on or before January 10, 2016. The Respondent shall submit a report certifying that compliance with permitted effluent limits has been achieved. The report shall be submitted on or before January 10, 2016.

3. On or before the effective date of this Amended CAO, the Respondent shall achieve compliance with all other permitted effluent limits.

4. On or before May 1, 2017, the Respondent shall submit Sanitary Sewer Evaluation Survey reports for each sub-basin.

5. On or before March 31, 2022, the Respondent shall complete collection system remedial action and re-evaluate the collection system.

6. The Respondent shall immediately operate and maintain the existing treatment system so as to maximize the treatment capability of the system to comply with the effluent limitations found in Part I, Section A of NPDES Permit No. AR0021768.

7. In compromise and full settlement for the violations specified in the Amended Findings of Fact, the Respondent agrees to pay to ADEQ the sum of Twenty Thousand Dollars (\$20,000.00) as a reduced civil penalty. Payment of the penalty shall be made within thirty (30) days of the effective date of this Amended 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

The reduced civil penalty is contingent upon Respondent complying with the requirements of Paragraphs 2 and 3 in the Amended Order and Agreement Section of this Amended CAO. In the event Respondent fails to fully comply with the requirements of Paragraphs 2 and 3 of the Amended Order and Agreement Section of this Amended CAO, or fails to pay the reduced sum of Twenty Thousand Dollars (\$20,000.00), the civil penalty amount will revert back to the original amount of Thirty Thousand Dollars (\$30,000.00), the balance of which will be due and payable immediately to ADEQ. In the event that the Respondent fails to pay the civil penalty within the prescribed time, ADEQ shall be entitled to attorney's fees and costs of collection.

8. This Amended 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 (hereinafter "APC&EC" or "Commission") Regulation No. 8 and shall not be effective until thirty (30) calendar days after public notice is given. ADEQ retains the right to rescind this Amended 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 shall be taken immediately. The publication of this Amended CAO shall occur on or about the 10th or 25th day of the month following the date this Amended CAO is executed. 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 Amended CAO is granted by the Commission.

9. Nothing in this Amended CAO shall be construed as a waiver by ADEQ of its enforcement authority over alleged violations not specifically addressed herein. Also, this Amended CAO does not exonerate the Respondent from any past, present, or future conduct which is not expressly addressed herein, nor does it relieve the Respondent of its responsibilities for obtaining any necessary permits.

10. By virtue of the signature appearing below, the individual represents that he or she is an Officer of Respondent, being duly authorized to execute and bind Respondent to the terms contained herein as attested by the secretary of said entity. Execution of this Amended CAO by an individual other than an Officer of Respondent shall be accompanied by a resolution granting signature authority to said individual as duly ratified by the governing body of the entity.

SO ORDERED THIS 2nd DAY OF June, 2014.

Teresa Marks
TERESA MARKS, DIRECTOR

APPROVED AS TO FORM AND CONTENT:

CITY CORPORATION
RUSSELLVILLE WATER AND SEWER SYSTEM

BY: *[Signature]*
(Signature)

STEVE MALLET, JR.
(Typed or printed name)

TITLE: GENERAL MANAGER

DATE: 5-21-14



B-CAP for TSS and TRC

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	

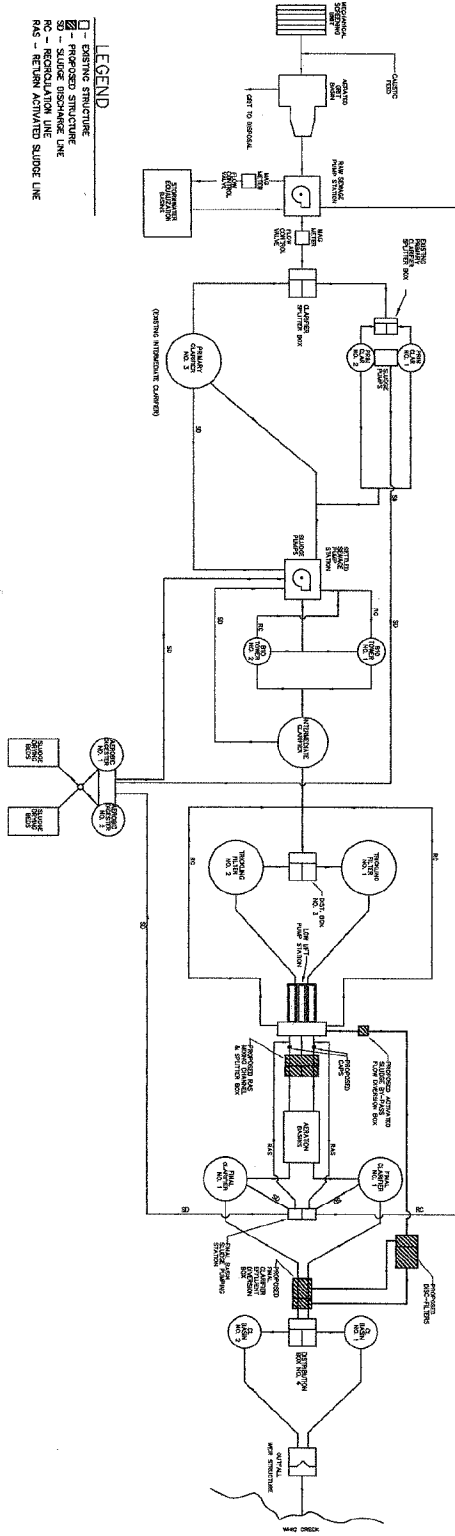
** In the event that the pilot test proves the filters to be ineffective, owner will research other treatment technologies and submit to ADEQ for a revision in this schedule.

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



LEGEND

- - DESIGN STRUCTURE
- - EXISTING STRUCTURE
- SLUDGE DISCHARGE LINE
- RECIRCULATION LINE
- RETURN ACTIVATED SLUDGE LINE

JOB NO.: 09016320
 DATE: DEC. 2009
 DRAWN BY: CKB
 CHECKED BY: CKB
 DATE: 12/01/09
 DRAWN BY: CKB
 CHECKED BY: CKB
 DATE: 12/01/09
 DRAWN BY: CKB
 CHECKED BY: CKB

CITY CORPORATION
 RUSSELLVILLE, ARKANSAS

PRELIMINARY
 PROCESS
 FLOW
 DIAGRAM

REV.	DATE	DESCRIPTION	BY



SHEET
 NUMBER
A1

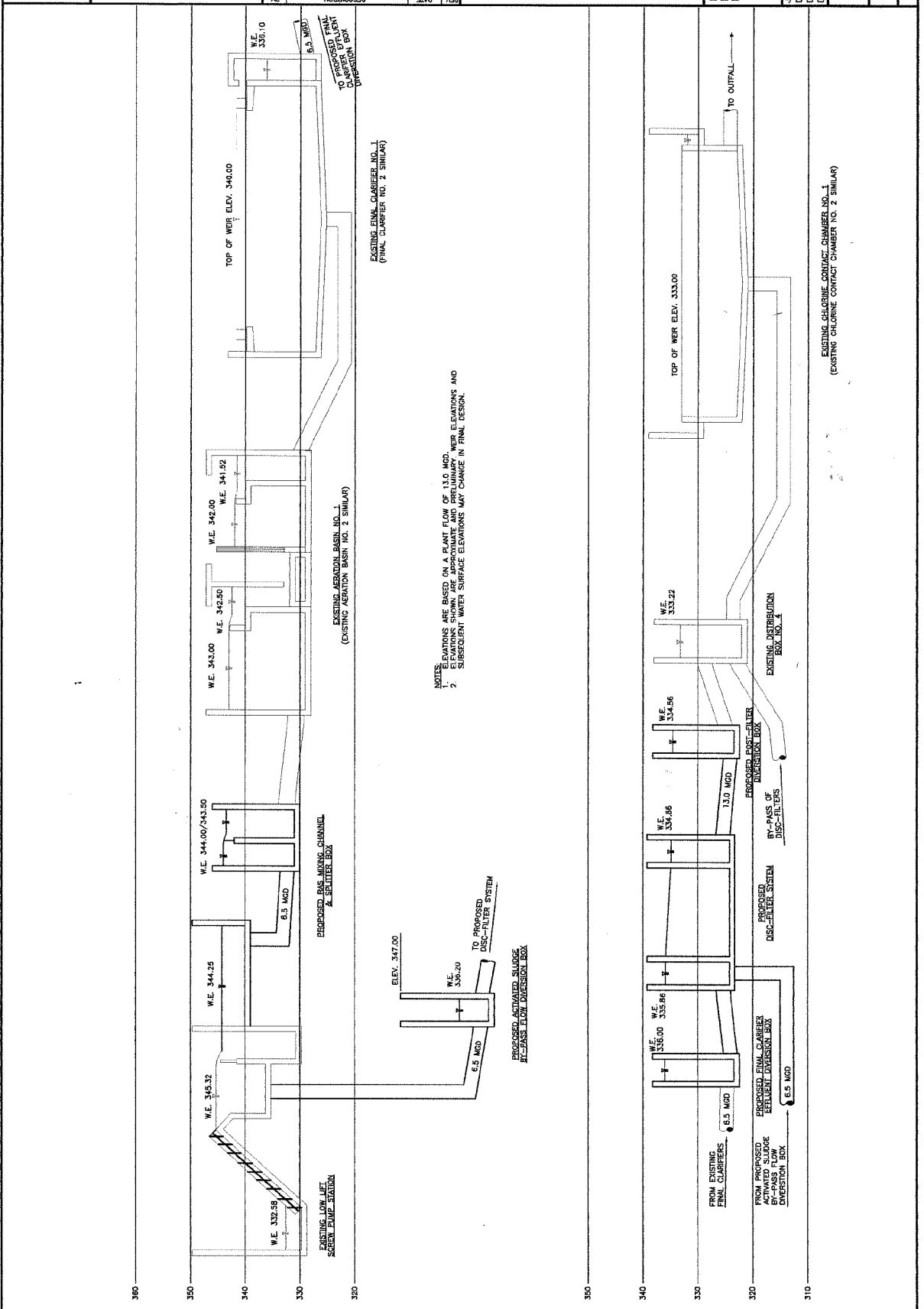


REV.	DATE	DESCRIPTION

CITY CORPORATION
 RUSSELLVILLE, ARKANSAS

CORRECTIVE ACTION PLAN
 FOR TSS COMPLIANCE

DETAILED HYDRAULIC PROFILE
 JOB NO: 09018320
 DATE: DEC 14, 2009
 DESIGNED BY: JWG
 DRAWN BY: CAB
 THIS IS NOT AN OFFICIAL DESIGN. IT IS FOR PRELIMINARY USE ONLY. ALL ELEVATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
 SHEET NUMBER
A2
 DRAWING NUMBER



- NOTES:
1. ELEVATIONS ARE BASED ON A FLOW OF 11.0 MGD. ELEVATIONS SHOWN ARE APPROXIMATE AND PRELIMINARY.
 2. SUBSEQUENT WATER SURFACE ELEVATIONS MAY CHANGE IN FINAL DESIGN.

EXISTING SOLUBLE CONTROL CHAMBER NO. 1
 (EXISTING SOLUBLE CONTROL CHAMBER NO. 2 SIMILAR)

B-Revised Comprehensive CAP

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) CBOD₅.
- 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) NO₃-N

3.2. Causes and Corrective Actions:

3.2.1. TSS and CBOD₅ Violations – The CBOD₅ 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 CBOD₅ violations noted in the CAO occurred during a month of excessive TSS discharge. That would seem to indicate that the CBOD₅ violations are due to particulate CBOD₅ rather than dissolved CBOD₅. Therefore it is anticipated that the final effluent filtration discussed above for TSS removal will also correct the CBOD₅ 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 CBOD₅ 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 (NO₃-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) NO₃-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.	

C-Job Descriptions Binder1

Update 2015 Sample Construction Crew Leader Job Description

Exempt: No
Department: Water-Sewer System - Lead Operator
Reports To: System Supervisor
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: September 28, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall provide general labor and equipment operating support for crew maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall provide maintenance to equipment, vehicles, office, shop, and yard as required.

This position is an on-call position, in a rotating schedule, to respond to after hours services calls.

This position requires an Arkansas Department of Health Distribution 3 Water System Operator License.

This position is a working supervisory position, with an emphasis on working, of a two (2) to three (3) man crew. It requires hands on work in the trench in addition to equipment operation.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Transport equipment and materials to work locations. This duty is performed daily, about 15% of the time.
2. Repair distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
3. Repair water and sewer services. This duty is performed daily, about 25% of the time.
4. Install of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
5. Install of water and sewer services. This duty is performed as needed, about 5% of the time.
6. Maintain of equipment and vehicles. This duty is performed as needed, about 10% of the time.
7. Maintain office, shop, and yard. This duty is performed as needed, about 10% of the time.
8. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Knowledge of a specialized field (however acquired), such as basic accounting, computer, etc. Equivalent of four years in high school, plus night, trade extension, or correspondence school specialized training, equal to two years of college, plus 3 years related experience and/or training, and 12 to 18 months related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication. Ability to read and understand simple instructions, short correspondence, notes, letters and memos; Ability to write simple correspondence. Ability to read and understand documents such as policy manuals, safety rules, operating and maintenance instructions, and procedure manuals; Ability to write routine reports and correspondence.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to prepare and interpret bar graphs.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Class A Commercial Driver's License (CDL)

Arkansas Department of Health Distribution 3 Water System Operator License

OSHA Excavation Safety Training (29 CFR 1926.650-652)

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Department of Health Distribution 4 Water System Operator License

SOFTWARE SKILLS REQUIRED

Not indicated.

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general supervision where standard practice enables the employee to proceed alone on routine work, referring all questionable cases to supervisor.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work; may also occasionally assist in the planning of work assignments performed by others within a limited area of operation.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance; the latter of which would affect the work operations of other employees and/or clientele to a moderate degree.

MENTAL DEMAND

Moderate mental demand. Operations requiring almost continuous attention, but work is sufficiently repetitive that a habit cycle is formed; operations requiring intermittent directed thinking to determine or select materials, equipment or operations where variable sequences may be selected by the employee.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately structured. Fairly broad activities using moderately structured procedures with only generally guided supervision. Interpolation of learned things in somewhat varied situations.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

Supervises a small group (1-3) of employees in the same or lower classification. Assigns and checks work; assists and instructs as required, but performs same work as those supervised, or closely related work, most of the time. Content of the work supervised is of a non-technical nature and does not vary in complexity to any great degree.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors of internal and external scope would have a moderate effect on the operational efficiency of the organizational component concerned. Errors might possibly go undetected for a considerable period of time, thereby creating an inaccurate picture of an existing situation. Could cause further errors, losses, or embarrassment to the organization. The possibility for error is always present due to requirements of the job.

ACCOUNTABILITY

FREEDOM TO ACT

Standardized. Accepted processes covered by well-defined standardized policies and procedures with supervisory review.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Very small. Job creates a monetary impact for the organization up to an annual level of \$100,000.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Regular contacts with patrons, either within the office or in the field. May also involve occasional self-initiated contacts to patrons. Lack of tact and judgment may result in a limited type of problem for the organization.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are extremely disagreeable working conditions most of the time (e.G. Hot mix paving in constant sun).

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to outdoor weather conditions; occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified

physical demands of the employee.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit, taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Construction Lineman I Job Description

Exempt: No
Department: Water-Sewer System - Lineman I - Senior
Reports To: Lead System Operator
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: September 28, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall provide general labor support for crew maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall provide labor to help maintain equipment, vehicles, office, shop, and yard as required.

This position is an on-call position, in a rotating schedule, to respond to after hours services calls.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Assist in the maintenance of office, shop, and yard. This duty is performed as needed, about 10% of the time.
2. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
3. Assist crew in transporting equipment and materials to work locations. This duty is performed daily, about 15% of the time.
4. Assist in repairing distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
5. Assist in repairing water and sewer services. This duty is performed daily, about 25% of the time.
6. Assist in the installation of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
7. Assist in the installation of water and sewer services. This duty is performed as needed, about 5% of the time.
8. Assist in the maintenance of equipment and vehicles. This duty is performed as needed, about 10% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Minimum requirement; general educational background without high school completion, plus 0 to 6 months related experience and/or training. Or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply and divide numbers. Ability to perform these mathematical skills using money and other forms of measurement.

CRITICAL THINKING SKILLS

Ability to use common sense understanding in order to carry out simple multi-step instructions. Ability to deal with standardized situations with limited variables.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Driver's License

OSHA Excavation Safety Training (29 CFR 1926.650-652)

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

SOFTWARE SKILLS REQUIRED

Not indicated.

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under immediate supervision, with short assignments of work at frequent interval with regular check of work.

PLANNING

Limited responsibility with regard to specific assignments in planning time, method, manner, and/or sequence of performance of own work operations.

DECISION MAKING

Performs work operations which permit infrequent opportunity for decision-making of minor importance and which would only affect the operating efficiency of the individual involved to a slight degree.

MENTAL DEMAND

Light mental demand. Operations requiring intermittent directed thinking to carry out predetermined procedure or sequence of operations of limited variability. Operations requiring intermittent attention to control machine or manual motions.

ANALYTICAL ABILITY / PROBLEM SOLVING

Repetitive. Activities or duties using a pre-determined set of processes or directions coupled with nearby supervision. Learned things in situations where choice is simple or

patterned.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$5,000 to \$150,000.

ACCURACY

Probable errors of internal scope should ordinarily be detected within the department or office in which they occur, but may affect the work of others within the unit, requiring additional expenditure of time to trace errors and make all necessary corrections. Errors would require a moderate amount of time to correct.

ACCOUNTABILITY

FREEDOM TO ACT

Defined. Semi-repetitive prescribed processes and procedures with nearby supervision.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Very small. Job creates a monetary impact for the organization up to an annual level of \$100,000.

IMPACT ON END RESULTS

Minimal impact. Job has little or no impact on the organization's end results. Job is focused on non-decision making activities or inconsequential duties.

PUBLIC CONTACT

Occasional contacts with patrons on routine matters.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are extremely disagreeable working conditions most of the time (e.G. Hot mix paving in constant sun).

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job.

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to outdoor weather conditions; occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit, taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Construction Lineman II

Job Description

Exempt: No
Department: Water-Sewer System - Lineman II
Reports To: Lead System Operator
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: September 28, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall provide general labor and equipment operating support for crew maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall provide maintenance to equipment, vehicles, office, shop, and yard as required.

This position is an on-call position, in a rotating schedule, to respond to after hours services calls.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Assist crew in transporting equipment and materials to work locations. This duty is performed daily, about 15% of the time.
2. Assist in repairing distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
3. Assist in repairing water and sewer services. This duty is performed daily, about 25% of the time.
4. Assist in the installation of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
5. Assist in the installation of water and sewer services. This duty is performed as needed, about 5% of the time.
6. Assist in the maintenance of equipment and vehicles. This duty is performed as needed, about 10% of the time.
7. Assist in the maintenance of office, shop, and yard. This duty is performed as needed, about 10% of the time.
8. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Minimum requirement; general educational background without high school completion, plus 12 to 18 months related experience and/or training. Or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply and divide numbers. Ability to perform these mathematical skills using money and other forms of measurement.

CRITICAL THINKING SKILLS

Ability to use common sense understanding in order to carry out simple multi-step instructions. Ability to deal with standardized situations with limited variables.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Class A Commercial Driver's License (CDL)

OSHA Excavation Safety Training (29 CFR 1926.650-652)

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

SOFTWARE SKILLS REQUIRED

Not indicated.

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general supervision where standard practice enables the employee to proceed alone on routine work, referring all questionable cases to supervisor.

PLANNING

Limited responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work operations.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and which would not only affect the operating efficiency of the individual involved, but would also affect the work operations of other employees and/or clientele to a slight degree.

MENTAL DEMAND

Moderate mental demand. Operations requiring almost continuous attention, but work is sufficiently repetitive that a habit cycle is formed; operations requiring intermittent directed thinking to determine or select materials, equipment or operations where variable sequences may be selected by the employee.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately repetitive. Activities with slight variation using a definite set of processes or directions with some degree of supervision. Choice of learned things in situations which conform to clearly established patterns and modes.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors of internal and external scope would have a moderate effect on the operational efficiency of the organizational component concerned. Errors might possibly go undetected for a considerable period of time, thereby creating an inaccurate picture of an existing situation. Could cause further errors, losses, or embarrassment to the organization. The possibility for error is always present due to requirements of the job.

ACCOUNTABILITY

FREEDOM TO ACT

Defined. Semi-repetitive prescribed processes and procedures with nearby supervision.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Very small. Job creates a monetary impact for the organization up to an annual level of \$100,000.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Frequent contacts with general public, patrons, or other outside representatives, wherein the manner of handling these contacts has a bearing on the organization's position and operation.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are extremely disagreeable working conditions most of the time (e.G. Hot mix paving in constant sun).

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to outdoor weather conditions; occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit, taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Construction Manager

Job Description

Exempt: No
Department: Water-Sewer System - Supervisor
Reports To: Utility Engineering Manager
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: September 29, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall oversee and manage all crews maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall oversee and manage maintenance to equipment, vehicles, office, shop, and yard as required.

This position requires an Arkansas Department of Health Distribution 4 Water System Operator License.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Manage and oversee transportation including but not limited to: maintenance, budgeting, and purchasing. This duty is performed as needed, about 15% of the time.
2. Manage and oversee repair of distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
3. Manage and oversee repair of water and sewer services. This duty is performed daily, about 25% of the time.
4. Manage and oversee installation of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
5. Manage and oversee installation of water and sewer services. This duty is performed as needed, about 5% of the time.
6. Manage and oversee equipment including but not limited to: maintenance, budgeting, and purchasing. This duty is performed as needed, about 10% of the time.
7. Manage and oversee maintenance of office, shop, and yard. This duty is performed as needed, about 10% of the time.
8. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Knowledge of a specialized field (however acquired), such as basic accounting, computer, etc. Equivalent of four years in high school, plus night, trade extension, or correspondence school specialized training, equal to two years of college, plus 5 years related experience and/or training, and 19 to 23 months related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication. Ability to read and understand simple instructions, short correspondence, notes, letters and memos; Ability to write simple correspondence. Ability to read and understand documents such as policy manuals, safety rules, operating and maintenance instructions, and procedure manuals; Ability to write routine reports and correspondence.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to prepare and interpret bar graphs.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Class A Commercial Driver's License (CDL)

Arkansas Department of Health Distribution 4 Water System Operator License

OSHA Excavation Safety Training (29 CFR 1926.650-652)

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Not indicated.

SOFTWARE SKILLS REQUIRED

Intermediate: Contact Management, Database, Payroll Systems, Spreadsheet, Word Processing/Typing

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under direction where a definite objective is set up and the employee plans and arranges own work, referring only unusual cases to supervisor.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work; may also occasionally assist in the planning of work assignments performed by others within a limited area of

operation.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance; the latter of which would affect the work operations of other employees and/or clientele to a moderate degree.

MENTAL DEMAND

Close mental demand. Operations requiring close and continuous attention for control of operations. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately structured. Fairly broad activities using moderately structured procedures with only generally guided supervision. Interpolation of learned things in somewhat varied situations.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

Supervises a moderate size group (8-15) of employees, but possibly smaller if difficult, semi-technical work, requiring considerable direction and assistance, is involved. Plans, directs and coordinates work, makes decisions, and performs personally the more difficult aspects of the same broad assignment.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors would not likely be detected until they reached another department, office or patron, and would then require considerable time and effort to correct the situation. Frequently, possibility of error that would affect the organization's prestige and relationship with the public to a limited extent, but where succeeding operations or supervision would normally preclude the possibility of a serious situation arising as a result of the error or decision.

ACCOUNTABILITY

FREEDOM TO ACT

Standardized. Accepted processes covered by well-defined standardized policies and procedures with supervisory review.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Small. Job creates a monetary impact for the organization from \$100,000 to \$1mm.

IMPACT ON END RESULTS

Moderate impact. Job has a definite impact on the organization's end results.

Participates with others in taking action for a department and/or total organization.

PUBLIC CONTACT

Regular contacts with patrons where the contacts are initiated by the employee. Involves both furnishing and obtaining information and, also, attempting to influence the decisions of those persons contacted. Contacts of considerable importance and of such nature, that failure to exercise proper judgment may result in important tangible or intangible losses to the organization.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are disagreeable working conditions part of the time.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, outdoor weather conditions, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Semi-repetitive, low physical. Semi-repetitive type work which requires periods of concentration for varied time cycles as prescribed by the tasks.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit,

taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Construction Operator Job Description

Exempt: No
Department: Water-Sewer System - Operator
Reports To: Lead System Operator
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: September 28, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall provide general labor and equipment operating support for crew maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall provide maintenance to equipment, vehicles, office, shop, and yard as required.

This position is an on-call position, in a rotating schedule, to respond to after hours services calls.

This position requires an Arkansas Department of Health Distribution 3 Water System Operator License.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Transport equipment and materials to work locations. This duty is performed daily, about 15% of the time.
2. Repair distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
3. Repair water and sewer services. This duty is performed daily, about 25% of the time.
4. Install of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
5. Install of water and sewer services. This duty is performed as needed, about 5% of the time.
6. Maintain equipment and vehicles. This duty is performed as needed, about 10% of the time.
7. Maintain office, shop, and yard. This duty is performed as needed, about 10% of the time.
8. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Knowledge of a specialized field (however acquired), such as basic accounting, computer, etc. Equivalent of four years in high school, plus night, trade extension, or correspondence school specialized training, equal to two years of college, plus 3 years related experience and/or training, and 12 to 18 months related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication. Ability to read and understand simple instructions, short correspondence, notes, letters and memos; Ability to write simple correspondence. Ability to read and understand documents such as policy manuals, safety rules, operating and maintenance instructions, and procedure manuals; Ability to write routine reports and correspondence.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to prepare and interpret bar graphs.

CRITICAL THINKING SKILLS

Ability to use common sense understanding in order to carry out detailed written or oral instructions. Ability to deal with problems involving a few known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Class A Commercial Driver's License (CDL)

Arkansas Department of Health Distribution 3 Water System Operator License

OSHA Excavation Safety Training (29 CFR 1926.650-652)

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Department of Health Distribution 4 Water System Operator License

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

SOFTWARE SKILLS REQUIRED

Not indicated.

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general supervision where standard practice enables the employee to proceed alone on routine work, referring all questionable cases to supervisor.

PLANNING

Limited responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work operations.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and which would not only affect the operating efficiency of the individual involved, but would also affect the work operations of other employees and/or clientele to a slight degree.

MENTAL DEMAND

Close mental demand. Operations requiring close and continuous attention for control of operations. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately structured. Fairly broad activities using moderately structured procedures with only generally guided supervision. Interpolation of learned things in somewhat varied situations.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors of internal and external scope would have a moderate effect on the operational efficiency of the organizational component concerned. Errors might possibly go undetected for a considerable period of time, thereby creating an inaccurate picture of an existing situation. Could cause further errors, losses, or embarrassment to the organization. The possibility for error is always present due to requirements of the job.

ACCOUNTABILITY

FREEDOM TO ACT

Defined. Semi-repetitive prescribed processes and procedures with nearby supervision.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget,

proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Very small. Job creates a monetary impact for the organization up to an annual level of \$100,000.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Frequent contacts with general public, patrons, or other outside representatives, wherein the manner of handling these contacts has a bearing on the organization's position and operation.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are extremely disagreeable working conditions most of the time (e.G. Hot mix paving in constant sun).

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to outdoor weather conditions; occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit, taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10

pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

*UPDATE 2015 SAMPLE
Job Description for Construction Operator*

*Printed 3/11/2016 at 08:28 AM
DBCompensation System - www.dbsquared.com*

Update 2015 Sample Construction Operator in Training Job Description

Exempt: No
Department: Water-Sewer System - Lead Operator
Reports To: System Supervisor
Location: 3105 S. Mobile Ave., Russellville, AR 72801
Date Prepared: July 25, 2014
Date Revised: October 06, 2015

GENERAL DESCRIPTION OF POSITION

The holder of this position shall provide general labor and equipment operating support for crew maintaining and installing: distribution and collection mains and appurtenances, water and sewer services. Additionally, the holder shall provide maintenance to equipment, vehicles, office, shop, and yard as required.

This position is an on-call position, in a rotating schedule, to respond to after hours services calls.

This position requires an Arkansas Department of Health Distribution 3 Water System Operator License.

This position is a working supervisory position, with an emphasis on working, of a two (2) to three (3) man crew. It requires hands on work in the trench in addition to equipment operation.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Transport equipment and materials to work locations. This duty is performed daily, about 15% of the time.
2. Repair distribution and collection mains and appurtenances. This duty is performed daily, about 25% of the time.
3. Repair water and sewer services. This duty is performed daily, about 25% of the time.
4. Install of distribution and collection mains and appurtenances. This duty is performed as needed, about 5% of the time.
5. Install of water and sewer services. This duty is performed as needed, about 5% of the time.
6. Maintain of equipment and vehicles. This duty is performed as needed, about 10% of the time.
7. Maintain office, shop, and yard. This duty is performed as needed, about 10% of the time.
8. Perform any other duties as required or assigned. This duty is performed as needed, about 5% of the time.
9. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

High school or GED, plus specialized schooling and/or on the job education in a specific skill area; e.g. data processing, clerical/administrative, equipment operation, etc, plus 3 years related experience and/or training, and 12 to 18 months related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read a limited number of words and recognize similarities and differences between words and between series of numbers; Ability to write and speak simple sentences as a means for basic communication. Ability to read and understand simple instructions, short correspondence, notes, letters and memos; Ability to write simple correspondence. Ability to read and understand documents such as policy manuals, safety rules, operating and maintenance instructions, and procedure manuals; Ability to write routine reports and correspondence.

MATHEMATICAL SKILLS

Ability to add, subtract, multiply, and divide in all units of measure, using whole numbers, common fractions, and decimals. Ability to compute rate, ratio, and percent and to prepare and interpret bar graphs.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Class A Commercial Driver's License (CDL)

Arkansas Department of Health Distribution 3 Water System Operator License

OSHA Excavation Safety Training (29 CFR 1926.650-652)

OSHA Confined Space Entry Competent Person Certification (29 CFR 1910.146)

AHTD Manual on Uniform Traffic Control Devices (MUTCD): Federal MUTCD - Part 6 - Temporary Traffic Control Training

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Arkansas Department of Health Distribution 4 Water System Operator License

SOFTWARE SKILLS REQUIRED

Not indicated.

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general supervision where standard practice enables the employee to proceed alone on routine work, referring all questionable cases to supervisor.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work; may also occasionally assist in the planning of work assignments performed by others within a limited area of operation.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance; the latter of which would affect the work operations of other employees and/or clientele to a moderate degree.

MENTAL DEMAND

Moderate mental demand. Operations requiring almost continuous attention, but work is sufficiently repetitive that a habit cycle is formed; operations requiring intermittent directed thinking to determine or select materials, equipment or operations where variable sequences may be selected by the employee.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately structured. Fairly broad activities using moderately structured procedures with only generally guided supervision. Interpolation of learned things in somewhat varied situations.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

Supervises a small group (1-3) of employees in the same or lower classification. Assigns and checks work; assists and instructs as required, but performs same work as those supervised, or closely related work, most of the time. Content of the work supervised is of a non-technical nature and does not vary in complexity to any great degree.

Supervises the following departments: NA

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors of internal and external scope would have a moderate effect on the operational efficiency of the organizational component concerned. Errors might possibly go undetected for a considerable period of time, thereby creating an inaccurate picture of an existing situation. Could cause further errors, losses, or embarrassment to the organization. The possibility for error is always present due to requirements of the job.

ACCOUNTABILITY

FREEDOM TO ACT

Standardized. Accepted processes covered by well-defined standardized policies and procedures with supervisory review.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Very small. Job creates a monetary impact for the organization up to an annual level of \$100,000.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Regular contacts with patrons, either within the office or in the field. May also involve occasional self-initiated contacts to patrons. Lack of tact and judgment may result in a limited type of problem for the organization.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of complex machines and equipment (desktop/laptop computer and software, road and production machines and equipment, driver's license/cdl, etc.)

WORKING CONDITIONS

Outside working environment, wherein there are extremely disagreeable working conditions most of the time (e.G. Hot mix paving in constant sun).

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to outdoor weather conditions; occasionally exposed to work near moving mechanical parts, fumes or airborne particles, toxic or caustic chemicals, risk of electrical shock, vibration. The noise level in the work environment is usually very loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified

physical demands of the employee.

While performing the functions of this job, the employee is regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl, talk or hear; and occasionally required to sit, taste or smell. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include distance vision; color vision; peripheral vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Laboratory Analyst Job Description

Exempt: No
Department: Laboratory
Reports To:
Location: Pollution Control Works Facility
Date Prepared: June 26, 2014
Date Revised: October 06, 2015

GENERAL DESCRIPTION OF POSITION

The incumbent is responsible for performing chemical and biological testing and providing information and data for various plant operations as required by local, state and federal regulatory agencies.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. gather and receive water, wastewater and sludge samples from treatment plant, collections/ distribution system, and perform various analytical tests using approved methods as required by regulatory agencies. This duty is performed daily, about 50% of the time.
2. Perform QA/QC control procedures and maintain QA/ QC records. This duty is performed daily, about 1% of the time.
3. Maintain bench sheets, analytical equipment calibration sheets and chain-of-custody sheets, enter data into operations program daily. This duty is performed daily, about 2% of the time.
4. Maintain cleanliness and safety of laboratory. This duty is performed daily, about 1% of the time.
5. Calibrate laboratory equipment. This duty is performed daily, about 5% of the time.
6. Submit purchase order requests and maintain bench supply levels for laboratory . This duty is performed weekly, about 5% of the time.
7. Answer phone message and customer requests for both in house and outside customers. This duty is performed daily, about 1% of the time.
8. Perform special analytical tests as requested by operations manager. This duty is performed as needed, about 20% of the time.
9. Perform other duties as required or assigned. This duty is performed daily, about 15% of the time.
10. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Broad knowledge of such fields as accounting, marketing, business administration, finance, etc. Equivalent to a four year college degree, plus 7 to 11 months related experience and/or training. Or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read, analyze, and understand common scientific and technical journals, financial reports, and legal documents; Ability to respond to complex or difficult inquiries or complaints from customers, regulatory agencies, or members of the business community.

MATHEMATICAL SKILLS

Ability to calculate figures and amounts such as discounts, interest, commissions, proportions, percentages, area, circumference, and volume. Ability to apply concepts such as fractions, ratios, and proportions to practical situations.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Class IV Wastewater License, Class IV Water Distribution, must have a valid Arkansas Motor vehicle operator license

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Advance Industrial license, BS in environmental science, chemistry or biology

SOFTWARE SKILLS REQUIRED

Intermediate: Presentation/PowerPoint, Spreadsheet, Word Processing/Typing
Basic: 10-Key, Alphanumeric Data Entry, Database

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under direction where a definite objective is set up and the employee plans and arranges own work, referring only unusual cases to supervisor.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work; may also occasionally assist in the planning of work assignments performed by others within a limited area of operation.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance; the latter of which would affect the work operations of other employees and/or clientele to a moderate degree.

MENTAL DEMAND

Close mental demand. Operations requiring close and continuous attention for control of operations. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment

where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Directed. Supervisory and/or professional skills using structured practices or policies and directed as to execution and review. Interpolation of learned things in moderately varied situations where reasoning and decision-making are essential.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments:

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$5,000 to \$150,000.

ACCURACY

Probable errors would not likely be detected until they reached another department, office or patron, and would then require considerable time and effort to correct the situation. Frequently, possibility of error that would affect the organization's prestige and relationship with the public to a limited extent, but where succeeding operations or supervision would normally preclude the possibility of a serious situation arising as a result of the error or decision.

ACCOUNTABILITY

FREEDOM TO ACT

Generally controlled. General processes covered by established policies and standards with supervisory oversight.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

None. Job does not create any dollar monetary impact for the organization.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Frequent contacts with general public, patrons, or other outside representatives, wherein the manner of handling these contacts has a bearing on the organization's position and operation.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of highly complex machines and equipment; specialized or advanced software programs.

WORKING CONDITIONS

Periodically exposed to such elements as noise, intermittent standing, walking, occasionally pushing, carrying, or lifting; but none are present to the extent of being disagreeable.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is frequently exposed to fumes or airborne particles, toxic or caustic chemicals; and occasionally exposed to work near moving mechanical parts, outdoor weather conditions, wet or humid conditions, extreme cold, extreme heat, risk of electrical shock. The noise level in the work environment is usually moderate.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Semi-repetitive, low physical. Semi-repetitive type work which requires periods of concentration for varied time cycles as prescribed by the tasks.

While performing the functions of this job, the employee is continuously required to use hands to finger, handle, or feel, talk or hear; regularly required to stand, walk; occasionally required to climb or balance, stoop, kneel, crouch, or crawl. The employee must occasionally lift and/or move up to 100 pounds; frequently lift and/or move up to 25 pounds; continuously lift and/or move up to 10 pounds. Specific vision abilities required by this job include close vision; distance vision; color vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample PCW Operator Job Description

Exempt: No
Department: Not indicated.
Reports To: Not indicated.
Location: Not indicated.
Date Prepared: June 26, 2014
Date Revised: September 29, 2015

GENERAL DESCRIPTION OF POSITION

Not indicated

ESSENTIAL DUTIES AND RESPONSIBILITIES

Not indicated.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

High school or GED, plus specialized schooling and/or on the job education in a specific skill area; e.g. data processing, clerical/administrative, equipment operation, etc, plus 2 years related experience and/or training. Or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read, analyze, and understand general business/company related articles and professional journals; Ability to speak effectively before groups of customers or employees.

MATHEMATICAL SKILLS

Ability to calculate figures and amounts such as discounts, interest, commissions, proportions, percentages, area, circumference, and volume. Ability to apply concepts such as fractions, ratios, and proportions to practical situations.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Not indicated.

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Not indicated.

SOFTWARE SKILLS REQUIRED

Basic: Accounting, Alphanumeric Data Entry, Database, Payroll Systems, Presentation/PowerPoint, Spreadsheet, Word Processing/Typing

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general direction, working from policies and general directives. Rarely refers specific cases to supervisor unless clarification or interpretation of the organization's policy is required.

PLANNING

Limited responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work operations.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance, either of which would affect the work operations of small organizational component and the organization's clientele.

MENTAL DEMAND

Close mental demand. Operations requiring close and continuous attention for control of operations. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately structured. Fairly broad activities using moderately structured procedures with only generally guided supervision. Interpolation of learned things in somewhat varied situations.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments: Not indicated.

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors would not likely be detected until they reached another department, office or patron, and would then require considerable time and effort to correct the situation. Frequently, possibility of error that would affect the organization's prestige and relationship with the public to a limited extent, but where succeeding operations or supervision would normally preclude the possibility of a serious situation arising as a result of the error or decision.

ACCOUNTABILITY

FREEDOM TO ACT

Generally controlled. General processes covered by established policies and standards with supervisory oversight.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Medium. Job creates a monetary impact for the organization from \$1mm to \$10mm.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Occasional contacts with patrons on routine matters.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of highly complex machines and equipment; specialized or advanced software programs.

WORKING CONDITIONS

Outside or inside working environment, wherein there are potential hazardous working conditions and life-threatening situations exist (fire, chemicals, electrical sources, heights, dangerous people, etc.) part of the time.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to fumes or airborne particles, outdoor weather conditions, wet or humid conditions; regularly exposed to work near moving mechanical parts, toxic or caustic chemicals; frequently exposed to risk of electrical shock; and occasionally exposed to work in high, precarious places, extreme heat, vibration. The noise level in the work environment is usually loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate

amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is continuously required to talk or hear, taste or smell; regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms; and frequently required to stoop, kneel, crouch, or crawl; occasionally required to sit, climb or balance. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 50 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include close vision; distance vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample PCW Operator in Training Job Description

Exempt: No
Department: Pollution Control Works
Reports To: Not indicated.
Location: Pollution Control Works Facility
Date Prepared: June 26, 2014
Date Revised: October 06, 2015

GENERAL DESCRIPTION OF POSITION

The incumbent is responsible for performing assigned duties to assure proper operations and maintenance of plant and equipment.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Operate various pumps and equipment.
2. Inspect pumps and equipment for defects.
3. Repair defective pumps and equipment using proper tools.
4. Read meters, record information and change charts.
5. Perform assigned duties in regard to sludge management practices.
6. Perform required laboratory analysis in regard to operational aspects of the plant.
7. Maintain records of temperature, dissolved oxygen, pH, sludge volume index and chemical readings.
8. Assist in plant maintenance as needed.
9. Perform other related duties as required or assigned.
10. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Mental alertness and adaptability to office and field area work routines. Equivalent to four years high school or GED, with particular emphasis during high school in office skills, shop skills, or others, plus 0 to 6 months related experience and/or training. Or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read, analyze, and understand general business/company related articles and professional journals; Ability to speak effectively before groups of customers or employees.

MATHEMATICAL SKILLS

Ability to calculate figures and amounts such as discounts, interest, commissions, proportions, percentages, area, circumference, and volume. Ability to apply concepts such as fractions, ratios, and proportions to practical situations.

CRITICAL THINKING SKILLS

Ability to utilize common sense understanding in order to carry out written, oral or diagrammed instructions. Ability to deal with problems involving several known variables in situations of a routine nature.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Class I Wastewater License

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Not indicated.

SOFTWARE SKILLS REQUIRED

Basic: Alphanumeric Data Entry, Database, Presentation/PowerPoint, Spreadsheet, Word Processing/Typing

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under immediate supervision, performs general assignments of work, with periodic check of performance by supervisor.

PLANNING

Limited responsibility with regard to specific assignments in planning time, method, manner, and/or sequence of performance of own work operations.

DECISION MAKING

Performs work operations which permit infrequent opportunity for decision-making of minor importance and which would only affect the operating efficiency of the individual involved to a slight degree.

MENTAL DEMAND

Moderate mental demand. Operations requiring almost continuous attention, but work is sufficiently repetitive that a habit cycle is formed; operations requiring intermittent directed thinking to determine or select materials, equipment or operations where variable sequences may be selected by the employee.

ANALYTICAL ABILITY / PROBLEM SOLVING

Moderately repetitive. Activities with slight variation using a definite set of processes or directions with some degree of supervision. Choice of learned things in situations which conform to clearly established patterns and modes.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

No supervision.

Supervises the following departments: Not indicated.

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$5,000 to \$150,000.

ACCURACY

Probable errors of internal and external scope would have a moderate effect on the operational efficiency of the organizational component concerned. Errors might possibly go undetected for a considerable period of time, thereby creating an inaccurate picture of an existing situation. Could cause further errors, losses, or embarrassment to the organization. The possibility for error is always present due to requirements of the job.

ACCOUNTABILITY

FREEDOM TO ACT

Directed. Freedom to complete duties as defined by wide-ranging policies and precedents with mid to upper-level managerial oversight.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

None. Job does not create any dollar monetary impact for the organization.

IMPACT ON END RESULTS

Moderate impact. Job has a definite impact on the organization's end results. Participates with others in taking action for a department and/or total organization.

PUBLIC CONTACT

Occasional contacts with patrons on routine matters.

EMPLOYEE CONTACT

Contacts occasionally with others beyond immediate associates, but generally of a routine nature. May obtain, present or discuss data, but only as pertains to an immediate and specific assignment. No responsibility for obtaining cooperation or approval of action or decision.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Occasional use of highly complex machines and equipment; specialized or advanced software programs.

WORKING CONDITIONS

Outside or inside working environment, wherein there are potential hazardous working conditions and life-threatening situations exist (fire, chemicals, electrical sources, heights, dangerous people, etc.) part of the time.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to

perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to fumes or airborne particles, outdoor weather conditions, wet or humid conditions; regularly exposed to work near moving mechanical parts, toxic or caustic chemicals; frequently exposed to risk of electrical shock; and occasionally exposed to work in high, precarious places, extreme heat, vibration. The noise level in the work environment is usually loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is continuously required to talk or hear, taste or smell; regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms; and frequently required to stoop, kneel, crouch, or crawl; occasionally required to sit, climb or balance. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 50 pounds; regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include close vision; distance vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample PCW Senior Operator Job Description

Exempt: No
Department: Pollution Control Works
Reports To: Not indicated.
Location: Pollution Control Works Facility
Date Prepared: June 26, 2014
Date Revised: September 29, 2015

GENERAL DESCRIPTION OF POSITION

The incumbent is responsible for providing daily work leadership in order to ensure proper operation and maintenance of the plant and equipment.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Provide leadership and supervision to all subordinate personnel.
2. Read meters, maintain records and reports, update charts as indicated.
3. Inspect pumps and equipment for defects.
4. Repair defective pumps and equipment using appropriate tools.
5. Perform laboratory analysis in regard to operational aspects of the plant.
6. Maintain proper level of chemicals.
7. Assist with maintenance of plant buildings and grounds.
8. Assist lab with samples as needed.
9. Perform inventory of reserve chemicals.
10. Monitor levels at various locations.
11. Receive emergency calls and dispatch appropriate personnel.
12. Conduct safety training.
13. Replace monitoring charts.
14. Perform other related duties as required or assigned.
15. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Knowledge of a specialized field (however acquired), such as basic accounting,

computer, etc. Equivalent of four years in high school, plus night, trade extension, or correspondence school specialized training, equal to two years of college, plus 4 years related experience and/or training, and 1 to 6 months related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to read, analyze, and understand general business/company related articles and professional journals; Ability to speak effectively before groups of customers or employees.

MATHEMATICAL SKILLS

Ability to calculate figures and amounts such as discounts, interest, commissions, proportions, percentages, area, circumference, and volume. Ability to apply concepts such as fractions, ratios, and proportions to practical situations.

CRITICAL THINKING SKILLS

Ability to define problems, collect data, establish facts, and draw valid conclusions. Ability to interpret an extensive variety of technical instructions in mathematical or diagram form and deal with several abstract and concrete variables.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Class III Wastewater License

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Class IV Wastewater License

SOFTWARE SKILLS REQUIRED

Intermediate: Presentation/PowerPoint, Spreadsheet, Word Processing/Typing
Basic: Accounting, Alphanumeric Data Entry, Database, Payroll Systems

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under general direction, working from policies and general directives. Rarely refers specific cases to supervisor unless clarification or interpretation of the organization's policy is required.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work, in addition, the work operations of a group of employees, all performing basically the same type of work.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance, either of which would affect the work operations of large organizational component and the organization's clientele.

MENTAL DEMAND

Close mental demand. Operations requiring close and continuous attention for control of operations. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Directed. Supervisory and/or professional skills using structured practices or policies and directed as to execution and review. Interpolation of learned things in moderately varied situations where reasoning and decision-making are essential.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

Supervises a small group (3-7) of employees, usually of lower classifications. Assigns and checks work; assists and instructs as required and performs same work as those supervised, or closely related work, a portion of the time. Content of the work supervised is of non-technical nature, but presents numerous situations to which policies and precedents must be interpreted and applied.

Supervises the following departments: Not indicated.

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Occasionally responsible for organization's property where carelessness, error, or misappropriation would result in moderate damage or moderate monetary loss to the organization. The total value for the above would range from \$150,000 to \$1,000,000.

ACCURACY

Probable errors would not likely be detected until they reached another department, office or patron, and would then require considerable time and effort to correct the situation. Frequently, possibility of error that would affect the organization's prestige and relationship with the public to a limited extent, but where succeeding operations or supervision would normally preclude the possibility of a serious situation arising as a result of the error or decision.

ACCOUNTABILITY

FREEDOM TO ACT

Directed. Freedom to complete duties as defined by wide-ranging policies and precedents with mid to upper-level managerial oversight.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Large. Job creates a monetary impact for the organization from \$10mm to \$50mm.

IMPACT ON END RESULTS

Modest impact. Job has some impact on the organizations end results, but still from an indirect level. Provides assistance and support services that facilitates decision making by others.

PUBLIC CONTACT

Regular contacts with patrons, either within the office or in the field. May also involve

occasional self-initiated contacts to patrons. Lack of tact and judgment may result in a limited type of problem for the organization.

EMPLOYEE CONTACT

Contacts of considerable importance within the department or office, such as those required in coordination of effort, or frequent contacts with other departments or offices, generally in normal course of performing duties. Requires tact in discussing problems and presenting data and making recommendations, but responsibility for action and decision reverts to others.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of highly complex machines and equipment; specialized or advanced software programs.

WORKING CONDITIONS

Outside or inside working environment, wherein there are potential hazardous working conditions and life-threatening situations exist (fire, chemicals, electrical sources, heights, dangerous people, etc.) part of the time.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to fumes or airborne particles, outdoor weather conditions, wet or humid conditions; regularly exposed to work near moving mechanical parts, toxic or caustic chemicals; frequently exposed to risk of electrical shock; and occasionally exposed to work in high, precarious places, extreme heat, vibration. The noise level in the work environment is usually loud.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is continuously required to talk or hear, taste or smell; regularly required to stand, walk, use hands to finger, handle, or feel, reach with hands and arms, stoop, kneel, crouch, or crawl; and occasionally required to sit, climb or balance. The employee must occasionally lift and/or move more than 100 pounds; frequently lift and/or move up to 25 pounds; regularly lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision; distance vision; depth perception; and ability to adjust focus.

ADDITIONAL INFORMATION

Not indicated.

Update 2015 Sample Wastewater Operations Manager Job Description

Exempt: No
Department: Wastewater
Reports To: Operations Manager
Location: 404 Jimmy Lyle Road - Pollution Control Works
Date Prepared: August 06, 2015
Date Revised: September 29, 2015

GENERAL DESCRIPTION OF POSITION

This position is responsible for the direct supervision of wastewater treatment plant and laboratory staff. This position is also responsible for the day to day operations and decisions that affect the wastewater treatment system in order to ensure compliance with applicable permit limits. This position is also responsible for providing oversight and direction for the pretreatment program including development, maintaining and updating the pretreatment ordinance, developing and assessing surcharge fees based on the ordinance, routine inspection of the significant users and any enforcement actions required as a result of these duties. This position is also responsible for all reporting and permitting of the wastewater facilities and is responsible to ensure that any corrective action pertaining to such permits is completed.

ESSENTIAL DUTIES AND RESPONSIBILITIES

1. Responsible for the direct supervision of wastewater treatment plant and laboratory staff. This duty is performed daily.
2. Responsible for the day to day operations and decisions that affect the wastewater treatment system in order to ensure compliance with applicable permit limits. This duty is performed daily.
3. Responsible for providing oversight and direction for the pretreatment program including development, maintaining and updating the pretreatment ordinance, developing and assessing surcharge fees based on the ordinance, routine inspection of the significant users and any enforcement actions required as a result of these duties. This duty is performed daily.
4. Responsible for all reporting and permitting of the wastewater facilities and is responsible to ensure that any corrective action pertaining to such permits is completed. This duty is performed as needed.
5. Assist with the development of the annual budgets for the areas of responsibility. This duty is performed annually.
6. Other job duties as assigned. This duty is performed as needed.
7. Perform any other related duties as required or assigned.

QUALIFICATIONS

To perform this job successfully, an individual must be able to perform each essential duty mentioned satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

EDUCATION AND EXPERIENCE

Knowledge of a specialized field (however acquired), such as basic accounting, computer, etc. Equivalent of four years in high school, plus night, trade extension, or correspondence school specialized training, equal to two years of college, plus 5 years related experience and/or training, and 2 years related management experience, or equivalent combination of education and experience.

COMMUNICATION SKILLS

Ability to write speeches and articles for publication that conform to prescribed style and format; Ability to effectively present information to top management, public groups, and/or boards of directors.

MATHEMATICAL SKILLS

Ability to work with mathematical concepts such as probability and statistical inference, and fundamentals of plane, algebra, solid geometry and trigonometry.

CRITICAL THINKING SKILLS

Ability to define problems, collect data, establish facts, and draw valid conclusions. Ability to interpret an extensive variety of technical instructions in mathematical or diagram form and deal with several abstract and concrete variables.

REQUIRED CERTIFICATES, LICENSES, REGISTRATIONS

Grade 4 Transmission and Distribution License; Grade 4 Wastewater License; Grade 4 Advanced Industrial License

PREFERRED CERTIFICATES, LICENSES, REGISTRATIONS

Not indicated.

SOFTWARE SKILLS REQUIRED

Advanced: Spreadsheet, Word Processing/Typing

Intermediate: Database

Basic: 10-Key, Accounting, Alphanumeric Data Entry, Payroll Systems, Presentation/PowerPoint

INITIATIVE AND INGENUITY

SUPERVISION RECEIVED

Under direction where a definite objective is set up and the employee plans and arranges own work, referring only unusual cases to supervisor.

PLANNING

Considerable responsibility with regard to general assignments in planning time, method, manner, and/or sequence of performance of own work, in addition, the organization and delegation of work operations for a division of employees engaged in widely diversified activities.

DECISION MAKING

Performs work operations which permit frequent opportunity for decision-making of minor importance and also frequent opportunity for decision-making of major importance, either of which would affect the work operations of large organizational component and the organization's clientele.

MENTAL DEMAND

Very close mental demand. Operations requiring very close and continuous attention for control of operations which require a high degree of coordination or immediate

response. Operations requiring intermittent direct thinking to determine or select the most applicable way of handling situations regarding the organization's administration and operations; also to determine or select material and equipment where highly variable sequences are involved.

ANALYTICAL ABILITY / PROBLEM SOLVING

Oversight. Activities covered by expansive policies and objectives, and oversight as to execution and review. High order of analytical, interpretative, and constructive thinking in varied situations covering multiple areas of the organization.

RESPONSIBILITY FOR WORK OF OTHERS

Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Responsibilities may include but not limited to interviewing, hiring and training employees; planning, assigning and directing work; appraising performance, rewarding and disciplining employees; addressing complaints and resolving problems.

Supervises a moderate size group (8-15) of employees engaged in important, complex operations, consisting of employees in different classifications who perform a wide variety of duties.

Supervises the following departments: Wastewater Plant, Laboratory, Pretreatment

RESPONSIBILITY FOR FUNDS, PROPERTY and EQUIPMENT

Regularly responsible for funds, building premises, inventory, or other property owned, controlled, or leased by the organization and, in addition, may have temporary custody and responsibility of patron property, which through carelessness, error, loss, theft, misappropriation, or similar action would result in very important monetary losses to the organization. The total value for the above would range from \$1,000,000 to \$10,000,000.

ACCURACY

Probable errors would normally not be detected in succeeding operations and could possibly affect organization-patron relationship, involve re-work, or additional expenditures in order to properly resolve the error. The possibility of such errors would occur quite frequently in performance of the job. May also cause inaccuracies or incomplete information that would be used in other segments of the organization as a basis for making subsequent decisions, plans, or actions.

ACCOUNTABILITY

FREEDOM TO ACT

Moderately directed. Freedom to act is given by upper level management guided by general policies and objectives that are reviewed by top management.

ANNUAL MONETARY IMPACT

The amount of annual dollars generated based on the job's essential duties / responsibilities. Examples would include direct dollar generation, departmental budget, proper handling of organization funds, expense control, savings from new techniques or reduction in manpower.

Medium. Job creates a monetary impact for the organization from \$1mm to \$10mm.

IMPACT ON END RESULTS

Moderate impact. Job has a definite impact on the organization's end results.

Participates with others in taking action for a department and/or total organization.

PUBLIC CONTACT

Extensive contacts with various diversified sectors of the public environment; wherein, the contacts are of major importance and failure to exercise proper judgment can lead to substantial losses to the organization.

EMPLOYEE CONTACT

Contacts with other departments or offices and also frequently with individuals in middle level positions; consulting on problems which necessitate judgment and tact in presentation to obtain cooperation or approval of action to be taken. Also, important contacts with associates as required in advanced supervisory jobs, plus frequent contact with senior level internal officials.

USE OF MACHINES, EQUIPMENT AND/OR COMPUTERS

Regular use of highly complex machines and equipment; specialized or advanced software programs.

WORKING CONDITIONS

Somewhat disagreeable working conditions. Continuously exposed to one or two elements such as noise, intermittent standing, walking; and occasional pushing, carrying, or lifting.

ENVIRONMENTAL CONDITIONS

The following work environment characteristics described here are representative of those an employee encounters while performing essential functions of this job.

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the functions of this job, the employee is continuously exposed to toxic or caustic chemicals; occasionally exposed to work near moving mechanical parts, outdoor weather conditions, wet or humid conditions, extreme cold, extreme heat, risk of electrical shock. The noise level in the work environment is usually moderate.

PHYSICAL ACTIVITIES

The following physical activities described here are representative of those that must be met by an employee to successfully perform the essential functions of this job.

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions and expectations.

Moderate diversity, moderately physical. Work activities which allow for a moderate amount of diversity in the performance of tasks which requires somewhat diversified physical demands of the employee.

While performing the functions of this job, the employee is continuously required to talk or hear, taste or smell; regularly required to stand, walk, sit, use hands to finger, handle, or feel; and occasionally required to reach with hands and arms, climb or balance, stoop, kneel, crouch, or crawl. The employee must occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close vision; and distance vision.

ADDITIONAL INFORMATION

Not indicated.

D-Ordinances

ORDINANCE NO. 1075

AN ORDINANCE REGULATING THE USE OF PUBLIC AND PRIVATE SEWERS AND DRAINS, PRIVATE SEWAGE DISPOSAL, THE INSTALLATION AND CONNECTION OF BUILDING SEWERS, AND THE DISCHARGE OF WATERS AND WASTES INTO THE PUBLIC SEWER SYSTEM; AND PROVIDING PENALTIES FOR VIOLATIONS THEREOF; IN THE CITY OF RUSSELLVILLE, COUNTY OF POPE, STATE OF ARKANSAS.

PREAMBLE

Whereas the City of Russellville, State of Arkansas wishes to provide for the maximum possible beneficial public use of the City's facilities through adequate regulation of sewer construction, sewer use and industrial waste water discharges, and to provide procedures for complying with requirements placed upon the City by other regulatory bodies, it is hereby ordained and enacted by the City Council of the City of Russellville, State of Arkansas, as follows:

ARTICLE I

Unless the context specifically indicates otherwise, the meaning of terms used in this ordinance shall be as follows:

Sec. 1: BOD (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20C, expressed in milligrams per liter.

Sec. 2: Building Drain shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five (5) feet (1.5 meters) outside the inner face of the building wall.

Sec. 3: Building Sewer shall mean the extension from the building drain to the public sewer or other place of disposal.

Sec. 4: Combined Sewer shall mean a sewer receiving both surface runoff and sewage.

Sec. 5: Garbage shall mean solid wastes from the domestic and commercial preparation, cooking, and dispensing of food, and from the handling, storage, and sale of produce.

Sec. 6: Industrial Wastes shall mean the liquid wastes from industrial manufacturing processes, trade, or business as distinct from sanitary sewage.

Sec. 7: Major Contributing Industry shall mean a nonresidential user that: (a) has a flow of 25,000 gallons or more per average work day; or (b) has a flow greater than 5 percent of the flow carried by the sewer system; or (c) has in its waste, a toxic pollutant; or (d) discharges wastewater that is found by the Superintendent, or the NPDES permit issuance authority in connection with the issuance of a NPDES permit to the public wastewater treatment system receiving the waste, to have significant impact, either singly or in combination with other contributing industries, on the wastewater treatment system or upon the quality of effluent therefrom.

Sec. 8: Natural Outlet shall mean any outlet into a watercourse, pond, ditch, lake, or other body of surface or groundwater.

Sec. 9: Person shall mean any individual, firm, company, association, society, corporation, group, partnership, copartnership, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine. The singular shall include the plural where indicated by the context.

Sec. 10: pH shall mean the logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.

Sec. 11: Properly Shredded Garbage shall mean the wastes from the preparation, cooking, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half ($\frac{1}{2}$) inch (1.27 centimeters) in any dimension.

Sec.12: Public Sewer shall mean a sewer in which all owners of abutting properties have equal rights, and is controlled by public authority.

Sec.13: Sanitary Sewer shall mean a sewer which carries sewage and to which storm, surface, and groundwaters are not intentionally admitted.

Sec. 14: Sewage shall mean a combination of the watercarried wastes from residences, business buildings, institutions, and industrial establishments, together with such ground, surface, and stormwaters as may be present.

Sec. 15: Sewage Treatment Plant shall mean any arrangement of devices and structures used for treating sewage.

Sec. 16: Sewage Works shall mean all facilities for collecting, pumping, treating, and disposing of sewage.

Sec. 17: Sewer shall mean a pipe or conduit for carrying sewage.

Sec. 18: Shall is mandatory; May is permissive.

Sec. 19: Slug shall mean any discharge of water, sewage, or industrial waste which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than fifteen (15) minutes more than five (5) times the average twenty-four hour concentration or flows during normal operation.

Sec. 20: Storm Drain (sometimes termed storm sewer) shall mean a sewer which carries storm and surface waters and drainage, but excludes sewage and industrial wastes, other than unpolluted cooling water.

Sec. 21: Superintendent shall mean the Superintendent of Sewage Works and/or Water Pollution Control of the City of Russellville, or his authorized deputy, agent, or representative.

Sec. 22: Suspended Solids shall mean solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, and which are removable by laboratory filtering.

Sec. 23: Watercourse shall mean a channel in which a flow of water occurs, either continuously or intermittently.

Sec. 24: Normal Domestic Sewage shall mean sewage which, when analyzed, shows by weight a daily average of not more than 350 parts per million of suspended solids and/or not more than 350 parts per million BOD.

Sec. 25: User shall mean any user who discharges an effluent into the City of Russellvilles Sewage Treatment Plant by means of pipes, conduits, pumping stations, force mains, constructed drainage ditches, intercepting ditches, and all constructed devices and appliances appurtenant thereto.

Sec. 26: Categorical Pretreatment Standards shall mean the National Pretreatment Standards specifying quantities or concentrations of pollutants or pollutant properties which may be discharged or introduced into a POTW by specific Industrial Dischargers.

Sec. 27: Act shall mean the Clean Water Act (33 U.S.C. 1251 et seq), as amended.

Sec. 28: City shall mean the City of Russellville, Arkansas, the local governmental entity enacting and enforcing this Ordinance.

Sec. 29: Permit is defined as set forth in Articles IV and VIII of this Ordinance.

ARTICLE II

Sec. 1: It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the City of Russellville, or in any area under the jurisdiction of said City, and human or animal excrement, garbage, or other objectionable waste.

Sec. 2: It shall be unlawful to discharge to any natural outlet within the City of Russellville, or in any area under the jurisdiction of said City, any sewage or other polluted waters, except where suitable treatment has been provided in accordance with subsequent provisions of this ordinance.

Sec. 3: Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault,

septic tank, cesspool, or other facility intended or used for the disposal of sewage.

Sec. 4: The owner of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the City and abutting on any street, alley, or right-of-way in which there is now located or may in the future be located a public sanitary or combined sewer of the City, is hereby required at his expense to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this ordinance, within ninety (90) days after date of official notice to do so, provided that said public sewer is within one hundred (100) feet (30.5 meters) of the property line.

ARTICLE III

Sec. 1: Where a public sanitary or combined sewer is not available under the provisions of Article II, Section 4, the building sewer shall be connected to a private sewage disposal system complying with the provisions of this article.

Sec. 2: Before commencement of construction of a private sewage disposal system the owner shall first obtain a written permit signed by the Superintendent. The application for such permit shall be made on a form furnished by the City, which the applicant shall supplement by any plans, specifications, and other information as are deemed necessary by the Superintendent. A permit and inspection fee of \$10.00 dollars shall be paid to the City at the time the application is filed.

Sec. 3: A permit for a private sewage disposal system shall not become effective until the installation is completed to the satisfaction of the Superintendent. He shall be allowed to inspect the work at any stage of construction and, in any event, the applicant for the permit shall notify the Superintendent when the work is ready for final inspection and before any underground portions are covered. The inspection shall be made within twenty-four (24) hours of the receipt of notice by the Superintendent.

Sec. 4: The type, capacities, location, and layout of a private sewage disposal system shall comply with all recommendations of the Department of Public Health of the State of Arkansas. No permit shall be issued for any

private sewage disposal system employing subsurface soil absorption facilities share the area of the lot is less than 15,000 square feet (1,394 square meters). No septic tank or cesspool shall be permitted to discharge to any natural outlet.

Sec. 5: At such time as a public sewer becomes available to a property served by a private sewage disposal system, as provided in Article III, Section 4, a direct connection shall be made to the public sewer in compliance with this ordinance, and any septic tanks, cesspools, and similar private sewage disposal facilities shall be abandoned and filled with suitable material.

Sec. 6: The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times; at no expense to the City.

Sec. 7: No statement contained in this article shall be construed to interfere with any additional requirements that may be imposed by the Health Officer.

Sec. 8: When a public sewer becomes available, the building sewer shall be connected to said sewer within sixty (60) days and the private sewage disposal system shall be cleaned of sludge and filled with clean bank-run gravel or dirt.

ARTICLE IV

Sec. 1: No authorized person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Superintendent.

Sec. 2: There shall be two (2) classes of building sewer permits: (a) for residential and commercial service, and (b) for service to establishments producing industrial wastes. In either case, the owner or his agent shall make application on a special form furnished by the City. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgement of the Superintendent. A permit and inspection fee of \$150.00 dollars for a residential or commercial building sewer permit and \$500.00 dollars for an industrial building sewer permit shall be paid to the City at the time the application is filed.

Sec. 3: All costs and expense incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the City from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

Sec. 4: A separate and independent building sewer shall be provided for every building; except where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer.

Sec. 5: Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the Superintendent, to meet all requirements of this ordinance.

Sec. 6: The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of the pipe, jointing, testing, and backfilling the trench, shall all conform to the requirements of the building and plumbing code or other applicable rules and regulations of the City. In the absence of code provisions or in amplification thereof, the materials and procedures set forth in appropriate specifications of the A.S.T.M. and W.P.C.F. Manual of Practice No. 9 shall apply.

Sec. 7: Whenever possible, the building sewer shall be brought to the building at an elevation below the basement floor. In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such building drain shall be lifted by an approved means and discharged to the building sewer.

Sec. 8: No person shall make connection of roof down spouts, exterior foundation drains, areaway drains, or other sources of surface runoff or groundwater to a building sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer.

Sec. 9: The connection of the building sewer into the public sewer shall conform to the requirements of the building and plumbing code or other applicable rules and

regulations of the City, or the procedures set forth in appropriate specifications of the A.S.T.M. and the W.P.C.F. Manual of Practice No. 9. All such connections shall be made gas tight and watertight. Any deviation from the prescribed procedures and materials must be approved by the Superintendent before installation. Sec. 10: The applicant for the building sewer permit shall notify the Superintendent when the building sewer is ready for inspection and connection to the public sewer. The connection shall be made under the supervision of the Superintendent or his representative.

Sec. 11: All excavations for building sewer installation shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City.

ARTICLE V

Sec. 1: No person shall discharge or cause to be discharged any stormwater, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer.

Sec. 2: Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the Superintendent. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Superintendent, to a storm sewer, combined sewer, or natural outlet.

Sec. 3: No person shall discharge or cause to be discharged any of the following described waters or wastes to any public sewers: (a) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas. (b) Any waters or wastes containing toxic or poisonous solids, liquied, or gases in sufficient quantity either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant. (c) Any waters or wastes having a pH lower than 6.0 or higher than 9.0, or having any othe rcorrosive property

capable of causing damage or hazard to structures, equipment and personnel of the sewage works.

(d) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works such as, but not limited to, ashes, ciners, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc. either whole or ground by garbage grinders.

Sec. 4: No person shall discharge or cause to be discharged the following described substances, materials, waters, or wastes if it appears likely in the opinion of the Superintendent that such wastes can harm either the sewers, sewage treatment process, or equipment, have an adverse effect on the receiving stream, or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his opinion as to the acceptability of these wastes, the Superintendent will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and other pertinent factors. The substances prohibited are:

(a) Any wastewater having a temperature which will inhibit biological activity in the POTW pretreatment plant resulting in Interference, but in no case wastewater with a temperature at the introduction into the POTW which exceeds 40C (104F) unless the POTW treatment plant is designed to accommodate such temperature.

(b) Any water or waste containing fats, wax, grease, or oils, whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) and one hundred fifty (150)F (0 and 65C).

(c) Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-fourths (3/4) horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the Superintendent.

(d) Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating solutions whether neutralized or not.

(e) Any waters or wastes containing toxic materials or

heavy metals in concentrations exceeding the following limits:

Element	mg/l
Arsenic	0.05
Barium	5.0
Boron	1.0
Cadmium	0.02
Chromium	0.5
Copper	0.2
Lead	0.1
Manganese	1.0
Mercury	0.005
Nickel	0.8
Selenium	0.02
Silver	0.1
Zinc	0.05
Cyanide	0.05

In addition, waters or wastes containing any measurable trace of the following:

Antimony	Rhenuim
Beryllium	Strontium
Bismuth	Tellurium
Cobalt	Pesticides
Molybdenum	Herbicides
Tin	Fungicides
	Uranylion

(f) Any waters or wastes containing phenols or other taste or odor-producing substances, in such concentrations exceeding limits which may be established by the Superintendent as necessary, after treatment of the composite sewage, to meet the requirements of the State, Federal or other public agencies of jurisdiction for such discharge to the receiving waters.

(g) Any radioactive wastes or isotopes of such halflife or concentration as may exceed limits established by the Superintendent in compliance with applicable State or Federal regulations.

(h) Deleted

(I) Materials which exert or cause:

(1) unusual concentrations of inert suspended solids (such as, but not limited to, Fullers earth,

lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

(2) Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).

(3) Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works.

(4) Unusual volume of flow or concentration of wastes constituting slugs as defined herein.

(j) Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes employed, or are amenable to treatment only to such degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

Section 5: If any waters or wastes are discharged, or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in Section 4 of this Article, and which in the judgement of the Superintendent, may have a deleterious effect upon the sewage works, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Superintendent may:

(a) Reject the wastes,

(b) Require pretreatment to an acceptable condition for discharge to the public sewers,

(c) Require control over the quantities and rates of discharge, and/or

(d) Require payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under the provisions of Section 10 of this article.

If the Superintendent permits the pretreatment of equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the Superintendent, and subject to the requirements of all applicable codes, ordinances, and laws.

Sec. 6: Grease, oil, and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of liquid wastes

containing grease in excessive amounts, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Superintendent, and shall be located as to be readily and easily accessible for cleaning and inspection.

Sec. 7: Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his expense.

Sec. 8: When required by the Superintendent, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole in the building sewer and/or other monitoring facilities together with such necessary meters and other appurtenances to facilitate observation, sampling, and measurement of the wastes. Such facilities, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the Superintendent. The facilities shall be installed by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times.

Sec. 9: All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this ordinance shall be determined in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, and shall be determined at the control manhole or monitoring facility provided, or upon suitable samples taken at said control manhole or monitoring facility has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb, and property. (The particular analyses involved will determine whether a twenty-four (24) hour composite of all out falls of a premise in appropriate or whether a grab sample or samples should be taken. Normally, but not always, BOD and suspended solids analyses are obtained from 24-hr composites of all out falls whereas pHs are determined from periodic grab samples.

Sec. 10: National categorical pretreatment standards as promulgated by the U.S. Environmental Protection Agency (EPA) pursuant to the Act shall be met by all Industrial Users of the regulated industrial categories. An application for modification of the national categorical pretreatment standards may be considered for submittal to the Regional Administrator by the Superintendent, when the wastewater treatment systems achieves consistent removal of the pollutants as defined by 40 CFR 403.7. State requirements and limitations on discharge to the Publicly Owned Treatment Works (POTW) shall be met by all Industrial Users which are subject to such standards in any instance in which they are more stringent than federal requirements and limitations or those in this or any other applicable ordinance.

Sec. 11: No statement contained in this ordinance shall be construed as preventing any special agreement or arrangement between the city and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the City for treatment, subject to payment therefore, by the industrial concern, provided that the industrial concern continues to comply with all applicable State and Federal requirements and standards.

ARTICLE VI

Sec. 1: No person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the sewage works. Any person, violating this provision shall be subject to immediate arrest under charge of disorderly conduct.

ARTICLE VII

Sec. 1: The Superintendent and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all properties at all reasonable times for the purpose of inspection, observation, measurement, sampling, testing and the performance of their duties, including inspection of all records maintained, in accordance with the provisions of this ordinance. The Superintendent or his representatives shall have no authority to inquire into any processes including metallurgical, chemical, oil, refining, ceramic,

paper, or other industries beyond that point having a direct bearing on the kind and source of discharge to the sewers or waterways or facilities for waste treatment. However the Superintendent or his representative shall have the right to set up on the users property such devices as are necessary to conduct sampling or metering operations. When such a user shall make necessary arrangements so that upon presentation of suitable identification, the Superintendent or his representative will be permitted to enter without delay for the purpose of performing their specific responsibilities.

Sec. 2: While performing the necessary work on private properties referred to in Article VII, Section 1 above, the Superintendent or duly authorized employees of the City shall observe all safety rules applicable to the premises established by the company and the company shall be held harmless for injury or death to the City employees and the City shall indemnify the company against loss or damage to its property by City employees and against liability claims and demands for personal injury or property damage asserted against the company and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the company to maintain safe conditions as required in Article V, Section B.

Sec. 3: The Superintendent and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter all private properties through which the City holds a duly negotiated easement for the purposes of, but not limited to, inspection, observation, measurement, sampling, repair, and maintenance of any portion of the sewage works lying within said easement. All entry and subsequent work, if any, on said easement, shall be done in full accordance with the terms of the duly negotiated easement pertaining to the private property involved.

Sec. 4: Information and data on a user obtained from applications, permits, monitoring programs and inspections shall be available to the public or any government agency without restriction unless the user specifically requests and is able to demonstrate to the satisfaction of the Superintendent that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets. When requested by the person furnishing a report, and until such time as the

information is determined not to be confidential, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to this ordinance and/or pretreatment programs; provided that, such portions of a report shall be available for use by the City or any City agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics shall not be recognized as confidential information. Information accepted by the Superintendent as confidential shall not be transmitted to any governmental agency by the superintendent until and unless a ten (10) day notification is given to the person furnishing the information.

ARTICLE VIII

Sec. 1: A permit issued under Article IV of this ordinance to a major contributing industry shall be subject to all the provisions of this ordinance and in addition such a permit may contain any or all of the following:

- (a) The average and maximum wastewater constituents and characteristics.
- (b) Limits on rate and time of discharge and requirements for flow regulations and equalization.
- (c) Requirements for installation of inspection and monitoring facilities.
- (d) Pretreatment requirements.
- (e) Specifications for monitoring programs which may include sampling, number, types and standards for tests and reporting schedule.
- (f) Compliance schedules.
- (g) Requirements for notification to and acceptance by the Superintendent of any new introduction of wastewater constituents or of any substantial change in the volume or character of the wastewater constituents being introduced into the wastewater system.
- (h) Requirements for disposal of sludges, floats and skimmings.
- (I) Requirements for submission of technical reports or discharge reports, including frequency of submission.
- (j) Requirements for maintaining plant records relating to wastewater discharge as specified by the Superintendent

and affording the Superintendent or his representative access thereto.

(k) Mean and maximum mass emission rates, or other appropriate limits when incompatible pollutants are proposed or present in the Major Contributing Industry's wastewater discharge.

(l) Additional requirement as determined by the Superintendent.

Section 2: Permits are issued to a specific user for a specific operation. Such a permit shall not be reassigned or transferred or sold to another owner, another user, or different premise, nor shall it be transferred to a new or significantly changed operation. At the time the Superintendent determines that a person qualifies as a Major Contributing Industry, the Superintendent shall order that person to obtain a permit of the type set forth in Section 1 of this Article. Major Contributing Industries shall complete and file with the Superintendent, a permit application therefor in the form prescribed by the Superintendent, and accompanied by the fee of \$200. Existing users shall apply for a permit within 60 days after the Superintendent's order. Proposed new Users who will be classified as Major Contributing Industries as defined in Article I of this ordinance shall apply at least 120 days prior to connecting to or contributing to the POTW. The Superintendent will evaluate the data furnished by a Major Contributing Industry and may require additional information. After evaluation and acceptance of the data furnished, the Superintendent will issue a Major Contributing Industry Wastewater Discharge Permit subject to terms and conditions provided herein.

Sec. 3: Any user who violates any section of this ordinance, or applicable State and/or Federal regulations, or any of the following conditions which are hereby made part of every permit, whether stated therein or not, is subject to having his permit revoked:

(a) The user shall actually report the wastewater constituents and characteristics of his discharge.

(b) The user shall report significant changes in operation, or in wastewater constituents and characteristics.

(c) The user shall allow reasonable access to his premises for the purposes of inspection or monitoring.

(d) The user shall comply with each and every term and

condition of the permit.

Sec. 4: The Superintendent shall be responsible for the enforcement of the provisions of this Article and shall have authority to serve notices of violations thereof, to issue orders and impose penalties as authorized therein, and to establish limits for the discharge of toxic or objectionable substances.

Sec. 5: Any person found to be violating any provision of this Article, Superintendents order, or condition of an industrial permit shall be served by the Superintendent or other agent of the City with written notice stating the nature of the violation. Within thirty (30) days after the date of the notice, unless a shorter time is necessary due to the nature of the violation, a description of successful corrective action taken or a plan for the satisfactory correction of the violation shall be submitted to the Superintendent. If the violation is not corrected by timely compliance, or a satisfactory correction plan submitted within the specified time, the Superintendent may order any user to show cause before him why enforcement action should not be taken. A written notice shall be served specifying the time and place of a hearing, the reason why the action is to be taken and the proposed enforcement action. The Superintendent may propose to take any enforcement action reasonably necessary to abate the violation, including termination of sewer service. Based upon the evidence presented at the hearing, the Superintendent shall determine the enforcement action which should be taken, if any. This determination may be appealed to a board or representative of the City designated to hear such appeals by filing a written petition with such board or representative within ten (10) days of the Superintendents ruling. The board or representative shall fix a reasonable time for hearing the appeal, at which the appelliant may be represented by counsel, and give written notice to the parties stating the time and place for the hearing. The board or representative shall decide the appeal within a reasonable time and notify the parties of its decision.

Sec. 6: The Superintendent may revoke any permit, or terminate or cause to be terminated wastewater treatment system service to any property, if a violation of any provision of this ordinance is found to exist or if a discharge of wastewater causes or threatens to cause a

condition of contamination, pollution, or nuisance as defined in this ordinance. This provision is in addition to any other provision set forth for violations of this ordinance.

Sec. 7: Users shall notify the Superintendent immediately of any discharges or highway spills of wastes in violation of this Ordinance to enable countermeasures to be taken by the City to minimize sewage to the wastewater treatment system and/or the receiving waters. This notification shall be followed, within 5 days of the date of occurrence, by a detailed written statement from the user describing the causes of the discharge and the measures being taken to prevent its future occurrence. Such notification will not relieve users of liability for any consequential expense, loss or damage to the wastewater treatment system or for any fines and/or penalties imposed on the City which result from the violative discharge. Users shall make available to their employees copies of this ordinance and together with such other wastewater information and notices which may be furnished by the Superintendent from time to time directed toward more effective waste pollution control. A notice shall be furnished and permanently posted by the user in a conspicuous place advising employees whom to call in case of any discharge in violation of this ordinance.

Sec. 8: When the Superintendent finds that a discharge of wastewater, in violation of this ordinance, or the provisions of a permit issued to a Major Contributing Industry, has taken place or threatens to take place, the Superintendent may issue an order to cease and desist, and direct that those persons not complying therewith shall:

- (a) Comply forthwith,
- (b) Comply in accordance with a time schedule set forth by the Superintendent, or
- (c) Take appropriate remedial or preventive action in the event of a threatened violation.

Sec. 9: When the City finds that a discharge of wastewater, in violation of this ordinance, or wastewater source control requirements, effluent limitations or pretreatment standards or the provisions of a permit, has been taking place, the Superintendent may require the user to submit for approval, with such modifications as the Superintendent deems necessary, a detailed time schedule of specific actions which the user shall take in order to prevent the

discharge or correct the violation of requirements resulting therefrom.

Sec. 10: Any person who violates any provision of this Article or any condition of a permit issued to a Major Contributing Industry, or who violates any case and desist order, prohibition, effluent limitation, or pretreatment or toxicity standard, issued or established to implement this ordinance shall be liable civilly to a penalty not to exceed \$100 for individuals and \$100 for corporations. Each day in which a violation occurs shall be considered a separate violation. The Superintendent may assess a penalty of up to \$50 for each such violation and add such penalty to the users charges and fees. Such assessment shall be offset against any subsequent penalty otherwise imposed for the same violation. Civil penalties in excess of \$50 shall be assessed by Municipal Court. An such penalty imposed shall not be construed as liquidated damages, and shall accrue in addition to any liability for any consequential damages or additional operating expenes resulting from the violation for which the penalty is imposed. Consequential damages shal include but not be limited to, fines and penalties imposed upon the City by other public authorities.

Sec. 11: Any person who violates any provision of this Article or any condition of a permit issued to a Major Contributing industry, effluent limitation, or pretreatment or toxicity standard, issued or establisehd to implement this ordinance shall be liable upon conviction to a sum not to exceed \$1,000 for each day in which such violation occurs, or to imprisonment for not more than 6 months, or both.

Sec. 12: All users subject to this ordinance shall retain and preserve for no less than three (3) years, any records, books, documents, memoranda, reports, correspondence and any and all summaries thereof, relating to monitoring, sampling and chemical analyses made by or in behalf of a user in connection with its discharge. All records which pertain to matters which are the subject of enforcement or litigation activities brought by the City shall be retained and preserved by the user until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

Sec. 13: 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 pursuant to this Article, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method shall upon conviction be punished as provided in Section 11 of this Article.

Sec. 14: No user shall increase the use of process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with any local, state, or federal discharge standard.

Sec. 15: The City reserves the right to amend any permit issued hereunder in order to assure compliance by the City with applicable laws and regulations, to comply with modification with the limitations and requirements of Article V, or if other just cause exists. Within 180 day of the promulgation of a National Categorical Pretreatment Standard, all industrial Users subject to such standards shall submit to the City a baseline report as stipulated in Part 403.12(b) of the Federal Register. This report shall be in addition to any other reports, applications, or questionnaires required or previously submitted. Within 9 months of the promulgation of a National Categorical Pretreatment Standard, the permit of each industrial User subject to such standards shall be revised to require compliance with such standards within the time frame prescribed by such standards. All National Categorical Pretreatment Standards adopted after the promulgation of this Ordinance shall be adopted by the City as part of this Ordinance. Where an Industrial User, subject to a National Categorical Pretreatment Standard, has not previously submitted an application for a Major Contributing Industry Permit as required by Section 1 and 2 of this Article, the industrial user shall apply for a Major Contributing Industry Permit from the City within 60 days after the promulgation of the applicable National Categorical Pretreatment Standard by the U.S. EPA. The Industrial User shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

Sec. 16: All permits shall be issued for perpetual duration, subject to amendment or revocation as provided in this Ordinance. Under extraordinary circumstances, a permit may be issued for a stated period or may be stated to expire on a specific date.

Sec. 17: Major Contributing Industries are required to provide and operate at the Users own expense, a monitoring facility to allow inspection, sampling, and flow easurement of each sewer discharge to the City. Each monitoring facility shall be situated on the Users premises, except where such a location would be impractical or cause undue hardship on the User, the City may concur with the facility being constructed in the public street or sidewalk area providing that the facility is located so that it will not be obstructed by landscaping or parked vehicles. There shall be ample rom in or near such monitoring facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the User. All monitoring facilities shall be constructed and maintained in accordance with all applicable local construction standards and specifications. Construction shall be completed within 120 days of receipt of a Major Contributing Industry Permit. The City may inspect the monitoring facilities of any User to determine complinace with the requirements of this Ordinance. The User shall allow the City or its representatives to enter upon the premises of the User at all reasonable hours, for the purposes of inspection, sampling, or records examination. The City shall have the right to set up on the Users property such devices as are necessary to conduct sampling, inspection, compliance monitoring, and/or metering operations.

ARTICLE IX

Sec. 1: Any person found to be violating any provision of this ordinance except Article VI and Article VIII shall be served by the City with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the eperiod of time stated in such notice, permanently cease all violations.

Sec. 2: (a) Any person who shall continue any violation beyond the time limit provided for in Article IX, Section 1, shall be guilty of a misdemeanor, and on conviction thereof shall be fined in the amount not exceeding Three Hundred Dollars (\$300) for each violation. Each day in which any such violaton shall continue shall be deemed a separate offense.

(b) In the event the prescribed sewer service charge is declared delinquent and has not been paid in full within four (4) months of the initial due date, the City shall at its option disconnect the sanitary sewer from the sewer collection line. The location of the disconnect shall be at the discretion of the City. The sewer may be re-connected to the Citys collection sysetm by the affected property owner who shall bear the entire expense of all costs for the reconnect provided that the delinquent account has been paid in full and that the City has been reimbursed in full for all costs borne by the City resulting from the disconnecting of the sewer. Further the City shall have the option in addition to any penalties set forth in this Ordinance to disconnect the sewer for any violation of this Ordinance in the use the sanitary sewer.

Sec. 3: Any peron violating any of the provisions of this ordinance shall become liable to the City for any expense, enforcement cost, loss, or damage occasioned the City by reason of such violation.

Sec. 4: A list of the users which were significantly violating provision of this ordinance during the 12 previous months shall be annually published by the Superintendent in a local newspaper. The notification shall also summarize any enforcement action atken against the user during the same 12 months. For the purpose of this Section, significant violations are those violations which remain uncorrected beyond any time limit set for correective action; which are part of a pattern of noncompliance over a 12 month period; or which involve a failure to accurately report noncompliance.

Sec. 5: Either as an alternative to any procedure established in this Ordinance or as an enforcement action therunder, the Superintendent may seek unjunctive relief to restrain the violation of, or attempted violation of, any provision of this ordinance.

ARTICLE X

Sec. 1: All ordinance or parts of ordinances in conflict herewith are hereby repealed.

Sec. 2: The invalidity of any section, clause, sentence, or provision of this ordinance shall not affect the validity of any other part of this ordinance which can be given effect without such invalid part or parts.

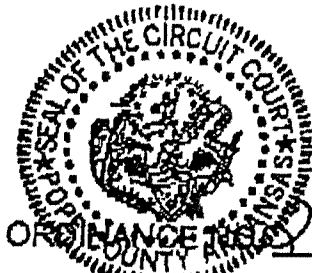
Sec. 3: The City reserves the right to amend the requirements set forth in this ordinance in any manner and to establish more stringent limitations or requirements where deemed necessary to comply with the objectives set forth in the Preamble to this ordinance.

ARTICLE XI

Sec. 1: This ordinance shall be in full force and effect from and after its passage, approval, recording, and publication as provided by law.

PASSED: May 12, 1983

This Instrument Prepared By:
 ROBERT W. HARDIN, P.A.
 Attorney at Law
 P.O. Box 866
 Russellville, AR 72811
 (479)988-5333



CLERKS CERTIFICATE OF RECORD
 STATE OF ARKANSAS - COUNTY OF POPE
 I, FERN TUCKER, Circuit Clerk and Recorder of
 the County attested do hereby certify that this
 instrument was filed for record the 12/29/2008 at
 16:53:18 AM, and the same is now
 duly recorded in Miscellaneous Book 2608-78 Page
 248 - 241

Witness my hand and the seal of said court this
 the 12/29/2008

Fern Tucker - Circuit Clerk and Recorder
 By *[Signature]* D.C.

**AN ORDINANCE AMENDING ORDINANCE NO. 849
 AS AMENDED BY ORDINANCE NOS. 1022, 1294, AND 1372
 TO REVISE THE SCHEDULE OF RATES AND CHARGES
 FOR THE SEWER SYSTEM, AND FOR OTHER PURPOSES**

BE IT ORDAINED by the City Council of the City of Russellville, Arkansas:

Section 1: That Section 6 of Ordinance No. 849 as amended by Ordinance Nos. 1022, 1294, and 1372, is amended to read as follows:

Section 6: That the following schedule of charges for the payment of the proper and reasonable expense of operation, repair, replacements, and maintenance of the works will be implemented:

	<u>2009 Billing Rate to commence 1/1/09 or as soon thereafter as this ordinance becomes effective:</u>	<u>2010 Billing Rate to commence 1/1/10</u>	<u>2011 Billing Rate and thereafter to commence 1/1/11</u>
Minimum Bill:	\$4.45 per mo.	\$5.56 per mo.	\$6.67 per mo. 6,67
<u>Volume Charge</u>			
First 1 Mg per mo.	Minimum Bill	Minimum Bill	Minimum Bill
Next 19 Mg per mo.	\$1.73 per Mg	\$2.16 per Mg	\$2.59 per Mg 2.59
Over 20 Mg per mo.	\$1.47 per Mg	\$1.84 per Mg	\$2.20 per Mg 2.20
Mg - Thousand Gallons			
mo. - Month			

Section 2: Miscellaneous. (a) The provisions of this Ordinance are severable and if any provision shall for any reason be held illegal or invalid, such holding shall not affect the validity of the remainder of the Ordinance.

08-70-240

(b) All ordinances and resolutions or parts thereof in conflict herewith are hereby repealed to the extent of such conflict.

(c) If this Ordinance, as a whole, shall for any reason be held illegal or invalid, defeated upon referendum or otherwise invalidated or repealed, such illegality, invalidity, defeat or repeal shall not affect the validity of Ordinance No. 949 as amended by Ordinance Nos. 1022, 1294, and 1372.

Section 3: This Ordinance, being necessary for the proper operation of the City of Russellville Sanitary Sewer System and being necessary for the preservation of the ~~public health and safety, an emergency~~ is hereby deemed to exist and this Ordinance shall be in full force and effect after its passage.

PASSED this 18 day of December, 2008.

APPROVED:

Tyrone Williamson
Tyrone Williamson, Mayor

ATTEST:

Kathy Collins
Kathy Collins, City Clerk

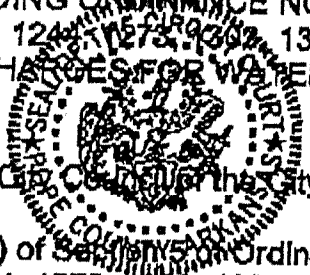


08-170-241

ORDINANCE NO. 2044

CLERKS CERTIFICATE OF RECORD
STATE OF ARKANSAS - COUNTY OF POPE
I, FERN TUCKER, Circuit Clerk and Recorder of
the County attested do hereby certify that this
instrument was filed for record the 12/29/2009 at
10:53:18 AM, and the same is now
duly recorded in Miscellaneous Book 2008-70 Page
242-244.
Witness my hand and the seal of said court this
29th day of December, 2009.
By: Fern Tucker Clerk and Recorder
D.C.

AN ORDINANCE AMENDING ORDINANCE NO. 1078 AS AMENDED BY ORDINANCE NOS. 1080, 1210, 1244, 1273, 1302, 1308 AND 1590 TO REVISE THE SCHEDULE OF RATES AND CHARGES FOR WATER, AND FOR OTHER PURPOSES.



BE IT ORDAINED by the City Council of the City of Russellville, Arkansas:

Section 1: Subsection (a) of Section 5 of Ordinance No. 1078 as amended by Ordinance Nos. 1080, 1210, 1244, 1273, 1302, 1308, and 1590 is amended to read as follows:

Section 5: Rates and Charges. (a) The following schedule of rates and charges, which the City Council hereby finds are reasonable and necessary for operating and maintaining the system, are hereby fixed as the rates and charges for water furnished and services rendered by the system:

Monthly Meter Charge

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

	2009 Billing Rate to commence 1/1/09, or as soon thereafter as this ordinance becomes effective	2010 Billing Rate and thereafter commencing 1/1/10
5/8" meter	\$ 7.76	\$ 8.69
1" meter	\$ 10.74	\$ 12.03
1 1/2" meter	\$ 20.41	\$ 22.86
2" meter	\$ 26.78	\$ 29.99
3" meter	\$ 43.93	\$ 49.20
4" meter	\$140.60	\$157.48
6" meter	\$173.44	\$194.26

Monthly charge for meters larger than 6" in diameter shall be based on the actual cost of the meter and appurtenances.

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 schedules:

This Instrument Prepared By:
ROBERT W. HARDIN, P.A.
Attorney at Law
P.O. Box 856
Russellville, AR 72811
(479)968-5333

08-70-242

	2009 Billing Rate to commence 1/1/09, or as soon thereafter as this ordinance <u>becomes effective</u>	2010 Billing Rate and thereafter <u>commencing 1/1/10</u>
RESIDENTIAL	\$1.52 per thousand for the first 2,000 gallons	\$1.71 per thousand for the first 2,000 gallons
"	\$1.74 per thousand for all over 2,000 gallons	\$1.94 per thousand for all over 2,000 gallons
COMMERCIAL	\$1.59 per thousand gallons	\$1.78 per thousand gallons
INDUSTRIAL	\$1.33 per thousand gallons	\$1.49 per thousand gallons
PUBLIC AUTHORITY	\$1.78 per thousand gallons	\$1.99 per thousand gallons
MUNICIPAL	\$1.37 per thousand gallons	\$1.53 per thousand gallons

PRIVATE FIRE PROTECTION (Fire Hydrants and Sprinkler Systems)

Size of Service Connection

Net Annual Rate

	2009 Billing Rate to commence 1/1/09, or as soon thereafter as this ordinance <u>becomes effective</u>	2010 Billing Rate and thereafter <u>commencing 1/1/10</u>
6"	\$338.11	\$378.68
8"	\$601.98	\$674.21
10"	\$939.75	\$1,052.52

Surcharge for Customers Within the City

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 shall be required to pay a surcharge (the "Surcharge") equal to 4.5% of the monthly charge to the customer for (i) monthly meter charge and (ii) additional charge for water usage.

Rates for Customers Outside the City Limits of Russellville

Each customer outside the city limits of Russellville, Arkansas, shall be required to pay one and one-half (1½) times the monthly meter charge for customers inside the city limits. In addition, each customer outside the city limits of Russellville, Arkansas, shall be required to pay one and one-half (1½) times the rate for water usage inside the city limits except for residential users outside the

08-70-243

city limits which shall be as follows:

	2009 Billing Rate to commence 1/1/09, or as soon thereafter as this ordinance <u>becomes effective</u>	2010 Billing Rate and thereafter <u>commencing 1/1/10</u>
RESIDENTIAL	\$3.15 per thousand for the first 2,000 gallons \$3.48 per thousand for all over 2,000 gallons	\$3.52 per thousand for the first 2,000 gallons \$3.90 per thousand for all over 2,000 gallons

Section 2: Ordinance No. 1078 as amended by Ordinance Nos. 1080, 1210, 1244, 1273, 1302, 1308 and 1590 is hereby amended and shall continue in full force and effect.

Section 3: Miscellaneous. (a) The provisions of this Ordinance are severable and if any provision shall for any reason be held illegal or invalid, such holding shall not affect the validity of the remainder of the Ordinance.

(b) All ordinances and resolutions or parts thereof in conflict herewith are hereby repealed to the extent of such conflict.

(c) If this Ordinance, as a whole, shall for any reason be held illegal or invalid, defeated upon referendum or otherwise invalidated or repealed, such illegality, invalidity, defeat or repeal shall not affect the validity of Ordinance No. 1078 as amended by Ordinance Nos. 1080, 1210, 1244, 1273, 1302, 1308 and 1590.

Section 4: This Ordinance, being necessary for the operation of the City of Russellville Water System and being necessary for the preservation of the public health and safety, an emergency is hereby deemed to exist and this Ordinance shall be in full force and effect after passage.

PASSED this 18 day of December, 2008.

APPROVED:

Tyrone Williamson
Tyrone Williamson, Mayor

ATTEST:

Kathy Collins
Kathy Collins, City Clerk
(SEAL)



Prepared by:
William F. Smith III
Russellville City Attorney
P.O. Box 428
Russellville, AR 72811
Sponsor: Steuber
NB#3, OB # 2



CLERKS CERTIFICATE OF RECORD
STATE OF ARKANSAS - COUNTY OF POPE
I, FERN TUCKER, Circuit Clerk and Recorder of
the County attested do hereby certify that this
instrument was filed for record the 08/28/2009 a
12:22:11 PM, and the same is now
duly recorded in Miscellaneous Book 2009-48 Page
427 - 428
Witness my hand and the seal of said court this
the 08/28/2009
FERN TUCKER, Circuit Clerk and Recorder
By *Fern Tucker* D.C.

ORDINANCE NO. 2060

AN ORDINANCE AMENDING ORDINANCE NOS. 973 AND 976, CLARIFYING THE RESPONSIBILITY OF MAINTENANCE OF SEWER LINES WITHIN THE CITY OF RUSSELLVILLE, ARKANSAS, AND FOR OTHER PURPOSES

WHEREAS, the City Council desires to clarify the responsibility of maintenance of sewer lines with the City of Russellville, Arkansas.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF RUSSELLVILLE, ARKANSAS:

SECTION 1: Ordinance No. 973, Section 6, and Ordinance No. 976 are hereby amended to read as follows:

SECTION 6: "It will be the property owner's responsibility to maintain the house sewer service line from the dwelling to the owner's property line. Also, the property owner will be responsible for the clean out of any stoppage of the sewer service line from the sewer main to the dwelling or other types of structures. City Corporation ~~The Sewer Department~~ will be responsible for repairs of sewer service line from main to edge of the owner's property line. In the event of new construction, where it is necessary to cross the street with the house service line the property owner shall notify City Corporation ~~Russellville Sewer Department~~ and City Corporation ~~Russellville Sewer Department~~ shall give an estimate of cost to the property owner and upon the deposit of said estimate with City Corporation ~~Russellville Sewer Department~~ will proceed to extend the sewer service from main to customers property line according to City Corporation ~~Russellville Sewer Department~~ specifications. Upon the completion of the line, should the estimate be too high the balance will be refunded to the property owner, and should the estimate be too low the property owner shall reimburse City Corporation ~~Russellville Sewer Department~~.

09-48-427

Prepared by:
William F. Smith III
Russellville City Attorney
P.O. Box 428
Russellville, AR 72811
Sponsor: Steuber
NB#3, OB # 2

In the event a property owners sewer service line should cross the property of an adjoining property owner before reaching the sewer main that sewer service shall be treated as a prescriptive easement and shall be maintained by City Corporation.

Should the sewer service line crossing the property of neighboring property owner ever need to be relocated that expense to relocate shall be paid by the person or firm needed the line to be relocated."

SECTION 2: All ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed or amended so as to be consistent with the intent of this Ordinance.

ORDAINED, this 20th day of August, 2009.

TYRONE WILLIAMSON
TYRONE WILLIAMSON, MAYOR

ATTEST:

Kathy Collins
KATHY COLLINS, CITY CLERK

I, Kathy Collins, City Clerk of Russellville, Arkansas, hereby certify that the above and foregoing is a true and correct copy of Ordinance No. 2060 passed by the City Council of the City of Russellville, Pope County, Arkansas, on the 20th day of August 2009.

APPROVED AS TO FORM:

William F. Smith III
WILLIAM F. SMITH III, CITY ATTORNEY



09-48-428

ORDINANCE NO. 976

An Ordinance amending Ordinance No. 973 of the City of Russellville, Arkansas, and for other purposes,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF RUSSELLVILLE, ARKANSAS, that Section 1 of Ordinance No. 973 is hereby amended to read as follows:

"Section 1. Hereafter the fee for connecting new service lines for the City of Russellville Sanitary Sewer shall be One Hundred Fifty and No/100 Dollars (\$150.00) inside the City limits of the City of Russellville, Arkansas, and Two Hundred Twenty-Five and N City of Russellville, Arkansas."

~~SECTION 2~~ that Section 6 of Ordinance No. 973 is hereby amended to read as follows:

~~"It will be the property owner's responsibility to maintain the house sewer service line from the dwelling to the owner's property line. Also, the property owner will be responsible for the clean out of any stoppage of the sewer service line from the sewer main to the dwelling or other types of structures. The Sewer Department will be responsible for repairs of sewer service line from main to edge of the street. In the event of new construction, where it is necessary to cross the street with the house service line the property owner shall notify the Russellville Sewer Department and the Russellville Sewer Department shall give an estimate of cost to the property owner and upon the deposit of said estimate with the Russellville Sewer Department, the Russellville Sewer Department will proceed to extend the sewer service from main to customers property line according to Sewer Department specifications. Upon the completion of the line, should the estimate be too high the balance will be refunded to the property owner, and should the estimate be too low the property owner shall reimburse the City of Russellville Sewer Department.~~

SECTION 3 that Section 7 of Ordinance No. 973 is hereby amended to read as follows"

~~SECTION 7~~ From and after the passage of this Ordinance all house sewer service lines shall be of Vitrified Clay Pipe, extra strength ASTM C700 with ASTM C425 factory molded polyurethane joints, Cast Iron Soil Pipe, ASTM A74-75 or CISP 301-72; or Schedule 40 ABS or PVC Plastic DWV Pipe.

SECTION 4. In the event any lot or group of lots are subdivided to create an additional building site or sites, then said subdivider shall install a sewer tap on the sewer building site or sites.

CITY OF DOVER

"Gateway to the Ozarks"

P.O. Box 258

DOVER, ARKANSAS 72837

1-501-331-3270

September 12, 1991

Mr. Kenneth Lutz
Pre-treatment Coordinator
City Corporation
P.O. Box 458
Russellville, AR 72801

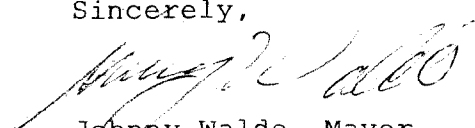
RE: City of Dover

Dear Mr. Lutz:

This is to confirm recent contacts you have had with our City Attorney, David H. McCormick, concerning Dover City Ordinance No. 89-3. This is to formally advise you that the City of Dover intends to pre-treat all sewage to whatever standard may be required by the Arkansas Department of Pollution Control and Ecology. This is to further confirm that Dover will adopt any new ordinance or amend existing ordinances as may be required in order to evidence the fact that they will comply with requirements of the DPC & E.

If you need further confirmation of the above information on behalf of the City, please contact our City Attorney, David H. McCormick, and advise him of what additional information or documentation you need.

Sincerely,



Johnny Waldo, Mayor

RESOLUTION NO. 358

WHEREAS, the CITY OF DOVER has contacted the CITY OF RUSSELLVILLE with reference to the treatment of its sewer wastes; and

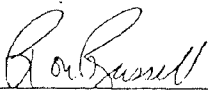
WHEREAS, such an agreement is in keeping with the rules and regulations of the Environmental Protection Agency; and

WHEREAS, the CITY OF RUSSELLVILLE, at the present time, is improving the pretreatment plant with assistance of funds provided by the Environmental Protection Agency; and

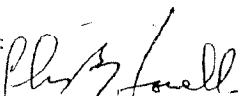
WHEREAS, it would be in the best interest of the inhabitants of the CITY OF RUSSELLVILLE to treat the sewage waste from the CITY OF DOVER.

NOW, THEREFORE BE IT RESOLVED, that the Mayor and City Clerk of the CITY OF RUSSELLVILLE, ARKANSAS, are authorized, instructed and directed to execute a contract for such waste water treatment with the CITY OF DOVER, a copy of which said agreement is attached and made a part of this resolution; that upon the signing of the agreement by the CITY OF RUSSELLVILLE and the CITY OF DOVER, that this agreement shall be in full force and effect.

This 11th day of January, 1979.



RON RUSSELL, MAYOR

ATTEST: 

CHARLES HOWELL, CITY CLERK

SEWER SERVICE AGREEMENT

BETWEEN

RUSSELLVILLE, POPE COUNTY, ARKANSAS AND
DOVER, POPE COUNTY, ARKANSAS

THIS AGREEMENT made and entered into this 11
day of Jan of 1979, by and between the CITY OF
RUSSELLVILLE, a municipal corporation of Russellville, Pope
County, Arkansas, hereinafter referred to as "RUSSELLVILLE"
and the CITY OF DOVER, a municipal corporation, of Pope County,
Arkansas, hereinafter referred to as "DOVER."

In consideration of the mutual covenants herein
contained, the parties hereto agree as follows:

SECTION I: Scope of Agreement. RUSSELLVILLE will
and shall permit the connection of the sewer service system
of DOVER with the sewer system of RUSSELLVILLE at such
locations as approved by RUSSELLVILLE and will handle and
treat sewage delivered to the RUSSELLVILLE sewage system
through the connection therewith of DOVER sewer under the
terms and conditions hereinafter more specifically set forth.

SECTION II: Extent of Service. DOVER shall limit
its sewer service connections to the residential and commercial
establishments now located along the proposed sewer lines and
shall not permit additional industrial or commercial connections
without the written approval of RUSSELLVILLE, first obtained.

SECTION III: Amount of Charges and Billing Periods.
DOVER agrees to pay to RUSSELLVILLE for all costs incurred in
the handling, transporting and treatment of raw sewage
delivered to the RUSSELLVILLE sewer facilities. Charges for
such services will be billed monthly and shall be based upon
the wholesale rates adopted by RUSSELLVILLE which currently
are established as follows:

A. Two and 25/100 Dollars (\$2.25) per month minimum for the first twenty-five hundred (2,500) gallons. Sixty Eight Cents (\$0.68) per thousand for the next seventeen thousand five hundred (17,500) gallons will be charged. Forty Six Cents (\$0.46) per thousand gallons will be charged for all sewage in excess of twenty thousand gallons (20,000). Said flowage will be metered by the CITY OF RUSSELLVILLE with DOVER installing such meter systems as may be required by RUSSELLVILLE and at the place so designated by RUSSELLVILLE.

B. DOVER will pay all the costes incurred in the administration of this contract. Such costs will include but not be limited to:

- Contract Development
- Legal Fees
- Testing Costs
- Metering Costs

C. If and when replacements or additional facilities are required for the treating, testing or metering of said sewage, DOVER shall, upon notificaion by RUSSELLVILLE, commence forthwith to provide the necessary facilities and equipment.

D. In the event the metering device fails to function, the sewage flow shall be determined based upon the most recent corresponding period to which the meter was in satisfactory operating condition, and if no such period is available, the flow shall be determined by RUSSELLVILLE.

E. The parties herto agree that the sewage delivered to the RUSSELLVILLE system shall be of standard household strength and in satisfactory condition, and should the same not be in satisfactory condition, DOVER will construct such pretreatment facilities as may be required by RUSSELLVILLE. Such facilities shall include but not limited to:

- Chlorinator
- All Expense of Operating such facilities

SECTION IV: Construction of System. DOVER agrees to construct its system in accordance with the plans and

specifications now used by RUSSELLVILLE and shall prevent the infiltration of surface water or storm drainage into the system. RUSSELLVILLE shall have the right to review plans and specifications for sewer system improvements or additions at DOVER, to inspect the DOVER system, and to require such maintenance or repair work as may be necessary to prevent the infiltration of surface water or storm drainage.

SECTION V: Conditional Industrial or Commercial Uses. In the event DOVER desires to connect an industrial or commercial user, RUSSELLVILLE shall be notified forthwith and an investigation shall be made to determine the strength and content of said effluent from said user. In the event it is deemed necessary by RUSSELLVILLE, DOVER shall construct whatever facilities are necessary for the pretreatment of the effluent from such establishment to lower the strength and content down to normal domestic sewage. RUSSELLVILLE shall not arbitrarily withhold approval for the connection of industrial or commercial customers.

SECTION VI: Dumping of Certain Material Prohibited. DOVER shall not discharge or cause to be discharged any of the following described waters or wastes to any public sewers:

- A. Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquid, solid or gas.
- B. Any waters or wastes containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard. The concentrations of such wastes discharged to the public sewer shall conform to the limitations set forth by the Russellville Sewer Ordinance.
- C. Any waters or wastes having a pH lower than 5.5 or having other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.
- D. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference

with the proper operation of the sewage works, such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.

DOVER shall not discharge or cause to be discharged the following described substances, materials, waters or wastes if it appears likely in the opinion of RUSSELLVILLE, their consulting engineers of the Arkansas Department of Pollution Control and Ecology Board that such wastes can harm either the sewers, sewage treatment process or equipment, have an adverse effect on the receiving stream or can otherwise endanger life, limb, public property or constitute a nuisance. In forming an opinion as to the acceptability of these waters, consideration will be given to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment facilities, degree of treatability of wastes in the sewage treatment facilities and other pertinent factors. The substances are:

1. Any liquid or vapor having a temperature higher than one hundred fifty (150)°F (65)°C.
2. Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) and one hundred fifty (150) °F. and (65) °C.
3. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor or three-fourths (3/4) horsepower (0.76 hp metric) or greater shall be subject to review and approval.
4. Any waters or wastes containing strong acid none pickling wastes or concentrated plating solutions whether neutralized or not.

5. Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established for such materials by State, Federal, or other public agencies of jurisdiction for such discharge to the receiving waters.
6. Any waters or wastes containing phenols or other taste or odor producing substances, in such concentrations exceeding limits which may be established as necessary, after treatment of the composite sewage, to meet the requirements of the State, Federal, or other public agencies of jurisdiction for such discharge to the receiving waters.
7. Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established in compliance with applicable State or Federal regulations.
8. Any waters or wastes having a pH in excess of (9.5).
9. Materials which exert or cause:
 - a. Unusual concentrations of inert suspended solids (such as, but not limited to, Fuller earth, lime slurries and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).
 - b. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).
 - c. Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works.
 - d. Unusual volume of flow or concentration of wastes constituting "slugs."
10. Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage

treatment processes employed, or are amenable to that treatment only to such degree that the sewage treatment facility effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

SECTION VII: Downspouts and Rain Leaders Not to be Connected to Sewer. DOVER shall not allow, suffer, or permit during the life of this agreement the existence or use of any downspout, rain leader, gutter or drain which is designed to be used or which shall be used in conducting rain or surface waters from any premise connected with the sanitary sewer of DOVER.

SECTION VIII: Penalty for Dumping Prohibited Materials. DOVER expressly agrees that if drainage other than sanitary sewage and waste not detrimental to RUSSELLVILLE sewage system or treatment processes does pass from DOVER'S system to RUSSELLVILLE sewage system, DOVER will pay, within ninety (90) days after written notice requesting such payment, RUSSELLVILLE for any damage incurred by DOVER resulting from such drainage. If DOVER fails to prevent the passage from its sewers into the sewage system of RUSSELLVILLE of any drainage other than sanitary sewage or waste not detrimental to RUSSELLVILLE'S sewage system or treatment processes within thirty (30) days after written notice by RUSSELLVILLE informing DOVER of such drainage, then DOVER will disconnect its sewage system from RUSSELLVILLE'S sewage system within seven (7) days after notice from RUSSELLVILLE to do so. In addition to damages, DOVER will pay RUSSELLVILLE a charge of One Hundred Dollars (\$100.00) per day for such violation from the first date of written notice.

SECTION IX: DOVER to Adopt and Enforce Regulations. DOVER will and shall enact, adopt, and strictly enforce all such resolutions, ordinances or regulations, as the case may be, as may or shall be necessary to give full effect to the stipulations contained in this agreement.

SECTION X: DOVER Must Conform to State Regulations. DOVER will and shall design, plan, lay, install, construct,

maintain, and keep in repair its own sewer facilities so that such facilities shall at all times strictly conform with all rules and regulations issued or promulgated by the STATE OF ARKANSAS and the CITY OF RUSSELLVILLE.

SECTION XI: Liability for Negligence. DOVER shall indemnify and hold harmless RUSSELLVILLE from any and all loss or damage to any property, incurred by RUSSELLVILLE by reason of any act or omission of DOVER, its agents or employees in connection with the operation and maintenance of the sanitary sewer facilities belonging to DOVER, unless the same shall be due to the negligence of RUSSELLVILLE, its agents or employees; and RUSSELLVILLE shall indemnify and hold harmless DOVER by reason of any act or omission on the part of RUSSELLVILLE, its agents or employees, in connection with the operation and maintenance of RUSSELLVILLE'S sanitary sewer system, unless the same shall be due to the negligence of DOVER, its agents or employees.

SECTION XII: Non-Liability of RUSSELLVILLE under Certain Circumstances. RUSSELLVILLE shall exercise diligence in operating its sewage systems, and if it be prevented from receiving and discharging sewage from DOVER, in accordance with the terms of this agreement, by any cause not reasonably within the control of RUSSELLVILLE, including, but not limited to, fire, explosion, flood, strike and unavoidable accident, rupture of pipe resulting from temperature change or ground disturbances, Federal or State interference, RUSSELLVILLE agrees (except in the case of practically total destruction of its properties) diligently to put its works in condition again to dispose of sewage in the manner provided for in this agreement. DOVER shall hold RUSSELLVILLE blameless for any damage or loss resulting from such interruption or suspension.

SECTION XIII: Terms of Agreement. This agreement shall be effective for a period of two (2) years at which time

the charges will be subject to change based upon the cost of providing service related to handling, transporting, and treatment. The length of term thereafter shall be a one (1) year period and shall remain in effect until terminated by mutual agreement of RUSSELLVILLE and DOVER. Should any portion of the charges specified in this agreement not be acceptable to EPA, the charges specified may be revised so that RUSSELLVILLE may conform to EPA requirements.

SECTION XV: Title to Remain with RUSSELLVILLE. It is understood and agreed that the title to the present sewer facilities of the CITY OF RUSSELLVILLE shall remain in RUSSELLVILLE and that title to the DOVER facility shall remain in DOVER. That RUSSELLVILLE shall have the duty for the care and upkeep of its facilities, and DOVER shall have the duty of the care and upkeep of its facilities.

This agreement shall be binding upon and inure to the benefits of the respective successors and assigns of RUSSELLVILLE and DOVER.

IN WITNESS WHEREOF, the CITY OF RUSSELLVILLE has caused this agreement to be signed in duplicate by its Mayor, attested by its Clerk, and its corporate seal to be hereunto affixed, pursuant to a resolution of the City Council of the CITY OF RUSSELLVILLE, a certified copy whereof is hereto annexed, and the CITY OF DOVER has caused this agreement to be executed by its Mayor, attested by its Clerk, and its corporate seal to be hereunto affixed pursuant to a resolution duly adopted by the City Council of DOVER, a certified copy whereof is hereto annexed.

CITY OF RUSSELLVILLE

BY: Bob Russell

MAYOR

ATTEST: Phil Lovell



Miscellaneous Book

Filed: 04/02/2015 10:39 am
Pope County, Arkansas
Diane Willcutt, Circuit Clerk
By: DJ Austin, D.C.

8 Pages **\$50.00**

ORDINANCE NO. 2194

AN ORDINANCE ESTABLISHING RATES AND FEES FOR SERVICES FURNISHED BY THE WASTEWATER SYSTEM OF THE CITY OF RUSSELLVILLE, ARKANSAS AND REPEALING OTHER ORDINANCES RELATED TO WASTEWATER RATES AND FEES AND FOR OTHER PURPOSES

SECTION 1: GENERAL PROVISIONS

1.0 Short Title: This Ordinance shall also be known as the Wastewater Rate Ordinance.

1.1 Purpose and Policy: This Ordinance sets forth the rates and fees for all persons, firms, corporations, organizations, political units and political subdivisions and all other entities using the wastewater collection and treatment system of the City of Russellville in accordance with a schedule of charges as hereinafter provided; and to repeal any and all previous ordinances that particularly define such rates and fees.

1.2 Definitions:

- A. "BOD" (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure for five (5) days at 20°C, expressed in milligrams per liter.
- B. "City" shall mean the City of Russellville, Arkansas or it's City Council
- C. "Control Authority" shall mean the entity in charge of operation and maintenance of the city's wastewater system, which at the time of the approval of this ordinance, is City Corporation.
- D. "NH3-N" (denoting Ammonia) shall mean the ammonia present in the wastewater stream, expressed in milligrams per liter.
- E. "System" shall mean the wastewater collection and treatment system owned by the City of Russellville, Arkansas

F. "TSS" (denoting Total Suspended Solids) shall mean solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, and which are removable by laboratory filtering.

1.3 Authority: The Ordinance is enacted by the City Council pursuant to the express grant of authority under Ark. Code Ann §§14-235-223 and 14-235-201 et. seq.

SECTION 2: REGULATIONS

- 2.0 The City hereby establishes rates and fees to be charged for services furnished by the System, which the City finds and declares to be fair, reasonable, and necessary, to be charged to all users who contribute wastewater to the System. The rates shall provide revenues sufficient to at least (1) pay the annual costs for operation, maintenance and replacement of the System; (2) pay annual debt service; and (3) provide necessary bond coverage. None of the facilities or services afforded by the System shall be furnished without a charge being made therefore.
- 2.1 In order to provide for the cost of service differentials between System customers within the corporate limits of Russellville and those outside the corporation limits, a separate rate equal to one and one-half times the inside city rate shall be charged to those customers outside the city limits of Russellville. Calculated rates for outside city customers shall be rounded up to the nearest penny.
- 2.2. Customers connected to and served by the wastewater system of the City that are classified as residential customers with domestic use only will be charged flat monthly rates for sewer services in accordance with the rates defined herein, and that flat rate shall be based on average water consumption in the months of January, February, and March. All other classification of wastewater customers will be billed in accordance with the rates defined herein based on their actual monthly water consumption.
- 2.3. All new residential customers initiating service after April 1, of each year, be charged on the basis of the water consumption of a typical user of the same or similar class and type of service until an average for the user is established for the following months of January, February, and March.
- 2.4. In such cases that a non-residential customer can show that a significant portion of the water used does not reach the System, a reduction may be allowed for that amount of water not reaching the System, provided it is quantified and proven to the satisfaction of the Control Authority. In order to be eligible for this type of wastewater billing credit, the customer shall show that the volume of water not reaching the System exceeds 50,000 gallons per month or 20% of the total water consumed by the user, whichever is greater, and provided, further, that no reduction be allowed to any commercial user whose water consumption is less than an average of 50,000 gallons per month.

- 2.5. Every customer who discharges sanitary sewage, industrial wastes, water or other liquids other than normal sewage shall be charged and pay a surcharge in addition to the charge for normal sewage. Normal sewage shall mean sewage which, when analyzed, shows by weight a daily average of not more than 250 parts per million of total suspended solids (TSS) and/or biochemical oxygen demand (BOD) and not more than 25 parts per million of ammonia (NH3-N).
- 2.6 In the event such charges for the use of the wastewater collection and treatment system are not paid within the time and in the manner as by this Article provided, the City Clerk shall certify to the County Clerk of Pope County the legal description of the real property enjoying the use of the wastewater collection and treatment system together with the amount of such charge or charges remaining unpaid, such amount to be placed on the tax roll for collection, subject to the same penalties and collected in like manner as other taxes are by law collectable, and shall become a lien upon the real property so served.

SECTION 3: RATES AND FEES

3.1 Wastewater Monthly Minimum Bill.

- A. All users of the System shall be charged a flat monthly fee, which includes the first 1,000 gallons of wastewater volume, in accordance with the following schedule(s), attached hereto and incorporated herein:

	<u>Inside City</u>	<u>Outside City</u>
April 1 – December 31, 2015	\$8.17	\$12.26
January 1 - December 31, 2016	\$10.01	\$15.02
January 1 - December 31, 2017	\$11.86	\$17.79
January 1 - December 31, 2018	\$12.75	\$19.13
January 1 - December 31, 2019	\$13.71	\$20.57
January 1, 2020 and thereafter	3% increase per annum	3% increase per annum

3.2 Wastewater Monthly Volume Charge.

- A. All users of the System shall also be charged on a monthly basis for wastewater volume in excess of 1,000 gallons in accordance with the following schedule(s), attached hereto and incorporated herein:

	<u>Inside City</u>	<u>Outside City</u>
April 1 – December 31, 2015		
1,001 to 20,000 gallons (per 1,000 gallons)	\$3.17	\$4.76
20,001 gallons and above (per 1,000 gallons)	\$2.70	\$4.05
January 1 - December 31, 2016		
1,001 to 20,000 gallons (per 1,000 gallons)	\$3.88	\$5.82
20,001 gallons and above (per 1,000 gallons)	\$3.31	\$4.97
January 1 - December 31, 2017		
1,001 to 20,000 gallons (per 1,000 gallons)	\$4.60	\$6.90
20,001 gallons and above (per 1,000 gallons)	\$3.92	\$5.88
January 1 - December 31, 2018		
1,001 to 20,000 gallons (per 1,000 gallons)	\$4.95	\$7.43
20,001 gallons and above (per 1,000 gallons)	\$4.21	\$6.32
January 1 - December 31, 2019		
1,001 to 20,000 gallons (per 1,000 gallons)	\$5.32	\$7.98
20,001 gallons and above (per 1,000 gallons)	\$4.53	\$6.80
January 1, 2020 and thereafter		
1,001 to 20,000 gallons (per 1,000 gallons)	3% increase per annum	3% increase per annum
20,001 gallons and above (per 1,000 gallons)	3% increase per annum	3% increase per annum

3.3 Wastewater Connection Fee.

- A. Each customer who connects to the System shall pay a permit fee of \$150 plus the actual cost to make the connection including any labor, equipment and materials required to complete the wastewater connection to the System including excavation, tapping of pipe, landscaping, and any pavement repairs associated with the connection.

3.4 Excessive Strength Wastewater Surcharge.

- A. For any customer, when the BOD and/or TSS exceeds 250 parts per million and/or the NH₃-N exceeds 25 parts per million, a surcharge shall be added to the basic

charge. This surcharge shall be based on one hundred percent (100%) of metered water use in accordance with the following formula:

$$S = .00834 [\$0.126 (Vs) (BOD - 250) + \$0.088 (Vs) (TSS - 550) + \$0.098(Vs) (NH3-N - 25)]$$

Where:

“S”	=	Surcharge in dollars monthly
“Vs”	=	Sewage volume in thousand gallons per month
“.00834”	=	Conversion factor for pounds per thousand gallons
“\$0.126”	=	Unit charge for BOD in dollars per pound based on actual treatment costs
“BOD”	=	(Biochemical Oxygen Demand) Five day strength index in milligrams per liter by weight.
“250”	=	Allowed BOD and TSS strengths in milligrams per liter by weight based on the design assimilative capacity for each at the wastewater treatment plant.
“\$0.088”	=	Unit charge for total suspended solids in dollars per pound based on actual treatment costs
“TSS”	=	(Total Suspended Solids) Five day strength index in milligrams per liter by weight.
“\$0.098”	=	Unit charge for ammonia in dollars per pound based on actual treatment costs
“NH3-N”	=	(Ammonia) Five day strength index in milligrams per liter by weight.

3.5 Pretreatment Program Permit Fees.

- A. Any customer determined by the Control Authority to be a significant industrial user as defined in Ordinance 2105, known as the Pretreatment Ordinance, shall be subject to the following permit fees:

New Permit Fee (currently 5 years)	\$500.00
Permit Renewal Fee	\$500.00

3.6 Grinder Pump Stations.

- A. Any customer that is deemed by the Control Authority to require a grinder pump for connection to the wastewater system shall be responsible for bearing all costs related to the purchase, installation and connection to the System. The City and/or Control Authority will not accept a grinder pump for ownership and/or maintenance if said grinder is not installed in conformance to the Control Authority’s current specification for such installation.

- B. Any customer served by a grinder pump shall pay a monthly grinder pump maintenance fee of \$15.00 per pump. The fee shall increase at 3% per annum beginning on January 1, 2016 and every January 1st thereafter.

3.7 Septic Tank Haulers

- A. Septic Tank Haulers who are allowed to dump septic contents at the plant will do so at a location designated by the Control authority and shall be subject to the following fees and will do so subject to approval based on plant conditions at time of dumping:

Permit fee (currently 1 year)	\$500
Annual Permit renewal	\$500
Discharge/Dump fees	\$1.00 per gallon

3.8 Other Service Related Fees.

- A. For other fees related to specific services for customers, it is the intent for each customer to bear the cost for such fee so as not to cause an undue burden on the remaining customer base. The fees for such services shall be charged based on the following schedule attached hereto and incorporated herein:

<u>Service</u>	<u>Fee</u>
Returned Check Fee	\$25.00 plus any bank fees incurred
Tampering	\$100 plus time/materials and/or related expenses
Late Payment Fee	\$10.00
After Hours Service Call	\$75.00
Repeat Trip/Service Call	\$25.00
Shut Off Processing Fee	\$25.00
Check Leak/Stoppage (if on customer side)	\$25.00
Wastewater Cleanout Cap Replacement	\$50.00

SECTION 4: ADMINISTRATION

- 4.1 The rates established herein shall never be reduced below an amount sufficient to provide for the operation and maintenance of the said sewer system and for the payment of the principal of and interest on existing bonds, and shall, when necessary, be increased to provide for said operation and maintenance and for the payment of the principal of and interest on existing bonds; provided, however, that the rates are sufficient to satisfy rate coverage equal to or greater than that specified to meet the average annual debt service requirements of any and all existing bonds and/or debt.

4.2 The Control Authority will cause for an annual review of all wastewater rates and fees to ensure that the rates and fees being charged are fair and equitable and meet the requirements listed in Item 4.1.

4.3 None of the facilities or services afforded by the System shall be furnished without a charge being made. Therefore, in the event the City or any department, agency, or instrumentality thereof shall avail itself of any of the facilities or services so afforded, the reasonable value thereof shall be charged against the City, or such department, agency or instrumentality, and shall be paid for as the charges therefore accrued. The revenues so received from the City shall be deemed to be revenues from the operation of the sewer system, and shall be used and accounted for in the same manner as any other revenues derived from its operation; provided, however, that nothing herein shall be construed as requiring the City, or any department, agency, or instrumentality thereof to avail itself of the facilities or services afforded by the sewer system.

4.4 All customers will be billed on a monthly basis in accordance with City Corporation's "Rules and Regulations Governing the Rendering of Water Services" and "Rules and Regulations Governing the Rendering of Sewer Service."

SECTION 5: SEVERABILITY

5.1 If any provision, paragraph, word, section, chapter, or article of this Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, chapters, and articles shall not be affected and shall continue in full force and effect.

SECTION 6: REPEAL AND AMENDMENT

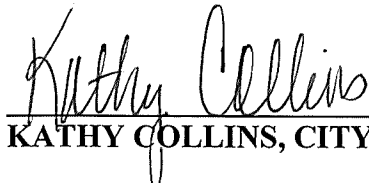
6.1 As of the effective date of this Ordinance, Ordinances No. 949, 1022, 1294, 1372, and 2043 are hereby repealed. All other parts of Ordinances in conflict with this Ordinance are amended to conform to this Ordinance.

ORDAINED, this 19th day of March, 2015.



RANDY HORTON, MAYOR

ATTEST:



KATHY COLLINS, CITY CLERK



2015-14-00368
Page 7 of 8

Prepared by:
City Corporation and
William F. Smith III
Russellville City Attorney
203 South Commerce Avenue
Russellville, AR 72801
Sponsor: Brown & City Corp
NB#9

I, Kathy Collins, City Clerk of Russellville, Arkansas, hereby certify that the above and foregoing is a true and correct copy of Ordinance No. 2194 passed by the City Council of the City of Russellville, Pope County, Arkansas, on the 19th day of March, 2015.

APPROVED AS TO FORM:



WILLIAM F. SMITH III, CITY ATTORNEY

SECTION 7: EMERGENCY

7.1 This City Council finds that the immediate implementation is in the best interest of the City and residents of the City of Russellville in order to secure the most favorable interest rate in the bonds to be issued to fund improvements of the Russellville Sewer System which shall protect, promote and preserve the public peace, health, safety and welfare of the City and its residents. Therefore, this is hereby in effect upon and after passage. An emergency is hereby declared and this Ordinance, being necessary for the preservation and promotion of the public peace, health, safety, welfare, finances and comfort for the City of Russellville and its residents, shall be implemented immediately this 19th day of March, 2015.

ORDAINED, this 19th day of March, 2015.


RANDY HORTON, MAYOR

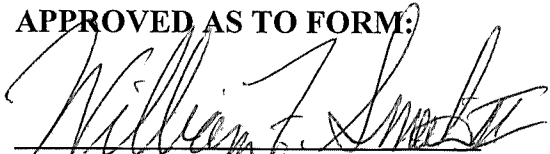
ATTEST:



KATHY COLLINS, CITY CLERK

I, Kathy Collins, City Clerk of Russellville, Arkansas, hereby certify that the above and foregoing is a true and correct copy of Ordinance No. 2194 passed by the City Council of the City of Russellville, Pope County, Arkansas, on the 19th day of March, 2015.

APPROVED AS TO FORM:



WILLIAM F. SMITH III, CITY ATTORNEY

2015-14-00369
Page 8 of 8

ORDINANCE NO. 1388

AN ORDINANCE SETTING FORTH UNIFORM REQUIREMENTS FOR DIRECT AND INDIRECT CONTRIBUTORS INTO THE WASTEWATER COLLECTION AND TREATMENT SYSTEM FOR THE CITY OF RUSSELLVILLE AND ENABLING THE CITY TO COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS REQUIRED BY THE CLEAN WATER ACT OF 1977 AND THE GENERAL PRETREATMENT REGULATIONS (40 CFR PART 403).

SECTION 1 - GENERAL PROVISIONS

1.0 Short Title: This Ordinance shall also be known as the Pretreatment Ordinance.

1.1 Purpose and Policy:

a. This Ordinance sets forth uniform requirements for direct and indirect contributors into the wastewater collection and treatment system for the City of Russellville (The City) and enables The City to comply with all applicable State and Federal laws required by the Clean Water Act of 1977 and the General Pretreatment Regulations set out in 40 CFR Part 403.

b. The objectives of this Ordinance are:

(1) To prevent the introduction of pollutants into The Citys wastewater treatment and collection system which will interfere with the operation of the system or contaminate the resulting sludge;

(2) To prevent the introduction of pollutants into The Citys wastewater treatment and collection system which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system;

(3) To improve the opportunity to recycle and reclaim wastewater and sludge from The Citys wastewater treatment system;

(4) To prevent any violation of The Control Authoritys National Pollutant Discharge Elimination System permit.

c. This Ordinance provides for the regulation of direct and indirect contributors The Citys wastewater treatment and collection system through the issuance of permits to certain non-domestic Users, the enforcement of general requirements for the other

Users, authorized monitoring and enforcement activities, required User reporting, and the assumption that existing customers capacity will not be preempted.

d. The terms and provisions of this Ordinance shall apply to all connections of lateral or other sewer lines to the sewerage system of the POTW whether within or outside The City and to all persons within The City and outside The City who are, by contract or agreement with The City, Users of The Citys wastewater collection and treatment system.

e. It is in the best interest of The City, to clarify and update the provisions of its existing wastewater Ordinance by the provisions of this Ordinance, so as to achieve compliance with the Clean Water Act and the regulations pursuant thereto, 40 CFR Part 403 as amended July 24, 1990. It is therefore intended that this Ordinance shall take precedence over any term or condition of agreements or contracts of The City or The Control Authority which are inconsistent with the provisions of this Ordinance, and over any and all inconsistent terms and conditions of any previous Ordinance.

f. Except as otherwise provided herein, The Control Authority is hereby authorized to administer, implement and enforce the provisions of this Ordinance. The National Pollution Discharge Elimination System (NPDES) permit shall be issued in the name of The Control Authority. The Control Authority as of the date of this Ordinance is City Corporation, a non-profit corporation established by City Resolution in April 1985. The City shall be responsible for all legal action necessary to enforce the provisions of this Ordinance.

1.2 Definitions

a. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this Ordinance, shall have the meanings hereinafter designated:

(1) Act or the Act: The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, Title 33 U.S.C. 1251, et. seq.

(2) Approval Authority: The Director of the Arkansas Department of Pollution Control and Ecology.

(3) Authorized Representative of a User: An authorized representative of a User may be: (1) A principal executive officer of at least the level of vice-president, if the User is a corporation; (2) A general partner or proprietor if the Industrial user is a partnership or proprietorship; or (3) A duly authorized representative or other individual designated above, if such representative is responsible for the overall operation of the facilities from which the indirect discharge originates and a statement outlining said individuals authority is submitted to The Control Authority in writing.

(4) Biochemical Oxygen Demand (BODs): The quantity of oxygen utilized in the biochemical oxidation of organic matter under laboratory condition of five (5) days at 20 degrees centigrade and expressed in terms of mass loading or concentration.

(5) Bypass: The accidental or intentional diversion of wastewater from any portion of a users pretreatment facility.

(6) City (The City): The City of Russellville or the City Council.

(7) Chemical Oxygen Demand (COD): A measure of the total oxygen consuming capacity of inorganic and organic matter present in the water or wastewater expressed in mass loading or concentration.

(8) Composite Sample: A sampling procedure defined in 40 CFR 403, Appendix E - Sampling Procedures, I. Composite Method.

(9) Control Authority: Under the provisions of 40 CFR 403.12(a) the Control Authority is charged with the administration, operation and maintenance of the POTW and enforcement of the provisions of this Ordinance.

As of the date of this Ordinance, Control Authority is City Corporation.

(10) Control Mechanism: Control through permits, orders or other means the contribution of each Significant Industrial user to the POTW to ensure compliance with applicable pretreatment standards and regulations.

(11) Direct Discharge: The discharge of treated or untreated wastewater directly to the waters of the State of Arkansas.

(12) Environmental protection Agency (EPA): The U.S. Environmental Protection Agency, or where appropriate the term may also be used as a designation for the Administrator or other duly authorized official of EPA.

(13) Grab Sample: A sampling procedure defined in 40 CFR 403, Appendix E - Sampling Procedures, II. Grab Method.

(14) Holding Tank Waste: Any waste from holding tanks - such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum pump trucks.

(15) Indirect Discharge or Contribution: The discharge or contribution of non-domestic pollutants from any source, including holding tank wastes to the POTW.

(16) Industrial User: Any business User discharging any materials other than normal domestic sanitary wastewater.

(17) Interference: The inhibition or disruption of the POTW treatment processes or operations which contribute to a violation of any requirement of The Citys NPDES permit or causes harm to the POTW. The term includes the prevention of sewage sludge use or disposal by the POTW in accordance with Section 405 of the Act, Title 33 U.S.C. 1345, or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any State sludge management plan prepared pursuant to Title IV

of SWDA) applicable to the method of disposal or use employed by the POTW.

(18) National Categorical Pretreatment Standard, categorical Pretreatment Standard, or Categorical Standard: Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Section 307(b) and © of the Act, Title 33 U.S.C. 1347, which applies to a specific category of Significant Industrial Users.

(19) New Source: Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307© of the Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that Section and meeting the requirements of 40 CFR 403.3(k).

(20) National Pollution Discharge Elimination System Permit or (NPDES): A permit issued pursuant to Section 402 of the Clean Water Act, Title 33 U.S.C. 1342, which establishes limits on the quality and quantity of discharges to the waters of the State.

(21) Pass Through: A discharge which exits the POTW into the waters of the State in quantities or concentration levels which, along or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTWs NPDES permit or increases the magnitude or duration of a violation.

(22) Person: Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

(23) pH: A measure of the acidity of a liquid and expressed as the negative logarithm (base 10) of the hydrogen ion concentration, and stated in standard units SUs.

(24) Pollution: The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(25) Pollutant: Any dredge spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

(26) Pretreatment or Treatment: The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state, prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes by other means, except as prohibited by 40 CFR Section 403.6(d).

(27) Pretreatment Requirements: Any substantive or procedural requirements related to pretreatment, including those imposed on Significant Industrial Users by the National Categorical Pretreatment Standards.

(28) Pretreatment Standards or Standards: Any limitation as set forth in Section 2 of this Ordinance.

(29) Publicly Owned Treatment Works (POTW): The treatment works, as defined by Section 212 of the Act, Title 33 U.S.C. 1292, which is owned by The City. This definition includes the treatment plant and any sewers that convey wastewater to the POTW treatment plant, but does not include pipe, sewers or other conveyances not connected to a facility providing treatment. For the purposes of this Ordinance, the POTW shall also include any sewers that convey wastewaters to the POTW from persons outside the city who are, by contract or agreement with The City, users of The City's POTW.

(30) POTW Treatment Plant: That portion of the POTW designed to provide treatment to wastewater.

(31) Shall is mandatory; May is permissive.

(32) Significant Industrial User: Any User of the POTW except as noted in 40 CFR §403.3(t) who (I) is subject to Categorical Pretreatment Standards under 40 CFR §403.6 and 40 CFR Chapter 1, Subchapter N, or (ii) any other user that discharges an average flow of 25,000 gallons per work day or more of process wastewater to the POTW (excluding sanitary, non-contact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated a Significant Industrial User by The Control Authority, on the basis that the industrial user has a reasonable potential for adversely affecting the POTWs operation or for violating any pretreatment standard or requirement.

(33) Significant Noncompliance: See, Section 4.8.a of this Ordinance.

(34) Slug Discharge: A slug discharge is any discharge of a non-routine, episodic nature, including, but not limited to, an accidental spill or non-customary batch discharge.

(35) State: State of Arkansas.

(36) Standard Industrial Classification (SIC): A classification pursuant to the Standard Industrial Classification Manual issued by the Executive office of the President, office of Management and Budget, 1972.

(37) Storm Water: Any flow occurring during or following any form of natural precipitation and resulting therefrom.

(38) Total Suspended Solids (TSS): The total concentration of matter that floats on the surface of, or is suspended in, water, wastewater or other liquids, and which is removable by laboratory filtering.

(39) Total Toxic Organics (TTO): The sum of the masses or concentration of specific toxic organic compounds

found in Users process discharge at a concentration greater than 0.01 mg/l.

(40) Toxic Pollutant: Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the Section of 307(a) of the Act or other Acts.

(41) User: Any person who, directly or indirectly, contributes, causes or permits the contribution of wastewater into The Citys POTW. The term user, depending on the context in which the term is used, includes Industrial Users and Significant Industrial Users.

(42) Wastewater: The liquid and water-carried Industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any ground water, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

(43) Waters of the State: All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the State or any portion thereof.

(44) Wastewater Contribution Permit: See. Section 4.2. of this Ordinance.

1.3 Abbreviations

The following abbreviations shall have the designated meanings:

ADPC&E - Arkansas Department of Pollution Control & Ecology
BOD - Biochemical Oxygen Demand
CFR - Code of Federal Regulations
COD - Chemical Oxygen Demand
EPA - Environmental Protection Agency
l - Liter

mg - Milligrams
mg/l - Milligrams per liter
NPDES - National Pollutant Discharge Elimination System
POTW - Publicly Owned Treatment Works
SIC - Standard Industrial Classification
SWDA - Solid Waste Disposal Act, 42 U.S.C. 6901, et.seq.
USC - United States Code
TSS - Total Suspended Solids

SECTION 2 - REGULATIONS

2.1 General Discharge Prohibition

a. It shall be unlawful for any User to contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which will interfere with the operation or performance of the POTW, causes a pass-through, which is defined in 1.2.a(21) of this Ordinance, or which violates any statute, rule, regulation or ordinance of any public agency. This general prohibition applies to all such users of the POTW whether or not the User is subject to National Categorical Pretreatment Standards or any other National, State, or local pretreatment standards or requirements.

b. A user may not contribute the following substances to the POTW:

(1) Any liquid, solid or gas which creates singly or by interaction with other substances a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 50 degrees Centigrade using the test methods specified in ASTM standards D-93-79, D-93-80, or D-3278-78 (incorporated by reference, see 40 CFR 260.11). This prohibition does not apply to any aqueous solution containing less than 24 percent alcohol by volume which would otherwise be a hazardous waste under 40 CFR 261.21 by virtue of having a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade.

(2) Any wastewater which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 6.0. The Control

Authority will develop and assign maximum pH discharge permit limitations based upon appropriate criteria.

(3) Any solid or viscous substance in amounts which will cause obstruction to the flow in the POTW or will result in Interference to the POTW.

(4) Any substance or substances, including oxygen demanding pollutants, directly or indirectly discharged at a flow rate or concentration level which will cause Interference with the POTW.

(5) Any wastewater having a temperature which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees C (104 degrees F) unless The Control Authority approves alternate temperature limits.

(6) Any wastewater containing concentration levels or flow rates of petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

(8) Any trucked or hauled pollutants, except at discharge points designated by The Control Authority.

(9) Any wastewater containnig toxic substances in sufficient quantity, either singly or by interaction with other substances, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters or exceed the limitations set forth in a Categorical Pretreatment Standard. A toxic substance shall include but not be limited to those identified under Section 307(a) of the Act.

(10) Any substance which may cause the POTWs effluent or any other roduct of the POTW such as redidues, sludges, or scums, to be unsuitale for reclamation and reuse or to interfere with the reclamation process. In

no case, shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or State or Federal disposal criteria.

(11) Any substance containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by The Control Authority in compliance with applicable State and Federal regulations.

(12) Any substance which will cause the POTW to violate its NPDES permit or the receiving waters water quality standards.

(13) Any wastewater which may cause a hazard to human health or create a public nuisance.

c. When the Control Authority determines that a User is contributing to the POTW, any of the above enumerated substances in such amounts as to interfere with the operation of the POTW, or to cause The Control Authority to be in violation of any applicable statute, regulation or permit, The Control Authority shall:

- 1) Advise the User of the impact of the contribution of the POTW;
- 2) Develop effluent limitation for such User to correct the violation or interference with the POTW and
- 3) Take any enforcement measures, necessary and appropriate under the circumstances.

2.2 Federal Categorical Pretreatment Standards:

a. Upon the promulgation of the Federal Categorical Pretreatment Standards for a particular industrial subcategory, the Federal Standard, if more stringent than limitations imposed under this Ordinance for sources in that subcategory, shall immediately supersede the limitations imposed under this Ordinance.

b. It shall be the responsibility of each User to be knowledgeable of all regulations applicable to the User. The Control Authority shall make all reasonable efforts to notify all affected users of the applicable Standards and reporting Requirements under 40 CFR

403.12. Failure of The Control Authority to notify an affected user, however, does not relieve the User of complying with the appropriate Federal Categorical Pretreatment Standards or applicable reprotng requirements.

2.3 Modification of Federal Categorical Pretreatment Standards:

If The Citys POTW treatment plant achieves consistent removal of pollutants limited by Federal Pretreatment Standards, The Control Authority may apply, to the Approval Authority for modification of specific limits in the Federal Pretreatment Standards. Consistent Removal shall mean reduction in the amount of a pollutant or alteration of the nature of the pollutant by the POTW treatment plant to a less toxic or harmless state in the effluent which is achieved by the POTW treatment plant in 95 percent of the samples taken when measured according to the procedures set forth in 40 CFR 403.7(c)(2) - General Pretreatment Regulations for Existing and New Sources of Pollution. The Control Authority may then modify pollutant discharge limits in the Federal Pretreatment Standards if the requirements contained in 40 CFR 403.7 are fulfilled and prior approval from the Approval Authority is obtained.

2.4 Specific Pollutant Limitations

a. It shall be unlawful to and no user shall discharge wastewater or waste into The Citys POTW which will cause the influent concentration at the POTW treatment plant to exceed the following limits:

Pollutant Maximum Concentration	(mg/l)
Arsenic	0.07 mg/l
Cadmium	0.014 mg/l
Chromium (Total)	0.18 mg/l
Copper	0.28 mg/l
Cyanide	0.15 mg/l
Lead	0.22 mg/l
Mercury	0.015 mg/l
Nickel	0.33 mg/l
Silver	0.28 mg/l
Zinc	0.62 mg/l

b. The Control Authority will develop and assign specific discharge permit limitations for its

Significant Industrial Users based upon the above limitations and an allocation mechanism set forth in The Citys approved pretreatment program, developed after receiving and considering comments from existing Significant Industrial Users. The specific permit limits will be developed to insure the above limits are not exceeded at the POTW treatment plant.

c. In addition, The Control Authority may develop specific discharge limitations for any other toxic or inhibiting pollutant which may be determined to be of sufficient quantity to cause POTW interference, POTW Pass Through, endanger the health and safety of the POTW personnel or general public, produce environmental harm, cause a POTW permit violation or render the POTWs sludges unacceptable for economical reclamation, disposal, or use. Such substances include but are not limited to:

Ammonia	Bismuth	Uranyl	Pesticides	Tin
Antimony	BOD	Manganese	Selenium	TSS
Barium	Boron	Molybdenum	Strontium	COD
Beryllium	Cobalt	Oil & Grease		Tellurium

d. Section a. through c. are in addition to other restrictions on discharges shall apply in any case where they are more stringent than Federal requirements and limitations or those in this Ordinance.

2.6 The Citys Right of Revision:

The City reserves the right to establish by ordinance more stringent limitations to requirements on discharge to the POTW if deemed necessary to comply with the objectives presented in Section 1.1 of this Ordinance. If more stringent limitations or requirements are deemed necessary, Industrial Users will have a reasonable time period to comply with such revisions. The time period will be established on a case by case basis by The Control Authority.

2.7 Excessive Discharge

Except where expressly authorized to do so by applicable pretreatment standards or requirements, no User shall ever increase the use of process water or in any way attempt to

dilute a discharge as partial or complete substitute for adequate treatment to achieve compliance with a pretreatment standard or requirement. The Control Authority may impose mass limitations on Users which are using dilution to meet applicable pretreatment standards or requirements, or in other cases where the imposition of mass limitations is appropriate.

2.8 Slug Discharges:

a. Each User shall provide protection from the Slug Discharge of prohibited materials or other substances regulated by this Ordinance. Facilities to prevent Slug Discharge of prohibited materials shall be provided and maintained at the owner or Users own cost and expense. For new sources, a detailed plan containing all of the minimum elements listed in 40 CFR 403.8(f)(2)(v) and a pretreatment facility and operating procedures to provide this protection shall be submitted to The Control Authority for review, and shall be approved by The Control Authority before construction of the facility. No New Source who is a Significant Industrial User ready to begin contribution to the POTW after the effective date of this Ordinance shall be permitted to introduce pollutants into the POTW until a Slug Discharge Procedures Plan has been approved by The Control Authority. All existing Significant Industrial Users shall complete such a plan for Slug Discharge procedures within one year of the effective date of this Ordinance. Review and approval of the Slug Discharge Procedures Plan and operating procedures shall not relieve the Significant Industrial User from the responsibility to modify its facility as necessary to meet the requirements of this Ordinance.

b. IN THE CASE OF A SLUG DISCHARGE, IT IS THE RESPONSIBILITY OF THE USER TO IMMEDIATELY TELEPHONE AND NOTIFY THE CONTROL AUTHORITY OF THE INCIDENT. The notification shall include location of discharge, type of waste, concentration and volume, and corrective actions.

c. Written Notice: Within five (5) days following, an Slug Discharge the User shall submit to the Control Authority a detailed written report describing the cause of the discharge and the measures to be taken by

the User to prevent similar future occurrences. Such notification shall not relieve the user of any expense, loss, damage, or other liability which may be incurred as a result of damage to the POTW, fish kills, or any other damage to person or property; nor shall such notification relieve the User of any fines, civil penalties, or other liability, which may be imposed under the provisions of this Ordinance or other applicable law.

d. Notice to Employees: A notice shall be permanently posted on the Significant Industrial Users bulletin board or other prominent place advising employees whom to call in the event of a slug discharge. Employers shall insure that all employees who may cause such a slug discharge to occur are advised of the emergency notification procedure.

2.9 Prohibition of Bypasses:

a. The Users pretreatment facility or device must be in operation at all times to the extent necessary to meet the applicable federal, state and local requirements and regulations and any intentional diversion, except as noted in Section 2.9.b below, of wastewater from any portion of the Users pretreatment facility or device is prohibited.

b. A bypass may be excused, however, if the bypass is necessary and there is no feasible alternative to prevent loss of life, personal injury or severe property damage. The no feasible alternative criterion is not satisfied if, in the exercise of reasonable engineering judgement, adequate back-up equipment should have been installed to prevent a bypass which occurs during a period of maintenance or in a period of equipment downtime.

c. Knowledge of a pending bypass must be reported immediately to The Control Authority. If the bypass is unanticipated the User must give oral notice of the Bypass within 24 hours of becoming aware of the bypass.

d. For both anticipated and unanticipated bypasses, the user must submit to The Control Authority a written report within 5 working days describing the following:

- (1) The nature of the Bypass;
- (2) the cause;
- (3) the duration and
- (4) solutions to avoid future bypasses.

SECTION 3 - FEES AND SURCHARGES

3.1 Purpose

It is the purpose of this chapter to provide for the recovery of costs from Users of the POTW for the implementation of the program established herein. The applicable fees and surcharges are set forth in The Citys Schedule of Charges and Fees.

3.2 Fees:

- a. The City may adopt charges and fees which may include:
 - (1) Fees for reimbursement of costs of setting up and operating The Control Authoritys Pretreatment Program;
 - (2) Fees for monitoring, inspections and surveillance procedures;
 - (3) Fees for reviewing Accidental Discharge procedures and construction;
 - (4) Fees for permit applications;
 - (5) Fees for filing appeals;
 - (6) Fees for consistent removal by The Control Authority of pollutants otherwise subject to Federal Pretreatment Standards; or
 - (7) Other fees as The City may deem necessary to carry out the requirements contained herein.

b. These fees related solely to the matters covered by this Ordinance and are separate from all other fees chargeable by The City.

3.3 Surcharges:

a. The discharge of pollutants in concentrations above that found in normal domestic wastewater may be accepted by the POTW from Users provided that:

- (1) The concentration levels of the constituent are not above that established by The Control Authority for the acceptance of such wastewater.
- (2) The wastewater has none of the characteristics

described in Section 2.1 of the Ordinance;

(3) The User pays to The Control Authority a Surcharge for the acceptance of such wastes in addition to its normal fee.

b. The permissible concentration ranges for the constituents eligible for acceptance, and a schedule of the surcharge costs together with certain restriction and limitations will be established by The Control Authority and incorporated into the Wastewater Contribution Permit of the Significant Industrial User.

SECTION 4 - ADMINISTRATION

4.1 Wastewater Discharge:

a. It shall be unlawful for a Significant Industrial User to discharge wastewater to the POTW without a current Wastewater Contribution Permit issued by The Control Authority in accordance with the provisions of this Ordinance.

b. It shall be unlawful to discharge wastewater to any natural outlet with the city, or in any area under the jurisdiction of The City without an NPDES permit of State permit issued by the Arkansas Department of Pollution Control and Ecology.

4.2 Wastewater Contribution Permits:

4.2.1 General Permits

a. All Users, currently not permitted by The Control Authority, who may discharge anything other than normal domestic sanitary wastewater must, if they have not previously done so, provide sufficient information or make an application for a Wastewater Contribution Permit so that The Control Authority can determine whether the applicant is a Significant Industrial User who must obtain a permit.

b. All Significant Industrial Users proposing to connect to or to contribute to the POTW shall obtain a Wastewater Contribution Permit before connecting to or contributing to the POTW. All existing Significant

Industrial Users, currently not permitted by The Control Authority, connected to or contributing to the POTW shall obtain a Wastewater Contribution Permit within 180 days after the effective date of this Ordinance.

4.2.2 Permit Application

a. Significant Industrial Users required to apply for or obtain a Wastewater Contribution Permit shall complete and file with The Control Authority an application in the form prescribed by The Control Authority and accompanied by a fee outlined in The City's schedule of charges and fees. Existing Significant Industrial Users so required shall apply for a Wastewater Contribution Permit within 90 days after the effective date of this Ordinance, and proposed new Significant Industrial Users shall apply at least 90 days prior to connecting to or contributing to the POTW. At the discretion of The Control Authority, applications received within 90 days of the desired date of connection to or contribution to the POTW will be processed as expeditiously as possible. In support of the application, the Significant Industrial User shall submit, in un-tils and terms appropriate for evaluation, the following information, unless deemed inapplicable by The Control Authority.

(1) Name, address, and location, (if different from the address);

(2) SIC number according to the Standard Industrial Classification manual, Bureau of the Budget, 1972, as amended;

(3) Wastewater constituents and characteristics including but not limited to those mentioned in Section 2 of this Ordinance as determined by a reliable analytical laboratory; sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304(h) of the Act and contained in 40 CFR, part 136, as amended;

(4) Time and duration of contribution;

(5) Average flow rates, including daily, monthly and

seasonal variations if any;

(6) Site plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;

(7) Description of activities, facilities and plant processes on the premises including all materials which are or could be discharges;

(8) Where known, the nature and concentration of any substances in the discharge which are limited by any City, State, or Federal Pretreatment Standard, and a statement regarding whether or not the pretreatment standards are being met on a consistent basis and if not, whether additional Operation and Maintenance (O & M) and/or additional pretreatment is required for the Significant Industrial user to meet applicable pretreatment standards; and

(9) If additional pretreatment and/or O&M will be required to meet the pretreatment standards, the shortest schedule by which the Significant Industrial user will provide such additional pretreatment. The completion date in this schedule shall not be later than the compliance date established for the applicable pretreatment standard. The following conditions shall apply:

(a) The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of additional pretreatment required for the Significant Industrial user to meet the applicable pretreatment standard (e.g., hiring an engineer, completing preliminary plans, completing final plans, executing contract for major components, commencing construction, completing construction, etc.).

(b) No increment referred to in paragraph (9) (a) above shall exceed 9 months.

(c) Not later than 14 days following each date in the schedule and the final date for compliance, the Significant industrial user shall submit a

progress report to The Control Authority including, as a minimum, whether or not it complied with the increment of progress to met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the Significant Industrial user to return the construction to the schedule established. In no event shall more than 9 months elapse between such progress reports to The Control Authority.

b. The permit application may also contain any other information as may be necessary by The Control Authority to evaluate the permit application, including but not limited to the following:

(1) Each product produced by type, amount, process or processes and rate of production;

(2) Type and amount of raw materials processed (average and maximum per day); and

(3) Number and type of employees, and hours of operation of plant and proposed or actual hours of operation of the Significant Industrial users pretreatment facility.

c. The Control Authority will evaluate the data furnished by the Significant Industrial User and may require additional information. After evaluation and acceptance of the data furnished, The Control Authority may issue a Wastewater Contribution Permit subject to terms and conditions provided herein.

4.2.3 Permit Modification

Within 9 months of the promulgation of a National Categorical Pretreatment Standard, the Wastewater Contribution Permit of Significant Industrial users subject to such standards shall be revised to require compliance with such standards within the time frame prescribed by such standard. Where a Significant Industrial User, subject to a National llCategorical Pretreatment Standard, has not previously submitted an application for a Wastewater Contribution Permit, as required by 4.2.2 of the Ordinance,

the Significant Industrial User shall apply for a Wastewater Contribution permit within 180 days after the promulgation of the Applicable National Categorical Pretreatment Standard. In addition, the Significant Industrial user with an existing Wastewater Contribution Permit shall submit to The Control Authority within 180 days after the promulgation of an applicable Federal Categorical Pretreatment Standard the information required by paragraph (8) and (9) of Section 4.2.2 of this Ordinance.

4.2.4 Permit Conditions:

a. Wastewater Contribution Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, Significant Industrial user chages and fees established by The City. Permits shall contain the following:

(1) Statement of permit duration;

(2) Statement of non-transferability wihtout, at a minimum, prior notification to The Control Authority;

(3) Applicable effluent limits or Categorical Pretreatment Standards, if applicable;

(4) Applicable self-monitoring, sampling, reporting, and record keeping requirement, including sampling location, smapling frequency, sample type, and standards for tests and reporting schedule.

(5) Notification requirements for Slug Discharges and Bypasses as contained in Sections 2.8. and 2.9. of this Ordinance.

(6) Statement of applicable civil and criminal penalties for violation of the pretreatment standards and requirements, and applicable compliance schedule(s).

b. Permits may contain one or more of the following:

(1) The unit charge or schedule of the Significant Industrial Users charges and fees for the wastewater to be discharged;

- (2) Limits on the average and maximum wastewater constituents and characteristics;
- (3) Limits on average and maximum rate and time of discharge or requirements for flow regulations and equalization;
- (4) Requirements for installation and maintenance of inspection and sampling facilities;
- (5) Requirements for submission of technical reports or discharge reports. See, Section 4.3. of this Ordinance.
- (6) Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by The Control Authority, and affording The Control Authority access thereto;
- (7) Requirements for notification of The Control Authority of any discharge, including a slug discharge, that could cause problems to the POTW; of any violation within 24 hours of becoming aware of the violation; and of any new introduction of wastewater constituents or any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the Significant Industrial User has submitted initial notification under 40 CFR 403.12(p);
- (8) Compliance schedules; or
- (9) Other conditions as deemed appropriate by The Control Authority to insure compliance with this Ordinance.

4.2.5 Permits Duration:

Wastewater Contribution Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date. The Significant Industrial User shall apply for permit reissuance no later than 180 days prior to the expiration of the Significant Industrial Users existing permit. The terms and conditions of the permit may be subject to modification by The Control Authority during the term of the permit if the limitations

or requirements as identified in Section 2 of this Ordinance are modified or for other just cause. The Significant Industrial User shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

4.2.6 Permit Transfer:

Wastewater Contribution Permits are issued to a specific Significant Industrial user for a specific operation. A wastewater discharge permit shall not be reassigned or transferred to a new owner, new Significant Industrial User, without, as a minimum, providing The Control Authority:

- 1) 30 days advance notice of an intent to transfer or assign;
 - 2) a certified statement by the assignee or transferee that upon the permits assignment or transfer, there will be not change in the operation of the facility so as to, in any way, affect the quantity and quality of the wastewater discharged to the POTW and
 - 3) a copy of the existing individual control mechanism is provided to the transferee or assignee.
- All other transfers, assignments, change in premises or change in operations will require the prior approval of The Control Authority before the Wastewater Contribution Permit will become effective. Any succeeding owner or Significant Industrial User shall also comply with the terms and conditions of the existing permit.

4.3 Reporting Requirements for Permittee

4.3.1 Baseline Monitoring Reports

Within 180 days days after the effective date of a Categorical Pretreatment Standard, or 180 days after a final administrative decision made upon the application of an appropriate Categorical Pretreatment Standard, whichever is later, an existing user subject to such categorical Pretreatment Standards and currently discharging to or scheduled to discharge to a POTW shall be required to submit to The Control Authority a Baseline Monitoring Report. This Baseline Monitoring Report shall contain all of the information required in 40 CFR 403.12(b)(1)-7.

At least 90 days prior to the commencement of discharge, New Sources, and sources that become Users subsequent to the promulgation of an applicable Categorical Standard, shall submit to The Control Authority a Baseline Monitoring Report which contains all the information listed in paragraphs 40 CFR 403.12(b)(1)-(5). New Sources shall also be required to include in their Report information on their method of pretreatment intended to be used in meeting their applicable pretreatment standards.

4.3.2 Compliance Date Report

Within 90 days following the date for final compliance with applicable pretreatment standards or, in the case of a New Source, following commencement of the introduction of wastewater into the POTW, any Significant Industrial user subject to pretreatment standards and requirements shall submit to The Control Authority a report indicating the nature and concentration of all pollutants in its discharge which are limited by pretreatment standards and requirements and their average and maximum daily flow. The report shall state whether the applicable pretreatment standards or requirements are being met on a consistent basis and, if not, what additional O&M and/or pretreatment is necessary to bring the Significant Industrial User into compliance with the applicable pretreatment standards or requirements. This statement shall be signed by an authorized representative of the Significant Industrial User. Any data presented as part of the report shall be prepared and certified by a certified laboratory and should any pretreatment be proposed or required, a registered engineer shall prepare and certify his/her involvement in the proposed pretreatment facility. Any person signing a submittal to The Control Authority 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 procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage this facility, or those persons directly responsible for gathering 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.

4.3.3 Periodic Compliance Reports

a. Any Significant Industrial User subject to a pretreatment standards, after the compliance date of such pretreatment standards, or, in the case of a New Source, after commencement of the discharge into the POTW, and any noncategorical Significant Industrial User shall submit to The Control Authority during the months of June and December, unless required more frequently by the Control Authority, a report indicating the nature, concentration and flow of pollutants in the effluent which are limited by such pretreatment standards. At the discretion of The Control Authority and in consideration of such factors as local high or low flow rates, holidays, budget cycles, etc., The Control Authority may agree to alter the months for report submittal.

b. The Control Authority may impose equivalent mass limitations of Significant Industrial Users where the imposition of mass limitations is appropriate. In such cases, the report required by subparagraph 1) of this paragraph shall indicate the mass of pollutants regulated by pretreatment standards in the effluent of the Significant Industrial user. These reports shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration, or production and mass where requested by The Control Authority, of pollutants contained therein which are limited by the applicable pretreatment standards. The frequency of monitoring shall be the same as above.

4.4 Monitoring Factors

a. The Control Authority may require, to be provided and operated at the users own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the building sewer and/or internal drainage systems. The monitoring facility should normally be situated on the Users premises, but The Control Authority may, when such a location would be impractical or cause undue hardship on the User, allow the facility to be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles.

b. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the User.

c. Whether constructed on public or private property, the sampling and monitoring facilities shall be provided in accordance with The Control Authority's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by The Control Authority.

4.5 Inspection and Sampling:

The Control Authority shall inspect the facilities of any user to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow The Control Authority, and other approval authorities, or their representatives, ready access at all reasonable times to all parts of the premises for the observation of any User personnel in the performance of any of their duties. All records of the facility pertaining in any way to the provisions of this Ordinance may be photocopied by The Control Authority and the copies removed from the facility's premises. EPA, The City or the State of Arkansas shall have the right to set up on the User's property such devices as are necessary to conduct sampling, inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from The City, The Control Authority, the State or EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

4.6 Sampling and Analytical Procedures:

a. All grab or composite sampling shall be done in accordance with 40 CFR 403, Appendix E - Sampling Procedures.

b. All analysis shall be performed in accordance with procedures established by the approval authority pursuant to Section 304(h) of the Act and contained in 40 CFR, Part 136 and amendments thereto or with any other test procedures approved by the Approval Authority. Sampling shall be performed in accordance with the techniques approved by the Approval Authority.

c. Where 40 CFR part 136 does not include a sampling or analytical technique for the pollutant in question, sampling and analysis shall be performed in accordance with the procedures set forth in the EPA publication, Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants, April, 1977, and amendments thereto, or with any sampling or analytical procedure approved by the Approval Authority.

4.7 Pretreatment:

Users shall provide any and all pretreatment as necessary to comply with this Ordinance, their Wastewater Contribution Permit, all applicable State and Federal requirements and if applicable, Federal Categorical Pretreatment Standards within the time limitations as specified by the Federal Categorical Pretreatment Standards within the time limitations as specified by the Federal Pretreatment Regulations. Any facility required to pretreat wastewater to a level acceptable to The Control Authority shall provide, operate, and maintain a pretreatment facility at the Significant Industrial Users expense. Detailed plans showing the pretreatment facility and operating procedures shall be submitted to The Control Authority for review, and shall be acceptable to The Control Authority before construction of the facility. The review of such plans and operating procedures will in no way relieve the Significant Industrial user from the responsibility of modifying the facility as necessary to produce an effluent acceptable to The Control Authority under the provisions of this Ordinance. Any subsequent changes in the pretreatment facility or method of operation shall be reported to and be acceptable to The Control Authority prior to the Significant Industrial Users initiation of the changes.

4.8 Significant Noncompliance:

a. A User is in significant noncompliance if it meets one or more of the criteria as stated in 40 CFR 403,8(f)(2)(vii).

b. All records relating to compliance with pretreatment standards shall be made available to officials of the EPA or approval authority upon request.

4.9 Confidential Information:

a. Information and data on a user obtained from reports questionnaires, permit applications, permit and monitoring programs and from inspections, shall be available to the public or other governmental agency without restriction unless the User specifically requests, and is able to demonstrate to the satisfaction of The Control Authority, that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the User.

b. When requested by the person furnishing a report, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to this Ordinance, the National Pollutant Discharge Elimination System (NPDES) Permit, State Disposal System permit and/or the Pretreatment Programs; Provided, however, that such portions of a report shall be available for use by the State or any state agency in judicial review or enforcement proceedings involving the person furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

c. Information accepted by The Control Authority as confidential, shall not be transmitted to any governmental agency or the general public by The Control Authority until and unless a ten-day notification is given to the User.

SECTION 5 - ENFORCEMENT

5.1. Notification of Violation:

Whenever The Control Authority finds that any User has violated or is violating this Ordinance, Wastewater Contribution Permit, or any prohibition, limitation or requirements contained therein or applicable state or Federal laws or regulations, The Control Authority may serve upon such person a written notice stating the nature of the violation. Within 30 days of the date of the notice, a plan for the satisfactory correction and prevention, to include specific required actions, shall be submitted to The Control Authority by the User. Submission of this plan in no way relieves the User of liability for any violation occurring before or after receipt of Notice of Violation.

5.2 Consent Agreement:

The Control Authority is hereby empowered to enter into Consent Agreement, assuring voluntary compliance, or other similar documents as an agreement with the user responsible for the noncompliance. Such agreements will include specific action to be taken by the User to correct the noncompliance within a time period also specified by the agreement.

5.3 Show Cause Hearing:

a. The Control Authority may order any User who causes or allows an unauthorized discharge to enter the POTW or who violates any of the conditions of this Ordinance, the permit, or applicable state or Federal laws or regulations to show cause before The Control Authority why the proposed enforcement action should not be taken. Notice shall be served on the User specifying the time and place of the show cause hearing, the reasons why the action is being taken, the proposed enforcement action, and a request that the User show cause why this proposed enforcement action should not be taken. The notice of hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days before the hearing. Service may be made on any agent or officer of a corporation. If a duly notified User fails to appear as noticed, immediate enforcement action may be pursued.

b. The Control Authority may itself conduct the show cause hearing and take the evidence, or may designate

any of its board members or any officer or employee of The Control Authority to:

(1) Issue in the name of The Control Authority notices of hearings requiring the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;

(2) Take the evidence; and

(3) Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Supervisor of The Control Authority for action thereon.

c. At any hearing held pursuant to this Ordinance, testimony taken must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof (i.e. postage, printing expense, etc.)

d. Following the show cause hearing, The Control Authority shall within 15 days following the recommendation of the hearing officer issue and have served on all parties the action recommended. If warranted, The Control Authority shall recommend to the City Council, after setting forth the findings of fact, that the City Attorney pursue legal action; including civil action to recover the recommended penalties for the violation, injunctive relief and/or criminal prosecution. Alternatively, The Control Authority may issue to the User in violation, notice that following a specified period of time, the sewer service will be discontinued unless its pretreatment facility shall have installed adequate devices or other related appurtenances and such devices or other related appurtenances are properly operated. Other orders and directives as are necessary and appropriate may be issued.

e. An order directing the cessation of sewer service shall not prelude a recommendation for legal action to The City.

5.4 Administrative Orders:

5.4.1 Compliance Orders:

When The Control Authority finds that a user has violated or continues to violate this Ordinance, its Wastewater Contribution Permit or orders issued thereunder, The Control Authority may issue an order to the User responsible for the violation that states that following a specified time period, sewer service shall be discontinued unless Users pretreatment facility has installed devices or other appurtenances and are properly operated. Compliance orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including, but not limited to, the installation of pretreatment technology, additional selfmonitoring and management practices.

5.4.2 Cease and Desist Orders:

When The Control Authority finds that a User has violated or continues to violate this Ordinance, its Wastewater Contribution Permit or order issued thereunder, The Control Authority may issue an order to cease and desist all such violations and direct the User in noncompliance to comply forthwith, if necessary The Control Authority may take such appropriate preventive or remedial action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating discharge.

5.5 Emergency Authority:

a. The Control Authority, following only oral notice to the User, may suspend the wastewater treatment service or the Wastewater Contribution Permit of any person when, in the opinion of the Supervisor of The Control Authority, such suspension is necessary to immediately and effectively halt or prevent any actual or threatened discharge which presents, or may present, an imminent or substantial endangerment to the health, safety or welfare of persons.

b. The Control Authority, following a notice with the opportunity to respond, may halt or prevent any discharge to the POTW which presents or may present an endangerment to the environment or which threatens to interfere with the operation of the POTW.

c. Any User notified of a suspension of its wastewater treatment service and/or its Wastewater Contribution Permit shall immediately stop or eliminate the harmful discharge. In the event of a failure of the User to comply voluntarily with the demand for cessation, The Control Authority shall take such steps as deemed necessary, including immediate severance of the sewer connection, to prevent the endangering discharge. The Control Authority may reinstate the Wastewater Contribution Permit and/or the wastewater treatment service upon proof of the elimination of the endangering discharge, together with an acceptable detailed written statement submitted by the User describing the cause of the harmful discharge and the measures taken to prevent any future occurrence. The proof and required statements must be submitted to The Control Authority within 15 days of the date of endangering discharges occurrence.

5.6 Revocation of Permits:

a. Any Significant Industrial User who violates any of the following conditions or requirements of this Ordinance, or applicable state and federal laws or regulations or any provisions of its Wastewater Contribution Permit is subject to having his permit revoked:

(1) Violation of Wastewater Contribution Permit conditions.

(2) Failure to accurately report the wastewater constituents and characteristics of its discharge.

(3) Failure to report significant changes in operations or wastewater constituents and characteristics.

(4) Refusal of reasonable access to the Significant Industrial Users premises for the purpose of inspection, monitoring or sampling.

b. A noncompliant Significant Industrial User will be notified of the proposed termination of its Wastewater Contribution Permit and offered an opportunity to show cause pursuant to Section 5.3 of this Ordinance why the proposed action should not be taken.

5.7 Judicial Remedies:

If any User discharges sewage, industrial wastes or other wastes into the POTW contrary to the provisions of this Ordinance, any other applicable ordinances, federal or state Pretreatment Requirements, or any order of The City or The Control Authority, or otherwise violates provisions of this Ordinance, the Wastewater Contribution Permit, or applicable laws and regulations, The Control Authority may recommend to the City Council that the City Attorney commence action for appropriate legal and/or equitable relief in a court of competent jurisdiction.

5.7.1 Injunctive Relief:

Whenever a User has violated or continues to violate the provisions of this Ordinance or its Wastewater Contribution Permit or orders issued thereunder, The Control Authority may request that the City Attorney immediately petition the Court for the issuance of a preliminary or permanent injunction, or both, as may be appropriate to restrain or compel the activities of the User.

5.7.2 Civil Penalties:

a. Any User who is found to have violated or continues to violate an order of The City and/or The Control Authority or who negligently failed to comply with any provisions of this Ordinance or the orders, rules, regulations and permits issued thereunder, may be fined not more than One Thousand Dollars (\$1,000.00) for each offense. Jurisdiction to determine such penalties shall be in the City Municipal Court or other court of appropriate jurisdiction. Each day on which a violation shall occur or continue shall be a separate and distinct offense.

b. In addition to the civil penalties provided for herein, The City may recover, from the user in violation, any damages suffered, reasonable attorneys fees, court costs, court reporters fees and other expenses of litigation in any action in law or equity against any person or other entity.

c. The City Attorney shall petition the Court to impose, assess and recover all civil penalties, legal

fees, and costs together with damages if appropriate. In determining the amount of the penalty, The Control Authority in its recommendation for civil penalties, the City Council and the Court shall take into account all relevant circumstances, including, but not limited to, the extent of harm caused by the violation, the magnitude and duration of the violation, any economic benefit gained by the user in allowing the violation, the timing and nature of any corrective actions taken by the User, the compliance history of the User and any other factors as justice requires.

5.8 Criminal Prosecution:

a. The Control Authority may recommend to the City Council that the City Attorney criminally prosecute any User who knowingly or willfully violates any provision of this ordinance, its Wastewater Contribution Permit or any orders issued thereunder. If so prosecuted the User shall, upon conviction, be guilty of a misdemeanor, and punished by a fine not to exceed \$1,000.00 per violation per day or imprisonment for not more than six (6) months, or both.

b. Any person who knowingly or willfully makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Ordinance or its Wastewater Contribution Permit, or who falsifies, tampers with, or knowingly or willingly renders inaccurate any monitoring or sampling device, wastewater sample or other methods required under this Ordinance, shall be guilty of a misdemeanor, and shall, upon conviction, be punished by a fine of not more than \$1,000.00 or by imprisonment for not more than six (6) months or both.

5.9 Supplemental Enforcement Remedies:

5.9.1 Annual Publication of Users is Significant Noncompliance:

The Control Authority shall publish, at least annually in the largest daily newspaper circulated in the area, a description of those Users which are found to be in Significant Noncompliance as defined in 40 CFR 403.8(f)(2)(vii) with any provisions of this Ordinance or

any permit or order issued thereunder during the period since the previous publication.

5.9.2 Performance Bonds:

The Control Authority may decline to reissue a Wastewater Contribution Permit to any Significant Industrial user which has failed to comply with the provisions of this Ordinance or any order or previous permit issued thereunder unless such Significant Industrial User files with The Control Authority a satisfactory bond payable to The City in a sum not to exceed an amount determined by The Control Authority to be necessary to achieve consistent compliance.

SECTION 6 - SEVERABILITY

If any provision, paragraph, word, section, chapter, or article of this Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, chapters, and articles shall not be affected and shall continue in full force and effect.

SECTION 7 - AMENDED

As of the effective date of this Ordinance, all other Ordinances or parts of Ordinances in conflict with this Ordinance are amended.

SECTION 8 - EFFECTIVE DATE

This Ordinance being necessary for the health, safety and welfare of the citizens of Russellville, an emergency is declared to exist, and this Ordinance shall take effect and be enforced from and after its passage, approval and publication, as provided by law.

PASSED AND APPROVED this 13th day of February, 1992.

ORDINANCE NO.

AN ORDINANCE SETTING FORTH UNIFORM REQUIREMENTS FOR DIRECT AND INDIRECT CONTRIBUTORS INTO THE WASTEWATER COLLECTION AND TREATMENT SYSTEM FOR THE CITY OF RUSSELLVILLE AND ENABLING THE CITY TO COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS REQUIRED BY THE CLEAN WATER ACT OF 1977 AND THE GENERAL PRETREATMENT REGULATIONS (40 CFR PART 403).

SECTION 1 - GENERAL PROVISIONS

1.0 Short Title: This Ordinance shall also be known as the Pretreatment Ordinance.

1.1 Purpose and Policy:

a. This Ordinance sets forth uniform requirements for direct and indirect contributors into the wastewater collection and treatment system for the City of Russellville (the City) and enables the City to comply with all applicable State and Federal laws required by the Clean Water Act (33 United States Code [U.S.C.] section 1251 et seq) and the General Pretreatment Regulations (Title 40 of the *Code of federal Regulations* [CFR] Part 403.

b. The objectives of this Ordinance are:

(1) To prevent the introduction of pollutants into the Citys wastewater treatment and collection system which will interfere with the operation of the system or contaminate the resulting sludge;

(2) To prevent the introduction of pollutants into the Citys wastewater treatment and collection system which will pass through the system, inadequately treated, into receiving waters or the atmosphere or otherwise be incompatible with the system;

(3) To improve the opportunity to recycle and reclaim wastewater and sludge from the Citys wastewater treatment system;

(4) To enable the City to comply with its National Pollutant Discharge Elimination System permit conditions, sludge use and disposal requirements, and any other Federal or State laws to which the Public Owned Treatment Works is subject;

(5) To protect both Publicly Owned Treatment Works personnel who may be affected by wastewater and sludge in the course of the employment and the general public; and

(6) To provide for fees for the equitable distribution of the cost of operation, maintenance, and improvement of the Public Owned Treatment Works

c. This Ordinance provides for the regulation of direct and indirect contributors into the City's POTW through the issuance of permits to certain non-domestic Users, the enforcement of general requirements for the other Users, authorized monitoring and enforcement activities, required User reporting, and the assumption that existing customers capacity will not be preempted, and provides for the setting of fees for the equitable distribution of cost resulting from the program established herein.

d. The terms and provisions of this Ordinance shall apply to all connections of lateral or other sewer lines to the sewerage system of the POTW whether within or outside the City and to all persons within the City and outside the City who are, by contract or agreement with the City, Users of the City's POTW.

e. It is in the best interest of the City, to clarify and update the provisions of its existing wastewater Ordinance by the provisions of this Ordinance, so as to achieve compliance with the Clean Water Act and the regulations pursuant thereto, 40 CFR Part 403 as amended July 24, 1990. It is therefore intended that this Ordinance shall take precedence over any term or condition of agreements or contracts of the City or the Control Authority which are inconsistent with the provisions of this Ordinance, and over any and all inconsistent terms and conditions of any previous Ordinance.

f. Except as otherwise provided herein, the Control Authority is hereby authorized to administer, implement and enforce the provisions of this Ordinance. The National Pollution Discharge Elimination System (NPDES) permit shall be issued in the name of the Control Authority. The Control Authority as of the date of this Ordinance is City

Corporation, a non-profit corporation established by City Resolution in April 1985. The City shall be responsible for all legal action necessary to enforce the provisions of this Ordinance.

1.2 Definitions

a. Unless the context specifically indicates otherwise, the following terms and phrases, as used in this Ordinance, shall have the meanings hereinafter designated:

(1) Act or the Act: The Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, Title 33 U.S.C. 1251, et. seq.

(2) Approval Authority: The Director of the Arkansas Department of Environmental Quality.

(3) Authorized Representative of a User:

a. If the user is a Corporation:

1. The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function for the corporation; or
2. The manager of one or more manufacturing, production, or operation facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate information for individual wastewater discharge permit requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

b. If the User is a partnership or sole proprietorship, a general partner or proprietor, respectively.

c. If the User is a Federal, State, or local governmental facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or their designee.

d. The individuals described in paragraphs a through c, above, may designate a Duly Authorized Representative if the authorization is in

writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates or having overall responsibility for environmental matters for the company, and the written authorization is submitted to the Control Authority.

(4) Best Management Practices or BMPs means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to implement the prohibitions listed in Section 2.1 a and b. BMPs include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw materials storage.

(5) Biochemical Oxygen Demand (BODs): The quantity of oxygen utilized in the biochemical oxidation of organic matter under laboratory condition of five (5) days at 20 degrees centigrade and expressed in terms of mass loading or concentration.

(6) Bypass: The intentional diversion of wastewater from any portion of a user's pretreatment facility.

(7) Categorical Pretreatment Standard or Categorical Standard: Any regulation containing pollutant discharge limits promulgated by EPA in accordance with sections 307(b) and (c) of the Act (33 U.S.C . section 1317) that apply to a specific category of Users and that appear in 40 CFR Chapter I, Subchapter N, Parts 405-471.

(8) Categorical Industrial User: An Industrial User subject to a categorical Pretreatment Standard or categorical Standard.

(9) City : The City of Russellville, City Corporation or the City Council.

(10) Chemical Oxygen Demand (COD): A measure of the total oxygen consuming capacity of inorganic and organic matter present in the water or wastewater expressed in mass loading or concentration.

(11) Composite Sample: A sampling procedure defined in 40 CFR 403, Appendix E - Sampling Procedures, I. Composite Method.

(12) Control Authority: Under the provisions of 40 CFR 403.3(f) the Control Authority is charged with the

administration, operation and maintenance of the POTW and enforcement of the provisions of this Ordinance. As of the date of this Ordinance, Control Authority is City Corporation, a City owned utility.

(13) Control Mechanism: Control through permits, orders or other means the contribution of each Significant Industrial user to the POTW to ensure compliance with applicable pretreatment standards and regulations.

(14) Direct Discharge: The discharge of treated or untreated wastewater directly to the waters of the State of Arkansas.

(15) Daily Discharge: 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.

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.

Concentration Calculations: For pollutants with limitations expressed in other units of measurement, determination of concentration made using a composite sample shall be the concentration of the composite sample.

When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during that sampling day by using the following formula: where c = daily concentration, F = daily flow and n = number of daily samples:

$$C_1F_1 + C_2F_2 + \dots + C_nF_n / F_1 + F_2 + \dots + F_n$$

(16) Daily Maximum Limit (Daily Maximum): The highest allowable daily discharge during a calendar month .

(17) Environmental protection Agency (EPA): The U.S. Environmental Protection Agency, or where appropriate The Regional Water Management Division Director, the regional Administrator, or other duly authorized official of said agency.

(18) Existing Source: Any source of discharge that is not a "New Source."

(19) **Grab Sample:** A sampling procedure defined in 40 CFR 403, Appendix E - Sampling Procedures, II. Grab Method.

(20) **Holding Tank Waste:** Any waste from holding tanks - such as vessels, chemical toilets, campers, trailers, septic tanks, and vacuum pump trucks.

(21) **Indirect Discharge or Contribution:** The discharge or contribution of non-domestic pollutants from any source, including holding tank wastes to the POTW.

(22) **Industrial User (or User):** A source of indirect discharge.

(23) **Instantaneous Limit:** The maximum concentration of a pollutant allowed to be discharged at any time, determined from the analysis of any discrete or composited sample collected, independent of the industrial flow rate and the duration of the sampling event.

(24) **Interference:** The inhibition or disruption of the POTW treatment processes or operations which contribute to a violation of any requirement of the City's NPDES permit or causes harm to the POTW. The term includes the prevention of sewage sludge use or disposal by the POTW in accordance with Section 405 of the Act, Title 33 U.S.C. 1345, or any criteria, guidelines, or regulations developed pursuant to the Solid Waste Disposal Act (SWDA), the Clean Air Act, the Toxic Substances Control Act, or more stringent state criteria (including those contained in any State sludge management plan prepared pursuant to Title IV of SWDA) applicable to the method of disposal or use employed by the POTW.

(25) **Local Limit:** Specific discharge limits developed and enforced by the Control Authority upon industrial or commercial facilities to implement the general and specific discharge prohibitions listed in 40 CFR 403.5 (a)(1) and (b).

(26) **Medical Waste:** Isolation wastes, infectious agents, human blood and blood products, pathological wastes, sharps, body parts, contaminated bedding, surgical wastes, potentially contaminated laboratory wastes, and dialysis wastes.

(27) **Monthly Average:** The sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

(28) Monthly Average Limit: 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.

(30) New Source: Any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under Section 307(c) of the Act which will be applicable to such source if such Standards are thereafter promulgated in accordance with that Section , provided that:

- (a) The building, structure, facility, or installation is constructed at a site at which no other source is located; or
- (b) The building, structure, facility, or installation totally replaces the process or production equipment that causes the discharge of pollutants at an Existing Source; or
- (c) The production or wastewater generating processes of the building, structure, facility, or installation are substantially independent of an Existing Source at the same time. In determining whether these are substantially independent, factors such as the extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the Existing Source, should be considered.
 - 1. Construction on a site at which an Existing Source is located results in a modification rather than a New Source if the construction does not create a new building, structure, facility, or installation meeting the criteria of Section (29)(b) or (c) above but otherwise alters, replaces, or adds to the existing process or production equipment.
 - 2. Construction of a New Source as defined under this paragraph has commenced if the owner or operator has:
 - a. Begun, or caused to begin, as part of a continuous onsite construction program (1) any placement, assembly, or installation of facilities or equipment; or (2) significant site preparation work

- including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the replacement, assembly, or installation of new source facilities or equipment: or
- b. Entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be use in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.

(31) National Pollution Discharge Elimination System Permit or (NPDES): A permit issued pursuant to Section 402 of the Clean Water Act, Title 33 U.S.C. 1342, which establishes limits on the quality and quantity of discharges to the waters of the State.

(32) Noncontact Cooling Water: Water used for cooling that does not come into direct contact with any raw material, intermediate product, waste product, or finished product.

(33) Pass Through: A discharge which exits the POTW into the waters of the State in quantities or concentration levels which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the Control Authority's NPDES permit or increases the magnitude or duration of a violation.

(34) Person: Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity or any other legal entity, or their legal representatives, agents or assigns. The masculine gender shall include the feminine, the singular shall include the plural where indicated by the context.

(35) pH: A measure of the acidity of a liquid and expressed as the negative logarithm (base 10) of the

hydrogen ion concentration, and stated in standard units (Sus).

(36) Pollution: The man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

(37) Pollutant: Any dredge spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, medical wastes, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

(38) Pretreatment or Treatment: The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state, prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. The reduction or alteration can be obtained by physical, chemical or biological processes, or process changes by other means, except by diluting the concentration of the pollutant unless allowed by an applicable Pretreatment Standard.

(39) Pretreatment Requirements: Any substantive or procedural requirements related to pretreatment, including those imposed on a Users, other than a Pretreatment Standards.

(40) Pretreatment Standards or Standards: Prohibited discharge standards, categorical Pretreatment Standards, and Local Limits.

(41) Prohibited Discharge Standards or Prohibited Discharges: Absolute prohibitions against the discharge of certain substances; these prohibitions appear in Section 2.1 of this Ordinance.

(42) Publicly Owned Treatment Works (POTW): The treatment works, as defined by Section 212 of the Act, Title 33 U.S.C. 1292, which is owned by the City. This definition includes the treatment plant and any sewers that convey wastewater to the POTW treatment plant, but does not include pipe, sewers or other conveyances

not connected to a facility providing treatment. For the purposes of this Ordinance, the POTW shall also include any sewers that convey wastewaters to the POTW from persons outside the City of Russellville who are, by contract or agreement with the City, users of the City's POTW.

(43) POTW Treatment Plant: That portion of the POTW designed to provide treatment to wastewater.

(44) Septic Tank Waste: Any sewage from holding tanks such as vessels, chemical toilets, campers, trailers, and septic tanks.

(45) Sewage: Human excrement and gray water (household showers, dishwashing operations, ect.).

(46) Shall is mandatory; May is permissive.

(47) Significant Industrial User (SIU): Any User of the POTW subject to Categorical Pretreatment Standards; or any other user that discharges an average flow of 25,000 gallons per work day or more of process wastewater to the POTW (excluding sanitary, non-contact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated a Significant Industrial User by The Control Authority, on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

A. The Control Authority may determine that an Industrial User subject to categorical Pretreatment Standards is a Non-Significant Categorical Industrial User rather than a Significant Industrial User on a finding that the Industrial User never discharges more than 100 gallons per day (gpd) of total categorical wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater, unless specifically included in the Pretreatment Standard) and the following conditions are met:

1. The Industrial User, prior to the Control Authority's finding, has consistently complied with all applicable categorical Pretreatment Standards and Requirements;
2. The Industrial User annually submits the certification statement required in 40 CFR 403.12(q), together with any additional information necessary to support the certification statement; and
3. The Industrial User never discharges any untreated concentrated wastewater.

B. Upon a finding that a User meeting the criteria for Industrial User has no reasonable potential for adversely affecting the POTW's operation or for violation any Pretreatment Standard or Requirement, the Control Authority may at any time, on its own initiative or in response to a petition received from an Industrial User, and in accordance with procedures in 40 CFR 403.8(f)(6), determine that such User should not be considered a Significant Industrial User.

(48) Significant Noncompliance (SNC): See, Section 4.8.a of this Ordinance.

(49) Slug Discharge: Any discharge at a flow rate or concentration, which could cause a violation of the prohibited discharge standards in Section 2.1 of this Ordinance. A slug discharge is any discharge of a non-routine, episodic nature, including, but not limited to, an accidental spill or non-customary batch discharge, which has a reasonable potential to cause Interference or Pass Through, or in any other way violate the POTW's regulations, Local Limits or Permit conditions.

(50) State: State of Arkansas.

(51) Standard Industrial Classification (SIC): A classification pursuant to the Standard Industrial Classification Manual issued by the Executive office of the President, office of Management and Budget, 1972.

(52) Storm Water: Any flow occurring during or following any form of natural precipitation and resulting therefrom.

(53) Superintendent: The individual designated by the Control Authority to supervise the operation of the POTW, and who is charged with certain duties and responsibilities by this ordinance. The term also means a Duly Authorized Representative of the Superintendent.

(54) Total Suspended Solids (TSS): The total concentration of matter that floats on the surface of, or is suspended in, water, wastewater or other liquids, and which is removable by laboratory filtering.

(55) Total Toxic Organics (TTO): The sum of the masses or concentration of specific toxic organic compounds found in Users process discharge at a concentration greater than 0.01 mg/l.

(56) Toxic Pollutant: Any pollutant or combination of pollutants listed as toxic in regulations promulgated by the Administrator of the Environmental Protection Agency under the Section of 307(a) of the Act or other Acts.

(57) User (or Industrial Usser): A source of indirect discharge.

(58) Wastewater: The liquid and water-carried Industrial or domestic wastes from dwellings, commercial buildings, industrial facilities, and institutions, together with any ground water, surface water, and storm water that may be present, whether treated or untreated, which is contributed into or permitted to enter the POTW.

(59) Waters of the State: All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the State or any portion thereof.

1.3 Abbreviations

The following abbreviations shall have the designated meanings:

ADEQ - Arkansas Department of Environmental Quality

BOD - Biochemical Oxygen Demand

CFR - Code of Federal Regulations

CIU - Categorical Industrial User

COD - Chemical Oxygen Demand

EPA - Environmental Protection Agency

l - Liter

mg - Milligrams

mg/l - Milligrams per liter
NPDES - National Pollutant Discharge Elimination System
POTW - Publicly Owned Treatment Works
SIC - Standard Industrial Classification
SIU - Significant Industrial User
SND - Significant Noncompliance
SWDA - Solid Waste Disposal Act, 42 U.S.C. 6901, et.seq.
USC - United States Code
TSS - Total Suspended Solids

SECTION 2 - REGULATIONS

2.1 Discharge Prohibitions

a. General Prohibitions. It shall be unlawful for any User to contribute or cause to be contributed, directly or indirectly, any pollutant or wastewater which will interfere with the operation or performance of the POTW, causes a pass-through, which is defined in Section 1.2.a(33) of this Ordinance, or which violates any statute, rule, regulation or ordinance of any public agency. This general prohibition applies to all such users of the POTW whether or not the User is subject to National Categorical Pretreatment Standards or any other National, State, or local pretreatment standards or requirements.

b. Specific Prohibitions. A user may not contribute the following substances to the POTW:

(1) Any liquid, solid or gas which creates singly or by interaction with other substances a fire or explosion hazard in the POTW, including, but not limited to, waste streams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 50 degrees Centigrade using the test methods specified in 40 CFR 261.21.

(2) Any wastewater having a pH lower than 5.0 S.U. or greater than 12.0 S.U. or having any other corrosive property capable of causing corrosive structural damage or a hazard to the structures, equipment and personnel of the POTW. In no case shall waters or wastes be discharged at such a flow rate and/or pH which will cause the influent at the POTW to be lower than 6.0 or greater than 9.0.

(3) Any solid or viscous substance in amounts which will cause obstruction to the flow in the POTW or will result in Interference to the POTW.

(4) Any substance or substances, including oxygen demanding pollutants, directly or indirectly discharged at a flow rate or concentration level which will cause Interference, upset, or loss of efficiency at the POTW.

(5) Any wastewater having a temperature which will inhibit biological activity in the POTW resulting in Interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees C (104 degrees F). Any liquid or vapor having a temperature higher than 54.4 degree C (130 degree F).

(6) Any wastewater containing concentration levels or flow rates of petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause Interference or Pass Through.

(7) Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems.

(8) Any trucked or hauled pollutants, except at discharge points designated by the Control Authority.

(9) Any wastewater containing toxic substances in sufficient quantity, either singly or by interaction with other substances, to injure or interfere with any wastewater treatment process, constitute a hazard to humans or animals, create a toxic effect in the receiving waters or exceed the limitations set forth in a Categorical Pretreatment Standard. A toxic substance shall include but not be limited to those identified under Section 307(a) of the Act.

(10) Any substance which may cause the POTWs effluent or any other product of the POTW such as residues, sludges, or scums, to be unsuitable for reclamation and reuse or to interfere with the reclamation process. In no case, shall a substance discharged to

the POTW cause the POTW to be in noncompliance with sludge use or State or Federal disposal criteria.

(11) Any substance containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Control Authority in compliance with applicable State and Federal regulations.

(12) Any substance which will cause the POTW to violate its NPDES permit or the receiving waters water quality standards.

(13) Any wastewater which may cause a hazard to human health or create a public nuisance.

(14) Storm water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage, condensate, de-ionized water, Noncontact Cooling Water, and unpolluted wastewater, unless specifically authorized by the Control Authority.

(15) Medical Wastes, no discharge of any pharmaceutical medications, prescription or 'over the counter', unused or expired.

Pollutants, substances, or wastewater prohibited by this section shall not be processed or stored in such a manner that they could be discharged to the POTW.

c. When the Control Authority determines that a User is contributing to the POTW, any of the above enumerated substances in such amounts as to Interfere with the operation of the POTW, or to cause the Control Authority to be in violation of any applicable statute, regulation or permit, the Control Authority shall:

- 1) Advise the User of the impact of the contribution on the POTW;
- 2) Develop effluent limitation for such User to correct the violation or Interference with the POTW and
- 3) Take any enforcement measures, necessary and appropriate under the circumstances.

2.2 National Categorical Pretreatment Standards:

Users must comply with the categorical Pretreatment Standards found at 40 CFR Chapter I, Subchapter N, Parts 405 – 471.

- A. When wastewater subject to a categorical Pretreatment Standard is mixed with wastewater not regulated by the same Standard. The Control Authority shall impose an alternate limit in accordance with 40 CFR 403.6(e).
- B. Where a categorical pretreatment standard is expressed only in terms of either the mass or the concentration of a pollutant in wastewater, the Control Authority may impose equivalent concentration or mass limits in accordance with 40 CFR 403.6(c).
- C. When the limits in a categorical Pretreatment Standard are expressed only in terms of mass of pollutant per unit of production, the Control Authority may convert the limits to equivalent limitations expressed either as mass of pollutant discharged per day or effluent concentration for purposes of calculation effluent limitations applicable to individual industrial Users in accordance with 40 CFR 403.6 (c)(2).
- D. When a categorical Pretreatment Standard is expressed only in terms of pollutant concentrations, an Industrial User may request that the City convert the limits to equivalent mass limits. The determination to convert concentration limits to mass limits is within the discretion of the Superintendent. The City may establish equivalent mass limits only if the Industrial User meets all the conditions as set forth in 40 DFR 403.6 (c) (5).

2.3 State Pretreatment Standards:[Reserved]

2.4 Local Limitations

- a. The Control Authority is authorized to establish Local Limits pursuant to 40 CFR 403.5(c).
- b. No person shall discharge any waters or wastes at a concentration that would exceed the concentration of pollutants, including but not limited to, those identified in the most recent "Technically Based Local Limits Development Document" in accordance with the requirements in NPDES Permit AR0021768, and adopted by the Control Authority and approved by the Arkansas

Department of Environmental Quality and the City of Russellville Council.

c. The Control Authority may develop Best Management Practices (BMPs), by Ordinance or in individual wastewater discharge permits or general permits, to implement Local Limits and the requirements of Section 2.1.

d. In addition, the Control Authority may develop specific discharge limitations, or Best Management Practice (BMPs), when deemed appropriate by the Control Authority, for any other toxic or inhibiting pollutant which may be determined to be of sufficient quantity to cause POTW interference, POTW Pass Through, endanger the health and safety of the POTW personnel or general public, produce environmental harm, cause a POTW permit violation or render the POTWs sludges unacceptable for economical reclamation, disposal, or use.

e. Section a. through d. are in addition to other restrictions on discharges which shall apply in any casewhere they are more stringent than Federal requirements and limitations or those in this Ordinance.

2.5 [Reserved]

2.6 The City's Right of Revision:[Reserved]

2.7 Dilution

No User shall ever increase the use of process water, or in any way attempt to dilute a discharge, as partial or complete substitute for adequate treatment to achieve compliance with a discharge limitation unless expressly authorized by an applicable Pretreatment Standard or Requirement. The Control Authority may impose mass limitations on Users which are using dilution to meet applicable pretreatment standards or requirements, or in other cases where the imposition of mass limitations is appropriate.

2.8 Slug Discharges:

A. Accidental Discharge/Slug Discharge Control Plans:

The Control Authority shall evaluate whether each SIU needs an accidental discharge/Slug discharge control plan or other action to control Slug Discharges. The Control Authority may require any User to develop, submit for approval, and implement such a plan or take such other action that may be necessary to control Slug Discharges. Alternatively, the Control Authority may develop such a plan for any User. An Accidental discharge/Slug discharge control plan shall address, at a minimum, the following:

1. Description of discharge practices, including nonroutine batch discharges;
2. Description of stored chemicals;
3. Procedures for immediately notifying the Control Authority of any accidental or Slug Discharges, as required by Section 6.7 of this ordinance; and
4. Procedures to prevent adverse impact from any accidental or Slug Discharge. Such procedures include, but are not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site runoff, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants, including solvents, and/or measures and equipment for emergency response.

B. Notification Requirements:

Significant Industrial Users are required to notify the Superintendent immediately of any changes at its facility affecting the potential for a Slug Discharge.

2.9 Prohibition of Bypasses:

a. The Users pretreatment facility or device must be in operation at all times to the extent necessary to meet the applicable federal, state and local requirements and regulations and any intentional diversion, except as noted in Section 2.9.b below, of wastewater from any portion of the Users pretreatment facility or device is prohibited.

b. A bypass may be excused, however, if the bypass is necessary and there is no feasible alternative to prevent loss of life, personal injury or severe property damage. The no feasible alternative criterion is not satisfied if, in the exercise of reasonable engineering judgement, adequate back-up equipment

should have been installed to prevent a bypass which occurs during a period of maintenance or in a period of equipment downtime.

c. Knowledge of a pending bypass must be reported immediately to the Control Authority. If the bypass is unanticipated the User must give oral notice of the Bypass within 24 hours of becoming aware of the bypass.

d. For both anticipated and unanticipated bypasses, the user must submit to the Control Authority a written report within 5 working days describing the following:

- (1) The nature of the Bypass;
- (2) the cause;
- (3) the duration and
- (4) solutions to avoid future bypasses.

2.10 Hauled Wastewater:

- A. Septic tank waste originating from domestic sources may be introduced into the POTW only at locations designated by the Control Authority, and at such times as are established by the Control Authority. Such waste shall not violate Section 2 of this ordinance or any other requirements established by City Corporation. The Control Authority may require septic tank waste haulers to obtain individual wastewater discharge permits.
- B. The Control Authority may require haulers of industrial waste to obtain individual wastewater discharge permits. The Control Authority may require generators of hauled industrial waste to obtain individual wastewater discharge permits. The Control Authority also may prohibit the disposal of hauled industrial waste. The discharge of hauled industrial waste is subject to all other requirements of this ordinance.
- C. Industrial waste haulers may discharge loads only at location designated by the Control Authority. No load may be discharged without prior consent of the Control Authority. The Control Authority may collect samples of each hauled load to ensure compliance with applicable Standards. The Control Authority may require the industrial waste hauler to provide a waste analysis of any load prior to discharge.
- D. Industrial waste haulers must provide a waste-tracking form for every load. This form shall include, at a minimum, the name and address of the industrial waste hauler, permit number, truck identification, names and addresses of sources of waste, and volume and characteristics of waste. The form shall

identify the type of industry, know or suspected waste constituents, and whether any wastes are RCRA hazardous wastes.

- E. Waste Haulers of waste materials removed from grease interceptors, solids traps or other such devices shall not, at any time, discharge any material retained by such devices back into the sanitary sewer collection system.

SECTION 3 - FEES AND SURCHARGES

3.1 Purpose

It is the purpose of this chapter to provide for the recovery of costs from Users of the POTW for the implementation of the program established herein. The applicable fees and surcharges are set forth in the City's Schedule of Charges and Fees.

3.2 Fees:

- a. The City may adopt charges and fees which may include:
 - (1) Fees for reimbursement of costs of setting up and operating the Control Authority's Pretreatment Program;
 - (2) Fees for monitoring, inspections and surveillance procedures;
 - (3) Fees for reviewing Accidental Discharge procedures and construction;
 - (4) Fees for permit applications;
 - (5) Fees for filing appeals;
 - (6) Fees for consistent removal by the Control Authority of pollutants otherwise subject to Federal Pretreatment Standards; or
 - (7) Other fees as the City may deem necessary to carry out the requirements contained herein.
- b. These fees related solely to the matters covered by this Ordinance and are separate from all other fees chargeable by the City.

3.3 Surcharges:

- a. The discharge of pollutants in concentrations above that found in normal domestic wastewater may be accepted by the POTW from Users provided that:
 - (1) The concentration levels of the constituent are

not above that established by the Control Authority for the acceptance of such wastewater.

(2) The wastewater has none of the characteristics described in Section 2.1 of the Ordinance;

(3) The User pays to the Control Authority a Surcharge for the acceptance of such wastes in addition to its normal fee.

b. The permissible concentration ranges for the constituents eligible for acceptance, and a schedule of the surcharge costs together with certain restriction and limitations will be established by the Control Authority and incorporated into the Wastewater Contribution Permit of the Industrial User.

SECTION 4 - ADMINISTRATION

4.1 Wastewater Discharge:

a. It shall be unlawful for a Significant Industrial User to discharge wastewater to the POTW without a current Wastewater Contribution Permit issued by The Control Authority in accordance with the provisions of this Ordinance.

b. All Users, currently not permitted by The Control Authority, who may discharge anything other than normal domestic sanitary wastewater must, if they have not previously done so, provide sufficient information or make an application for a Wastewater Contribution Permit so that the Control Authority can determine whether the applicant is a Significant Industrial User who must obtain a permit.

4.2 Wastewater Contribution Permits:

4.2.1 Individual Wastewater Discharge Permit Requirement.

a. All Significant Industrial Users proposing to connect to or to contribute to the POTW shall obtain a Wastewater Contribution Permit before connecting to or contributing to the POTW.

4.2.2 Permit Application

a. All Users required to apply for or obtain a Wastewater Contribution Permit shall complete and file with the Control Authority an application in the form prescribed by the Control Authority and accompanied by a fee outlined in The City's schedule of charges and fees. Existing users shall apply for permit reissuance no later than 180 days prior to the expiration of the User's existing permit. Proposed new Significant Industrial Users shall apply at least 90 days prior to connecting to or contributing to the POTW. At the discretion of the Control Authority, applications received within 90 days of the desired date of connection to or contribution to the POTW will be processed as expediently as possible. In support of the application, Users shall submit, in units and terms appropriate for evaluation, the following information, unless deemed inapplicable by the Control Authority.

- (1) Name, address, and location, (if different from the address);
- (2) SIC number according to the Standard Industrial Classification manual, Bureau of the Budget, 1972, as amended;
- (3) Wastewater constituents and characteristic including but not limited to those mentioned in Section 2 of this Ordinance as determined by a reliable analytical laboratory; sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to Section 304(h) of the Act and contained in 40 CFR, part 136, as amended;
- (4) Time and duration of contribution;
- (5) Average flow rates, including daily, monthly and seasonal variations if any;
- (6) Site plumbing plans and details to show all sewers, sewer connections, and appurtenances by the size, location and elevation;
- (7) Description of activities, facilities and plant

processes on the premises including all materials which are or could be discharges;

(

8. Environmental Permits. A list of any environmental control permits held by or for the facility.

9. Measurement of Pollutants.

- a. The categorical Pretreatment Standards applicable to each regulated process and any new categorically regulated processes for Existing Sources.
- b. The results of sampling and analysis identifying the nature and concentration, and/or mass, where required by the Standard or by the Control Authority, of regulated pollutants in the discharge from each regulated process.
- c. Instantaneous, Daily Maximum, and long-term average concentrations, or mass, where required, shall be reported.
- d. The sample shall be representative of daily operations and shall be analyzed in accordance with procedures set out in Section 4.6 of this Ordinance. Where the Standard requires compliance with a BMP or pollution prevention alternative, the User shall submit documentation as required by the Control Authority or the applicable Standards to determine compliance with the Standard.
- e. Sampling must be performed in accordance with procedures set out in Section 4.6 of this ordinance.

b. The permit application may also contain any other information as may be necessary by the Control Authority to evaluate the permit application, including but not limited to the following:

(1) Each product produced by type, amount, process or processes and rate of production;

(2) Type and amount of raw materials processed (average and maximum per day); and

(3) Number and type of employees, and hours of operation of plant and proposed or actual hours of operation of the users pretreatment facility.

c. The Control Authority will evaluate the data furnished by the User and may require additional information. After evaluation and acceptance of the data furnished, the Control Authority may issue a Wastewater Contribution Permit subject to terms and conditions provided herein.

D. Application Signatories and Certification: All Wastewater Contribution Permit applications and Users reports must be signed by an authorized representative (*defined in Section 1.2 a(3)*) of the User and contain the following certification statement:

"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."

If the designation of an Authorized Representative is no longer accurate because a different individual or position has responsibility for the overall operation of the facility or overall responsibility for environmental matters for the company, a new written authorization satisfying the requirements of this Section must be submitted to the Control Authority prior to or together with any reports to be signed by an Authorized Representative.

4.2.3 Permit Modification

The Superintendent may modify an individual wastewater discharge permit for good cause, including, but not limited to, the following reasons:

- (1) To incorporate any new or revised Federal, State, or local Pretreatment Standards of Requirements.
- (2) To Address significant alterations to the User's operation, process, or wastewater volume or character since the time of the individual wastewater discharge permit issuance;
- (3) A change in the POTW that requires either a temporary or permanent reduction or elimination of the authorized discharge;
- (4) Information indicating that the permitted discharge poses athreat to the City's POTW, City personnel, or the receiving waters;
- (5) Violation of any terms of conditions of the individual wastewater discharge permit;
- (6) Misrepresentations or failure to fully disclose all relevant facts in the wastewater discharge permit application or in any required reporting; or
- (7) To correct typographical or other errors in the individual wastewater discharge permit.

The terms and conditions of the permit may be subject to modification by the Control Authority during the term of the permit if the limitations or requirements as identified in Section 2 of this Ordinance are modified or for other just cause. The User shall be informed of any proposed changes in his permit at least 30 days prior to the effective date of change. Any changes or new conditions in the permit shall include a reasonable time schedule for compliance.

4.2.4 Permit Conditions:

a. Wastewater Contribution Permits shall be expressly subject to all provisions of this Ordinance and all other applicable regulations, Significant Industrial user chages and fees established by the City. Permits shall contain the following:

- (1) Statement of permit duration;

(2) Statement of non-transferability without, at a minimum, prior notification to the Control Authority;

(3) Applicable effluent limits, including Best Management Practices or Categorical Pretreatment Standards, if applicable;

(4) Applicable self-monitoring, sampling, reporting, and record keeping requirement, including sampling location, sampling frequency, sample type, and standards for tests and reporting schedule.

(5) Notification requirements for Slug Discharges and Bypasses as contained in Sections 2.8. and 2.9. of this Ordinance.

(6) Statement of applicable civil and criminal penalties for violation of the pretreatment standards and requirements, and applicable compliance schedule(s).

b. Permits may contain one or more of the following:

(1) The unit charge or schedule of the Significant Industrial Users charges and fees for the wastewater to be discharged;

(2) Limits on the average and maximum wastewater constituents and characteristics;

(3) Limits on average and maximum rate and time of discharge or requirements for flow regulations and equalization;

(4) Requirements for installation and maintenance of inspection and sampling facilities;

(5) Requirements for submission of technical reports or discharge reports.

(6) Requirements for maintaining and retaining plant records relating to wastewater discharge as specified by the Control Authority, and affording the Control Authority access thereto;

(7) Requirements for notification of the Control

Authority of any discharge, including a slug discharge, that could cause problems to the POTW; of any violation within 24 hours of becoming aware of the violation; and of any new introduction of wastewater constituents or any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous wastes for which the Significant Industrial User has submitted initial notification under 40 CFR 403.12(p);

(8) Compliance schedules; or

(9) Other conditions as deemed appropriate by The Control Authority to insure compliance with this Ordinance.

4.2.5 Permits Duration:

Wastewater Contribution Permits shall be issued for a specified time period, not to exceed five (5) years. A permit may be issued for a period less than a year or may be stated to expire on a specific date.

4.2.6 Permit Transfer:

Wastewater Contribution Permits are issued to a specific User for a specific operation. A wastewater discharge permit shall not be reassigned or transferred to a new owner, new User, without, as a minimum, providing the Control Authority:

- 1) 30 days advance notice of an intent to transfer or assign;
- 2) a certified statement by the assignee or transferee that upon the permits assignment or transfer, there will be not change in the operation of the facility so as to, in any way, affect the quantity and quality of the wastewater discharged to the POTW and
- 3) a copy of the existing individual control mechanism is provided to the transferee or assignee. All other transfers, assignments, change in premises or change in operations will require the prior approval of the Control Authority before the Wastewater Contribution Permit will become effective. Any succeeding owner or Significant Industrial User shall also comply with the terms and conditions of the existing permit.

Failure to provide advance notice of a transfer renders the individual wastewater discharge permit void of the date of facility transfer.

4.2.7 Regulation of Waste Received from Other Jurisdictions

- A. All discharges to the City of Russellville POTW, which are outside the jurisdiction and are not part of another incorporated city, shall be required to agree by written contract to abide by the conditions set forth in this Ordinance, subsequent revisions and amendments to this Ordinance, and any rules and/or regulations promulgated by the City.
- B. All incorporated cities which discharge to the City of Russellville POTW shall agree by written contract to adopt an Ordinance which meets the requirements of 40 CFR 403, General Pretreatment Regulations, and will be at least as stringent as the conditions set forth in this Ordinance. This agreement must also contain a provision that allows for the adoption of any and all rules and/or regulations promulgated by the Control Authority and shall delegate to the City of Russellville the powers to enforce the provisions of all laws, rules, and/or regulations adopted in accordance with this Section.

4.3 Reporting Requirements for Permittee

Reports (Baseline Monitoring, Compliance Date and Periodic Compliance) in this section shall include the certification statement as set forth in Section 4.2.2.d in this ordinance and shall be signed by an authorized Representative of the User as set forth in Section 1.2.3 in this ordinance.

4.3.1 Baseline Monitoring Reports

Within 180 days after the effective date of a Categorical Pretreatment Standard, or 180 days after a final administrative decision made upon the application of an appropriate Categorical Pretreatment Standard, whichever is later, an existing user subject to such categorical Pretreatment Standards and currently discharging to or scheduled to discharge to the POTW shall be required to submit to the Control Authority a Baseline Monitoring Report. This Baseline Monitoring Report shall contain all of the information required in 40 CFR 403.12(b)(1)-7. At least 90 days prior to the commencement of discharge, New Sources, and sources that become Users subsequent to the promulgation of an applicable Categorical Standard, shall submit to the Control Authority a Baseline Monitoring Report which contains all the information listed in

paragraphs 40 CFR 403.12(b)(1)-(5). New Sources shall also be required to include in their Report information on their method of pretreatment intended to be used in meeting their applicable pretreatment standards. Requirements for compliance schedules for meeting categorical Pretreatment Standards are set forth in 40 CFR 403.12 (c).

4.3.2 Compliance Date Report

Within 90 days following the date for final compliance with applicable pretreatment standards or, in the case of a New Source, following commencement of the introduction of wastewater into the POTW, any User subject to pretreatment standards and requirements shall submit to the Control Authority a report indicating the nature and concentration of all pollutants in its discharge which are limited by pretreatment standards and requirements and their average and maximum daily flow. The report shall state whether the applicable pretreatment standards or requirements are being met on a consistent basis and, if not, what additional O&M and/or pretreatment is necessary to bring the Significant Industrial User into compliance with the applicable pretreatment standards or requirements. This statement shall be signed by an authorized representative of the User. Any data presented as part of the report shall be prepared and certified by a certified laboratory and should any pretreatment be proposed or required, a registered engineer shall prepare and certify his/her involvement in the proposed pretreatment facility.

4.3.3 Periodic Compliance Reports

a. Any User subject to a pretreatment standards, after the compliance date of such pretreatment standards, or, in the case of a New Source, after commencement of the discharge into the POTW, and any noncategorical Significant Industrial User shall submit to the Control Authority during the months of June and December, unless required more frequently by the Control Authority, a report indicating the nature, concentration and flow of pollutants in the effluent which are limited by such pretreatment standards. (the Control Authority will specify reporting parameters for noncategorical SIUs) At the discretion of the Control Authority and in consideration of such factors as local high or low flow rates, holidays, budget

cycles, etc., the Control Authority may agree to alter the months for report submittal.

b. The Control Authority may impose equivalent mass limitations of Significant Industrial Users where the imposition of mass limitations is appropriate. In such cases, the report required by 4.3.3.a of this paragraph shall indicate the mass of pollutants regulated by pretreatment standards in the effluent of the Significant Industrial user. These reports shall contain the results of sampling and analysis of the discharge, including the flow and the nature and concentration, or production and mass where requested by the Control Authority, of pollutants contained therein which are limited by the applicable pretreatment standards. The frequency of monitoring shall be the same as above.

4.3.4 Notification of Potential Problems

All categorical and non-categorical Industrial Users shall notify the POTW immediately of all discharges that could cause problems to the POTW, including any slug loading by the Industrial User.

4.4 Monitoring Factors

a. The Control Authority may require, to be provided and operated at the users own expense, monitoring facilities to allow inspection, sampling, and flow measurement of the building sewer and/or internal drainage systems. The monitoring facility should normally be situated on the Users premises, but The Control Authority may, when such a location would be impractical or cause undue hardship on the User, allow the facility to be constructed in the public street or sidewalk area and located so that it will not be obstructed by landscaping or parked vehicles.

b. There shall be ample room in or near such sampling manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility, sampling, and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the User.

c. Whether constructed on public or private property, the sampling and monitoring facilities shall be provided in accordance with the Control Authority's requirements and all applicable local construction standards and specifications. Construction shall be completed within 90 days following written notification by the Control Authority.

d. If a User subject to the reporting requirement in this section 4.3 monitors any regulated pollutant at the appropriate sampling location more frequently than required by the Control Authority, using the procedures prescribed in Section 4.6 of this ordinance, the results of this monitoring shall be included in the report.

4.5 Inspection and Sampling:

The Control Authority shall inspect the facilities of any user to ascertain whether the purpose of this Ordinance is being met and all requirements are being complied with. Persons or occupants of premises where wastewater is created or discharged shall allow the Control Authority, and other approval authorities, or their representatives, ready access at all reasonable times to all parts of the premises for the observation of any User personnel in the performance of any of their duties. All records of the facility pertaining in any way to the provisions of this Ordinance may be photocopied by the Control Authority and the copies removed from the facility's premises. EPA, ADEQ or The City shall have the right to set up on the Users property such devices as are necessary to conduct sampling, inspection, compliance monitoring and/or metering operations. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with their security guards so that upon presentation of suitable identification, personnel from the City, the Control Authority, ADEQ or EPA will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

4.6 Sampling and Analytical Procedures:

All pollutant analyses, including sampling techniques, to be submitted as part of a wastewater discharge permit application or report shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto, unless otherwise specified in an applicable categorical Pretreatment Standard. If 40 CFR Part 136 does

not contain sampling or analytical techniques for the pollutant in question, or where the EPA determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed by using validated analytical methods or any other applicable sampling and analytical procedures, including procedures suggested by the Control Authority or other parties approved by EPA. All samples shall be collected at the secure sample point, sample/inspection manhole, or process sampling point as designated by the Control Authority.

All independent laboratories performing analyses for Industrial Users, including, but not limited to self monitoring reports, Periodic Reports on Continuing Compliance, Baseline Monitoring Reports and/or split sample verification, shall be certified by the Arkansas Department of Environmental Quality Laboratory Certification Program for the specific analysis being performed. The Control Authority reserves the right to reject any analysis performed by an independent laboratory that is not duly certified for a particular analysis.

Samples collected to satisfy reporting requirements must be based on data obtained through appropriate sampling and analysis performed during the period covered by the report, based on data that is representative of conditions occurring during the reporting period.

- A. Except as indicated in Section B and C below, the User must collect wastewater samples using 24-hour flow-proportional composite sampling techniques, unless time-proportional composite sampling or grab sampling is authorized by the Control Authority. Where time-proportional composite sampling or grab sampling is authorized by the Control Authority, the samples must be representative of the discharge. Using protocols (including appropriate preservation) specified in 40 CFR Part 136 and appropriate EPA guidance, multiple grab samples collected during a 24-hour period may be composited prior to the analysis as follows: for cyanide, total phenols, and sulfides the samples may be composited in the laboratory or in the field; for volatile organics and oil and grease, the samples may be composited in the laboratory. Composite samples for other parameters unaffected by the compositing procedures as documented in approved EPA methodologies may be authorized by the Control Authority, as appropriate. In addition, grab samples may be required to show compliance with Instantaneous Limits.
- B. Samples for oil and grease, temperature, pH, cyanide, total phenols, sulfides, and volatile organic compounds must be obtained using grab collection techniques.
- C. For sampling required in support of baseline monitoring and 90-day compliance reports required in Section 6.1 and 6.3 [40 CFR 403.12(b) and (d)], a minimum of four (4) grab samples must be used for pH, cyanide, total phenols, oil and grease, sulfide and volatile organic compounds for facilities for which historical sampling data do not exist; for facilities for which historical sampling data are available, the Control Authority may authorize a lower minimum. For the reports required by paragraphs Section 6.4 (40 CFR

403.12(e) and 403.12(h)), the Industrial User is required to collect the numbers of grab samples necessary to assess and assure compliance by with applicable Pretreatment Standards and Requirements.

- D. Sampling and testing shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. The sampling methods performed shall include at a minimum procedures for sample chain of custody, preservation techniques, and holding times.

- F. If sampling performed by an Industrial User indicates a violation, the User shall notify the Control Authority within 24 hours of becoming aware of the violation. The User shall also repeat the sampling and analysis and submit the results of the repeat analysis to the Control Authority within 30 days after becoming aware of the violation. Where the Control Authority has performed the sampling and analysis in lieu of the Industrial User, the Control Authority must perform the repeat sampling and analysis unless it notifies the User of the violation and requires the User to perform the repeat analysis. Resampling is not required if:
 - (1) The Control Authority performs sampling at the Industrial User at a frequency of at least once per month; or
 - (2) The Control Authority performs sampling at the User between the time when the initial sampling was conducted and the time when the User or the Control Authority receives the results of this sampling.

4.7 Pretreatment:

- A. Users shall provide any and all pretreatment as necessary to comply with this Ordinance, their Wastewater Contribution Permit, all applicable State and Federal requirements and if applicable, Federal Categorical Pretreatment Standards within the time limitations as specified by the Federal Categorical Pretreatment Standards within the time limitations as specified by the Federal Pretreatment Regulations. Any facility required to pretreat wastewater to a level acceptable to the Control Authority shall provide, operate, and maintain a pretreatment facility at the User's expense. Detailed plans showing the pretreatment facility and operating procedures shall

be submitted to the Control Authority for review, and shall be acceptable to the Control Authority before construction of the facility. The review of such plans and operating procedures will in no way relieve the User from the responsibility of modifying the facility as necessary to produce an effluent acceptable to the Control Authority under the provisions of this Ordinance. Any subsequent changes in the pretreatment facility or method of operation shall be reported to and be acceptable to the Control Authority prior to the Users initiation of the changes.

- B. Grease, oil, and sand interceptors shall be provided when, in the opinion of the Superintendent, they are necessary for the proper handling of wastewater containing excessive amount of grease and oil, or sand; except that such interceptors shall not be required for residential users. All interception units shall be of a type and capacity approved by the Superintendent, shall be so located to be easily accessible for cleaning and inspection. Such interceptors shall be inspected, cleaned and repaired by the User at their expense.

4.8 Significant Noncompliance (SNC) :

The Control Authority shall publish annually, in a newspaper of general circulation that provides meaningful public notice within the jurisdictions served by the POTW, a list of the Users which, at any time during the previous twelve (12) months, were in Significant Noncompliance with applicable Pretreatment Standards and Requirements. The term Significant Noncompliance shall be applicable to all Significant Industrial Users (or any other Industrial User that violates paragraphs (C), (D) or (H) of this Section) and shall mean:

- A. Chronic violations of wastewater discharge limits, defined here as those in which sixty-six percent (66%) or more of all the measurements taken for the same pollutant parameter taken during a six- (6) month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including Instantaneous Limits as defined in Section 2;
- B. Technical Review Criteria (TRC) violations, defined here as those in which thirty-three percent (33%) or more of wastewater measurements taken for each pollutant parameter during a six- (6) month period equals or exceeds the product of the numeric Pretreatment Standard or Requirement including Instantaneous Limits, as defined by Section 2 multiplied by the applicable criteria (1.4 for BOD, TSS, fats, oils and grease, and 1.2 for all other pollutants except pH);

- C. Any other violation of a Pretreatment Standard or Requirement as defined by Section 2 (Daily Maximum, long-term average, Instantaneous Limit, or narrative standard) that the Control Authority determines has caused, alone or in combination with other discharges, Interference or Pass Through, including endangering the health of POTW personnel or the general public;
- D. Any discharge of a pollutant that has caused imminent endangerment to the public or to the environment, or has resulted in the Control Authority exercise of its emergency authority to halt or prevent such a discharge;
- E. Failure to meet, within ninety (90) days of the scheduled date, a compliance schedule milestone contained in an individual wastewater discharge permit or enforcement order for starting construction, completing construction, or attaining final compliance;
- F. Failure to provide within forty-five (45) days after the due date, any required reports, including baseline monitoring reports, reports on compliance with categorical Pretreatment Standard deadlines, periodic self-monitoring reports, and reports on compliance with compliance schedules;
- G. Failure to accurately report noncompliance; or
- H. Any other violation(s), which may include a violation of Best Management Practices, which the Control Authority determines will adversely affect the operation or implementation of the local pretreatment program.

4.9 Confidential Information:

- a. Information and data on a user obtained from reports questionnaires, permit applications, permit and monitoring programs and from inspections, shall be available to the public or other governmental agency without restriction unless the User specifically requests, and is able to demonstrate to the satisfaction of the Control Authority, that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the User.
- b. When requested by the User furnishing a report, the portions of a report which might disclose trade secrets or secret processes shall not be made available for inspection by the public but shall be made available upon written request to governmental agencies for uses related to the National Pollutant Discharge Elimination System (NPDES) Program or the Pretreatment Program; Provided, however, that such portions of a report shall be available for use by the

State or any state agency in judicial review or enforcement proceedings involving the User furnishing the report. Wastewater constituents and characteristics will not be recognized as confidential information.

c. Information accepted by the Control Authority as confidential, shall not be transmitted to any governmental agency or the general public by The Control Authority until and unless a ten-day notification is given to the User.

4.10 Notification Requirements

A. In accordance with 40 CFR 403.12(j) all Industrial Users shall promptly notify the Control Authority in advance of any substantial change in the volume or character of pollutants in their Discharge, including the listed or characteristic hazardous wastes for which the Industrial User has submitted initial notification under paragraph (b) of this section.

B. In accordance with 40 CFR 403.12 (p) the Industrial User shall notify the POTW, the EPA Regional Waste Management Division Director, and State hazardous waste authorities in writing of any discharge into the POTW of a substance, which if otherwise disposed of, would be a hazardous waste under 40 CFR part 261.

4.11 Recordkeeping

Users subject to the reporting requirements of this ordinance shall retain, and make available for inspection and copying, all records of information obtained pursuant to any monitoring activities required by this ordinance, any additional records of information obtained pursuant to monitoring activities undertaken by the User independent of such requirements, and documentation associated with Best Management Practices established under Section 2.4 c. Records shall include the date, exact place, method, and time of sampling, and the name of the person(s) taking the samples; the dates analyses were performed; who performed the analyses; the analytical techniques or methods used; and the results of such

analyses. These records shall remain available for a period of at least three (3) years. This period shall be automatically extended for the duration of any litigation concerning the User or the City, or where the User has been specifically notified of a longer retention period by the Superintendent.

SECTION 5 - ENFORCEMENT

5.1. Notification of Violation:

Whenever the Control Authority finds that any User has violated or is violating this Ordinance, Wastewater Contribution Permit, or any prohibition, limitation or requirements contained therein , the Control Authority may serve upon such person a written notice stating the nature of the violation. Within 30 days of the date of the notice, a plan for the satisfactory correction and prevention, to include specific required actions, shall be submitted to the Control Authority by the User. Submission of this plan in no way relieves the User of liability for any violation occurring before or after receipt of Notice of Violation.

5.2 Consent Agreement:

The Control Authority is hereby empowered to enter into Consent Agreement, assuring voluntary compliance, or other similar documents as an agreement with the user responsible for the noncompliance. Such agreements will include specific action to be taken by the User to correct the noncompliance within a time period also specified by the agreement.

5.3 Show Cause Hearing:

a. The Control Authority may order any User who causes or allows an unauthorized discharge to enter the POTW or who violates any of the conditions of this Ordinance, the permit, or applicable state or Federal laws or regulations to show cause before the Control Authority why the proposed enforcement action should not be taken. Notice shall be served on the User specifying the time and place of the show cause hearing, the reasons why the action is being taken,

the proposed enforcement action, and a request that the User show cause why this proposed enforcement action should not be taken. The notice of hearing shall be served personally or by registered or certified mail (return receipt requested) at least ten (10) days before the hearing. Service may be made on any agent or officer of a corporation. If a duly notified User fails to appear as noticed, immediate enforcement action may be pursued.

b. The Control Authority may itself conduct the show cause hearing and take the evidence, or may designate any of its board members or any officer or employee of The Control Authority to:

(1) Issue in the name of the Control Authority notices of hearings requiring the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearings;

(2) Take the evidence; and

(3) Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Superintendent or the Control Authority for action thereon.

c. At any hearing held pursuant to this Ordinance, testimony taken must be under oath and recorded stenographically. The transcript, so recorded, will be made available to any member of the public or any party to the hearing upon payment of the usual charges thereof (i.e. postage, printing expense, etc.)

d. Following the show cause hearing, the Control Authority shall within 15 days following the recommendation of the hearing officer issue and have served on all parties the action recommended. If warranted, the Control Authority shall recommend to the City Council, after setting forth the findings of fact, that the City Attorney pursue legal action; including civil action to recover the recommended penalties for the violation, injunctive relief and/or criminal prosecution. Alternatively, the Control Authority may issue to the User in violation, notice

that following a specified period of time, the sewer service will be discontinued unless its pretreatment facility shall have installed adequate devices or other related appurtenances and such devices or other related appurtenances are properly operated. Other orders and directives as are necessary and appropriate may be issued.

e. An order directing the cessation of sewer service shall not preclude a recommendation for legal action to the City.

5.4 Administrative Orders and Fines:

5.4.1 Compliance Orders:

When the Control Authority finds that a user has violated or continues to violate this Ordinance, its Wastewater Contribution Permit or orders issued thereunder, the Control Authority may issue an order to the User responsible for the violation that states that following a specified time period, sewer service shall be discontinued unless Users pretreatment facility has installed devices or other appurtenances and are properly operated. Compliance orders may also contain such other requirements as might be reasonably necessary and appropriate to address the noncompliance, including, but not limited to, the installation of pretreatment technology, additional selfmonitoring and management practices.

5.4.2 Cease and Desist Orders:

When the Control Authority finds that a User has violated or continues to violate this Ordinance, its Wastewater Contribution Permit or order issued thereunder, the Control Authority may issue an order to cease and desist all such violations and direct the User in noncompliance to comply forthwith, if necessary the Control Authority may take such appropriate preventive or remedial action as may be needed to properly address a continuing or threatened

violation, including halting operations and terminating discharge.

5.4.3 Administrative Fines:

When the Superintendent finds that a User has violated, or continues to violate, any provision of this ordinance, an individual wastewater discharge permit, or order issued hereunder, or any other Pretreatment Standard or Requirement, the Superintendent may fine such User in an amount not to exceed \$1000. Such fines shall be assessed on a per-violation, per-day basis. In the case of monthly or other long-term average discharge limits, fines shall be assessed for each day during the period of violation.

5.5 Emergency Authority:

a. The Control Authority, following only oral notice to the User, may suspend the wastewater treatment service or the Wastewater Contribution Permit of any person when, in the opinion of the Supervisor of the Control Authority, such suspension is necessary to immediately and effectively halt or prevent any actual or threatened discharge which presents, or may present, an imminent or substantial endangerment to the health, safety or welfare of persons.

b. The Control Authority, following a notice with the opportunity to respond, may halt or prevent any discharge to the POTW which presents or may present an endangerment to the environment or which threatens to interfere with the operation of the POTW.

c. Any User notified of a suspension of its wastewater treatment service and/or its Wastewater Contribution Permit shall immediately stop or eliminate the harmful discharge. In the event of a failure of the User to comply voluntarily with the demand for cessation, The Control Authority shall take such steps as deemed necessary, including immediate severance of the sewer connection, to prevent the endangering discharge. The Control Authority may reinstate the Wastewater Contribution Permit and/or the wastewater treatment service upon proof of the elimination of the endangering discharge, together with an acceptable detailed written statement submitted by the User

describing the cause of the harmful discharge and the measures taken to prevent any future occurrence. The proof and required statements must be submitted to The Control Authority within 15 days of the date of endangering discharges occurrence.

5.6 Revocation of Permits:

a. Any Significant Industrial User who violates any of the following conditions or requirements of this Ordinance, or applicable state and federal laws or regulations or any provisions of its Wastewater Contribution Permit is subject to having his permit revoked:

(1) Violation of Wastewater Contribution Permit conditions.

(2) Failure to accurately report the wastewater constituents and characteristics of its discharge.

(3) Failure to report significant changes in operations or wastewater constituents and characteristics.

(4) Refusal of reasonable access to the Significant Industrial Users premises for the purpose of inspection, monitoring or sampling.

b. A noncompliant Significant Industrial User will be notified of the proposed termination of its Wastewater Contribution Permit and offered an opportunity to show cause pursuant to Section 5.3 of this Ordinance why the proposed action should not be taken.

5.7 Judicial Remedies:

If any User discharges sewage, industrial wastes or other wastes into the POTW contrary to the provisions of this Ordinance, any other applicable ordinances, federal or state Pretreatment Requirements, or any order of the City or the Control Authority, or otherwise violates provisions of this Ordinance, the Wastewater Contribution Permit, or applicable laws and regulations, the Control Authority may recommend to the City Council that the City Attorney commence action for appropriate legal and/or equitable relief in a court of competent jurisdiction.

5.7.1 Injunctive Relief:

Whenever a User has violated or continues to violate the provisions of this Ordinance or its Wastewater Contribution Permit or orders issued thereunder, the Control Authority may request that the City Attorney immediately petition the Court for the issuance of a preliminary or permanent injunction, or both, as may be appropriate to restrain or compel the activities of the User.

5.7.2 Civil Penalties:

a. Any User who is found to have violated or continues to violate an order of the City and/or the Control Authority or who negligently failed to comply with any provisions of this Ordinance or the orders, rules, regulations and permits issued thereunder, may be fined not more than One Thousand Dollars (\$1,000.00) for each offense. Jurisdiction to determine such penalties shall be in the City Municipal Court or other court of appropriate jurisdiction. Each day on which a violation shall occur or continue shall be a separate and distinct offense.

b. In addition to the civil penalties provided for herein, the City may recover, from the user in violation, any damages suffered, reasonable attorneys fees, court costs, court reporters fees and other expenses of litigation in any action in law or equity against any person or other entity.

c. The City Attorney shall petition the Court to impose, assess and recover all civil penalties, legal fees, and costs together with damages if appropriate. In determining the amount of the penalty, the Control Authority in its recommendation for civil penalties, the City Council and the Court shall take into account all relevant circumstances, including, but not limited to, the extent of harm caused by the violation, the magnitude and duration of the violation, any economic benefit gained by the user in allowing the violation, the timing and nature of any corrective actions taken

by the User, the compliance history of the User and any other factors as justice requires.

5.8 Criminal Prosecution:

a. The Control Authority may recommend to the City Council that the City Attorney criminally prosecute any User who knowingly or willfully violates any provision of this ordinance, its Wastewater Contribution Permit or any orders issued thereunder. If so prosecuted the User shall, upon conviction, be guilty of a misdemeanor, and punished by a fine not to exceed \$1,000.00 per violation per day or imprisonment for not more than six 96) months, or both.

b. Any person who knowingly or willfully makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this Ordinance or its Wastewater Contribution Permit, or who falsifies, tampers with, or knowingly or willingly renders inaccurate any monitoring or sampling device, wastewater sample or other methods required under this Ordinance, shall be guilty of a misdemeanor, and shall, upon conviction, be punished by a fine of not more than \$1,000.00 or by imprisonment for not more than six (6)months or both.

5.9 Supplemental Enforcement Remedies:

5.9.1 Annual Publication of Users is Significant Noncompliance:

The Control Authority shall publish, at least annually in the largest daily newspaper circulated in the area, a description of those Users which are found to be in Significant Noncompliance as defined in section 4.8) with any provisions of this Ordinance or any permit or order issued thereunder during the period since the previous publication.

5.9.2 Performance Bonds:

The Control Authority may decline to reissue a Wastewater

Contribution Permit to any Significant Industrial user which has failed to comply with the provisions of this Ordinance or any order or previous permit issued thereunder unless such Significant Industrial User files with the Control Authority a satisfactory bond payable to the City in a sum not to exceed an amount determined by the Control Authority to be necessary to achieve consistent compliance.

5.9.3 Remedies Nonexclusive

The remedies provided for in this ordinance are not exclusive. The Control Authority may take any, all, or any combination of these actions against a noncompliant User. Enforcement of the pretreatment violations will generally be in accordance with the City's enforcement response plan. However, the Control Authority may take other action against any User when the circumstances warrant. Further, the Control Authority is empowered to take more than one enforcement action against any noncompliant User.

SECTION 6 - SEVERABILITY

If any provision, paragraph, word, section, chapter, or article of this Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, sections, chapters, and articles shall not be affected and shall continue in full force and effect.

SECTION 7 - AMENDED

As of the effective date of this Ordinance, all other Ordinances or parts of Ordinances in conflict with this Ordinance are amended.

SECTION 8 - EFFECTIVE DATE

This Ordinance being necessary for the health, safety and welfare of the citizens of Russellville, an emergency is declared to exist, and this Ordinance shall take effect and be enforced from and after its passage, approval and publication, as provided by law.

PASSED AND APPROVED this .

CITY OF RUSSELLVILLE ORDINANCE
TABLE OF CONTENTS

Section 1. General Provisions

- 1.1 Purpose and Policy
- 1.2 Definitions
- 1.3 Abbreviations

Section 2. Regulations

- 2.1 Discharge Prohibitions
- 2.2 National Categorical Standards
- 2.3 State Pretreatment Standards
- 2.4 Local Limits
- 2.5 [Reserved]
- 2.6 The City's Right of Revisions
- 2.7 Dilution
- 2.8 Slug Discharge
- 2.9 Prohibition of Bypasses
- 2.10 Hauled Wastewater

Section 3. Fees and Surcharges

- 3.1 Purpose
- 3.2 Fees
- 3.3 Surcharges

Section 4. Administration

- 4.1 Wastewater Discharge
- 4.2 Wastewater Contribution Permits
- 4.3 Reporting Requirements for Permittees
- 4.4 Monitoring Factors
- 4.5 Inspection and Sampling
- 4.6 Sampling and Analytical Procedures
- 4.7 Pretreatment
- 4.8 Significant Noncompliance
- 4.9 Confidential Information
- 4.10 Notification Requirements
- 4.11 Recordkeeping

Section 5. Enforcement

- 5.1 Notification of Violation
- 5.2 Consent Agreement
- 5.3 Show Cause Hearing
- 5.4 Administrative Orders and Fines
- 5.5 Emergency Authority
- 5.6 Revocation of Permits
- 5.7 Judicial Remedies
- 5.8 Criminal Prosecution
- 5.9 Supplemental Enforcement Remedies

Section 6. Severability

Section 7. Amended

Section 8. Effective Date

E-Russellville Overflows (12-31-15)

APPENDIX E- OVERFLOW LIST

Manhole	Address	Project Name	Basin	Total # of Occurrences (Since 2005)	Date of Last Overflow
1062	W B St & N Phoenix		RV14	3	10/27/2015
1200	1105 Resimont	Basins 9,15 & 25	RV15	2	6/27/2015
1315	3rd & Vancouver	Hydraulic Cap Improv	RV16	10	12/27/2015
1323	2220 W 2nd Pl	Basins 7,14	RV14	1	1/26/2015
1333	4th & Waco	Hydraulic Cap Improv	RV16	9	12/27/2015
1334	W 4th & Arlington	Hydraulic Cap Improv	RV16	2	12/27/2015
1341	1310 Ridgewood Dr	Basins 13,16 & 26	RV16	2	3/9/2013
1465	ATU	GARVER	RV20	2	12/20/2012
1466	1300 Glenwood-ATU	GARVER	RV20	2	5/13/2015
1486	404 N El Paso Ave	Basin 23	RV23	1	4/13/2015
1567	200 N Arkansa Ave	Hydraulic Cap Improv	RV24	3	4/25/2011
1628	407 N Arkansas, City Mall	City Mall	RV024	1	3/18/2015
1704	E L st & Parker Rd	Parker Rd	RV25	4	1/25/2012
1705	1025 Parker Rd	Parker Rd	RV25	2	2/26/2013
1706	1022 Parker	Parker Rd	RV25	2	12/5/2011
1724	E N ST & N Greenwich		RV21	1	12/1/2015
1725	E G & N Greenwich	City Mall	RV25	10	12/28/2015
1750	901 N Detroit Ave	Basin 9,15, 25	RV25	1	3/18/2015
1823	603 N Arkansas, City Mall	City Mall	RV24	2	12/5/2011
1825	407 N Arkansas, City Mall	City Mall	RV24	5	11/17/2015
1990	311 W B St	Basin 23	RV23	1	6/27/2015
2023	Cedar and N. Commerce	Basins 9,15 & 25	RV15	2	5/15/2010
2024	2807 N Arkansas	GARVER	RV22	16	12/27/2015
2028	Birch and Commerce	GARVER	RV22	2	5/11/2009
2033	W Birch & I-40	GARVER	RV22	2	12/27/2015
2035	Honda of Rsvl, Lakefront Dr	GARVER	RV22	3	5/25/2015
2036	220 Lakefront Dr	GARVER	RV22	8	12/27/2015
2043	ATU Softball Field	GARVER	RV20	11	12/27/2015
2048	ATU Pasture	GARVER	RV20	13	12/27/2015
2050	ATU Pasture	GARVER	RV20	11	12/27/2015
2815	Arkansas Tech	GARVER	RV20	3	5/13/2015
2816	Arkansas Tech	GARVER	RV20	5	12/27/2015
2817	N Glenwood	GARVER	RV20	5	11/17/2015
3027	2502 W 2nd St.	Basins 17,18,20, & 21	RV17	2	7/15/2010
3043	N Hunter Ridge Ln	Basins 17,18,20, & 21	RV18	2	5/20/2015
3052	102 N Fairbanks	Basins 17,18,20, & 21	RV17	2	6/11/2010
3075	3801 W Main	Basins 17,18,20, & 21	RV18	2	7/19/2012
3094	215 S. Portland	Basins 17,18,20, & 21	RV18	2	12/8/2010
3191	John Trusty Lane	Hydraulic Cap Improv	RV18	8	12/27/2015
3193	John Trusty Lane	Hydraulic Cap Improv	RV18	9	3/21/2012
3273	Hilltop & Marina Rd	Basins 12,19 & 24	RV19	2	12/27/2015
4009	2005 E Main St	Basins 9,15 & 25	RV09	2	5/13/2015
4019	1611 E. Main St.	Basins 9,15 & 25	RV09	2	5/13/2015
4020	E Main & N Sydney	Basins 9,15 & 25	RV09	2	7/17/2013
4021	1819 E Main St	Basins 9,15 & 25	RV09	1	5/13/2015
4078	1002 E I St	Basins 13,16 & 26	RV13	2	5/13/2015
4117	210 HWY 324	Basins 1,2,8 & 11	RV11	1	10/3/2015
4127	515 S Ithaca	Basins 1,2,8 & 11	RV08	5	3/8/2012
4213	88 Joyce Lane	Basins 1,2,8 & 11	RV11	3	1/16/2014
4214	Flying J Truck Stop	Basins 1,2,8 & 11	RV11	2	1/30/2013
5032	E. 11th and Boston	Basins 3,5, & 6	RV03	12	5/20/2015
5054	1416 S Boston Ave	Basins 3,5, & 6	RV06	2	1/5/2010
5121	10th and Glenwood	Basins 3,5, & 6	RV05	2	12/27/2015
5123	929 S El Paso		RV05	1	12/27/2015
6029	1105 S Oswego Ave	Basins 7,14	RV07	1	3/18/2015
6399	1519 S Knoxville Ave	Basins 3,5, & 6	RV03	2	3/18/2015
6478	404 Jimmy Lile Rd	Treatment Plant		5	12/27/2015
8048	404 Jimmy Lile Rd	Treatment Plant		9	11/17/2015
Old Post	Old Post Lift Station	Basins 13,16 & 26	RV26	4	12/28/2015

F-no exposure exclusion renewal

ADEQ

ARKANSAS
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: <u>City Corporation Wastewater Treatment Plant</u>			
Permit Number: <u>ARR000104</u>		AFIN NO.: <u>58-00105</u>	
No Exposure Exclusion: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Monitoring Category: <u>X</u>	Industrial Sector: <u>IL</u>
Stream Segment: <u>3F</u>		Nearest Receiving Water: <u>Whig Creek</u>	HUC: <u>1110203</u>
Assigned	Activity	Initials	Date Complete/Entered
Sect.	NOI Logged/Assign to Engineer (1-day)		N/A
Engineer (5 days)	Confirm/Perform the following: <input checked="" type="checkbox"/> Check Permittee Name on SOS (if applicable) <input checked="" type="checkbox"/> Check SIC Code <input checked="" type="checkbox"/> Assign Industrial Sector <input checked="" type="checkbox"/> Check Facility and Outfall Coordinates by Google Earth. <input checked="" type="checkbox"/> Check Receiving Stream <input type="checkbox"/> Enter information into Access <input checked="" type="checkbox"/> DMR status _____ submitted Dates not submitted:	<u>RY</u>	<u>5/7/10</u>
AA (5 days unless AFIN Change is Required)	Check the following into PDS: <input type="checkbox"/> AFIN Change Required <u>name change</u> <input type="checkbox"/> Invoice Information <input type="checkbox"/> Coordinates-if not already there <input type="checkbox"/> SIC/NAICS <input type="checkbox"/> Receiving Stream <input type="checkbox"/> Stream Segment <input type="checkbox"/> Facility Contact (All info-name/number/email) <input type="checkbox"/> Facility Mailing Information <input type="checkbox"/> Monitoring Category <input type="checkbox"/> Staff	<u>Jett</u> <u>Jett</u>	<u>5/18/10</u> <u>want 2 weeks</u> <u>5/18/10</u>
Engineer (2 days)	Merge Permit Authorization Letter	<u>Jett</u>	<u>6/2/10</u>
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.	<input checked="" type="checkbox"/> Scan complete packet <input checked="" type="checkbox"/> E-mail to everyone cc on the letter <input checked="" type="checkbox"/> Mail Letter	<u>WH</u>	<u>6/8/2010</u>

Comments:



G-Equipment List

City Corporation Fleet Listing

Vehicle #	Description	Operation
201	2006 Chev. Silverado	8
301	2010 Ford F150 (8cyl)	6
302	2014 Ford F150	6
303	2007 Ford F150	6
304	2012 Ford F150 Pickup	6
305	2016 Ford F150XL	6
401	2007 Ford F150 (6cyl)	7
502	2003 MEBT U Trailer	5
503	2012 ZT 726cc Bad Boy Mower	5
505	2007 Ford F150 (8cyl)	5
532	2014 Ford F250 Pickup	5
533	2005 GMC 2KH Pickup	5
559	2007 Tex-Mex 14' Trailer	5
601	1992 Hudson Trailer	1
602	1992 Hudson Trailer	1
603	2005 Holden Model HCZ Trailer	1
604	2000 Tiger-Vac	1
606	1994 Justin C Trailer 6x14	1
607	2005 Holden Model HCZ Trailer	1
609	1995 Sullair Compressor 540	1
610	1995 Sullair Compressor 541	1
611	1989 Wells Cargo Trailer	1
619	1996 Sullair 185 543	1
620	2013 ECO-III Jetter	1
621	1999 Easement Cleaner	1
622	1999 Sreco Seca Trailer	1
623	1999 Big Tex Dump Trailer	1
625	2004 Husqvarna Lawn Tractor	1
626	2005 Cherokee Enclosed Trailer	1
636	Gator Gam Push Camera	1
637	2005 case 580M Backhoe	1
638	2007 SECA Model 747FR2 Jetter/Cam Tr.	1
639	Black 16' Trailer (Kept at Const. Shop)	1
640	1995 Ford F800 Dump	1
642	2013 John Deer Minix	1
643	2003 New Holland LB75.B Backhoe	1
644	1997 Sullair 185DLG (542)	1
645	2006 International 420 Diesel Pickup	1
646	2009 Ford F150	1
647	2010 Ford Ranger	1
648	2002 Ford F350 4x4	1
649	2009 Ford F250	1
650	2004 Sreco Jetter	1
651	2003 International 4200 Diesel	1

City Corporation Fleet Listing

Vehicle #	Description	Operation
652	2004 International 4200 Diesel	1
653	2010 Freightliner M2106	1
654	1995 Ford F700 Flatbed	1
655	2008 Ford F350 Diesel	1
656	2004 New Holland LB75.B Backhoe	1
657	1997 International 2 Ton Flatbed Dump	1
658	2015 Cat Mini X	1
701	2015 Ford F250 4X4	2
702	1993 Case 1845C Uniloader	2
703	1996 Alumacraft MV 1650 AW Boat	2
704	1986 Light Boat Trailer	2
705	1996 M-F Tractor	2
706	1995 CRLY Utility Boat Trailer	2
707	2007 Kubo RTV	2
708	1999 Kodiak Trailer	2
709	2006 John Deere X500 Mower	2
710	2013 10' Big Bee Rotary Cutter	2
711	1996 Gooseneck Trailer	2
712	2003 125 Genertor RE02JB	2
801	1999 International 4700 Dump	4
802	2000 Ford TC35D Tractor	4
803	2007 Ford F150	4
804	1986 Ford 2110 4x4 Tractor	4
805	2014 New Holland Skid Loader	4
806	2015 Ranger XT Side by Side	4
807	2010 Trailmaster 14' Trailer	4
808	2003 500 Generator	4
809	2009 125 Genertor GCT-2E-11400	4
811	2012 Ford F150 Pickup	4
812	1996 Ford 555D Backhoe	4
901	2011 Ford F150 Pickup	4
	2015 Minix	7
	Lowboy Trailer	7

- 1 Construction Dept
- 2 Water Plant
- 3 Con-Agra PTP
- 4 Wastewater Plant
- 5 Maintenance
- 6 Service Dept.
- 7 Engineering
- 8 205 bldg

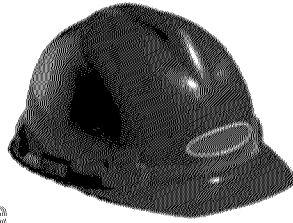
H-spare parts list

City Corporation Spare Parts Inventory

No.	Item2	Quantity
41	4928 Manhole Riser STD. DIA. 3"	0
44	4952 Manhole Riser STD. DIA. 8"	0
45	4960 Manhole Riser STD. DIA. 10"	0
46	4979 Manhole Riser STD. DIA. 12"	0
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	Rebuilt US 100HP Motor for 14th&Houston Pump Station.	1
6	Rebuilt Rotating Assembly for Pump @ 14th&Houston.	1
11	Capacitor #97F9633 440 VAC 50/60 HZ	1
12	Capacitor #97F9264 410 VAC 50/60 HZ	1
14	Rebuilt 200 HP motor for Industrial Pump Station.	1
48	4995 Flat Top Manhole Ring	1
7	Complete Capacitor Package for 2hp single phase 230 v grinder pump	2
8	Capacitor # 97F9632 440 VOLTS 50/60HZ (Fits all sewer lift stations)	2
9	Capacitor # 12141A006 220 VAC. 50/60 HZ	2
10	Capacitor # 12141A000 250 VAC. 50/60 HZ	2
16	Rebuild Kit for 8 inch PRV at 14th&Houston	2
22	Myers 2 Horse Power 230 Volt Grinder Pump	2
31	4804 Furnco Clay x Plastic 10"	2
13	Relay # 3ARR22J15M3	3
19	2 inch air release valves for sewer force mains	3
43	4944 Manhole Riser STD. DIA. 6"	3
15	Rebuild Kits for 2inch Air Relief Valves	4
47	4987 Reg Manhole Top Ring	5
32	4812 Furnco Plastic x Plastic 12"	6
33	4820 Furnco Clay x Plastic 12"	6
42	4936 Manhole Riser STD. DIA. 4"	6
23	4715 Sewer Service Saddle Romac 4.63	7
49	5002 Manhole Lid STD. DIA.	13
40	4901 Manhole Riser STD. DIA. 2"	15
27	4766 Furnco Clay x Plastic 6"	16
26	4758 Furnco Plastic x Plastic 6"	17
30	4790 Furnco Plastic x Plastic 10"	20
51	5517 Manhole Riser Ring 2.5"	21
39	4898 Manhole Riser STD. DIA. 1.5"	25
37	4863 Pipe PVC SDR 26 10"	27
24	4723 Furnco Plastic x Plastic 4"	32
28	4774 Furnco Plastic x Plastic 8"	37
25	4731 Furnco Clay x Plastic 4"	46
36	4855 Pipe PVC SDR 26 8"	48
29	4782 Furnco Clay x Platic 8"	69
35	4847 Pipe PVC SDR 26 6"	76

50	5010 Sondes Green Marker	81
38	4871 Pipe PVC SDR 26 12"	100
34	4839 Pipe PVC SCH 40 4"	601
17		
18		
20		
21		

I-Workplace Safety Committee



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.

J-Safety & Health Manual

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.

K-Vehicle Accident SOP

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.

L-Parked Traffic Cone Procedure

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-stripped 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: _____

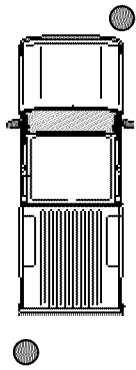
Signature: _____

Date: _____

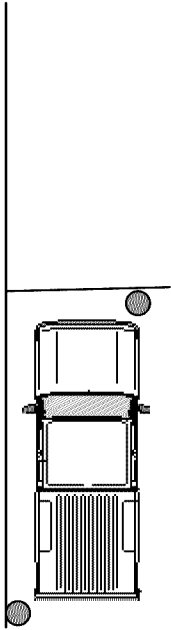
(Return to Safety Coordinator when completed)

M-Cone Procedure

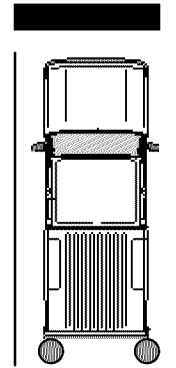
Cone placement diagrams:



Unmarked

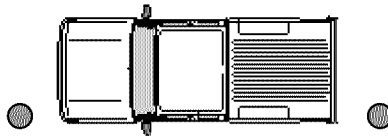


Marked, no curb



Marked w/curb

Street curb



N-Drug Terminator Poster

DRUG TERMINATOR

For Disposal of Confiscated Drugs

**Burns
CLEAN
and
SMOKE FREE**



www.drugterminator.com

ELASTEC 

AmericanMarine
Innovative Environmental Products

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.

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

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:

United States Army
Nebraska State Patrol
Colorado State Patrol
North Las Vegas Police Department
Utah Highway Patrol
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

Contact our incinerator specialists for more information.

Phone: +1 (618) 382-2525
Fax: +1 (618) 382-3610
Email: elastec@elastec.com

ELASTEC 

AmericanMarine
Innovative Environmental Products
1309 W. Main, Carmi, IL 62821

www.drugterminator.com

O-prescrip_disposal



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



P-Rate Study



CITY CORPORATION -- RUSSELLVILLE

WATER RATE STUDY WASTEWATER RATE STUDY

December 2014 – FINAL

Prepared by:



5500 Democracy Drive, Suite 130
Plano, TX 75024
972-378-6588
972-378-6988 (fax)
www.economists.com

Project Manager: Dan V. Jackson

**CITY CORPORATION -- RUSSELLVILLE
 WATER RATE STUDY
 WASTEWATER RATE STUDY
 TABLE OF CONTENTS**

Executive Summary3

I. Introduction and Demographic Profile16

 Background16

 Report Organization17

 City and Corporation Overview17

 City Corporation18

 Water and Wastewater Rate Structure19

 Water and Wastewater Rate Comparison.....22

II. Water Rate Study25

 Water Accounts – Current Year and Forecast26

 Historical and Forecast Water Consumption28

 Peaking Factors30

 Revenue Requirement Background and Methodology31

 Operating Expenses and Capital Outlays - Test Year and Forecast32

 Debt Service.....34

 Non-Rate Revenues.....35

 Net Revenue Requirement.....36

 Water Utility Cost Functionalization, Classification and Allocation37

 Water Rate Design40

 Tri County Rate43

III. Wastewater Rate Study45

 Wastewater Accounts – Current Year and Forecast.....46

 Historical and Forecast Wastewater Billing Units.....47

 Revenue Requirement Background and Methodology49

 Operating Expenses and Capital Outlays - Test Year and Forecast50

 Debt Service.....52

 Non-Rate Revenues.....53

 Net Revenue Requirement.....54

 Wastewater Utility Cost Functionalization, Classification and Allocation54

 Wastewater Rate Design57

 BOD and TSS Rates59

Appendix A – Water and Wastewater Rate Model – Scenario 2 Conservation

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 started 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 Mark Tripp Richard Harris Randall Horton Freddie Harris Robert Wiley Spencer Roberts Martin Irwin Garland Steuber	<table border="0"> <tr> <td><i>Mayor</i></td> <td>Art Jones</td> <td><i>Chairman</i></td> </tr> <tr> <td><i>Ward 1, Position 1</i></td> <td>Frank Russenberger</td> <td><i>Vice Chairman</i></td> </tr> <tr> <td><i>Ward 1, Position 2</i></td> <td>Luke Duffield</td> <td><i>Secretary</i></td> </tr> <tr> <td><i>Ward 2, Position 1</i></td> <td>Harold Barr</td> <td><i>Member</i></td> </tr> <tr> <td><i>Ward 2, Position 2</i></td> <td>Bill Harmon</td> <td><i>Member</i></td> </tr> <tr> <td><i>Ward 3, Position 1</i></td> <td></td> <td></td> </tr> <tr> <td><i>Ward 3, Position 2</i></td> <td></td> <td></td> </tr> <tr> <td><i>Ward 4, Position 1</i></td> <td></td> <td></td> </tr> <tr> <td><i>Ward 4, Position 2</i></td> <td></td> <td></td> </tr> </table>	<i>Mayor</i>	Art Jones	<i>Chairman</i>	<i>Ward 1, Position 1</i>	Frank Russenberger	<i>Vice Chairman</i>	<i>Ward 1, Position 2</i>	Luke Duffield	<i>Secretary</i>	<i>Ward 2, Position 1</i>	Harold Barr	<i>Member</i>	<i>Ward 2, Position 2</i>	Bill Harmon	<i>Member</i>	<i>Ward 3, Position 1</i>			<i>Ward 3, Position 2</i>			<i>Ward 4, Position 1</i>			<i>Ward 4, Position 2</i>			<table border="0"> <tr> <td>Steve Mallett</td> <td><i>General Manager</i></td> </tr> <tr> <td>Taryn Childers</td> <td><i>Chief Financial Officer</i></td> </tr> <tr> <td>Lance Bartlett</td> <td><i>Engineering Manager</i></td> </tr> <tr> <td>Larry Collins</td> <td><i>Operations Manager</i></td> </tr> <tr> <td>Jeremy Myers</td> <td><i>Customer Service Manager</i></td> </tr> <tr> <td>Steve Reves</td> <td><i>Construction Supervisor</i></td> </tr> <tr> <td>Jonathan Shipley</td> <td><i>WTP Lead Operator</i></td> </tr> <tr> <td>Danny Teeter</td> <td><i>ConAgra Lead Operator</i></td> </tr> <tr> <td>Randy Bradley</td> <td><i>Pretreatment Coordinator</i></td> </tr> </table>	Steve Mallett	<i>General Manager</i>	Taryn Childers	<i>Chief Financial Officer</i>	Lance Bartlett	<i>Engineering Manager</i>	Larry Collins	<i>Operations Manager</i>	Jeremy Myers	<i>Customer Service Manager</i>	Steve Reves	<i>Construction Supervisor</i>	Jonathan Shipley	<i>WTP Lead Operator</i>	Danny Teeter	<i>ConAgra Lead Operator</i>	Randy Bradley	<i>Pretreatment Coordinator</i>
<i>Mayor</i>	Art Jones	<i>Chairman</i>																																													
<i>Ward 1, Position 1</i>	Frank Russenberger	<i>Vice Chairman</i>																																													
<i>Ward 1, Position 2</i>	Luke Duffield	<i>Secretary</i>																																													
<i>Ward 2, Position 1</i>	Harold Barr	<i>Member</i>																																													
<i>Ward 2, Position 2</i>	Bill Harmon	<i>Member</i>																																													
<i>Ward 3, Position 1</i>																																															
<i>Ward 3, Position 2</i>																																															
<i>Ward 4, Position 1</i>																																															
<i>Ward 4, Position 2</i>																																															
Steve Mallett	<i>General Manager</i>																																														
Taryn Childers	<i>Chief Financial Officer</i>																																														
Lance Bartlett	<i>Engineering Manager</i>																																														
Larry Collins	<i>Operations Manager</i>																																														
Jeremy Myers	<i>Customer Service Manager</i>																																														
Steve Reves	<i>Construction Supervisor</i>																																														
Jonathan Shipley	<i>WTP Lead Operator</i>																																														
Danny Teeter	<i>ConAgra Lead Operator</i>																																														
Randy Bradley	<i>Pretreatment Coordinator</i>																																														

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 <u>City</u>	Commercial <u>City</u>	Industrial <u>City</u>	Public <u>City</u>	
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 <u>Outside</u>	Commercial <u>Outside</u>	Industrial <u>Outside</u>		
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%.

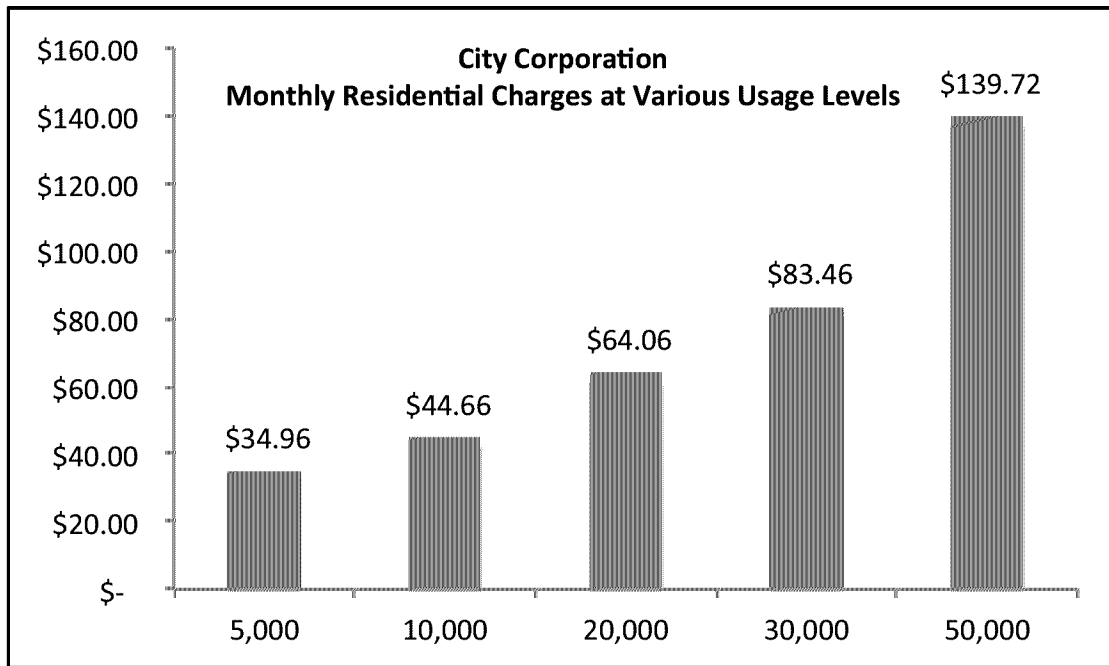
In 1997 City corporation reduced inside city residential rates by 24.9% and increased residential outside rates by 3.3%. In 2009 and 2010 City Corporation implemented uniform rate adjustments of 12.0% for all ratepayers.

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.

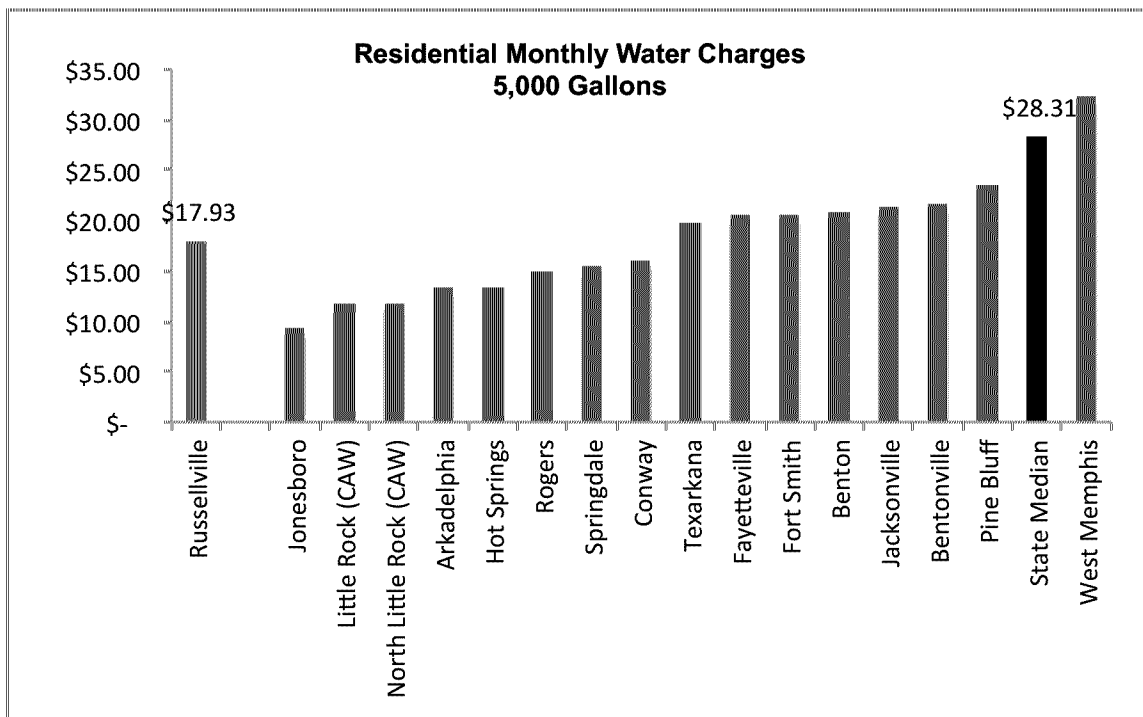
With these caveats in mind, the comparisons reveal that City Corporation’s rates are comparable to, or lower than the majority of the similarly sized cities in the region. City Corporation’s combined residential water and wastewater charges are approximately **27% less** than the statewide survey average.



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



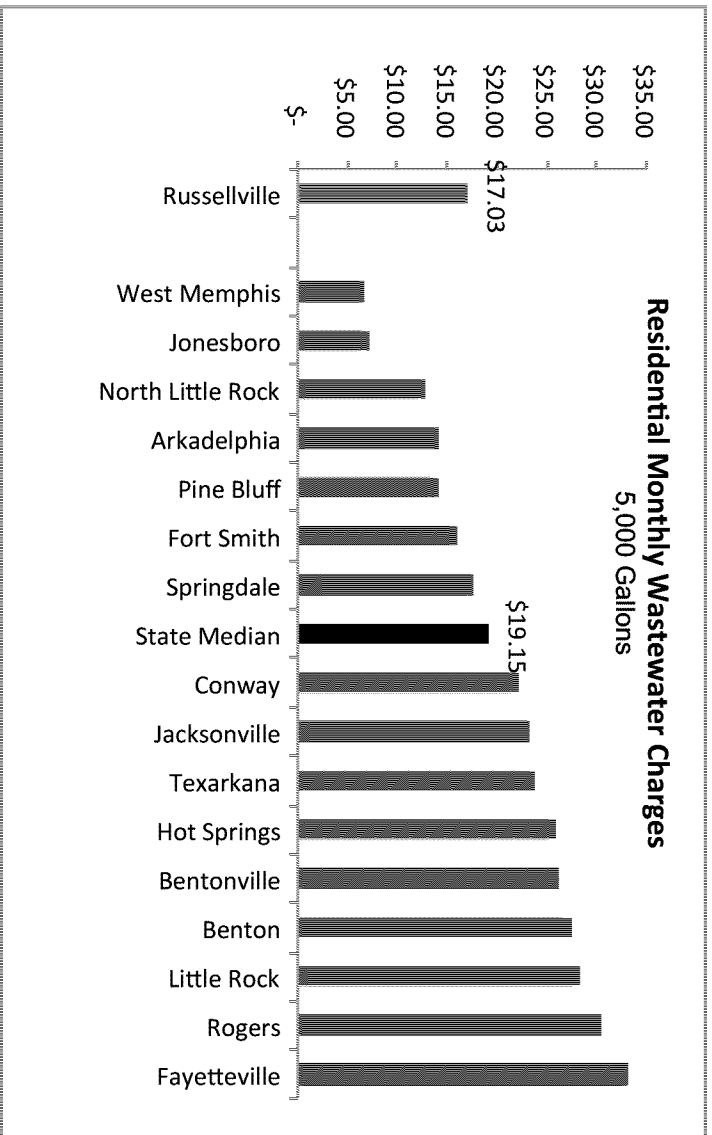


CHART I-7

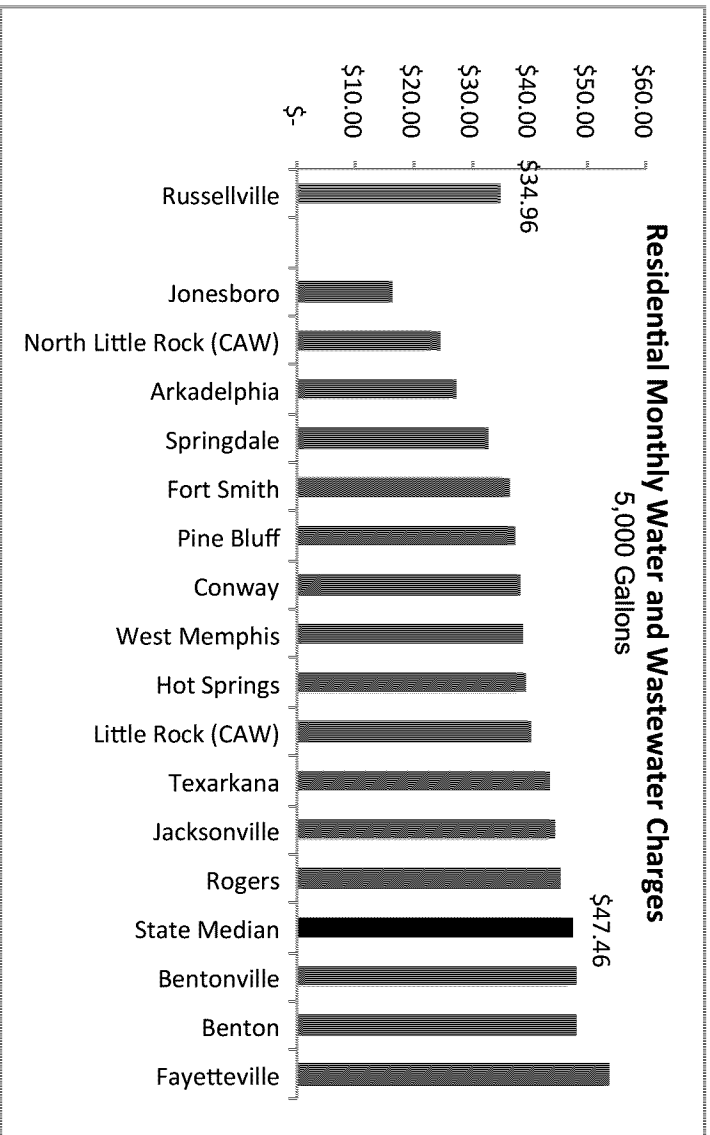
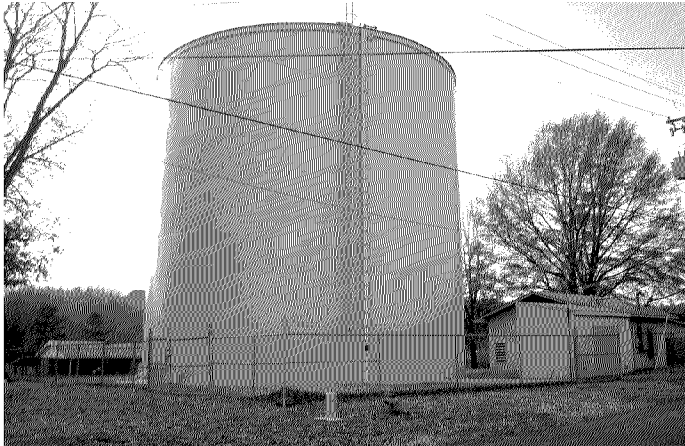


CHART I-8

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	<u>7</u>
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

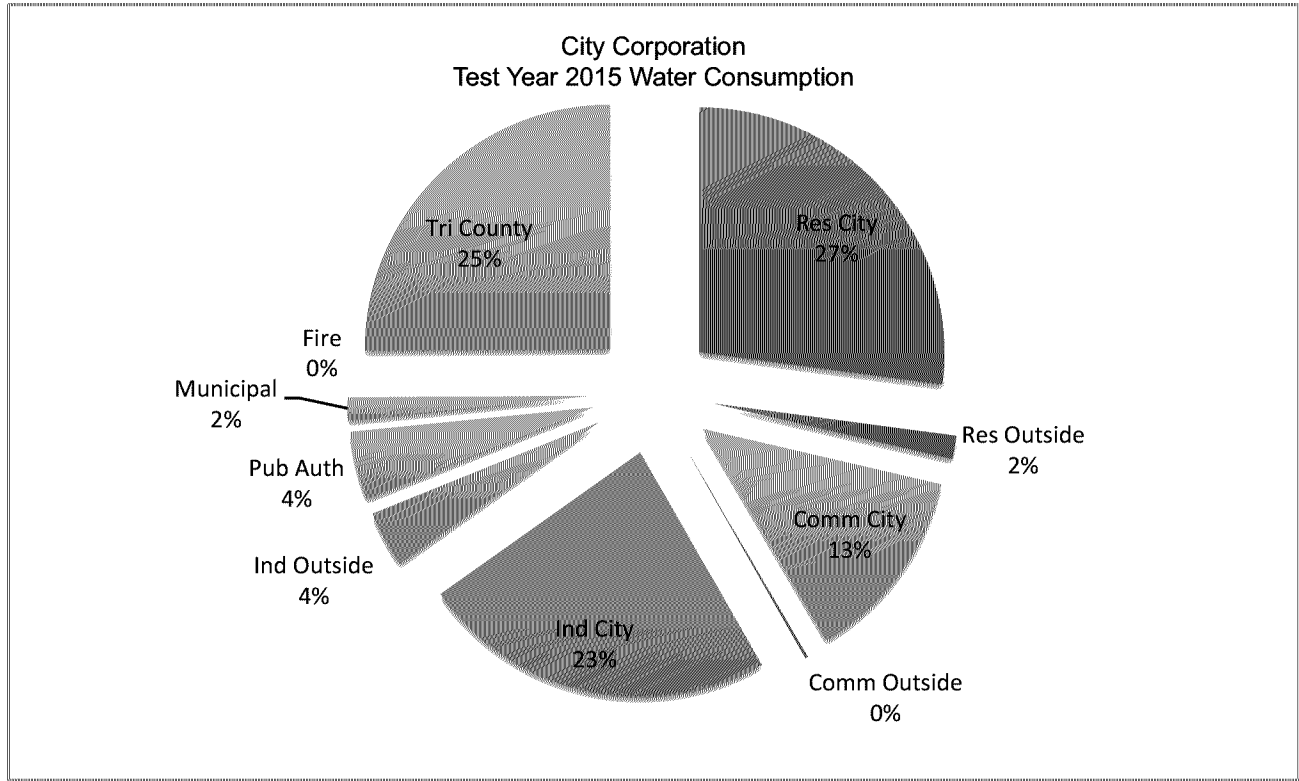
Historical and Forecast Water Consumption

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	582,582,000	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	33,958,278	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**.

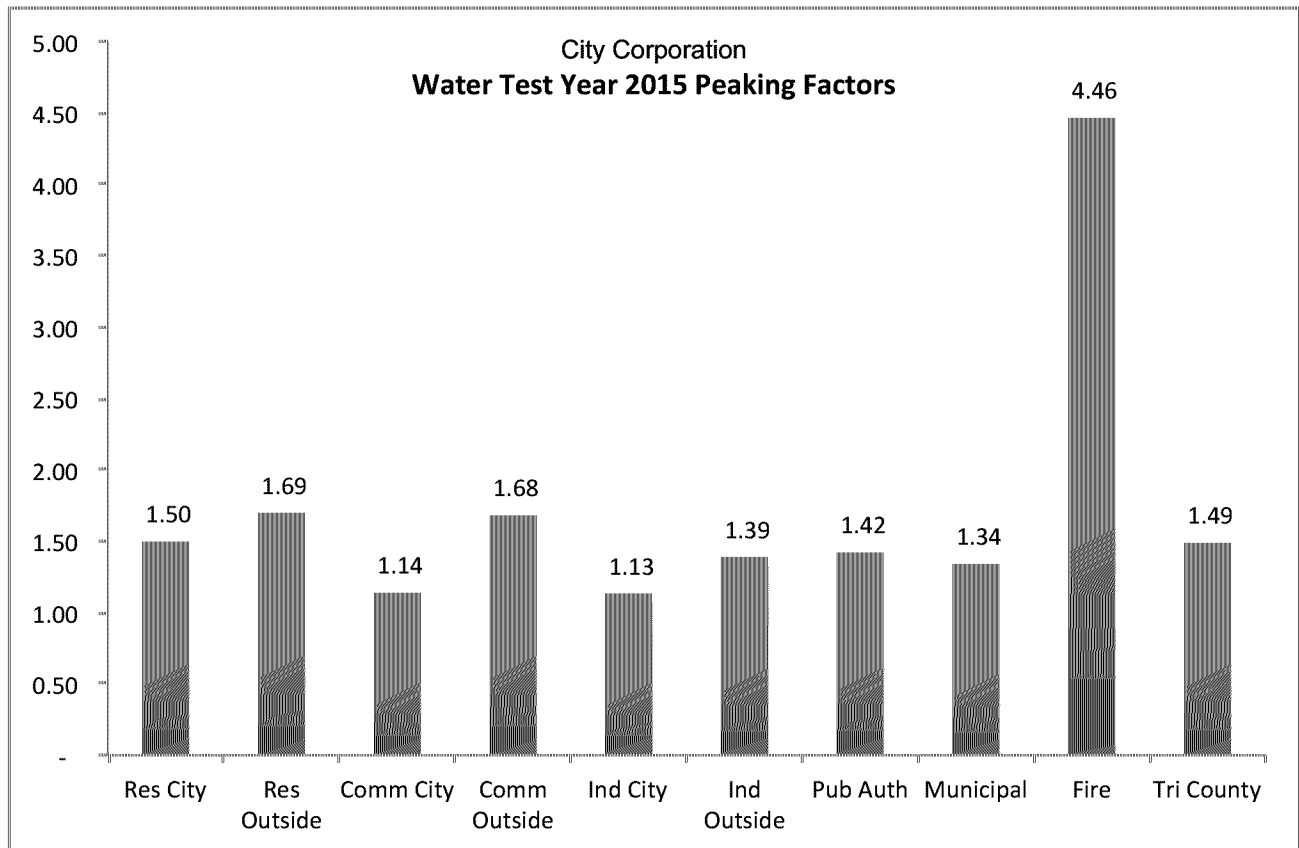
The consumption data by class provided by City Corporation was utilized in the rate model to calculate the peak day factor and peaking factors for individual rate classes.

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	-	-	-	-	-
	<u>3,591,863</u>	<u>1,665,811</u>	<u>607,637</u>	<u>874,711</u>	<u>443,704</u>
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	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

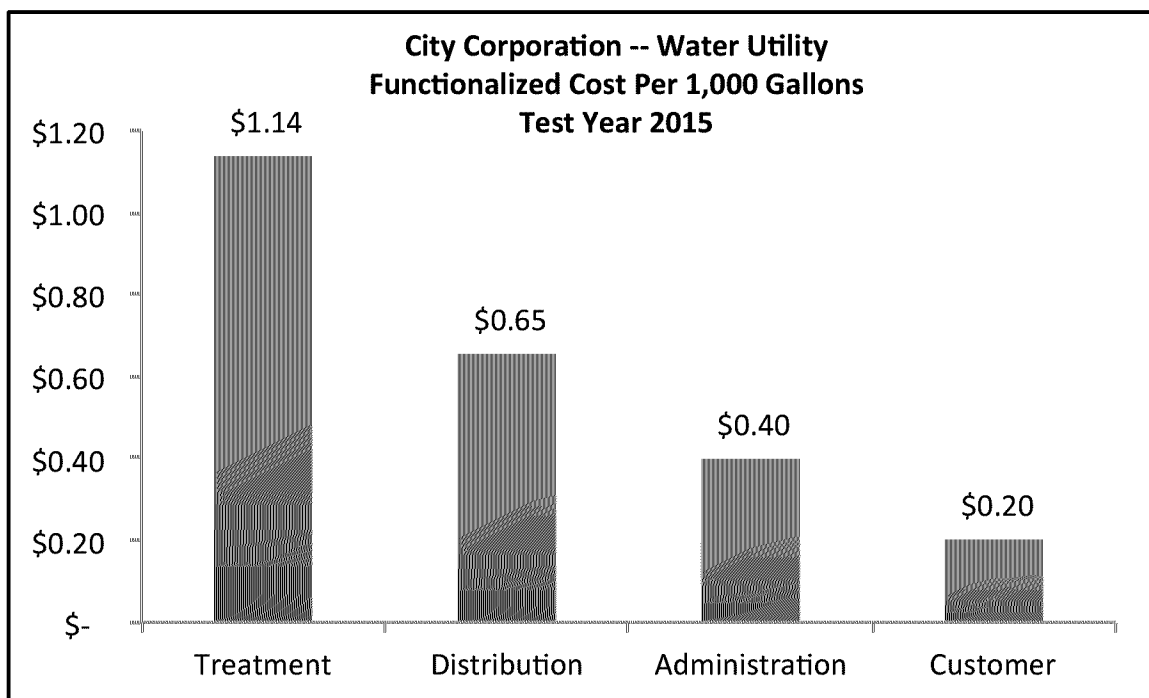
Customer Billing – the processes involved in billing and providing other services to customers

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	<u>443,704</u>
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	<u>532,453</u>
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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

1 Water Rates

Monthly Minimum Charge

Size	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	259.80	267.39	283.43	291.93	300.69	309.71

Volume Rate/1,000 Gal

Category	City	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	City	1.71	1.71	1.86	1.92	2.07	2.13	2.19	2.32	2.39	2.46
	2,001 Above	1.94	2.05	2.23	2.30	2.46	2.55	2.63	2.79	2.87	2.96
Residential	Outside City	3.52	2.57	2.79	2.88	3.11	3.20	3.29	3.48	3.59	3.69
	2,001 Above	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44
Commercial	City	1.78	1.90	2.07	2.13	2.30	2.37	2.44	2.59	2.67	2.75
Industrial	City	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.16	2.22	2.29
Public Authorities	City	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08
Municipal	City	1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31	2.38
Tri County		1.7400	1.7400	1.9060	1.9627	2.0200	2.0802	2.1432	2.2094	2.2787	2.3514

2 Residential Monthly Water Bill -- 3/4" Meter

Usage	Category	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	\$ 26.46	\$ 27.26	\$ 28.07
	Dollar Inc	0.94	1.68	0.63	0.63	1.68	0.67	0.71	1.48	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 5,000 WW	Total	27.83	29.12	31.70	32.68	35.26	36.28	37.39	39.65	40.81	42.06	43.32
	Dollar Inc	1.49	2.58	0.99	0.99	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 5,000 WW	Total	47.03	49.62	54.00	55.68	60.06	61.78	63.69	67.55	69.51	71.66	73.82
	Dollar Inc	2.59	4.38	1.68	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 5,000 WW	Total	66.43	70.12	76.30	78.68	84.86	87.28	89.99	95.45	98.21	101.26	104.32
	Dollar Inc	3.69	6.18	2.38	2.38	6.18	2.42	2.71	5.48	2.76	3.05	3.06
	Percent Inc		5.6%	8.6%	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	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

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

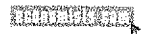
3 WATER Revenues and Expenses - CASH Basis

		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water Revenues												
W.1	Residential City	\$ 2,187,308	\$ 2,359,998	\$ 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	188,845	201,000	211,892	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	988,530	1,039,941	1,077,748	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	58,692	60,299	63,352	67,098	69,098	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	1,310,180	
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	478,019	517,320	625,693	754,105	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	1.48	1.54	1.60	1.62	1.64	
(NOTE: excludes reserve funding)												



**CITY CORPORATION – RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL**

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WATER Fund Summary -- CASH Basis											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
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	494,268	502,102	417,557	564,998	482,803	395,759	333,674	270,346	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
	Less 2013	(21,782,849)									
	Net Total	17,273,726									
Less Uses of Funds:											
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	32
Avg. Annual Growth Rate		0.26%	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	595,288,681	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	2,205,809,685	2,209,256,608	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	
<u>Treatment Cost of Service</u>	
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
<u>Operations and Maintenance</u>	
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
<u>Rate Calculation</u>	
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

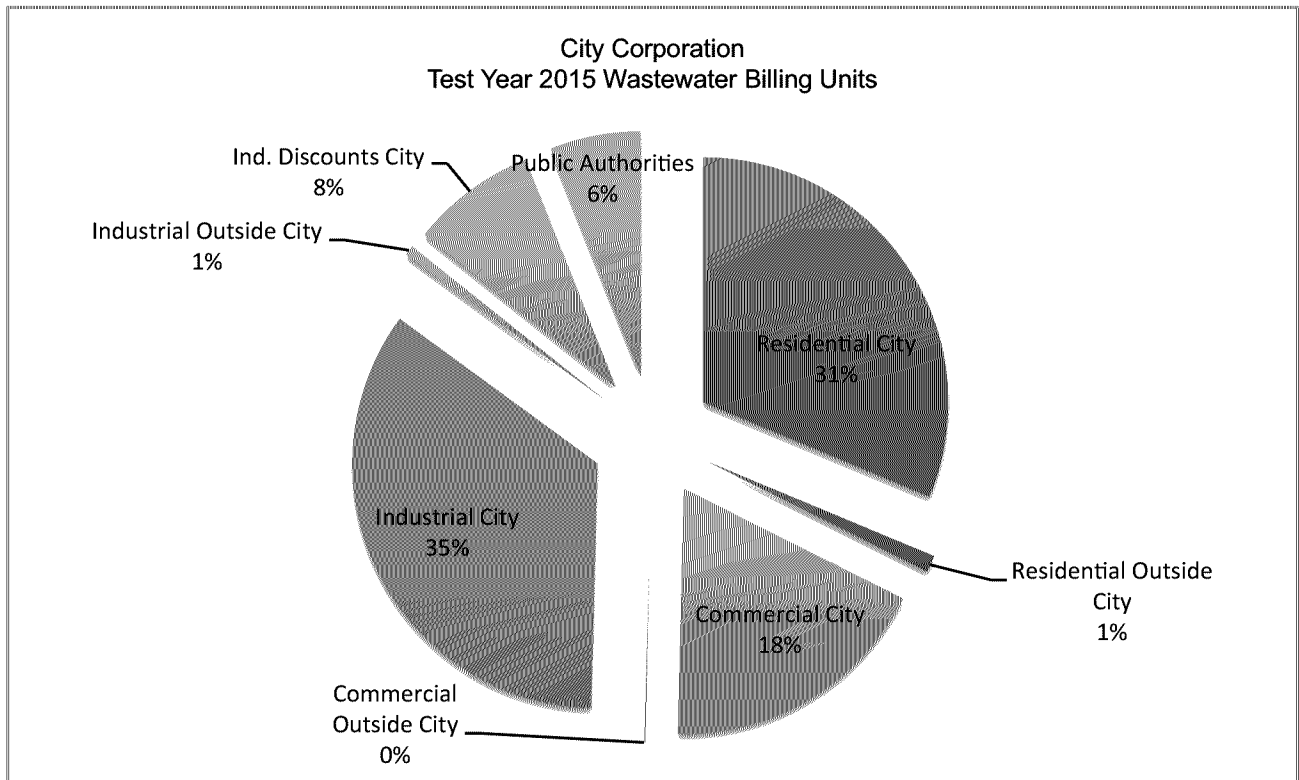
Historical and Forecast Wastewater Billing Units

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
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	<u>231,146</u>
Total	\$ 3,925,003

CHART III-12

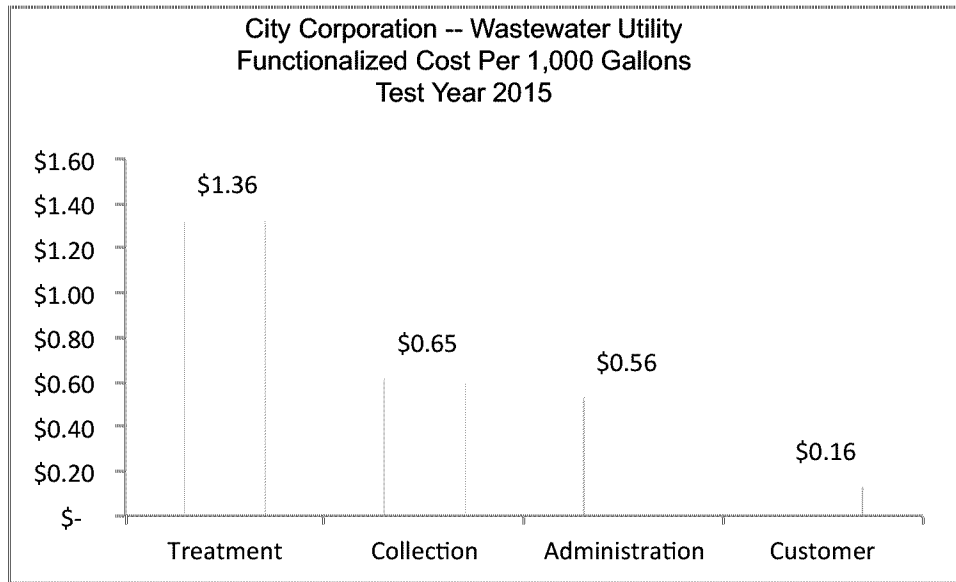


CHART III-13

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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WASTEWATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

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	1.88	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	17.69	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**

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WASTEWATER Fund Summary -- CASH Basis											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
3 WASTEWATER Revenues and Expenses											
WW Revenues											
Residential City	\$ 1,727,670	\$ 2,120,695	\$ 2,563,620	\$ 2,915,280	\$ 3,141,348	\$ 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	760,763	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	1,785,697	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	77,998	79,720	82,111	84,575	87,112	89,726	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	3,058,353	3,058,353	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	5,722,008	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	2.01	1.01	1.45	1.79	1.30	1.40	1.25	1.28	1.31	1.33	
(NOTE: excludes reserve funding)											



**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

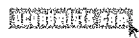
4 Capital Project Funding Summary -- WASTEWATER

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		114,960		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		3,645,500		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%		0.29%		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

**CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Model Summary

Scen: 2014 12 12 -- Scen 2 -- Conservation

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	43.78	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	229.78	236.65	243.75	251.06
6"	194.26	207.66	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
		Above	1.94	2.05	2.23	2.30	2.46	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
		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	\$ 6.17	\$ 10.01	\$ 11.86	\$ 12.75	\$ 13.71	\$ 14.12	\$ 14.54	\$ 14.98	\$ 15.43	\$ 15.89
Usage Chg	1,001	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	4.81	4.95	5.10	5.25

2 Residential Monthly Bill -- 50" Water

5,000 W	Total	\$ 34.96	\$ 39.72	\$ 46.08	\$ 51.44	\$ 55.41	\$ 58.52	\$ 60.28	\$ 62.80	\$ 64.68	\$ 66.61	\$ 68.60
5,000 WW	Dollar Inc		4.78	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	10.85	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	175.84	189.33	196.22	202.30	213.46	219.66	226.45	233.30
5,000 WW	Dollar Inc		10.70	16.08	9.14	13.69	6.88	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											
	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Model Summary

Scen: 2014 12 12 -- Scen 2 -- Conservation

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	\$	7,185,626	\$	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		3,922,548		4,100,118		4,286,414		4,481,898		4,687,056		4,902,402		5,129,480		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)		894,419		479,019		517,320		825,993		764,105		601,408		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		3,872,538		4,050,695		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		(468,635)		440,757		1,121,167		468,462		735,742		412,425		504,295		597,183		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		1,263,062		1,038,418		1,288,400		1,398,669		1,528,089
Debt Coverage		6.63		1.34		1.67		1.91		1.37		1.43		1.26		1.40		1.43		1.45
2013 Bond Requirement	1.50																			

**CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Model Summary

Scen: 2014 12 12 -- Scen 2 -- Conservation

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 Loss 2013	88,688,180 (42,573,866)	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 Uses of Funds:												
Capital Improvement Plan -- TOTAL	Net Total	46,114,323	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	12,629	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	32
Avg. Annual Growth Rate		0.26%	0.26%	0.25%	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	32
Avg. Annual Growth Rate		0.29%	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	596,455,261	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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WATER Fund Summary -- CASH Basis

Scen: 2014 12 12 -- Scen 2 -- Conservation

1 Water Rates

Monthly Minimum Charge

Size	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	34.68	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
3"	49.20	52.64	57.39	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
4"	157.48	169.50	183.67	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
6"	194.26	207.88	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.89	309.71

Volume Rate/1,000 Gal

Category	City	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential	-	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	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 Svc - S/A Rate

Volume	Category	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	\$ 26.46	\$ 27.26	\$ 28.07
	Dollar Inc	0.94	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 5,000 WW	Total	27.63	29.12	31.70	32.68	35.26	36.28	37.39	39.65	40.81	42.06	43.32
	Dollar Inc	1.49	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 5,000 WW	Total	47.03	49.62	54.00	55.68	60.06	61.78	63.69	67.55	69.51	71.66	73.82
	Dollar Inc	2.59	2.59	4.38	1.88	4.38	1.72	1.91	3.86	1.98	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 5,000 WW	Total	66.43	70.12	76.30	78.68	84.86	87.28	89.99	95.45	98.21	101.26	104.32
	Dollar Inc	3.69	3.69	6.18	2.38	6.18	2.42	2.71	5.45	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	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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WATER Fund Summary -- CASH Basis

Scen: 2014 12 12 -- Scen 2 -- Conservation

3 WATER Revenue and Expenses -- CASH Basis

		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	806,356	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	632,196	656,884	910,183	955,683	1,011,141	1,042,325	1,086,519	1,135,927	1,169,293	1,205,866	
W.6	Industrial Outside City	192,568	202,727	215,335	226,099	239,218	246,597	257,052	266,738	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	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	1,081,411	1,092,099	1,124,270	1,157,899	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	669,914	710,612	731,930	753,888	778,505	
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		1,666,000	1,666,000	1,666,000	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%	6.6%	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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WATER Fund Summary -- CASH Basis

Scen: 2014 12 12 -- Scen 2 -- Conservation

4 Capital Project Funding Summary -- WATER

Beginning Balance		\$ 6,342,482	\$ 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 Less 2013	39,056,575 (21,782,849)	21,782,849	2,150,266	2,158,102	10,917,557	1,064,998	982,803	895,759	633,674	770,348	705,755
Less Uses of Funds:												
Capital Improvement Plan -- WATER	Net Total	17,273,728	3,412,000	1,758,501	6,395,325	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		12,487	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	596,455,381	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	33,669,255	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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WASTEWATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

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	77.89	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**

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

WASTEWATER Fund Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

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	89,844	110,395	133,587	152,065	164,023	173,887	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	4,237,898
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	8,166,113
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		126,849		258,318		212,007		114,860		372,568		302,844		348,521		285,264		215,970		145,289
Replacement Reserve	2.0%	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		1,688,668		7,618,844		837,180		535,264		465,970		385,289
Less Uses of Funds:																				
Capital Improvement Plan -- WW		14,217,548		3,889,902		6,385,325		3,545,600		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

2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Revenue and Expense Summary -- CASH Basis

Scen: 2014 12 12 -- Scen 2 -- Conservation

1 TOTAL Revenues and Expenses -- CASH Basis

Total Revenues

Water Rate Revenues	\$ 5,510,136	\$ 5,671,084	\$ 6,043,985	\$ 6,339,687	\$ 6,686,805	\$ 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	<u>381,887</u>	<u>688,124</u>	<u>708,767</u>	<u>730,030</u>	<u>751,931</u>	<u>774,489</u>	<u>797,724</u>	<u>821,656</u>	<u>846,305</u>	<u>871,694</u>
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	9,603,761
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	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>	<u>223,224</u>
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	2,116,585	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	7,892,165	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											
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Revenue and Expense Summary -- CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

2 WATER Revenue and Expense - CASH Basis

Water Revenues

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	280,540	275,137	292,568	302,913	317,146	333,477	345,247	367,137
W.9 Municipal	City	53,431	56,692	60,299	63,352	67,098	69,098	72,065	75,561	77,891	80,222
W.10 Fire Protection	City	7,933	728	775	815	863	888	925	989	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	1,193,266	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	7,195,828	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	4,461,898	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	1,301,408	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	(520,684)	(295,674)	844,418	479,615	517,120	825,933	764,105	307,400	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	1.82	1.64
(NOTE: excludes reserve funding)											

CITY CORPORATION – RUSSELLVILLE										
WATER/WASTEWATER COST OF SERVICE MODEL										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Revenue and Expense Summary – CASH Basis
Scen: 2014 12 12 -- Scen 2 -- Conservation

3 WASTEWATER Revenues and Expenses

WW Revenues

Residential City	\$ 1,727,870	\$ 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	1,305,268	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	42,483	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	3,088,766	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	2,923,738	3,604,148	3,988,039	4,265,319	4,360,640	4,462,511	4,545,378	4,638,616
Debt Service -- Prin&int	614,287	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

Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
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	1,218,383	1,269,279	1,324,659	1,382,646	1,443,375	1,508,882	1,573,616	1,643,430	1,716,587	1,793,280
Transmission & Distribution	85,309	88,176	91,149	94,230	97,423	100,732	104,162	107,719	111,406	115,231
Maintenance	665,438	696,862	729,802	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	1,131,684	1,182,081	1,234,938	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	\$ 958,756	\$ 995,026	\$ 1,034,627
Interest	-	872,000	851,062	829,266	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



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
Total Expense	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Wastewater Division – CASH BASIS

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	\$	250,820	\$	261,737	\$	273,376	\$	285,585	\$	298,331	\$	311,702
Treatment	\$	992,528	\$	1,039,838	\$	1,089,528	\$	1,141,714	\$	1,196,537	\$	1,254,132	\$	1,314,846	\$	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	\$	345,818
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	\$	565,175.2	\$	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	\$	1,460,839	\$	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	\$	7,659,625	\$	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

Adjust 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%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.1	Residential City		7.00%	9.00%	3.00%	8.00%	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%	8.00%	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%	8.00%	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%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.8	Public Authorities City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.9	Municipal City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.10	Fire Protection City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
0	Other City		7.00%	9.00%	3.00%	8.00%	3.00%	3.00%	6.00%	3.00%	3.00%	3.00%
W.11	Tn County Outside City		na	na	na	na	na	na	na	na	na	na

Water Monthly Charge

W. Residential City	5/8" -- 3/4"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	Usage Charge	2,001	5,000	10,001	20,001
Base Charge	\$ 8.89	\$ 9.30	\$ 10.14	\$ 10.44	\$ 11.28	\$ 11.82	\$ 11.87	\$ 12.69	\$ 13.07	\$ 13.46					
Base Charge	8.89	9.30	10.14	10.44	11.28	11.82	11.87	12.69	13.07	13.46	2.00	2.00	2.00	2.00	2.00
Base Charge	12.03	12.87	14.03	14.45	15.61	16.06	16.56	17.55	18.02	18.52	2.01	2.01	2.01	2.01	2.01
Base Charge	22.86	24.46	26.98	27.48	29.66	30.55	31.47	33.96	34.36	35.30	2.01	2.01	2.01	2.01	2.01
Base Charge	29.99	32.09	34.98	36.03	38.91	40.09	41.28	43.76	45.07	46.42	2.01	2.01	2.01	2.01	2.01
Base Charge	49.20	52.64	57.38	59.10	63.83	65.74	67.71	71.77	73.82	76.14	2.01	2.01	2.01	2.01	2.01
Base Charge	157.48	166.50	183.67	188.18	204.31	210.44	216.75	229.76	236.65	243.75	2.01	2.01	2.01	2.01	2.01
Base Charge	194.26	207.86	228.57	233.37	252.64	259.80	267.39	283.43	291.93	300.69	2.01	2.01	2.01	2.01	2.01
Base Charge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Charge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2.00	1.71	1.71	1.88	1.92	2.07	2.13	2.19	2.32	2.39	2.46	2.53	2.60	2.67
Usage Charge	2.001	5.000	1.94	2.05	2.23	2.30	2.48	2.55	2.63	2.79	2.87	2.98	3.05	3.12	3.19
Usage Charge	5.001	20.000	1.94	2.25	2.45	2.52	2.72	2.80	2.88	3.05	3.14	3.23	3.31	3.39	3.47
Usage Charge	20.001	Above	1.94	2.26	2.45	2.52	2.72	2.80	2.88	3.05	3.14	3.23	3.31	3.39	3.47

W. Residential Outside City

Base Charge	5/8" -- 3/4"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	Usage Charge	2,001	5,000	10,001	20,001
Base Charge	\$ 13.04	\$ 13.95	\$ 15.21	\$ 15.66	\$ 16.92	\$ 17.43	\$ 17.96	\$ 19.04	\$ 19.61	\$ 20.19					
Base Charge	13.04	13.95	15.21	15.66	16.92	17.43	17.96	19.04	19.61	20.19	2.00	2.00	2.00	2.00	2.00
Base Charge	18.05	19.31	21.05	21.88	23.42	24.12	24.84	26.33	27.12	27.93	2.00	2.00	2.00	2.00	2.00
Base Charge	34.29	36.69	41.19	44.49	48.83	50.04	51.54	53.09	54.68	56.27	2.00	2.00	2.00	2.00	2.00
Base Charge	44.99	48.14	52.47	54.05	58.37	60.12	61.92	65.64	67.61	69.63	2.00	2.00	2.00	2.00	2.00
Base Charge	73.80	78.96	86.07	88.65	95.75	98.61	101.57	107.88	110.88	114.21	2.00	2.00	2.00	2.00	2.00
Base Charge	236.22	252.75	275.51	283.77	306.47	315.66	325.13	344.64	354.88	365.63	2.00	2.00	2.00	2.00	2.00
Base Charge	291.35	311.79	339.86	350.06	378.06	389.40	401.09	425.15	437.90	451.04	2.00	2.00	2.00	2.00	2.00
Base Charge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Base Charge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge	-	2.00	3.52	2.57	2.79	2.80	3.11	3.20	3.29	3.48	3.59	3.69	3.80	3.90	4.00
Usage Charge	2.001	5.000	3.90	3.08	3.35	3.45	3.72	3.83	3.95	4.19	4.31	4.44	4.56	4.68	4.80
Usage Charge	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	5.12	5.24
Usage Charge	10.001	Above	3.90	3.38	3.88	3.78	4.08	4.20	4.32	4.58	4.71	4.85	5.00	5.12	5.24

**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. Commercial CHS											
Base Charge 5/8" – 3/4"	\$ 8.89	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge 3/4"	8.89	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	29.68	30.55	31.47	33.36	34.38	35.39	36.45
Base Charge 2"	29.99	32.09	34.88	36.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
Base Charge 3"	49.20	52.04	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	207.66	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
Usage Charge 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
Usage Charge 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
Usage Charge 20,001 - 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

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W. Commercial Submeter											
Base Charge 5/8" – 3/4"	\$ 13.04	\$ 13.95	\$ 15.21	\$ 15.66	\$ 16.92	\$ 17.43	\$ 17.95	\$ 19.04	\$ 19.61	\$ 20.19	\$ 20.78
Base Charge 3/4"	13.04	13.95	15.21	15.66	16.92	17.43	17.95	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	36.09	39.98	41.19	44.48	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	65.04	67.01	69.03	71.12
Base Charge 3"	73.80	78.96	86.07	88.65	95.75	98.81	101.57	107.68	110.88	114.21	117.63
Base Charge 4"	238.22	252.75	275.51	283.77	309.47	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	437.60	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
Usage Charge 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
Usage Charge 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
Usage Charge 20,001 - 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

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W. Industrial CHS											
Base Charge 5/8" – 3/4"	\$ 8.89	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
Base Charge 3/4"	8.89	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	29.68	30.55	31.47	33.36	34.38	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	52.04	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	207.66	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
Usage Charge 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
Usage Charge 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
Usage Charge 20,001 - 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

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
W.C. Industries 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	21.66	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	65.84	67.61	69.63	71.72
Base Charge	3"	73.60	78.66	85.07	88.65	95.75	98.61	101.57	107.69	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	354.88	365.63	378.59
Base Charge	6"	297.39	311.79	338.66	350.06	378.06	389.40	401.09	425.15	437.50	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
Usage Charge	2,001	10,000	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44
Usage Charge	10,001	20,000	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44
Usage Charge	10,001	Above	2.24	2.39	2.60	2.67	2.88	2.97	3.06	3.24	3.33	3.44
W.C. Discretionary 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	26.68	27.46	29.66	30.55	31.47	33.38	34.38	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	229.78	236.65	243.75	251.06
Base Charge	6"	194.26	207.66	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	2.18	2.22	2.29
Usage Charge	2,001	10,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.18	2.22	2.29
Usage Charge	10,001	20,000	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.18	2.22	2.29
Usage Charge	10,001	Above	1.49	1.59	1.73	1.78	1.92	1.98	2.04	2.18	2.22	2.29
W.C. Public Utilities 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	26.68	27.46	29.66	30.55	31.47	33.38	34.38	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	229.78	236.65	243.75	251.06
Base Charge	6"	194.26	207.66	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
Usage Charge	2,001	10,000	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08
Usage Charge	10,001	20,000	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08
Usage Charge	10,001	Above	1.99	2.13	2.32	2.39	2.58	2.66	2.74	2.90	2.99	3.08

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Current 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Scenario	Rate	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
5/8" - 3/4"	Base Charge	\$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	8.88	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	22.86	24.46	26.86	27.46	29.66	30.55	31.47	33.36	34.38	35.39	36.45
	Base Charge	29.99	32.09	34.98	35.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	49.20	52.84	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	157.48	168.50	183.87	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31
		2,001	10,000	1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31
		10,001	20,000	1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31
		10,001	Above	1.53	1.64	1.79	1.84	1.99	2.05	2.11	2.24	2.31

5/8" - 3/4"	Base Charge	\$ 8.69	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	8.88	9.30	10.14	10.44	11.28	11.62	11.97	12.69	13.07	13.46	13.86
	Base Charge	12.03	12.87	14.03	14.45	15.61	16.08	16.56	17.55	18.08	18.62	19.18
	Base Charge	22.86	24.46	26.86	27.46	29.66	30.55	31.47	33.36	34.38	35.39	36.45
	Base Charge	29.99	32.09	34.98	35.03	38.91	40.08	41.28	43.76	45.07	46.42	47.81
	Base Charge	49.20	52.84	57.38	59.10	63.83	65.74	67.71	71.77	73.92	76.14	78.42
	Base Charge	157.48	168.50	183.87	189.18	204.31	210.44	216.75	229.76	236.65	243.75	251.06
	Base Charge	194.26	207.86	226.57	233.37	252.04	259.60	267.39	283.43	291.93	300.69	309.71
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02
		2,001	10,000	1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02
		10,001	20,000	1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02
		10,001	Above	1.35	1.44	1.57	1.62	1.75	1.80	1.85	1.96	2.02

5/8" - 3/4"	Base Charge	\$ -	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Base Charge	-	-	-	-	-	-	-	-	-	-	-
	Usage Charge	-	2,000	-	-	-	-	-	-	-	-	-
		2,001	10,000	-	-	-	-	-	-	-	-	-
		10,001	20,000	-	-	-	-	-	-	-	-	-
		10,001	Above	-	-	-	-	-	-	-	-	-

CITY CORPORATION -- RUSSELLVILLE WATER/WASTEWATER COST OF SERVICE MODEL											
Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Outlet		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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		2,001	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		10,001	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		10,001	Above	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		2,001	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		10,001	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		10,001	Above	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		2,001	10,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		10,001	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Usage Charge		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 County											
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	1,740	1,740	1,908	1,967	2,020	2,082	2,143	2,204	2,278
	2,001	10,000	1,740	1,740	1,908	1,967	2,020	2,082	2,143	2,204	2,278
	10,001	20,000	1,740	1,740	1,908	1,967	2,020	2,082	2,143	2,204	2,278
	10,001	Above	1,740	1,740	1,908	1,967	2,020	2,082	2,143	2,204	2,278

Wastewater Monthly Charges

	Annual Adjustment	Draft Rpt	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1 Residential City	22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW2 Residential Outside City	na	na	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW3 Commercial City	22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW4 Commercial Outside City	na	na	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW5 Industrial City	22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW6 Industrial Outside City	na	na	18.50%	7.50%	7.50%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
WW7 Ind. Discounts City	22.50%	22.50%	18.50%	7.50%	7.50%	3.00%	3.00%	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%	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	4.85	5.32	5.48	5.64	5.81	6.16
	20,001	Above	2.20	2.70	3.31	3.92	4.21	4.53	4.67	4.81	4.95	5.25

WW2 Residential Outside City

Base Charge		\$ 10.01	\$ 12.26	\$ 15.02	\$ 17.76	\$ 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	9.24
	20,001	Above	3.30	4.05	4.97	5.88	6.32	6.80	7.01	7.22	7.43	7.85



CITY CORPORATION -- RUSSELLVILLE											
WATER/WASTEWATER COST OF SERVICE MODEL											
	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

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 20,001	20,000 Above	2.59 2.20	3.17 2.70	3.88 3.31	4.60 3.92	4.95 4.21	5.32 4.53	5.48 4.67	5.64 4.81	5.81 4.95	5.98 5.10	6.16 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 20,001	20,000 Above	3.89 3.30	4.76 4.05	5.82 4.97	6.90 5.88	7.43 6.32	7.98 6.80	8.22 7.01	8.46 7.22	8.72 7.43	8.97 7.65	9.24 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 20,001	20,000 Above	2.59 2.20	3.17 2.70	3.88 3.31	4.60 3.92	4.95 4.21	5.32 4.53	5.48 4.67	5.64 4.81	5.81 4.95	5.98 5.10	6.16 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 20,001	20,000 Above	3.89 3.30	4.76 4.05	5.82 4.97	6.90 5.88	7.43 6.32	7.98 6.80	8.22 7.01	8.46 7.22	8.72 7.43	8.97 7.65	9.24 7.88
WW7 Ind. Discounts City													
Base Charge		-15.8%	\$ (1.05)	\$ (1.29)	\$ (1.58)	\$ (1.87)	\$ (2.01)	\$ (2.16)	\$ (2.22)	\$ (2.29)	\$ (2.36)	\$ (2.43)	\$ (2.50)
Usage Charge	1,001 20,001	20,000 Above	\$ (0.41) \$ (0.35)	\$ (0.50) \$ (0.43)	\$ (0.61) \$ (0.53)	\$ (0.72) \$ (0.63)	\$ (0.77) \$ (0.68)	\$ (0.83) \$ (0.73)	\$ (0.85) \$ (0.75)	\$ (0.88) \$ (0.77)	\$ (0.91) \$ (0.79)	\$ (0.94) \$ (0.81)	\$ (0.97) \$ (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 20,001	20,000 Above	2.59 2.20	3.17 2.70	3.88 3.31	4.60 3.92	4.95 4.21	5.32 4.53	5.48 4.67	5.64 4.81	5.81 4.95	5.98 5.10	6.16 5.25

CITY CORPORATION -- RUSSELLVILLE
WATERWASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
 Scen: 2014 12 12 -- Scen 2 -- Conservation

Summary of Financial Data Calculation

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue Less Revenue Requirement	571,205	(520,661)	(299,674)	994,418	479,018	517,220	625,993	764,105	801,408	927,183	1,048,888
Water	146,682	(488,635)	440,757	1,121,187	498,482	735,742	812,426	904,289	997,183	1,088,283	1,248,888
Wastewater	424,523	(33,026)	(140,421)	(127,769)	(21,566)	(118,520)	(139,931)	(140,184)	(150,275)	(161,100)	(170,000)
Total	146,682	(421,661)	300,336	994,418	479,018	517,220	625,993	764,105	801,408	927,183	1,048,888
Rate	7.5%	-9.2%	1.2%	10.0%	8.7%	8.5%	8.0%	7.5%	7.0%	6.5%	6.0%

Debt Coverage Calculation

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water	1.61	1.97	2.07	1.47	1.47	1.49	1.54	1.60	1.62	1.64	1.64
Wastewater	2.01	1.01	1.45	1.79	1.30	1.40	1.25	1.28	1.31	1.33	1.33
Total	3.63	2.98	3.52	3.26	2.77	2.89	2.79	2.88	2.93	2.97	2.97

Residential

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	1,074,642	1,101,764	1,238,207	1,304,167	1,383,270	1,427,784	1,491,908	1,565,312	1,618,291	1,666,678	1,666,678
Volume Charge	2,187,308	2,358,988	2,513,538	2,647,238	2,805,898	2,894,322	3,170,980	3,222,971	3,271,703	3,322,483	3,375,483
Total	2,155,402	2,225,402	2,296,931	2,371,217	2,449,590	2,530,503	2,613,045	2,765,082	3,022,153	3,222,757	3,222,757

Residential - Scen 2

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	80,464	87,009	92,739	97,676	103,600	108,934	114,737	117,235	120,978	124,627	124,627
Volume Charge	113,530	101,638	114,018	120,784	124,900	129,978	136,311	140,820	145,068	149,895	149,895
Total	194,014	188,645	201,000	211,092	224,354	231,433	241,714	253,446	261,598	268,895	268,895

Commercial

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	289,280	191,691	205,043	216,825	230,889	239,258	250,983	264,354	273,847	283,817	283,817
Volume Charge	518,950	592,285	601,323	635,485	676,588	701,038	735,547	775,587	803,900	832,499	832,499
Total	808,230	783,976	806,366	852,310	907,477	940,296	986,530	1,039,941	1,077,746	1,116,128	1,116,128

Commercial - Outside City

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	4,283	3,141	3,241	3,512	3,718	3,830	3,994	4,182	4,207	4,435	4,435
Volume Charge	9,761	10,512	11,175	11,738	12,424	12,797	13,348	13,993	14,420	14,848	14,848
Total	14,054	13,654	14,416	15,251	16,142	16,627	17,342	18,175	18,727	19,282	19,282

Commercial - Industrial

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	45,233	3,233	9,978	11,157	11,810	12,166	12,687	13,285	13,882	14,080	14,080
Volume Charge	728,293	846,858	899,688	944,528	999,331	1,030,159	1,073,822	1,122,642	1,135,927	1,153,011	1,191,578
Total	833,196	850,091	910,183	955,683	1,011,141	1,042,325	1,086,519	1,135,927	1,169,293	1,205,660	1,205,660

Commercial - Industrial - Outside City

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	5,320	1,216	1,293	1,360	1,439	1,482	1,540	1,619	1,661	1,717	1,717
Volume Charge	167,249	201,511	214,042	224,739	237,770	245,114	255,906	267,120	274,964	283,523	283,523
Total	192,569	202,727	215,335	226,099	239,218	246,597	257,052	268,738	276,631	285,239	285,239

Commercial - Ind. Discounts

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	-	-	-	-	-	-	-	-	-	-	-
Volume Charge	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-

Public Authorities

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	61,481	24,530	26,217	27,667	28,445	30,474	31,927	33,588	34,749	35,947	35,947
Volume Charge	202,386	219,323	234,323	247,450	263,123	272,440	285,219	299,891	310,498	321,190	321,190
Total	263,867	243,853	260,540	275,117	291,568	302,913	317,146	333,477	345,247	357,137	357,137

Municipal

Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base Charge	1,270	347	370	388	411	424	442	463	476	491	491
Volume Charge	52,152	56,344	59,930	62,983	66,688	68,672	71,923	75,098	77,415	79,731	79,731
Total	53,421	56,692	60,299	63,372	67,099	69,096	72,065	75,661	77,691	80,222	80,222



CITY CORPORATION -- RUSSELLVILLE											
WATER/WASTEWATER COST OF SERVICE MODEL											
	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Category	Sub-Category	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	\$ 483	\$ 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	\$ 1,157,899	\$ 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	\$ 1,157,899	\$ 1,193,366	\$ 1,230,455	\$ 1,269,355	\$ 1,310,160	
Total Water Revenue		\$ 5,510,136	\$ 6,671,084	\$ 8,043,865	\$ 8,339,887	\$ 8,688,805	\$ 8,902,485	\$ 7,195,628	\$ 7,527,768	\$ 7,769,180	\$ 8,020,239	

CITY CORPORATION - RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Input Area -- Rate Calculator											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
<u>Less Revenues to be Raised from Rates:</u>											
W.1 Residential City	\$ 2,091,679	\$ 2,701,420	\$ 2,767,960	\$ 2,259,088	\$ 2,682,399	\$ 2,759,914	\$ 2,841,496	\$ 2,827,371	\$ 3,017,777	\$ 3,112,968	
W.2 Residential Outside City	149,663	191,132	195,703	158,418	188,894	194,220	189,825	205,725	211,836	218,475	
W.3 Commercial City	434,221	573,176	588,841	474,740	570,638	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	938,668	731,995	887,043	907,516	929,097	951,754	975,839	1,000,783	
W.6 Industrial Outside City	202,870	271,675	277,182	217,687	262,955	269,210	278,794	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	363,028	373,814	385,167	397,110	409,702	
W.9 Municipal City	75,438	101,194	103,161	81,022	97,825	100,144	102,586	105,156	107,882	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	180	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	1,078,590	1,110,404	1,143,555	1,178,220	1,214,570	1,252,683	1,292,681	1,334,630	
Sub-Total	4,938,931	6,191,748	6,342,639	5,345,288	6,269,786	6,385,175	6,569,636	6,763,883	6,967,733	7,182,550	
<u>Rate Revenue Less RRRR:</u>											
W.1 Residential City	\$ 95,629	\$(342,422)	\$(254,421)	\$ 388,153	\$ 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	35,480	37,213	41,688	47,821	49,662	51,420	
W.3 Commercial City	353,988	180,710	217,526	377,580	336,820	351,669	378,070	412,450	429,270	445,530	
W.4 Commercial Outside City	(126)	(5,099)	(4,022)	24	(2,121)	(2,090)	(1,852)	(1,522)	(1,499)	(1,501)	
W.5 Industrial City	150,668	(84,434)	(28,485)	223,689	124,098	134,809	157,452	184,173	193,654	204,893	
W.6 Industrial Outside City	(10,302)	(89,148)	(61,847)	8,212	(23,736)	(22,613)	(18,742)	(13,986)	(13,390)	(12,483)	
W.7 Ind. Discounts City	-	-	-	-	-	-	-	-	-	-	
W.8 Public Authorities City	15,948	(114,592)	(106,808)	(16,709)	(60,204)	(60,112)	(59,668)	(51,690)	(51,672)	(52,565)	
W.9 Municipal City	(22,007)	(44,502)	(42,892)	(17,671)	(30,727)	(31,049)	(30,521)	(29,555)	(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)	(180)	(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	471,265	(500,462)	(298,974)	584,418	278,516	317,320	425,393	484,167	501,408	537,639	

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Input Area -- Rate Calculator											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
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	1,545,094	1,666,021	1,762,466	1,819,072	1,876,807	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	\$ 85,162	\$ 88,025	\$ 90,942
	Volume Charge	48,558,723	59,657	72,185	82,184	88,653	93,878	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	\$ 231,336	\$ 240,035	\$ 249,096	\$ 258,429
	Volume Charge	847,980	799,369	972,267	1,111,737	1,204,466	1,281,164	1,329,473	1,378,877	1,430,491	1,485,866
	Total	760,783	939,149	1,141,559	1,305,266	1,414,138	1,504,152	1,560,809	1,619,012	1,679,497	1,742,116
WW4 Commercial Outside City	Base Charge	\$ 525	\$ 643	\$ 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	3,948	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	1,462,777	1,768,816	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	1,468,398	1,769,697	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	68,965	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	(51,593)	(63,057)	(75,814)	(85,691)	(91,875)	(96,970)	(99,741)	(103,125)	(106,508)	(109,891)
	Total	(51,681)	(63,158)	(75,937)	(85,830)	(92,125)	(97,128)	(99,803)	(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	207,250	259,738	310,435	354,165	383,021	407,027	421,630	437,818	452,840	468,022
	Total	221,373	277,148	331,565	378,284	409,111	434,733	450,334	467,559	483,661	500,953
Total WW Rate Revenues		4,050,411	4,977,387	6,021,043	6,846,283	7,384,194	7,816,350	8,075,640	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

Less Revenues to be Raised from Rates:

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Residential City	\$	1,354,207	\$ 1,627,372	\$ 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	82,483	89,132	91,327	93,632	96,053
Commercial City		674,086	953,808	981,880	1,011,206	1,234,807	1,268,058	1,380,774	1,417,068	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	2,968	3,028
Industrial City		1,236,793	1,760,598	1,798,801	1,834,699	2,236,783	2,277,998	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	43,118	46,855	47,513	48,416	49,362
Ind. Discounts City		285,381	420,532	428,198	438,292	534,326	544,168	588,892	599,682	611,021	622,939
Public Authorities		218,651	311,436	319,913	328,797	402,364	412,401	449,765	459,851	471,488	483,678
Sub-Total		3,892,048	5,372,864	5,504,350	5,642,286	6,833,604	6,985,480	7,583,513	7,730,828	7,906,484	8,090,923

Rate Revenue Less RARR:

Residential City	\$	373,463	\$ 283,324	\$ 688,638	\$ 890,311	\$ 841,484	\$ 968,503	\$ 888,485	\$ 937,880	\$ 988,282	\$ 1,038,702
Residential Outside City		42,724	46,653	68,124	84,795	83,521	91,195	90,308	94,029	97,885	101,764
Commercial City		85,797	(14,750)	159,678	284,060	179,329	236,096	180,935	201,344	233,173	245,274
Commercial Outside City		1,098	1,059	1,855	2,113	1,880	2,180	2,123	2,215	2,309	2,405
Industrial City		(23,241)	(272,107)	(1,104)	291,138	(48,281)	33,835	(82,934)	(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		(347,092)	(483,690)	(505,134)	(524,121)	(626,451)	(641,294)	(688,784)	(702,973)	(717,701)	(733,007)
Public Authorities		2,728	(38,288)	11,652	49,488	6,726	22,332	1,888	11,973	11,177	11,177
		148,682	(458,835)	440,757	1,121,167	458,482	735,742	412,425	504,295	587,163	690,400

Rate Revenue Less Revenue Rqmt.		148,682	(458,835)	440,757	1,121,167	458,482	735,742	412,425	504,295	587,163	690,400
--	--	----------------	------------------	----------------	------------------	----------------	----------------	----------------	----------------	----------------	----------------

WATER Customers - 2014 Q4 Data

Net Annual Volume after Minimum (000 gal)

W.1 Residential	City	Rates		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	-	2,000	50.0%	297,041	297,634	288,228	298,821	299,414	300,005	300,591	301,194	301,788	302,381
	2,001	5,000	20.0%	118,816	119,054	118,291	119,528	119,766	120,003	120,240	120,478	120,715	120,952
	5,001	20,000	25.0%	148,521	148,917	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 =	4,946	100.0%	594,082	595,269	596,455	597,042	598,829	600,015	601,202	602,389	603,575	604,762
W.2 Residential	Outside City												
	-	2,000	50.0%	18,811	18,845	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 =	5,685	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	42,765	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	290,478	292,201	293,925	295,649	297,374	299,098

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Input Area -- Rate Calculator											
Scen: 2014 12 12 -- Scen 2 -- Conservation											
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
2,001	10,000	40.0%	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
10,001	Above	15.0%	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
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
2,001	10,000	25.0%	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
10,001	Above	45.0%	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208	231,208
Avg Mthly Usage =	488,900	100.0%	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
2,001	10,000	10.0%	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
10,001	Above	75.0%	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
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
2,001	10,000	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640
10,001	20,000	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640
10,001	Above	25.0%	24,703	24,820	24,937	25,054	25,171	25,288	25,405	25,523	25,640
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
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
2,001	10,000	10.0%	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
10,001	Above	75.0%	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
W.10 Fire Protection	City										
-	2,000	30.0%	73	73	73	73	73	73	73	73	73
2,001	10,000	40.0%	97	97	97	97	97	97	97	97	97
10,001	20,000	15.0%	36	36	36	36	36	36	36	36	36
10,001	Above	15.0%	36	36	36	36	36	36	36	36	36
Avg Mthly Usage =	8,368	100.0%	242	242	242	242	242	242	242	242	242
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%	-	-	-	-	-	-	-	-	-

			CITY CORPORATION -- RUSSELLVILLE WATER/WASTEWATER COST OF SERVICE MODEL										
			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Input Area -- Rate Calculator													
Scen: 2014 12 12 -- Scen 2 -- Conservation													
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
		2,001	10,000	1.0%	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
		10,001	Above	97.0%	533,247	533,247	533,247	533,247	533,247	533,247	533,247	533,247	533,247
		Avg Mthly Usage =	6,544,612	100.0%	549,739	549,739	549,739	549,739	549,739	549,739	549,739	549,739	549,739
Total				2,192,021	2,195,466	2,198,916	2,202,362	2,205,809	2,209,256	2,212,703	2,216,149	2,219,596	2,223,043
				2,192,021	2,195,466	2,198,916	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
 Scn: 2014 12 12 -- Scn 2 -- Conservation

Rate	Category	City	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W1	Residential	City	120,150	120,350	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	120,350	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	120,350	120,630	120,870	121,110	121,350	121,590	121,830	122,070	122,310	
W2	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			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scen: 2014 12 12 -- Scen 2 -- Conservation													
W.3	Commercial	City											
		5/8"	19,735	19,855	19,975	20,095	20,215	20,335	20,455	20,575	20,695	20,815	
		3/4"	90.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	
		1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
		1 1/2"	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											
		5/8"	217	217	217	217	217	217	217	217	217	217	
		3/4"	90.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	
		1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
		1 1/2"	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
WATERWASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scen: 2014 12 12 -- Scen 2 -- Conservation													
W5	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
W6	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

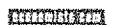
CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator			Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scen: 2014 12 12 -- Scen 2 -- Conservation													
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											
		5/8"	2,530	2,542	2,554	2,566	2,578	2,590	2,602	2,614	2,626	2,638	
		3/4"	40.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	
		1"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
		1 1/2"	20.000%	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"	10.000%	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		Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Scen: 2014 12 12 -- Scen 2 -- Conservation												
W9	Municipal	City	38	38	38	38	38	38	38	38	38	38
		5/8"	50.000%	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"	10.000%	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"	10.000%	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%
		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"	18	38	38	38	38	38	38	38	38	38
		3/4"	-	-	-	-	-	-	-	-	-	-
		1"	4	-	-	-	-	-	-	-	-	-
		1 1/2"	4	-	-	-	-	-	-	-	-	-
		2"	4	-	-	-	-	-	-	-	-	-
		3"	4	-	-	-	-	-	-	-	-	-
		4"	4	-	-	-	-	-	-	-	-	-
		6"	-	-	-	-	-	-	-	-	-	-
		8"	-	-	-	-	-	-	-	-	-	-
		10"	-	-	-	-	-	-	-	-	-	-
			38	38	38	38	38	38	38	38	38	38
W10	Fire Protection	City	38	38	38	38	38	38	38	38	38	38
		5/8"	0.000%	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"	100.000%	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"	-	38	38	38	38	38	38	38	38	38
		3/4"	-	-	-	-	-	-	-	-	-	-
		1"	-	-	-	-	-	-	-	-	-	-
		1 1/2"	-	-	-	-	-	-	-	-	-	-
		2"	-	-	-	-	-	-	-	-	-	-
		3"	-	-	-	-	-	-	-	-	-	-
		4"	-	-	-	-	-	-	-	-	-	-
		6"	38	-	-	-	-	-	-	-	-	-
		8"	-	-	-	-	-	-	-	-	-	-
		10"	-	-	-	-	-	-	-	-	-	-
			38	38	38	38	38	38	38	38	38	38



CITY CORPORATION -- RUSSELLVILLE											
WATER/WASTEWATER COST OF SERVICE MODEL											
Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Input Area -- Rate Calculator
 Scen: 2014 12 12 -- Scen 2 -- Conservation

0	Other	City	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%
		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"	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
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%
		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"	-	-	-	-	-	-	-	-	-	-
		3/4"	-	-	-	-	-	-	-	-	-	-
		1"	-	-	-	-	-	-	-	-	-	-
		1 1/2"	-	-	-	-	-	-	-	-	-	-
		2"	-	-	-	-	-	-	-	-	-	-
		3"	-	-	-	-	-	-	-	-	-	-
		4"	-	-	-	-	-	-	-	-	-	-
		6"	-	-	-	-	-	-	-	-	-	-
		8"	-	-	-	-	-	-	-	-	-	-
		10"	-	-	-	-	-	-	-	-	-	-



CITY CORPORATION -- RUSSELLVILLE
WATER/SEWER COST OF SERVICE MODEL

City	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
5/8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
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%
Other	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

City	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%
5/8"	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
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%
Other	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

CITY CORPORATION -- RUSSELLVILLE
WATER/WASTEWATER COST OF SERVICE MODEL

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

WASTEWATER -- Customer & Usage Data

Customer Class Units -- Net Usage After Minimum (000 gallons)

	Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1 Residential City	338,760	339,491	340,222	340,953	341,684	342,415	343,146	343,878	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:

Customer Class	Units	Usage	Percentage	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	343,878	344,607	345,338
	Avg Mthly Usage =	4,046											
WW2 Residential Outside City	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	80%	148,033	147,166	146,299	145,433	144,566	143,700	142,833	141,967	141,100	140,233
	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 =	19,740											
WW4 Commercial Outside City	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 =	198,063											
WW7 Ind. Discounts City	1,001	20,000	60%	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 =	1,853,553											
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	76,588	77,062	77,536	78,010	78,473	78,945	79,418	79,890	80,363
	Total			84,571	85,095	85,619	86,144	86,668	87,192	87,716	88,240	88,765	89,289
	Avg Mthly Usage =	44,863											
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										
Current	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Input Area -- Rate Calculator
Scen: 2014 12 12 -- Scen 2 -- Conservation

Customer Class	Units	Total Bill	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		3,765	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	133,685	133,969	134,353	134,737	135,121	135,505	135,889	136,273	136,657

Test Year 2016	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL					
	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

Account	Description	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
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

Test Year 2015	CITY CORPORATION -- RUSSELLVILLE					
	WATER/WW COST OF SERVICE MODEL					
	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

OPERATING EXPENSES

Water Division

0	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	-	-
		169,313	169,313	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/ano	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			



Test Year 2016	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL					Customer Billing
	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	

Test Year W 1.0 -- Water Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

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	442,615	64,841

Test Year 2015	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL					Customer Billing
	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	

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
	Total	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	CWMP FUTA Exp	-	-	-	-	-	-
01.01.927000	CWMP 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	-



Test Year 2015	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL					
	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

DEPRECIATION AND AMORTIZATION						
01.01.426000	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	\$ 3,591,863	\$ 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	\$ -	\$ -
------------	--------------	--------------	------------	------------	------	------



Test Year	CITY CORPORATION -- RUSSELLVILLE					
2015	WATER/WW COST OF SERVICE MODEL					
	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing

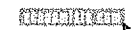
Test Year W 1.0 -- Water Department Cost Functionalization
 Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- CURRENT

1	<u>2013 Bond</u>						
	Principal	\$ 614,297	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	223,224	-	-	-	-	-
	Sub-Total	837,521	-	-	-	-	-
2	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
3	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
4	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
5	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
6	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
7	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
8	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-

TOTAL CURRENT DEBT SERVICE

Principal	\$ 614,297	\$ -	\$ -	\$ -	\$ -	\$ -
Interest	-	-	-	-	-	-
Reserve	223,224	-	-	-	-	-
TOTAL	837,521	-	-	-	-	-
Cash Basis	\$ 837,521	\$ -	\$ -	\$ -	\$ -	\$ -



Test Year 2015	Total Revenue Requirement	Water Revenue Requirement	Treatment	Distribution	Admin	Customer Billing
-------------------	---------------------------------	---------------------------------	-----------	--------------	-------	---------------------

**CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL**

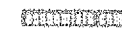
Test Year W 1.0 -- Water Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- FUTURE

Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Interest	-	-	-	-	-	-
Reserve	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-
Cash Basis	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Utility Basis	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

TOTAL EXPENSES

Cash Basis	\$ 6,085,384	\$ 5,347,863	\$ 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					
	Base Annual Use	Base Daily Average	Capacity Factor	Max Day Total Capacity	Extra Capacity	Water Bills

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					
W.1	Residential	City	594,082,000	1,627,822	150	2,434,058	806,436	120,150
W.2	Residential	Outside City	33,622,000	92,115	169	156,081	63,968	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	162,458	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	30,608	36
W.10	Fire Protection	City	242,000	663	446	2,958	2,298	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	149,967

Allocation Factors		
Base		100.00%
Maximum Day		50.00%
Maximum Hour		25.00%
		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%
0	Other	City		0.00%	0.00%	0.00%
W.11	Tri County	Outside City		25.06%	34.40%	0.06%
Total System				100.00%	100.00%	100.00%

SOURCE: Volume Input spreadsheet

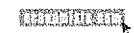


Test Year 2015	CITY CORPORATION -- RUSSELLVILLE								
	WATER/WW COST OF SERVICE MODEL								
	Base	Max Day	Max Hour	Cust Billing	Total Water	Base	Max Day	Max Hour	Cust Billing

Test Year W 3.0 -- Water Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

CASH BASIS

	Base	Max Day	Max Hour	Cust Billing	Total Water	Base	Max Day	Max Hour	Cust Billing
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	0.00%	1,870,358	0.00%
	100.00%	25.00%	75.00%	0.00%				75.00%	
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	0.00%	0.00%
	100.00%	50.00%	0.00%	0.00%			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	0.00%	0.00%	0.00%	443,704
	100.00%	0.00%	0.00%	100.00%			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%	(308,932)	(94,751)	(50,709)	(132,127)	(31,345)
CASH BASIS -- WATER COST CLASSIFICATION					\$ 4,938,931	\$ 1,514,799	\$ 810,687	\$ 2,112,337	\$ 501,108



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	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

NON-RATE REVENUES

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
Other Revenue (Sales of Supplies)		-		-		-		-		-
London/Ark Nuclear One Revenue		13,282		13,580		14,091		14,514		14,949
Tapping Fees		26,500		27,295		28,114		28,957		29,826
Other Service Fees		-		-		-		-		-
Cross Connection Fees		-		-		-		-		-
Solid Waste Fees		64,200		66,126		68,110		70,153		72,258
Interest Income		19,200		19,776		20,369		20,980		21,610
Misc. Non-Operating Revenue		11,750		12,103		12,466		12,840		13,226
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 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
OPERATING EXPENSES										
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
01.01.600000	5,574	5,853	6,145	6,453	6,775	7,114	7,470	7,843	8,235	8,647
01.01.601000	1,764	2,042	2,184	2,364	2,514	2,684	2,864	3,044	3,224	3,404
01.01.602000	3,913	4,030	4,151	4,272	4,394	4,515	4,636	4,757	4,878	5,000
01.01.603000	70,960	74,809	78,457	82,502	86,757	91,234	95,932	100,860	106,031	111,550
01.01.604000	2,220	2,334	2,455	2,581	2,715	2,855	3,002	3,157	3,319	3,490
01.01.605000	1,950	2,051	2,156	2,268	2,384	2,507	2,637	2,773	2,916	3,066
01.01.606000	22,872	24,016	25,216	26,477	27,801	29,191	30,651	32,183	33,792	35,482
01.01.607000	2,880	2,971	3,065	3,161	3,261	3,364	3,470	3,578	3,688	3,800
01.01.608000	9,477	9,776	10,085	10,405	10,732	11,076	11,436	11,812	12,204	12,612
01.01.609000	9,817	10,504	11,239	12,026	12,868	13,769	14,733	15,764	16,867	18,046
01.01.610000	960	990	1,022	1,054	1,087	1,121	1,157	1,193	1,231	1,270
01.01.611000	1,350	1,393	1,437	1,482	1,529	1,577	1,627	1,678	1,731	1,786
01.01.612000	-	-	-	-	-	-	-	-	-	-
01.01.613000	-	-	-	-	-	-	-	-	-	-
01.01.614000	-	-	-	-	-	-	-	-	-	-
01.01.615000	-	-	-	-	-	-	-	-	-	-
01.01.616000	-	-	-	-	-	-	-	-	-	-
01.01.617000	-	-	-	-	-	-	-	-	-	-
01.01.618000	-	-	-	-	-	-	-	-	-	-
01.01.619000	-	-	-	-	-	-	-	-	-	-
01.01.620000	-	-	-	-	-	-	-	-	-	-
Total	159,313	166,748	174,852	182,732	191,367	200,316	209,776	219,893	230,110	241,046
01.01.621000	124,493	130,913	137,665	144,764	152,228	160,078	168,331	177,010	186,136	195,722
01.01.622000	3,000	3,155	3,317	3,488	3,668	3,858	4,056	4,258	4,485	4,717
01.01.623000	264	278	292	307	323	339	357	375	395	415
01.01.624000	-	-	-	-	-	-	-	-	-	-
01.01.625000	1,080	1,114	1,149	1,186	1,223	1,262	1,301	1,342	1,385	1,429
01.01.626000	5,574	5,853	6,145	6,453	6,775	7,114	7,470	7,843	8,235	8,647
01.01.627000	14,426	15,436	16,516	17,672	18,910	20,233	21,650	23,165	24,787	26,522
01.01.628000	28,918	30,934	33,059	35,416	37,895	40,548	43,385	46,423	49,673	53,150
01.01.629000	9,901	10,594	11,338	12,129	12,978	13,889	14,869	15,929	17,072	18,293
01.01.630000	5,700	5,880	6,066	6,257	6,455	6,658	6,868	7,085	7,309	7,539
01.01.631000	18,301	18,879	19,475	20,090	20,724	21,378	22,052	22,748	23,466	24,207
01.01.632000	300	309	319	329	340	350	361	373	385	397
01.01.633000	211,949	223,344	236,379	248,091	261,519	275,704	290,693	306,650	323,687	340,956
Total	1,216,383	1,269,279	1,324,859	1,382,646	1,443,376	1,506,982	1,573,616	1,643,430	1,716,687	1,793,260
01.01.640000	243,640	255,831	268,623	282,054	296,157	310,965	326,513	342,839	359,981	377,980
01.01.641000	369,840	381,517	393,561	405,985	418,800	432,018	445,643	459,717	474,223	489,187
01.01.642000	9,670	9,975	10,315	10,615	10,950	11,296	11,652	12,020	12,399	12,790
01.01.643000	31,434	33,006	34,656	36,389	38,208	40,119	42,125	44,231	46,442	48,764
01.01.644000	204,175	214,705	226,777	239,420	249,663	262,538	276,072	290,306	305,273	321,010
01.01.645000	26,140	28,819	31,773	35,026	38,682	42,752	47,240	52,152	57,492	63,266
01.01.646000	109,415	117,074	125,269	134,038	143,421	153,450	164,202	175,697	187,995	201,155
01.01.647000	35,442	37,214	39,075	41,029	43,080	45,234	47,486	49,870	52,384	54,982
01.01.648000	18,850	19,445	20,059	20,692	21,345	22,019	22,714	23,431	24,170	24,933
01.01.649000	166,648	171,509	177,337	183,135	188,709	194,695	200,609	207,146	213,683	220,425
01.01.650000	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	1,324,859	1,382,646	1,443,376	1,506,982	1,573,616	1,643,430	1,716,687	1,793,260

Forecast
2015-2024

CITY CORPORATION -- RUSSELLVILLE
WATERMW COST OF SERVICE MODEL

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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
TRANSMISSION AND DISTRIBUTION EXPENSES										
01.01.660000 Supervision - T&D	8,796	9,236	9,686	10,182	10,692	11,226	11,787	12,377	12,995	13,645
01.01.662100 Employee Benefits - T&D	2,855	3,269	3,669	3,497	3,742	4,004	4,285	4,585	4,906	5,248
01.01.662100 Labor - Overhead	-	-	-	-	-	-	-	-	-	-
01.01.662200 Materials - T&D	6,000	6,189	6,365	6,586	6,794	7,009	7,230	7,458	7,693	7,936
01.01.666000 Safety Equipment & Supplies	3,930	4,023	4,150	4,281	4,416	4,558	4,698	4,844	4,991	5,139
01.01.903400 Computer Expense	953	862	1,041	1,073	1,105	1,137	1,169	1,201	1,233	1,265
01.01.903600 Training Exp	8,592	8,850	9,115	9,393	9,670	9,960	10,259	10,567	10,884	11,211
01.01.921000 Office Supplies & Stationery	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	4,844	5,092	5,402	5,731	6,084	6,461	6,862	7,289	7,743
01.01.921600 Transportation	39,000	40,170	41,375	42,616	43,895	45,212	46,568	47,965	49,404	50,886
01.01.921800 Travel and Personal	6,000	6,180	6,365	6,556	6,753	6,956	7,164	7,379	7,601	7,829
01.01.921700 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	97,433	100,732	104,162	107,719	111,406	115,231

MAINTENANCE EXPENSE

01.01.670000 Safety Equipment	960	1,022	1,087	1,054	1,087	1,121	1,157	1,193	1,231	1,270
01.01.670000 Supervision - Maintenance	8,796	9,236	9,686	10,182	10,692	11,226	11,787	12,377	12,995	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	89,000	102,126	116,075	130,875	146,625	163,325	181,075	199,875	219,725	240,625
01.01.673300 O/S Cont - Maint of Trans. Main	18,000	18,568	19,155	19,759	20,383	21,025	21,690	22,374	23,080	23,819
01.01.675100 Labor - Maint of Services	126,260	132,873	139,220	146,162	153,470	161,143	169,200	177,660	186,544	195,871
01.01.675200 Materials - Maint of Services	57,208	60,877	64,799	68,926	73,349	78,069	83,084	88,404	94,029	99,969
01.01.676100 Labor - Maint of Meters	36,877	38,721	40,657	42,689	44,814	47,035	49,354	51,772	54,289	56,907
01.01.676200 Materials - Maint of Meters	23,964	25,318	26,784	28,261	29,849	31,549	33,361	35,286	37,324	39,475
01.01.676300 O/S Cont - Maint of Meters	5,000	5,163	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	17,673	18,543	19,447	20,386	21,360	22,369	23,414
01.01.677200 Materials - Maint of Hydrants	3,300	3,407	3,518	3,633	3,751	3,873	3,999	4,129	4,263	4,402
01.01.690000 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	1,549	1,594	1,642	1,691	1,742
01.01.921100 Office Supplies and Stationery	920	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	698	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	640	655	671	688	706	724	743	763	784	806
Total	665,438	696,862	729,882	764,585	801,061	839,408	879,728	923,128	966,725	1,013,837

CUSTOMER ACCOUNT EXPENSES

01.01.666000 Safety Equipment and Supplies	59,388	62,357	65,475	68,749	72,186	75,796	79,586	83,565	87,743	92,130
01.01.902100 Supervision - Customer Accounts	31,029	32,560	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	92,862	97,631	102,513	107,638	113,020	118,671	124,605	130,835	137,377	144,246
01.01.903100 Labor Customer Records	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	41,461	42,726	44,067	45,428	46,887	48,388	49,931	51,517
01.01.903600 Training Costs	2,486	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	31	31
01.01.910100 Employee Benefits - Cust Acct	59,604	63,776	68,241	73,017	78,129	83,598	89,421	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	2,968	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	2,950	2,985	3,018	3,051	3,085	3,119	3,154	3,189	3,225	3,277
01.01.923000 Outside Services	63,600	65,908	68,497	71,382	74,559	78,027	81,786	85,837	90,182	94,824
01.01.923000 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	396,186	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

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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ADMIN AND GENERAL EXPENSES										
01.01.950000 Safety Equipment and Supplies	330	341	352	363	375	387	413	426	440	
01.01.903300 Postage	5,480	5,558	5,643	5,833	6,229	6,432	6,541	7,380	7,310	
01.01.903400 Computer	43,947	45,265	46,623	48,072	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	76,684	77,517	78,368	79,236	80,122	81,026	81,948	82,888	83,846
01.01.920200 Salaries - Accounting	59,195	60,155	61,165	62,225	63,335	64,495	65,705	66,965	68,275	69,635
01.01.920300 Salaries - Other	52,862	53,905	55,000	56,147	57,346	58,597	59,900	61,255	62,662	64,121
01.01.920400 Salaries - Engineering	165,405	173,875	182,359	191,477	201,051	211,103	221,638	244,378	255,597	
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	8,250	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	122,859	131,470	140,673	150,520	161,056	172,330	184,393	197,301	211,112
01.01.921900 Payroll Tax	-	-	-	-	-	-	-	-	-	-
01.01.922000 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 Incentives	67,952	69,970	72,069	74,231	76,458	78,752	81,114	83,549	86,054	88,630
01.01.926000 Payroll Penny Round Off	-	-	-	-	-	-	-	-	-	-
01.01.926000 CWP FUTA Exp	-	-	-	-	-	-	-	-	-	-
01.01.927000 CWP SUTA Exp	-	-	-	-	-	-	-	-	-	-
01.01.931000 Office Equipment Rental	2,160	2,205	2,252	2,300	2,431	2,504	2,579	2,657	2,736	2,818
01.01.932000 Maint. Of General Plant	27,374	28,165	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	1,290,386

DEPRECIATION AND AMORTIZATION

01.01.425000 Interest Revenue Bonds 1992	-	-	-	-	-	-	-	-	-	-
01.01.426000 Paying Agent Fees	-	-	-	-	-	-	-	-	-	-
01.01.427000 Interest	-	-	-	-	-	-	-	-	-	-
01.01.428000 Depreciation	-	-	-	-	-	-	-	-	-	-
01.01.404000 Amortization	-	-	-	-	-	-	-	-	-	-
01.01.404000 Expense	0	-	-	-	-	-	-	-	-	-
01.01.404000 Expense	0	-	-	-	-	-	-	-	-	-
01.01.404000 Expense	0	-	-	-	-	-	-	-	-	-
01.01.404000 Expense	0	-	-	-	-	-	-	-	-	-
Total	0	0	0	0	0	0	0	0	0	0

TOTAL OPERATING EXPENSES

Cash Basis	\$ 3,691,863	\$ 3,753,267	\$ 3,922,348	\$ 4,100,118	\$ 4,286,414	\$ 4,481,998	\$ 4,687,056	\$ 4,902,402	\$ 5,128,480	\$ 5,365,864
------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
	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

CAPITAL OUTLAYS

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	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	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
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											

Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
	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 -- 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	\$	-	\$	-	\$	-	\$	-	\$	-



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	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	\$ 566,176	\$ 650,553	\$ 684,576	\$ 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	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	\$	6,247,863	\$ 6,804,728	\$ 6,974,008	\$ 6,995,579	\$ 6,879,606	\$ 7,076,089	\$ 7,280,247	\$ 7,495,694	\$ 7,721,871	\$ 7,969,056
------------	----	-----------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Treatment	46.38%	1,655,811	1,740,666	1,819,174	1,801,526	1,987,926	2,078,586	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	578,984	605,595	633,523	662,847
TOTAL		3,691,863	3,753,267	3,922,548	4,100,118	4,286,414	4,481,898	4,687,056	4,902,402	5,128,480	5,385,864

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



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
	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

DEBT SERVICE – CURRENT

1	<u>2013 Bond</u>											
	Treatment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Distribution	-	-	-	-	-	-	-	-	-	-	-
	Admin	-	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
2	<u>Debt</u>											
	Treatment	-	-	-	-	-	-	-	-	-	-	-
	Distribution	-	-	-	-	-	-	-	-	-	-	-
	Admin	-	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
3	<u>Debt</u>											
	Treatment	-	-	-	-	-	-	-	-	-	-	-
	Distribution	-	-	-	-	-	-	-	-	-	-	-
	Admin	-	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
4	<u>Debt</u>											
	Treatment	-	-	-	-	-	-	-	-	-	-	-
	Distribution	-	-	-	-	-	-	-	-	-	-	-
	Admin	-	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-
5	<u>Debt</u>											
	Treatment	-	-	-	-	-	-	-	-	-	-	-
	Distribution	-	-	-	-	-	-	-	-	-	-	-
	Admin	-	-	-	-	-	-	-	-	-	-	-
	Customer	-	-	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-	-	-



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
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

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

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	2,160,872	2,189,309	1,841,349	2,921,730	2,654,800	2,089,507	2,125,937	2,164,183	2,204,341
	Admin	874,711	914,917	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	553,850	578,994	605,585	633,523	662,647
	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



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

WATER

Customer Class Units -- Base Annual Usage			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	33,689,295	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	-	-	-	-	-	-	-	-	-	-
	Sub-Total		1,842,282,000	1,845,728,921	1,849,175,842	1,852,622,763	1,856,069,685	1,859,516,606	1,862,963,527	1,866,410,448	1,869,857,369	1,873,304,290
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%	1.49%	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%	4.89%	4.88%	4.87%	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%	6.13%	6.14%	6.16%	6.18%
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%



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

Not Annual Volume after Minimum:		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	Residential City	594,082,000	595,268,581	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	99,278,864	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	2,205,808,686	2,209,255,606	2,212,702,527	2,216,149,448	2,219,596,369	2,223,043,290
Base Daily Average		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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		6,005,637	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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 – Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

Max Day Total Capacity			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	156,081	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			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	63,986	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	114,921	116,001	117,081	118,161	119,241	120,321	121,401	122,481	123,561
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	2,145,129	2,148,046	2,150,964	2,153,882	2,156,799
Percent of Total			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%	5.36%	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%	1.43%	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	34.00%	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									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

Percent of Total -- Adjusted		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%	6.06%
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%	2.19%	2.19%	2.19%	2.18%	2.17%	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

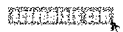
Total Bills		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	Residential City	120,150	120,390	120,630	120,870	121,110	121,350	121,590	121,830	122,070	122,310
W.2	Residential Outside City	5,999	6,011	6,023	6,035	6,047	6,059	6,071	6,083	6,095	6,107
W.3	Commercial City	19,735	19,855	19,975	20,095	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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	13.18%	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%	0.06%	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%	0.03%	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%
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%	0.06%	0.05%
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									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

Percent of Total Bills -- Adjusted			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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.5	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%	0.03%	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			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 6.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

New Accounts			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
W.1	Residential	City	20	20	20	20	20	20	20	20	20	20
W.2	Residential	Outside City	1	1	1	1	1	1	1	1	1	1
W.3	Commercial	City	10	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	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	32
Average Monthly Usage Per Connection			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	14,688	14,574	14,560	14,845	14,531	14,517	14,503	14,490

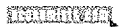


Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
Allocation	%	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

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		6,804,720		6,974,008		5,995,579		6,879,608		7,075,089		7,280,247		7,496,694		7,721,671		7,969,055
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	\$ 1,696,935	\$ 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	5,963,632	6,138,829	6,301,732	6,472,755	6,652,329									



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
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

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	\$ 356,569	\$ 370,472	\$ 366,064	\$ 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	76,804	101,203	94,713	100,990	107,655	114,730	122,238	130,204	
Total Administration	874,711	914,017	955,241	998,484	1,043,952	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	688,648	720,325	755,761	793,051	
Total	5,247,863	6,804,728	6,974,008	5,995,579	6,879,606	7,076,089	7,280,247	7,495,694	7,721,671	7,959,656	
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	118,026	118,460	120,937	123,461	126,032	128,653	
Max Hour	132,127	254,923	283,161	278,087	282,745	291,869	301,286	311,002	321,027	331,370	
Customer Billing	31,345	48,246	50,830	65,813	60,776	63,836	67,022	70,336	73,787	77,372	
Total	398,932	612,980	631,369	660,310	669,820	689,914	710,612	731,930	763,868	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	2,701,290	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	649,887	681,974	715,679	
Total	4,938,931	6,181,748	6,342,639	5,345,268	6,209,786	6,385,175	6,669,636	6,763,663	6,987,783	7,182,850	
Check to W5 Difference	5,247,863	6,804,728	6,874,008	5,995,579	6,879,606	7,075,089	7,280,247	7,495,594	7,721,671	7,959,655	

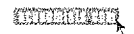
Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL											
	2011 Audit	2012 Audit	Test Year 2016	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 8.0 -- Tri-County Rate Calculation
Scen: 2014 12 12 -- Scen 2 -- Conservation

TRI-COUNTY TREATMENT COST OF SERVICE												
Supply	\$ 162,111	\$ 168,706	\$ 159,313	\$ 166,745	\$ 174,542	\$ 182,722	\$ 191,307	\$ 200,315	\$ 209,770	\$ 219,693	\$ 230,110	\$ 241,046
Pumping	185,832	200,298	211,949	223,344	235,379	248,091	261,519	275,704	290,693	306,530	323,297	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
	<u>786,966</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>	<u>786,630</u>
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	2,219,596,389	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	513,431	874,711	912,673	952,451	994,139	1,037,838	1,083,652	1,131,694	1,182,081	1,234,838	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	<u>2,168,276</u>	<u>2,040,104</u>	<u>2,497,645</u>	<u>2,569,901</u>	<u>2,645,672</u>	<u>2,725,144</u>	<u>2,806,512</u>	<u>2,895,982</u>	<u>2,987,774</u>	<u>3,084,119</u>	<u>3,185,259</u>	<u>3,291,454</u>
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	1,061,255	1,323,752	1,382,048	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	2,219,596,389	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	<u>0.4652</u>	<u>0.4406</u>	<u>0.6039</u>	<u>0.6204</u>	<u>0.6377</u>	<u>0.6558</u>	<u>0.6748</u>	<u>0.6947</u>	<u>0.7156</u>	<u>0.7376</u>	<u>0.7606</u>	<u>0.7847</u>
Sub-Total	1.4505	1.3071	1.6870	1.7345	1.7843	1.8354	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



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 9.0 -- CASH BASIS Net Water Cost Classification less Tri-County

Scen: 2014 12 12 -- Scen 2 -- Conservation

Water System Cost Classification (W7)

Base	\$ 1,514,799	\$ 1,983,876	\$ 2,034,782	\$ 1,638,800	\$ 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	2,574,951	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	541,778	563,440	580,804	619,628	649,987	681,974	715,878
Total	4,938,931	6,191,748	6,342,639	5,345,268	6,209,766	6,386,175	6,669,635	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

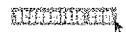
W-11	Tri County	Outside City	\$ 1,020,175	\$ 1,048,876	\$ 1,078,960	\$ 1,110,494	\$ 1,143,566	\$ 1,178,220	\$ 1,214,570	\$ 1,252,693	\$ 1,292,681	\$ 1,334,630
------	------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

Allocated to:

Base	\$ 312,894	\$ 337,761	\$ 346,141	\$ 340,673	\$ 358,892	\$ 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	216,108	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	82,594	86,864	112,555	103,760	109,018	114,554	120,384	126,522	132,884
Total	1,020,175	1,048,876	1,078,960	1,110,494	1,143,566	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	911,267	929,584	948,743	968,895
Max Hour	1,876,017	2,138,790	2,193,951	1,810,946	2,138,560	2,292,812	2,270,445	2,341,650	2,416,523	2,495,577
Customer Billing	397,601	404,782	423,764	429,223	459,680	481,788	505,072	529,603	555,452	582,894
Total	3,918,756	5,142,872	5,263,880	4,234,774	6,066,231	5,206,955	5,365,065	5,510,970	5,675,102	5,847,920



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

I. Net Water System Cost Classification																				
Base	\$	1,201,905	\$	1,656,115	\$	1,888,641	\$	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
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		461,786		505,072		529,603		555,452		562,594
Total Cost Classification		3,918,756		5,142,872		5,283,680		4,234,774		6,066,231		5,206,955		5,355,066		5,510,970		5,675,102		5,847,820
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%		8.1%		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%	31.08%	31.02%	30.96%	30.90%	30.83%	30.77%	30.71%
W.6	Industrial	Outside City	4.95%	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%	1.98%	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%



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class
Scen: 2014 12 12 -- Scen 2 -- Conservation

Extra Capacity – Adjusted			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%	6.05%	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			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2016	2016	2017	2018	2019	2020	2021	2022	2023	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																				
W1 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		1,739,640		1,768,044		1,834,880		1,886,281		1,940,392		1,997,360
Customer		318,727		324,301		329,318		343,497		367,668		385,136		403,528		422,895		443,294		464,783
Total		1,091,679		2,701,420		2,767,960		2,259,085		2,982,399		2,759,914		2,841,995		2,927,371		3,017,777		3,112,968
W2 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		114,580		137,989		141,670		145,544		149,622		153,015		156,434
Customer		15,914		16,192		16,942		17,151		18,358		19,230		20,148		21,115		22,134		23,207
Total		146,663		191,132		195,703		158,319		188,894		194,120		199,824		205,724		211,936		216,475
W3 Commercial City																				
Base	\$	207,538	\$	287,104	\$	293,896	\$	226,988	\$	278,962	\$	285,707	\$	294,847	\$	303,406	\$	312,409	\$	321,879
Extra Capacity		174,332		232,587		238,757		190,644		230,305		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		75,153		79,098
Total		434,222		573,175		588,841		474,740		570,636		588,627		607,560		627,491		648,476		670,679
W4 Commercial Outside City																				
Base	\$	2,602	\$	3,578	\$	3,641	\$	2,795	\$	3,415	\$	3,480	\$	3,567	\$	3,649	\$	3,736	\$	3,827
Extra Capacity		11,002		14,590		14,887		11,816		14,189		14,539		14,907		15,284		15,702		16,131
Customer		576		585		610		617		659		689		720		753		788		825
Total		14,180		18,753		19,138		15,228		18,263		18,707		19,194		19,687		20,226		20,783
W5 Industrial City																				
Base	\$	378,021	\$	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		683,528		921,317		938,668		731,994		887,044		907,510		929,069		951,744		975,644		1,000,783
W6 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		202,871		271,874		277,181		217,887		262,955		269,210		275,791		282,726		290,021		297,702



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

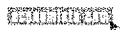
Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

W7 Ind. Discounts City											
Base	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Extra Capacity	-	-	-	-	-	-	-	-	-	-	-
Customer	-	-	-	-	-	-	-	-	-	-	-
Total											

W6 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	258,030	205,765	248,252	255,554	263,237	271,324	279,838	288,802	
Customer	5,711	6,848	7,184	7,292	7,825	8,220	8,635	9,074	9,536	10,025	
Total	267,928	358,446	367,348	291,837	352,770	363,025	373,813	385,167	397,116	409,702	

W5 Municipal City											
Base	\$ 24,221	\$ 33,304	\$ 33,887	\$ 25,016	\$ 31,783	\$ 32,473	\$ 33,199	\$ 33,953	\$ 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	105,146	107,862	110,710	



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast W 10.0 -- CASH Basis Retail Water Cost of Service by Customer Class

Scen: 2014 12 12 -- Scen 2 -- Conservation

W10 Fire Protection City		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base	\$	-	-	-	-	-	-	-	-	-	-
Extra Capacity		-	-	-	-	-	-	-	-	-	-
Customer		158	162	169	171	182	190	199	208	216	228
Total		158	162	169	171	182	190	199	208	216	228
0 Other City		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base	\$	-	-	-	-	-	-	-	-	-	-
Extra Capacity		-	-	-	-	-	-	-	-	-	-
Customer		-	-	-	-	-	-	-	-	-	-
Total		-	-	-	-	-	-	-	-	-	-
0 Other City		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base	\$	-	-	-	-	-	-	-	-	-	-
Extra Capacity		-	-	-	-	-	-	-	-	-	-
Customer		-	-	-	-	-	-	-	-	-	-
Total		-	-	-	-	-	-	-	-	-	-
0 Other City		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Base	\$	-	-	-	-	-	-	-	-	-	-
Extra Capacity		-	-	-	-	-	-	-	-	-	-
Customer		-	-	-	-	-	-	-	-	-	-
Total		-	-	-	-	-	-	-	-	-	-
Total											
Base	\$	1,201,905	1,656,115	1,698,641	1,299,127	1,590,422	1,620,314	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	5,273,680	4,234,774	5,066,231	5,208,955	5,355,065	5,510,970	5,675,102	5,847,920



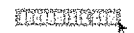
Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

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	\$ 2,582,399	\$ 2,759,814	\$ 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	184,220	199,825	205,725	211,936	218,475
W.3	Commercial	City	434,221	573,176	586,841	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	938,658	731,995	887,043	907,516	929,067	951,794	975,639	1,000,783
W.6	Industrial	Outside City	202,870	271,875	277,162	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	1,110,494	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			2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CASH Basis												
Total Cost of Service			\$ 5,247,853	\$ 6,804,728	\$ 6,974,008	\$ 5,995,579	\$ 6,879,606	\$ 7,075,089	\$ 7,280,247	\$ 7,495,594	\$ 7,721,671	\$ 7,958,055
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			-	-	-	-	-	-	-	-	-	-



Test Year 2015	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL						Customer Billing
	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin		

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
 Scen: 2014 12 12 -- Scen 2 -- Conservation

NON-RATE REVENUES

	Total	WW	Treatment	Collection	Admin	Customer Billing
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



Test Year 2014	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
-------------------	---------------------------------	------------------------------	-----------	------------	-------	---------------------

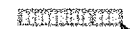
**CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL**

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Wastewater Division

Account	Description	\$	\$	\$	\$	\$	\$
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	-	-	-	-
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	-



Test Year 2018		CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL				
	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
01.02.921800	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	-
01.02.950000	Loss on Sale of Assets	-	-	-	-	-	-
01.02.950200	Gain/Loss -- Cont in Aid of Const	-	-	-	-	-	-
	Total	806,351	806,351	-	-	806,351	-



	CITY CORPORATION -- RUSSELLVILLE					
Test Year 2014	WATER/WW COST OF SERVICE MODEL					
	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

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	-	-	-	-	-
01.02.428000	Interest	-	-	-	-	-
01.02.403000	Depreciation	-	-	-	-	-
	Total	-	-	-	-	-

TOTAL OPERATING EXPENSES

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

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	-	-	-	-	-
Other	Other	-	-	-	-	-



Test Year 2016	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL				
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

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	-	-	-	-	-	-
	TOTAL	250,000	250,000	-	250,000	-	-

TOTAL CAPITAL OUTLAYS

Cash Basis	\$	250,000	\$	250,000	\$	-	\$	250,000	\$	-	\$	-
------------	----	---------	----	---------	----	---	----	---------	----	---	----	---

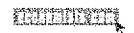
Test Year 2015	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing
-------------------	---------------------------------	------------------------------	-----------	------------	-------	---------------------

**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

DEBT SERVICE -- CURRENT

1	<u>2013 Bond</u>						
	Principal	\$ 614,297	\$ 614,297	\$ 614,297	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	223,224	223,224	223,224	-	-	-
	Sub-Total	837,521	837,521	837,521	-	-	-
2	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
3	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
4	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
5	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-



Test Year 2018		CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL					Customer Billing
	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin		

Test Year WW 1.0 -- Wastewater Department Cost Functionalization
Scen: 2014 12 12 -- Scen 2 -- Conservation

6	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
7	<u>Debt</u>						
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-
8	<u>Debt</u>						
	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	\$ -	\$ -	\$ -

Test Year 2015	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL						
	Total Revenue Requirement	WW Revenue Requirement	Treatment	Collection	Admin	Customer Billing	

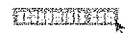
Test Year WW 1.0 -- Wastewater Department Cost Functionalization
 Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- FUTURE

Principal	\$	-	\$	-	\$	-	\$	-	\$	-
Interest										
Reserve										
TOTAL										
Cash Basis	\$	-	\$	-	\$	-	\$	-	\$	-

TOTAL EXPENSES

Cash Basis	\$	3,926,003	\$	3,925,003	\$	1,965,892	\$	931,614	\$	806,351	\$	231,146
------------	----	-----------	----	-----------	----	-----------	----	---------	----	---------	----	---------



Test Year 2015	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL				
	Total Wastewater	Treatment	Collection	Administration	Cust Billing

Test Year WW 2.0 -- Wastewater Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

CASH BASIS

Operating Expenses	\$ 2,837,482	\$ 1,118,371	\$ 681,614	\$ 806,351	\$ 231,148
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	\$ 231,148
Percentage	100.00%	48.83%	23.74%	20.54%	5.89%
Allocation of Administration:					
Total WW less Admin	3,118,652	1,955,892	931,614	na	231,148
Percent of Total	<u>100.00%</u>	<u>62.72%</u>	<u>29.87%</u>	na	<u>7.41%</u>
Administration Allocation	806,351	505,711	240,876	na	59,785
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									
Total Expense:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service
 Scen: 2014 12 12 -- Scen 2 -- Conservation

NON-RATE REVENUES

Wastewater Division	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	4,258	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
------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL										
	Total Expense:										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Forecast WW 3.0 – Wastewater Utility Cost of Service
 Scen: 2014 12 12 -- Scen 2 -- Conservation

OPERATING EXPENSES

Wastewater Division

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
PUMPING										
01.02.623100	\$ 83,120	\$ 87,482	\$ 92,873	\$ 96,903	\$ 101,987	\$ 107,337	\$ 112,966	\$ 118,891	\$ 125,126	\$ 131,685
01.02.623200	15,000	15,787	16,616	17,487	18,405	19,370	20,388	21,455	22,580	23,764
01.02.624000	-	-	-	-	-	-	-	-	-	-
01.02.626100	1,800	1,858	1,919	1,981	2,045	2,112	2,180	2,251	2,324	2,399
01.02.630000	5,574	5,853	6,145	6,453	6,775	7,114	7,470	7,843	8,235	8,647
01.02.631100	9,256	9,904	10,597	11,338	12,133	12,982	13,891	14,863	15,904	17,017
01.02.633100	22,812	23,656	24,424	25,217	26,036	26,881	27,753	28,654	29,583	30,542
01.02.633200	7,800	8,053	8,315	8,585	8,863	9,151	9,448	9,765	10,071	10,398
01.02.633300	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	240,693	250,620	261,737	273,376	285,966	298,531	311,702
TREATMENT										
01.02.640100	172,436	181,058	190,111	199,616	209,597	220,077	231,081	242,635	254,767	267,505
01.02.641000	81,600	84,250	86,988	89,810	92,726	95,735	98,842	102,048	105,358	108,775
01.02.642000	42,800	44,190	45,625	47,106	48,636	50,214	51,843	53,525	55,262	57,054
01.02.642100	72,470	76,094	79,898	83,893	88,088	92,492	97,117	101,973	107,071	112,426
01.02.643100	10,670	10,990	11,320	11,659	12,009	12,369	12,741	13,123	13,516	13,922
01.02.644000	321,190	338,046	355,784	374,451	394,095	414,767	436,521	459,414	483,504	508,855
01.02.650000	26,983	28,332	29,749	31,236	32,798	34,438	36,160	37,966	39,866	41,859
01.02.651100	95,797	102,503	109,678	117,355	125,570	134,360	143,765	153,829	164,597	176,119
01.02.652100	22,872	24,016	25,216	26,477	27,801	29,191	30,651	32,183	33,792	35,482
01.02.652200	24,960	25,771	26,608	27,471	28,363	29,284	30,234	31,215	32,227	33,272
01.02.652300	66,505	69,665	70,895	73,197	75,573	78,025	80,557	83,171	85,868	88,653
01.02.662100	-	-	-	-	-	-	-	-	-	-
01.02.666000	2,620	2,705	2,793	2,884	2,977	3,074	3,174	3,277	3,383	3,493
01.02.903400	4,967	5,116	5,269	5,428	5,590	5,758	5,931	6,109	6,292	6,481
01.02.903600	8,293	8,542	8,798	9,062	9,334	9,614	9,902	10,199	10,505	10,820
01.02.921100	5,040	5,191	5,347	5,507	5,673	5,843	6,018	6,199	6,385	6,576
01.02.921200	31	32	33	34	35	36	37	38	39	40
01.02.921400	7,044	7,255	7,473	7,697	7,928	8,166	8,411	8,663	8,923	9,191
01.02.921600	14,850	15,332	15,830	16,344	16,875	17,422	17,988	18,571	19,174	19,795
01.02.921700	7,800	8,034	8,275	8,523	8,779	9,042	9,314	9,593	9,881	10,177
01.02.932000	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	1,089,626	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

Total Expense

2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service
Scen: 2014 12 12 -- Scen 2 -- Conservation

		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	198,180	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	26,953	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	38,148
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	4,535	4,672	4,812	4,957	5,105	5,256	5,416	5,579	5,746	5,916
01.02.921600	Transportation	37,908	39,129	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	518,468	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	38,416	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	640	668	696	726	756	787	820	853	888	924
	Total	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										
	Total Expense										
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	

Forecast WW 3.0 – Wastewater Utility Cost of Service
Scen: 2014 12 12 – Scen 2 – Conservation

Code	Description	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	29,296	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	111,647	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	14,236	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	72,089	77,135	82,535	88,312	94,494	101,109	108,166	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	CWMP FUTA Exp	-	-	-	-	-	-	-	-	-	-
01.02.922700	CWMP 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
01.02.950000	Loss on Sale of Assets	-	-	-	-	-	-	-	-	-	-
01.02.950200	Gain/Loss -- Cont In Aid of Const	-	-	-	-	-	-	-	-	-	-
	Total	806,361	838,098	871,226	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	13,655	14,346	15,065	15,819
01.02.960100	Labor -- Pretreatment	72,825	76,466	80,280	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	18,914	19,481	20,066	20,668
01.02.961100	Employee Benefits -- Pretreatment	26,981	28,370	30,891	33,053	35,367	37,842	40,491	43,326	46,358	49,603
	Total	125,843	132,388	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	-	-	-	-	-	-	-	-	-	-
01.02.428000	Paying Agent Fees	-	-	-	-	-	-	-	-	-	-
01.02.429000	Interest	-	-	-	-	-	-	-	-	-	-
01.02.403000	Depreciation	-	-	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-	-	-	-

TOTAL OPERATING EXPENSES

Cash Basis	\$	2,837,482	\$	2,965,926	\$	3,098,766	\$	3,239,024	\$	3,386,142	\$	3,540,477	\$	3,702,409	\$	3,872,338	\$	4,050,686	\$	4,237,898
------------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------	----	-----------



Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	Total Expense									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service
Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- CURRENT										
1	<u>2013 Bond</u>									
	Principal	\$ 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
	Sub-Total	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
2	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
3	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
4	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
5	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
6	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
7	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
8	<u>Debt</u>									
	Principal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Interest	-	-	-	-	-	-	-	-	-
	Reserve	-	-	-	-	-	-	-	-	-
	Sub-Total	-	-	-	-	-	-	-	-	-
TOTAL DEBT SERVICE -- CURRENT										
	Principal	\$ 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
	TOTAL	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521	837,521
	Cash Basis	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521	\$ 837,521

Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
Total Expense:	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 3.0 -- Wastewater Utility Cost of Service
 Scen: 2014 12 12 -- Scen 2 -- Conservation

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	851,052	829,286	1,460,639	1,421,382	1,642,156	1,593,413	1,542,722	1,490,003	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	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	\$ 5,440,008	\$ 6,681,748	\$ 5,722,006	\$ 6,916,719	\$ 7,070,955	\$ 7,650,626	\$ 7,620,554	\$ 7,998,901	\$ 8,186,113



Forecast 2015-2024	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-----------------------	-----------------	------	------	------	------	------	------	------	------	------	------

**CITY CORPORATION -- RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL**

Forecast WW 4.0 -- Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

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	4,237,896

CAPITAL OUTLAYS

Treatment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Collection	250,000	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	250,000



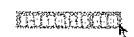
Forecast 2015-2024	Allocation %	CITY CORPORATION - RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 4.0 – Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

DEBT SERVICE -- CURRENT

1	2013 Bond													
	Treatment	\$ 837,521	\$ 837,521	\$ 837,521	\$ 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	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	-	-	-	-	-	-	-	-	-	-	-	-	-



Forecast 2015-2024	Allocation %	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
-----------------------	-----------------	------	------	------	------	------	------	------	------	------	------

**CITY CORPORATION – RUSSELLVILLE
WATER/WW COST OF SERVICE MODEL**

Forecast WW 4.0 – Wastewater Utility Cost Functionalization

Scen: 2014 12 12 -- Scen 2 -- Conservation

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	\$ 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	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	\$ 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	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	2,860,695

TOTAL EXPENSES

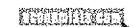
Treatment	\$ 1,955,892	\$ 2,703,893	\$ 2,756,605	\$ 2,811,887	\$ 3,393,170	\$ 3,454,000	\$ 3,727,144	\$ 3,794,120	\$ 3,864,414	\$ 3,938,202
Collection	931,614	1,659,983	1,692,109	1,725,802	2,284,440	2,321,514	2,569,732	2,610,552	2,653,395	2,698,366
Admin	806,351	842,596	880,602	920,461	962,268	1,006,127	1,052,145	1,100,435	1,151,117	1,204,319
Customer	231,146	241,526	252,431	263,856	275,841	288,413	301,604	315,447	329,876	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	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
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	\$ 5,448,008	\$ 5,581,748	\$ 5,722,006	\$ 6,916,719	\$ 7,070,056	\$ 7,680,626	\$ 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	\$ 4,801,545	\$ 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%	58.84%	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	27,859	28,653	31,508	32,379	33,925	34,855	35,810	36,790
Customer	5,497	3,941	4,156	4,381	3,804	4,023	3,982	4,212	4,453	4,707
Total	\$ 72,956	\$ 75,144	\$ 77,398	\$ 79,720	\$ 82,111	\$ 84,576	\$ 87,112	\$ 89,726	\$ 92,417	\$ 95,190
Total WW 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	\$ 4,563,825
Collection	1,150,696	1,936,605	1,961,211	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									
	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 6.0 -- WASTEWATER Cost Classification
Scen: 2014 12 12 -- Scen 2 -- Conservation

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	\$	4,563,825
Collection		1,150,606		1,936,605		1,981,211		2,027,886		2,822,171		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	\$	8,090,921

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									
	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 6.0 -- WASTEWATER Cost Classification

Scan: 2014 12 12 -- Scen 2 -- Conservation

Functionalized Cost

	2015	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	63,088	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	4,563,825
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	63,088	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	3,862,048	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									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 7.0 – Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 – Conservation

WASTEWATER BILLING UNITS AND STRENGTHS											
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	260,859,803	262,868,606	264,877,409	266,886,212	268,895,015	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
	Total System	1,303,309,000	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								
2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

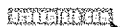
Forecast WW 7.0 – Customer and Volume Totals
Scen: 2014 12 12 – Scen 2 -- Conservation

Customer Class Units – BOD Strength Levels (mg/l)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1 Residential City		426,469,990,909	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	1,366,667,331,281	1,369,936,923,925	1,373,316,616,569	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		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WW1 Residential City		426,469,990,909	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	1,366,667,331,281	1,369,936,923,925	1,373,316,616,569	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									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 7.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

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

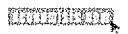
Systemwide Excess Strength Lbs											
	BOD	149,950	150,321	150,693	151,065	151,437	151,808	152,180	152,552	152,924	153,295
	TSS	149,950	150,321	150,693	151,065	151,437	151,808	152,180	152,552	152,924	153,295



Forecast 2015-2024	CITY CORPORATION – RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 7.0 -- Customer and Volume Totals
Scen: 2014 12 12 -- Scen 2 -- Conservation

WASTEWATER ACCOUNTS										
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



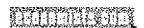
10 Year Forecast 2015-2024	CITY CORPORATION -- RUSSELLVILLE WATER/WW COST OF SERVICE MODEL									
	Test Year 2015	Forecast 2016	2017	2018	2019	2020	2021	2022	2023	2024

Forecast WW 8.0 -- WASTEWATER Cost of Service by Customer Class
 Scen: 2014 12 12 -- Scen 2 -- Conservation

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		808,895		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										
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 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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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%	11.76%	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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	77,886	79,578	85,445	87,295	89,237	91,277
Customer -- Total	285,503	281,766	295,559	310,057	316,621	332,244	345,714	362,890	380,991	400,069

WW1 Residential City

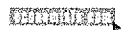
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Volume	\$ 586,734	\$ 901,640	\$ 922,155	\$ 943,670	\$ 1,184,383	\$ 1,208,179	\$ 1,319,973	\$ 1,346,213	\$ 1,373,748	\$ 1,402,646
BOD	324,993	424,221	433,913	444,078	523,284	534,415	573,632	585,871	598,721	612,212
TSS	188,949	246,640	252,275	258,185	304,235	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	2,289,883	2,364,612	2,541,264	2,601,488	2,664,769	2,731,230

WW2 Residential Outside City

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	11,352
Total	47,121	63,742	65,482	67,270	80,601	82,493	89,132	91,327	93,692	95,053

WW3 Commercial City

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	150,897	178,895	183,683	198,212	203,508	209,058	214,875
Ammonia	6,695	11,414	11,739	12,080	14,312	14,665	15,657	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	674,866	953,898	981,890	1,011,206	1,234,807	1,269,058	1,380,774	1,417,688	1,456,324	1,496,242



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

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	696	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	105	111	113	118	122	128	134	141	
Total	1,472	2,060	2,096	2,142	2,689	2,840	2,852	2,908	2,966	3,028	
WW5 Industrial City											
Volume	\$ 649,653	\$ 996,178	\$ 1,016,656	\$ 1,038,146	\$ 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	1,760,606	1,786,801	1,834,890	2,236,783	2,277,996	2,466,191	2,610,383	2,657,678	2,697,793	
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	23,430	33,329	34,016	34,741	42,324	43,116	46,856	47,613	48,419	49,362	



CITY CORPORATION -- RUSSELLVILLE WATERWW COST OF SERVICE MODEL											
10 Year Forecast 2015-2024	Last 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

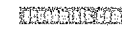
WW7 Ind. Discounts City																				
Volume	\$	155,243	\$	238,050	\$	242,944	\$	248,079	\$	310,603	\$	316,259	\$	344,787	\$	350,894	\$	357,311	\$	364,055
BOD		85,990		112,002		114,315		116,743		137,271		139,891		149,837		152,709		155,727		158,899
TSS		49,994		65,118		66,462		67,874		79,808		81,332		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		285,381		420,632		429,196		438,252		534,326		544,166		588,892		599,692		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		5,984
Total		218,681		311,438		319,913		328,797		402,384		412,401		448,765		459,681		471,489		483,676

Total Cash Basis Cost of Service

Volume	\$	1,875,451	\$	2,882,947	\$	2,949,485	\$	3,019,259	\$	3,790,616	\$	3,857,996	\$	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		593,952		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		7,730,820		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		7,730,820		7,906,484		8,090,923
--------------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------



R-Grease Trap

Customer	Address	Billing Address	Contact	Serial #	Pumper	Date Pumped	Size
7-40 Supper Club	2807 N Arkansas Ave	P.O. Box 601 72811-0601	Bob Whorton 970-8030 (Francis)	GT 0061	12	inactive	
Ahrens Fourt St. Laundry	320 E 4th St	316 Blackfin Drive Russellville, AR 72802	479-967-7271	GT 0178	12 Denali	9/20/2015	
Arby's	915 E Main St	U.S.Beef Corp 4923 E 49th St. Tulsa, OK 74135	Wilma 501 562-7106	GT 0029	6 Brooks	8/18/2015	
Arby's North Arkansas	2323 N Arkansas Ave	U.S.Beef Corp 4923 E 49th St. Tulsa, OK 74135	Shelley Hughes: 479-857-6824	GT0054	6 Brooks	2/3/2016	1,000
Arkansas State Highway Dept	370 E Aspen Ln	P.O. Box 70 Russellville, AR 72811	Tim Flory 479-968-2286	GT 0012	12 Crystal Clean	3/24/2015	
AT&T Store	1107 N. Arkansas		72801	GT 0009	12 inactive	inactive	
ATU Buerkle Field Thone	1302 N.El Paso Ave.		under bleachers	GT 0146	0 inactive	inactive	1,000
ATU Doc Bryan	1605 Coliseum Dr.		Brian Lasey 479-968-0261	GT 0145	12 Dar Pro Solutions	4/28/2015	1,000
ATU Chambers	204 W O St	1505 N Boulder Ave 302 Russellville, AR 72801		GT0158	12 Dar Pro Solutions	7/29/2015	1,000
ATU Techionary	306 W O St	1507 N Boulder Ave 302 Russellville, AR 72801		GT 0175	12 TRS.	7/29/2015	
ATU Williamson Bldg	1205 N El Paso	1506 N Boulder Ave 302 Russellville, AR 72801		GT 0175	12 TRS.	7/29/2015	1,000
ATU. Baswell Hall	1204 N El Paso Ave.			GT 0200	6 Dar Pro Solutions	inactive	1,000
Best Auto Sales	3015 S Arkansas Ave.		cleaned 12/20/13	GT 0203	0 inactive	inactive	1,000
Brangus	1509 E Main	Russellville, AR 72801-5326	Mike/Matt Brady 968-1999	GT 0147	4 Murdock	12/17/2015	
Brick Oven Pizza	401 S Arkansas Avea	owned by Pizza Pro	967-7900	GT0125	6 Murdock	5/7/2015	
Clarion Inn & Suites	2407 N Arkansas Ave		968-4300	GT 0052	6 Dar Pro Solutions	12/22/2015	
Brown's Catfish	1804 E Main	Alvin Brown DBA. P.O.Box 487, Russellville, AR 72811	Alvin Brown 968-3360	GT0037	12 Murdock	3/26/2015	
Buffalo Wild Wings	2212 E Parkway Dr	Ernestine Brantley GM. 731-267-8015	Urnastine 967-1288	GT0206	6 Dar Pro Solutions	9/30/2015	
Burger King	1420 E Main St	kimberlys@neubk.com 479-783-8880	Kimberly Smith	GT 0034	6 Dar Pro Solutions	1/14/2016	
Burger King 3064	2306 N Arkansas	kimberlys@neubk.com 479-783-8881	Kimberly Smith	GT 0055	6 Dar Pro Solutions	1/14/2016	
CJ's Burgers	2803 N Arkansas	72802-8986	Richard Wilson 968-2300	GT 0060	2 Reed's	10/13/2015	
Cash Saver (three guy's)	3301 W Main Place	Skyline Joint Ventures	Diane Dollar 968-2559; 264-4232	GT 0064	12 Williams	3/9/2014	
Central Presbyterian	400 W Main St	72801-3794	Doug: 968-1238	GT 0015	12 Murdock	4/15/2014	
Central Rentals	105 N. Sidney	Sand Oil separator	Mike Mayo: 870-365-0401	GT 0197	12 Murdock	6/11/2014	
Chick Fil A	3089 E Main St		cfarussellville@gmail.com	GT-0171	6 Dar Pro Solutions	12/1/2015	
Church of Christ West-Side	2300 W C St	72801-2503	Frank Foster-479-880-6845	GT 0025	0 Murdock	inactive	
Cici's Pizza	3063 E Main St Ste. C	8FE Pizza DBA 217 Gate House Rd Hot Springs, AR 71913; Justin Miramontes: justin	Mark Groff 501-620-0626	GT 0155	3 Lyles Co.	12/10/2015	
Cogswell Collision Center	202 S Sidney Ave		Pat Johnson 968-4471	GT 0153	12 Murdock	6/11/2015	
Cogswell River Valley Trucks	2911 S Arkansas Ave		Joey Barrett 479 498-7846	GT 0184	12 Roto-Rooter	5/15/2014	
Colton's Steak House	2320 N Arkansas	5 Shackelford Plz. Ste 100 Little Rock AR 72211-1889 Randy Bell	Alison Frazier 880-2333	GT 0056	6 Brooks	3/23/2015	
Cracker Barrell	211 E Harrell Dr	P.O.Box 787 Lebanon,TN 37088-0000	968-5983	GT 0022	6 TRS	6/4/2015	
AVAP	801 N Arkansas	72801		GT 0154	0	Previously Cracker Box	
Cumberland Presbyterian	1200 N Arkansas	72801-2939	Gene 968-1061	GT 0124	12 Murdock	4/18/2015	
Cyclone Car Wash	2614 W. Main	Signature Bank of Arkansas	John Krochcke 964-9887	GT 0206	12 Reed's	7/29/2015	
Cyclone Car Wash	1020 N Arkansas Ave	Signature Bank of Arkansas	John Krochcke 964-9887	GT 0179	12 Reed's	7/29/2015	
Dairy Queen	2007 E Main	72802-5361; Derreck: 479-301-6395	Christina: 858-6420	GT-0048	6 Williams	1/28/2016	
Denny's Restaurant	43 Bradley Cove Rd	72802 South In Lawn	Diana Brixley 498-2390	GT 0057	4 Lyles 501-227-9042	2/4/2015	2000
Dixie Café	105 E Harrell Dr		968-4800	GT0023	6 Dar Pro Solutions	4/16/2015	1000
Vacant	2211 N. Arkansas	72802-2217		GT0057	0 CLOSE	Inactive	
Health Food Garden	2621 W Main	Ste.1 Russellville,AR 72801-2551 Drive Thru		GT 0028	0 CLOSE	No grease	
Exxon S & F Fuel	1103 E 16th St	P.O.Box 267 Russelville, AR 72811-0267	Ali 967-2676	GT 0031	12 Roto-Rooter	5/27/2015	
Exxon Tiger Mart	203 S Arkansas Ave	P.O. Box 1330 Beebe,Ar,72012-1330	Corp. 501-882-5220	GT 0123	12 TRS.	9/5/2013	
E-Z Mart (Shell)	3102 S Arkansas Ave		Not being use.No cooking			Inactive	
Fat Daddy BBQ	104 N Denver			GT0202	6 Dar Pro Solutions	1/14/2016	
Firehouse Subs	2005 N Arkansas Ave	Mathias Shopping Center	Robert Burnett 479-264-2851	GT 0196	12 Dar Pro Solutions	10/15/2014	
First Assembly of God	124 E G St	72801-3822	Diane 968-2622; diane@rfalife	GT 0005	12 Dar Pro Solutions	10/7/2014	
First Baptist Church	200 S.El Paso	P.O.Box 36 72811	Darren Richardson 968-1316	GT 0017	6 Roto-Rooter	12/16/2015	
First Cumberland Presbyterian	1200 N Arkansas	72801-2939	Gene 968-1061	GT 0124	12 Murdock	4/18/2015	
Fletcher Oil (Shell)	20 Bradley Cove Rd.			GT 0193	6 TRS.	10/30/2013	
Flying J	43 Bradley Cove Rd.	Sand/oil separator tank farm	Keith Puttman	GT 0194	6 Parr	5/14/2015	
Freedom House	400 Lake Front Dr	72802 Gary Rhodes 857-4369 cell	Martice: 968-7086	GT 0069	6 Murdock	5/14/2015	

Friendship Apts	1010 E M St	Grace House	Sam: 264-0511	GT-0170	12 Roto-Rooter		9/30/2016	
Inflatables	2410 E Main St	was Gambino's Pizza		GT0072	0 inactive	Inactive		
Hardee's	1201 W Main	Nicholas Shutgot Saddle Peak ILC., PO Box 7971 Madison, WI 53791	Kim: 968-6300	GT 0026	6 Roto-Rooter		7/7/2015	
Hardee's	3095 E Main	Same as other store		GT0043	6 Roto-Rooter		1/15/2016	1000
Harps Foods	100 S Knoxville	P.O.Box 48 Springdale, AR 72765-0048	Donnie Sims: 967-4345	GT0030	6 Brooks		11/15/2015	
Health Food Garden	2621 WMain	thevitaminstore@centurytel.net; does not cook enough to pump	Theresa: (479) 498-2884	GT0028	12 Murdock		2/6/2013	
Hunt Properties	2212 E Parkway Dr	Buffalo Wild Wings; West Parking Lot		GT206	6 Dar Pro Solutions		9/30/2015	
AT&T Store	1107 N Arkansas		Does Not Cook	GT0009			5/31/2013	
Iglesia La Luz Mundo	1412 S Arkansas	David Mosqueda (Pastor)		GT0101	12 Dar Pro Solutions		4/16/2014	
IHop	401 E Harrell Dr	72802-2276.Sandi@GoldenCakesInc.com	Sandi Street: 972-420-1902	GT0021	6 Value Stream		12/6/2015	
Imperial Catering	1310 S Elmira	72802-9648	Bob Wylie: 877-836-0155	GT0038	12 Reed's Septic		12/8/2015	
Pasta Grill	315 W Main		72811 Spence? 967-1707	GT 0016	6 TRS		10/24/2015	
Vacant	1601 S Knoxville	CLOSE		GT 0032	0 Inactive	Inactive		
Johnny's Ice Cream	2405 E Parkway Dr		John Bucher: 857-4274	GT0044	6 Dar Pro Solutions		10/23/2015	
Kentucky Fried	720 N Arkansas	600 Edgewood Dr Maumelle, Ar. 72113	Peachy: 968-1568	GT0006	6 Lyles		1/11/2016	
Kroger 624	1111 W Main	P.O. Box 290396 Nashville, TN 37229	Patsy Kenedy: 901-765-4208	GT0027	3 Lyles		6/10/2015	
La Chiquita	1509 E Main St Ste3	72801-5350	Maria Navarro: 890-9402	GT0050	6 Lyles		8/5/2015	
La Huerta	1500 E Main	72801-5327	Robert cell: 747-2105	GT 0036	3 Roto-Rooter		4/15/2015	
La Huerta (Mathias Shopping)	2005 N Arkansas Ste. 1	72802-2214	880-9111	GT0058	3 Roto-Rooter		4/15/2015	1000
La Villa Italian	1312 N Arkansas	479-968-6285	Ray Perolli	GT0003	6 Murdock		1/29/2016	
Las Palmas II	615 N Arkansas	72801-3845 886-2807	Jaime Atilano D.B.A.	GT0013	6 Dar Pro Solutions		12/16/2015	
Latino Market	517 S Arkansas Ave		Jose: 967-4188/4288	GT0160	12 Dar Pro Solutions		1/17/2015	
Legacy Heights Nursing	900 W 12th St	72801-6699	Rebecca Brashear: 968-5858	GT0065	6 Murdock		1/7/2016	
Little Caesars	407 N Arkansas Ste. 14	7500 Landers Rd North Little Rock, AR 72117-1609	Robin Rohloff: 501-833-9444	GT0067	6 Lyles Co.		1/11/2016	
Long John Silvers/Beemac	916 N Arkansas	728011srussellville@beemac.com	Melissa Satterfield: 479-968-6040	GT0004	6 Brooks		2/3/2016	
Madame Wu's	914 S Arkansas	72801-6012	968-4569	GT0018	2 Dar Pro Solutions		11/13/2015	
Main Street Mission	1110 E 2nd	Jeff Jones	968-8303	GT0100	12 Roto-Rooter		12/18/2015	
Vacant	311 S Arkansas Ave	Closed		GT 0181	6 Inactive (close)			
McAlister Deli	319 Weir Rd	(479) 967-2209		GT0046	4 Lyles Co.		1/11/2016	1000
McDonald's	81 SR 331 N	808 W B St 72801-3610	Vicky Sykes: 967-9393	GT0041	6 Roto-Rooter		10/7/2015	
McDonald's	1122 N Arkansas	809 W B St 72801-3610	Bradley Allen: 968-2292	GT0002	6 Roto-Rooter		10/8/2015	
Friendship MiChild	1301 Russell Rd	P.O. Box 2109 72811-2109	Ryan Burris: 857-0405	GT0063	6 Murdock		1/29/2016	
MKJ	4480 E Main St	72802	Roxanne DeMarco: 967-0227	GT0040	6 Roto-Rooter		10/28/2014	
Mulan's	2790 E Parkway	72802-2006	Jim Ni: 880-8080	GT0107	3 Dar Pro Solutions		1/21/2016	
Neighborhood Roofing	1122 Bradley Ln.	Jeff Hawkins 479-967-8768		GT-0176	inactive			
New China; Mathias	2005 N Arkansas	203 E Elm St 72802-8913; located behind building	Andy Zhang: 968-8881	GT0108	3 Dar Pro Solutions		11/19/2015	
New Prospect Baptist Church	321 S Houston Ave	P.O. Box 2021 72811-2021	Andy Hatley: 970-8315	GT0020	12 Dar Pro Solutions		3/26/2015	
Old South	1330 E Main	72801-5323	James Austin: 968-3789	GT0035	4 Murdock		1/29/2016	
Oumami	304 N Elmira Ave	72811	Amy: 857-3464	GT0111	12 Murdock		1/7/2016	
Outdoor Living Center RV.	10 Outdoor Ct	Lint trap; In front of laundry room	Ricky: 968-7705	GT0141	12 Murdock		4/8/2015	
Ozark Pizza/Papa John's	700 W Main	700 Northshore Pl. North Little Rock, AR72118-5298; Located Indoors	Angie: 858-7272	GT0114	6 Roto-Rooter		5/4/2015	
PDQ East/Frank Griffin Oil	2215 E Main	P.O. Box 666 72811	Sherrie Leavell: 968-3939	GT0112	12 Dar Pro Solutions		3/10/2015	
PDQ South/Frank Griffin Oil	2750 S Arkansas	P.O.Box 666 72801	Tammy Brook: 890-5392	GT0113	12 Dar Pro Solutions		5/15/2015	
Panes Restaurant	111 N El Paso Ave	72801; Ford Management	479-498-6466	GT 0159	12 Murdock		7/10/2014	
Papa Murphy's	420 N Arkansas Ave	72801	968-7272	GT0007	12 Dar Pro Solutions		7/30/2015	
Parker Place Apts	1401 Parker Rd	Lint trap	890-6708	GT 0193	12 Roto-Rooto		4/2/2015	
Pho Linh Vietnamese	624 S Knoxville	72801-6419	Phuong Linh Phan: 479-221-0392	GT0126	6 Brooks		11/15/2015	
Pilot Travel (Sand/Oil Sep.)	215 SR 331 N	P.O. Box 182181 Columbus,OH 43218	Keith Putnam: 967-7414	GT0160	6 3-D Plumbing		12/7/2015	
Pizza Hut	502 N Arkansas	330 E Madison Ave Ste. B-10, Derby, KS 67037	Nancy Pitt: 479-890-5555	GT0117	6 Murdock		7/30/2015	
Pizza Pro	218 E Parkway	PO Box 1285 Cabot, AR 72023-1285	Diane: 1-800-777-7554	GT0008	6 Roto-Rooter		8/11/2015	1000
Pope County Detention Center	3 County Complex	72801	Kenneth Wells: 968-2558	GT0047	6 Roto-Rooter		1/15/2016	
Popeyes Chicken (Pollo LLC)	2411 E Parkway	72802	Steve Duvall: 479-857-5573	GT0068	3 Value Stream		4/14/2015	

Pupuseria Xiomara	416 S Knoxville	Behind bldg.in the grass	970-5430	GT0001	12 TRS.	6/19/2014	750
Quick Truck Wash(nis)	43 Interstate Ave.	72802	Ida Jackson: 968-9131	GT 0188	3 Reed's	1/25/2016	
Quiznos	407 N Arkansas Ste. 3	PO Box 814 Russellville, AR 72811-0814	Robert Ford: 479-970-9388	GT 0072	12 Roto-Rooter	11/6/2015	
River Valley Equipment	2911 S Arkansas Ave	Cogswell Motors		GT 0184	12 Roto-Rooter	5/15/2014	
Russellville Nursing (ATU)	1700 W C St			GT 0077	0 Inactive	Inactive	
Russellville Center Valley School	5399 SR 124	5401 SR 124 Jaime Thomas: 968-1306	Kelly: 968-1650	GT0212	6 Dar Pro Solutions	8/25/2015	
Russellville High School Fine Arts	2209 S Knoxville Ave	Jaime Thomas: 968-1307		GT0039	6 Dar Pro Solutions	9/1/2015	
Russellville Junior High	2000 W Parkway Dr	PO Box 928	Jaime Thomas: 968-1306	GT0075	6 Dar Pro Solutions	8/25/2015	
Russellville Middle School	1201 W 4th St	PO Box 928 Jaime Thomas: 968-1306	Wesley Roach: 968-1650	GT0076	6 Dar Pro Solutions	9/1/2015	
Russellville Pediatric Plus	301 N Sidney Ave.	South Side of Building		GT0049	6 Murdock	8/19/2015	
Russellville Nursing Rehab	215 S Portland	PO Box 1588 Russellville, AR 72811-1588	Bro Price: 968-5256	GT0078	3 Dar Pro Solutions	12/29/2015	
Ruby Tuesday	115 E Harrell Dr	150 W Church Ave Maryville,TN 37801	Jennifer Palmer: 968-6040	GT0073	6 Lyles	12/10/2015	
Save the Childrens(Head Start)	507 N Elmira Ave.	inactive		GT 0149	12 Murdock	10/27/2015	
Save the Childrens(Head Start)	507 N Elmira Ave	2707 E H St; North Side of Building; Shirley Trude: 498-9415	Sandra Johnson: 567-5629	GT0045	12 Murdock	10/27/2015	
Second Time Around	713 E 4th St	inactive	890-8045	GT 0082	0 Inactive	Inactive	
Senior Center(Friendship)	1010 N Rochester	72801 968-5039	Kurt: 264-0511	GT0083	12 Murdock	1/29/2016	
Shipley Donuts	407 N Arkansas Ste. 15	Caetra Yok: 880-0885		GT 0179	6 Murdock	1/9/2016	1000
Aspen Dental	331 Weir Rd	inactive		GT 0096	6	Inactive	
Sonic	3003 E Parkway	72802-2004	Ken Bilyeu: 968-8631	GT0084	12 Dar Pro Solutions	6/4/2015	
Sonic	806 E 4th St	2505 W Main 72801-2532	Ken Bilyeu: 968-8631	GT0085	12 Dar Pro Solutions	5/12/2014	
Sonic	2505 W Main St	2505 W Main 72801-2532	Ken Bilyeu: 968-8631	GT0086	12 Dar Pro Solutions	5/12/2014	
Vacant	1019 N Arkansas	Inactive		GT0109	TRS	Inactive	
Sportsworld	3700 W Main	72802	David Hyde: 968-1122	GT 0088	12 Murdock	4/29/2015	
St. Mary's Regional Hospital	1800 W Main	PO Box 3050 72811-3050	Craig Neal: 964-9269	GT0089	6 Roto-Rooter	1/9/2015	
Starbucks	2220 E Parkway	mcatudal@starbuck.com (Micheal)	Heather Hall: 967-2488	GT0090	3 Murdock	3/4/2015	
Stella Manor	400 N Vancouver	Russellville, AR 72801-2720	Brad: 968-4141	GT0091	6 Murdock	8/6/2015	
Subway	2410 E Parkway	56 Bowers Loop, Dover, AR 72837-8777	Melisa Cross: 968-7976	GT 0092	6 Murdock	8/6/2015	
Vacant	422 S Arkansas	72801-5902		GT0019	12 TRS	Inactive	
Sumo Japanese Steakhouse	2300 E Parkway			GT0211	6 Dar Pro Solutions	1/14/2016	
Superfast Lube & Oil	1301 E Main St	72801	Bobby Gipson: 968-8761	GT0148	12 Roto-Rooter	1/13/2016	
Taco Bell # 345	1308 N Arkansas Ave	72801 Robert Tanner(District Coach): 414-6328	Chris Gosh: 479-806-3894	GT0095	6 Drain Master	1/8/2016	
Taco Bell # 346	301 N El Mira Ave	PO Box 6538 Ft.Smith 72906-6538	Christa: 967-2121	GT0094	6 Roto-Rooter	1/6/2016	
Taco John's	1103 N Arkansas	72801-2937	Jerome Minaham DBA: 967-1985	GT0097	12 Murdock	6/4/2015	
Taco John's	1819 E Main S.	72802	Patrick Minaham	GT 0098	12 Murdock	6/4/2015	
Taco Villa	420 E 4th St	Russellville, AR 72801-5219	Kit Kitterman DBA: 968-1191	GT0099	3 Dar Pro Solutions	11/19/2015	
The Cake Place	311 W B St	Russellville, AR 72801 (cell 223-2319)	inactive	GT0127	12 TRS.	3/19/2014	
The Cake Place	411 W Parkway Dr		Patti: 968-8945	GT 0191	12 Dar Pro Solutions	3/17/2014	
The Carpet Shack	1512 S Arkansas Ave	Inactive	Rick Latham: 967-7748	GT0122	0 inactive	Inactive	
The Oak Tree Bistro	2725 E Parkway Ave.	Special Stainless Steel GT.	Miller Susan	GT 0186	2 Brooks	8/6/2014	500
Three Guy's Inc. (Cash Saver)	3301 W Main Place	Behind bldg.	Jessie Emerson: 967-4466	GT0064	12 Williams	3/9/2014	
Tiger Mart #106 (Exxon)	2402 N Arkansas Ave	Inactive	968-2966	GT0053	12 inactive	9/5/2013	
Totally Star	1600 S Elmira	Russellville, AR 72802-8452	498-2230	GT0093	12 Lyles	4/10/2015	
Tropical Smoothie	605 N Arkansas Ave	4220 N Rodney Parham Rd Suite 320 Little Rock, AR 72212 479-498-0004	Corey: 479-498-0777	GT 0014	12	waiting on notice	
Tyson (TVDC)	4820 E.Main	72801 Contact Samantha Knight if no response	Mark Johnson: 964-8124	GT0166	12 Roto-Rooter	7/27/2016	
Tyson Truck Shop	5050 E Main	ronnie.keene@tyson.com : 964-8160		GT 0183	6 Crytal Clean	11/14/2015	
Chili's	107 N Elmira Ave	Russellvile, AR 72802 North Side of Building		GT0080	6 Lyles	10/25/2015	
Verizon	1710 E Main	Not in use	formerly Mr.Burger; not in use	GT0102	0 Inactive	Inactive	
Venezia's Pizzeria &Pasta	1321 E Main St			GT0051	6 Dar Pro Solutions	10/7/2014	
Waffle House #897	2408 N Arkansas	5305 McClanahan Dr. Ste.1, North Little Rock, AR 72116-7001	1-866-327-4362, Local-968-3444	GT0103	3 Value Stream	4/14/2015	
Waffle House #1410	3085 E Parkway	Ozark Waffles llc.P.O.Box 6450, Norcross, GA. 30091; Mellody for both stores	Michelle Harness 1-866/327-4362, L	GT0042	3 Value Stream	1/22/2016	
Wal-Mart	2409 E Main	West Side of Store		GT 0104	3 Liquid Enviromental	8/14/2015	2000
Wal-Mart	2409 E Main			GT0105	3 Liquid Enviromental	8/14/2015	1000

Wal-Mart Oil Separator	2410 E Main	Wendy Widner: 479-204-2030	Oil- Water Separator	GT0106	6 January Envir.	2/19/2015	1000
Waste Managment	88 Joyce Ln	Sherry: 968-0540	Oil-Separator	GT 0187	6 Murdock	9/16/2015	
Wendy's #10	721 N Arkansas	Fourjay Ilc.42 Parkstone Cir N Little Rock 72116-7086		GT 0011	6 3-D Plumbing	11/24/2015	500
Wendy's #45	215 SR 331 N	42 Parkstone Cir.North Little Rock 72116		GT0059	6 Parr	11/13/2015	4000
West Main Donuts	3415 W Main St	Mark: 880-9308		GT0119	6 Dar Pro Solutions	2/6/2015	
West Side Church of Christ	2300 W C St 72801	201 N Waco	Frank: 968-1121/6565	GT0025	12 Murdock	12/30/2015	
Western Sizzlin	1105 E Main	3492 W Sunset Ave Springdale, AR 72762-4900	Joe: 479/751-3663	GT0118	3 Dar Pro Solutions	9/1/2015	
Wildflower Retirement	240 S Inglewood	Emeritus Corp.3131 Elliott Ave Ste 500	Roberta Gill: 890-6709	GT0121	3 Dar Pro Solutions	3/7/2015	
Wind Taste	715 N Arkansas Ave		Yung Yang Ni: 857-6969	GT 0187	6 Murdock	9/16/2015	
WingFoot Commercial Tire	185 Interstate Ave	phutcheson@goodyear.com	Phillip: 479-880-9224	GT 0190	12 Parr	1/22/2014	

S-16-0311 Phase 1 Private Defect Report

Private Defect Report Phase I

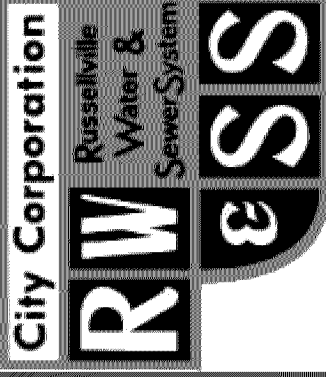
Overall Total	July		August		September		October		November		December		January		
# of Defects Reported	74	# of Defects Reported	68	# of Defects Reported	2	# of Defects Reported	1	# of Defects Reported	3	# of Defects Reported	0	# of Defects Reported	0	# of Defects Reported	0
# of 1st Notices Sent	24	# of 1st Notices Sent	18	# of 1st Notices Sent	2	# of 1st Notices Sent	1	# of 1st Notices Sent	3	# of 1st Notices Sent	0	# of 1st Notices Sent	0	# of 1st Notices Sent	0
# of 2nd Notices Sent	4	# of 2nd Notices Sent	3	# of 2nd Notices Sent	0	# of 2nd Notices Sent	0	# of 2nd Notices Sent	0	# of 2nd Notices Sent	1	# of 2nd Notices Sent	0	# of 2nd Notices Sent	0
# of Repairs Made	58	# of Repairs Made	3	# of Repairs Made	8	# of Repairs Made	40	# of Repairs Made	3	# of Repairs Made	3	# of Repairs Made	0	# of Repairs Made	1
# of Unresolved Defects	1	# of Unresolved Defects	0	# of Unresolved Defects	0	# of Unresolved Defects	0	# of Unresolved Defects	1	# of Unresolved Defects	0	# of Unresolved Defects	0	# of Unresolved Defects	0

S-16-0311 Phase 2 Private Defect Report

Private Defect Report Phase 2

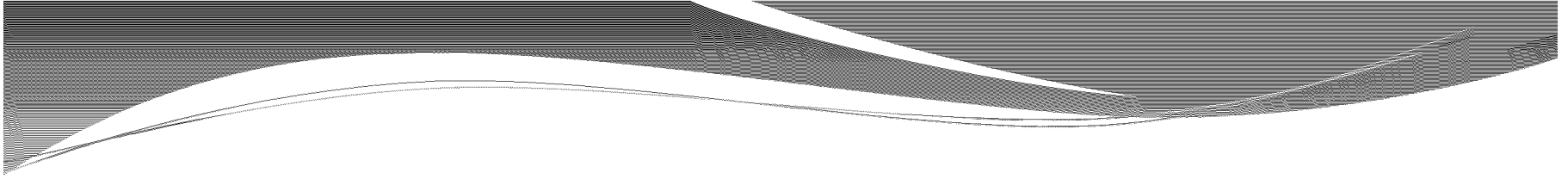
Overall Total	January	February	March	April	May	June	July
# of Defects Reported	94	94	0	0	0	0	0
# of 1st Notices Sent	22	22	0	0	0	0	0
# of 2nd Notices Sent	0	0	0	0	0	0	0
# of Repairs Made	26	4	8	14	0	0	0
# of Unresolved Defects	0	0	0	0	0	0	0

T-Rate Study PowerPoint Presentation



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



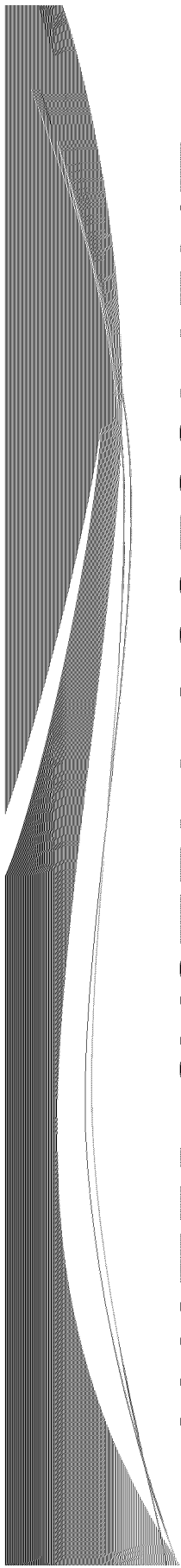
WATER SYSTEM ASSESSMENT

- 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



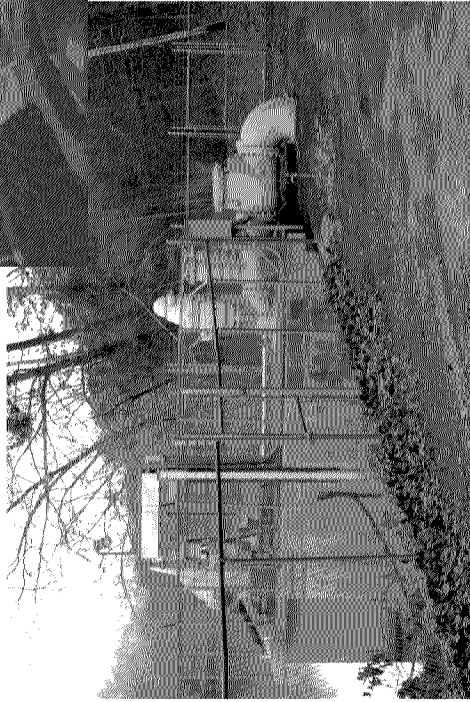
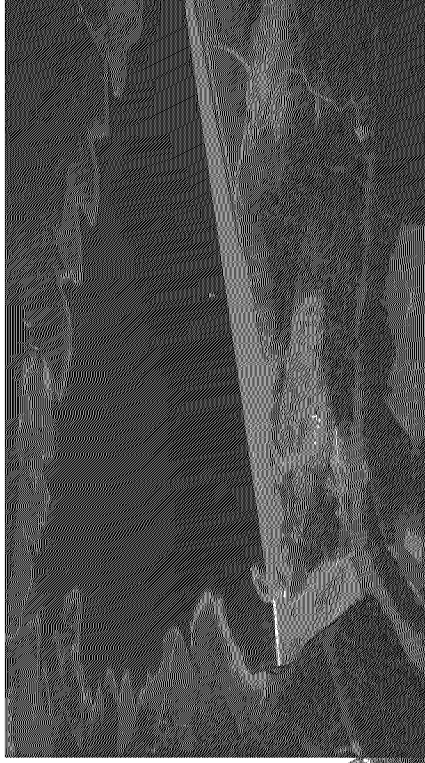
WATER SYSTEM ASSESSMENT

- 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



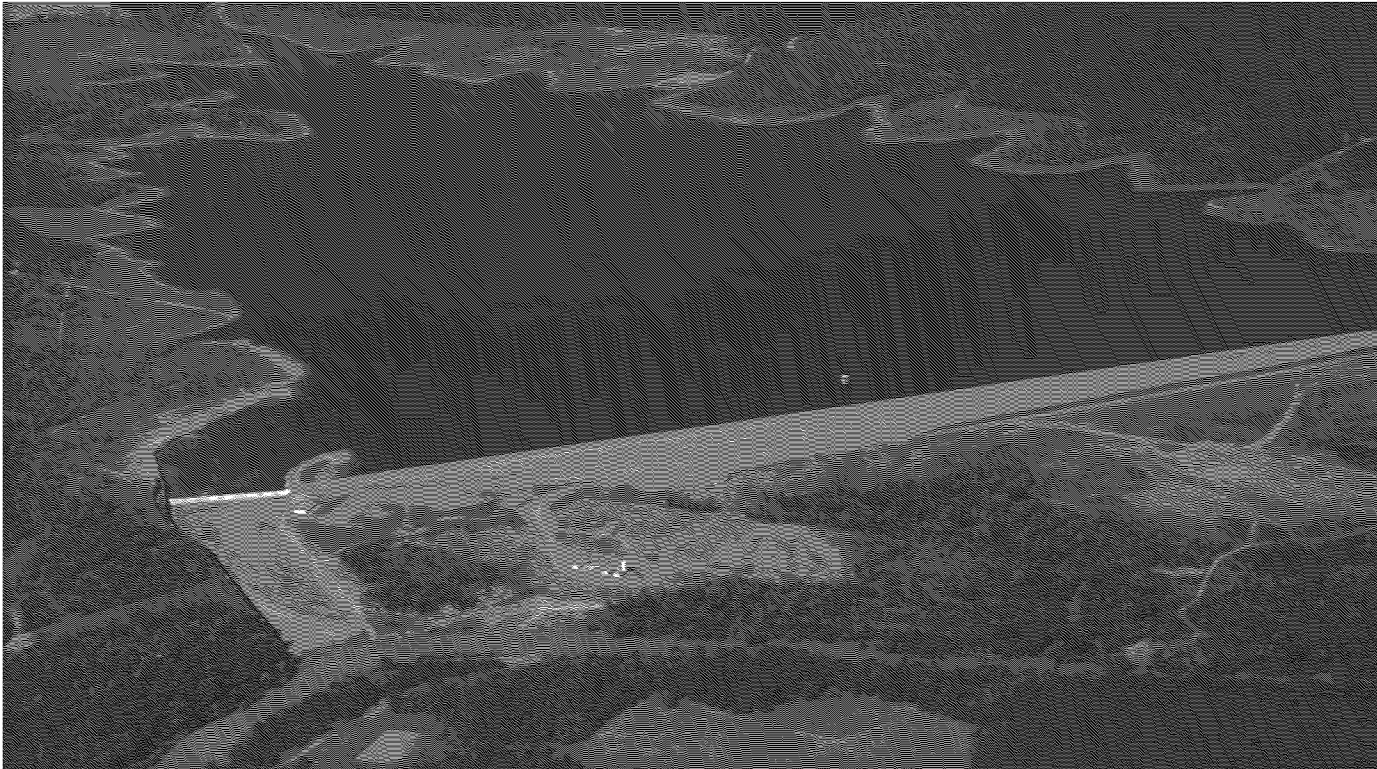


WATER SYSTEM ASSESSMENT

- 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

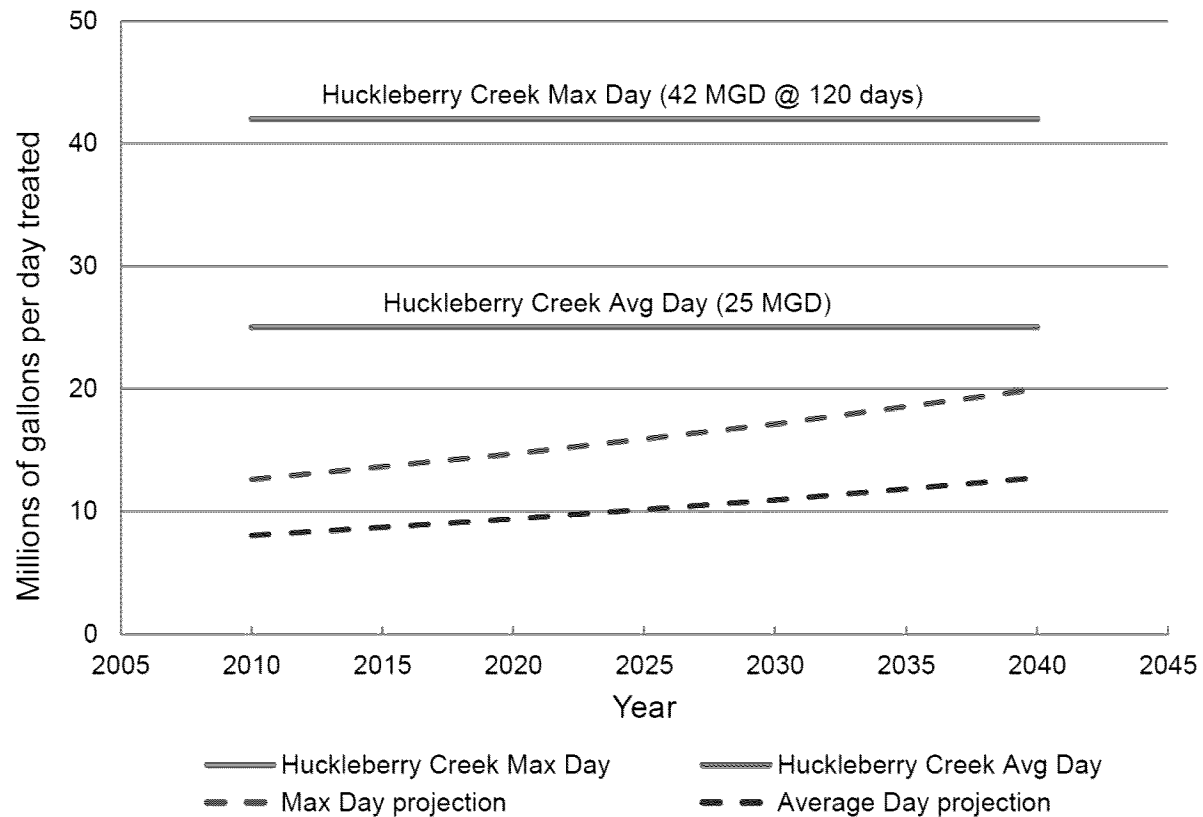


WATER SYSTEM ASSESSMENT

- 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

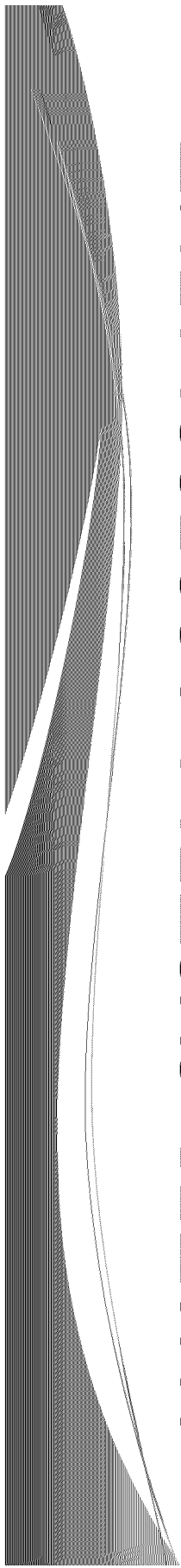


WATER SYSTEM ASSESSMENT

- 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

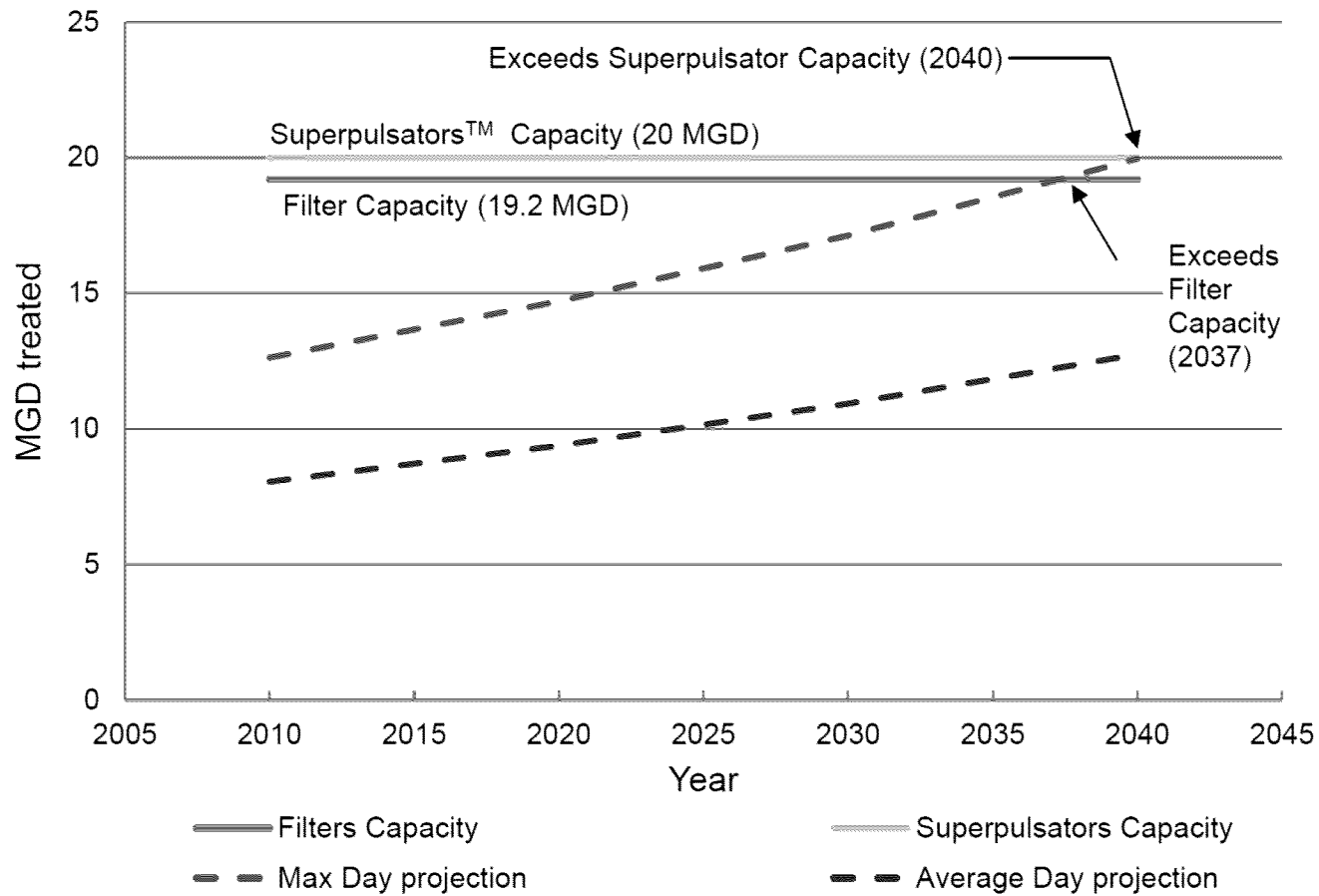


WATER SYSTEM ASSESSMENT

- 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:

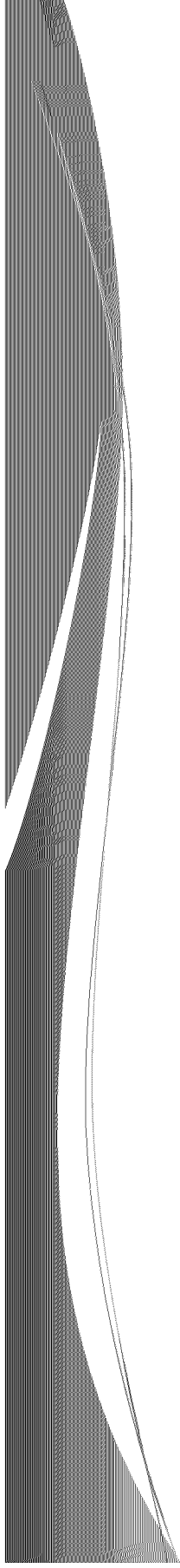
- Begin process of re-rating filters and settling basins to increase capacity and/or for operational benefits
 - Consider construction of 4th filter (\$2.9 million)
 - Consider Superpulsator One Improvements (\$835K)
 - Sludge Pond Improvements (\$600K)
 - Construction of second clearwell and high service 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**

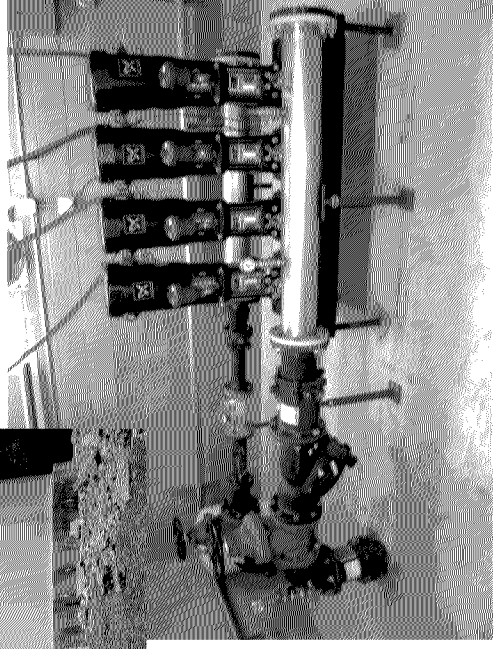


WATER SYSTEM ASSESSMENT

- 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 buildings
 - 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

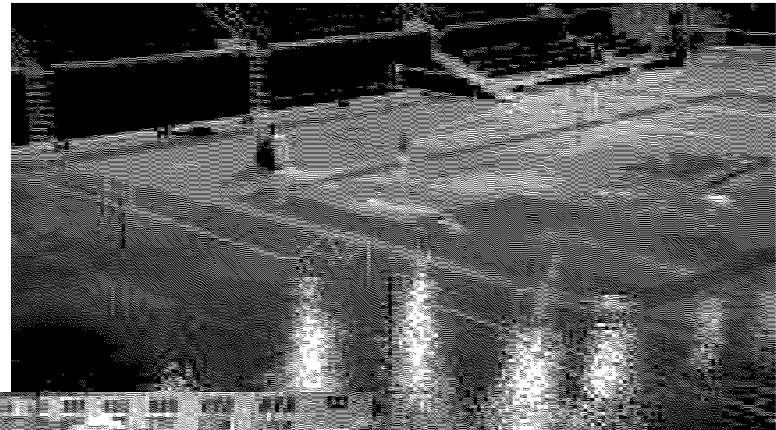
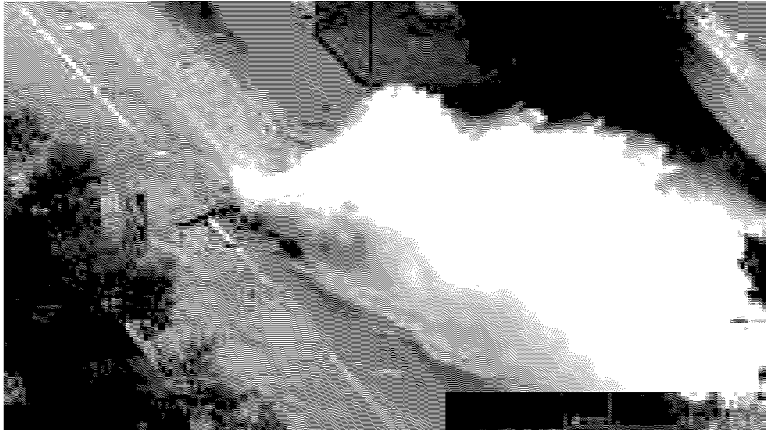


WATER SYSTEM ASSESSMENT

- **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

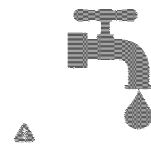
- Meter Study
 - Based on testing of selected meters, study projected a payback of 5.7 years, with an estimated annual financial benefit of \$690,000 thereafter
 - New meters are guaranteed at a higher accuracy for 20 years
 - New meters read remotely, eliminating the need to manually read them
 - New 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



Leaks



Today: Oct 16, 2014
6.0 gallons per hour

Set Leak Alert

Your Meter



Your meter measures the quantity of water used in your household. Flow is measured electronically at hourly intervals, and updated every 24 hours for billing and leak detection.

Read Frequency
Hourly

Transmit Frequency
Daily

Meter Read
5:59 PM on Oct 15
5.5 KGAL

At a Glance

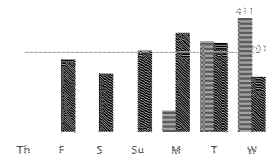


103% increase

1,651 Last 7 Days
gallons

813 Previous 7 Days
gallons

284 30 Day Average
gallons per day

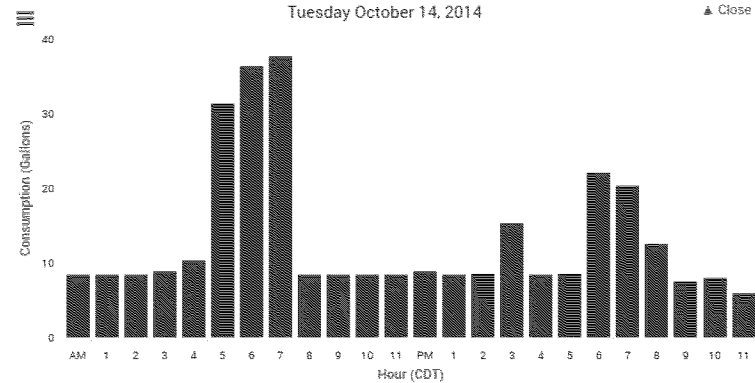


Total 321 Gallons

Hour Day Month Year Today

Gallons Overlays

Tuesday October 14, 2014





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 ADMINISTRATIVE 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 violations 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)

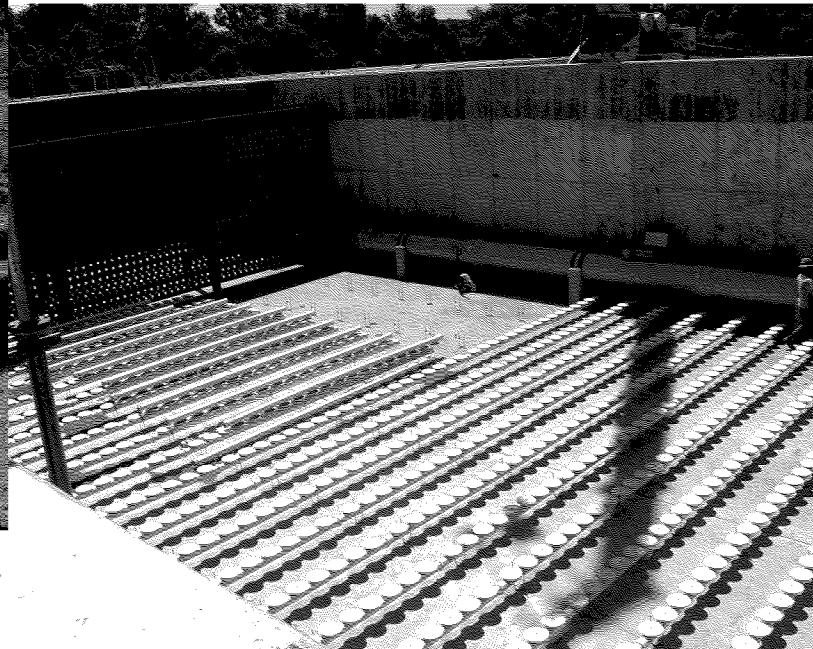
WASTEWATER SYSTEM ASSESSMENT

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

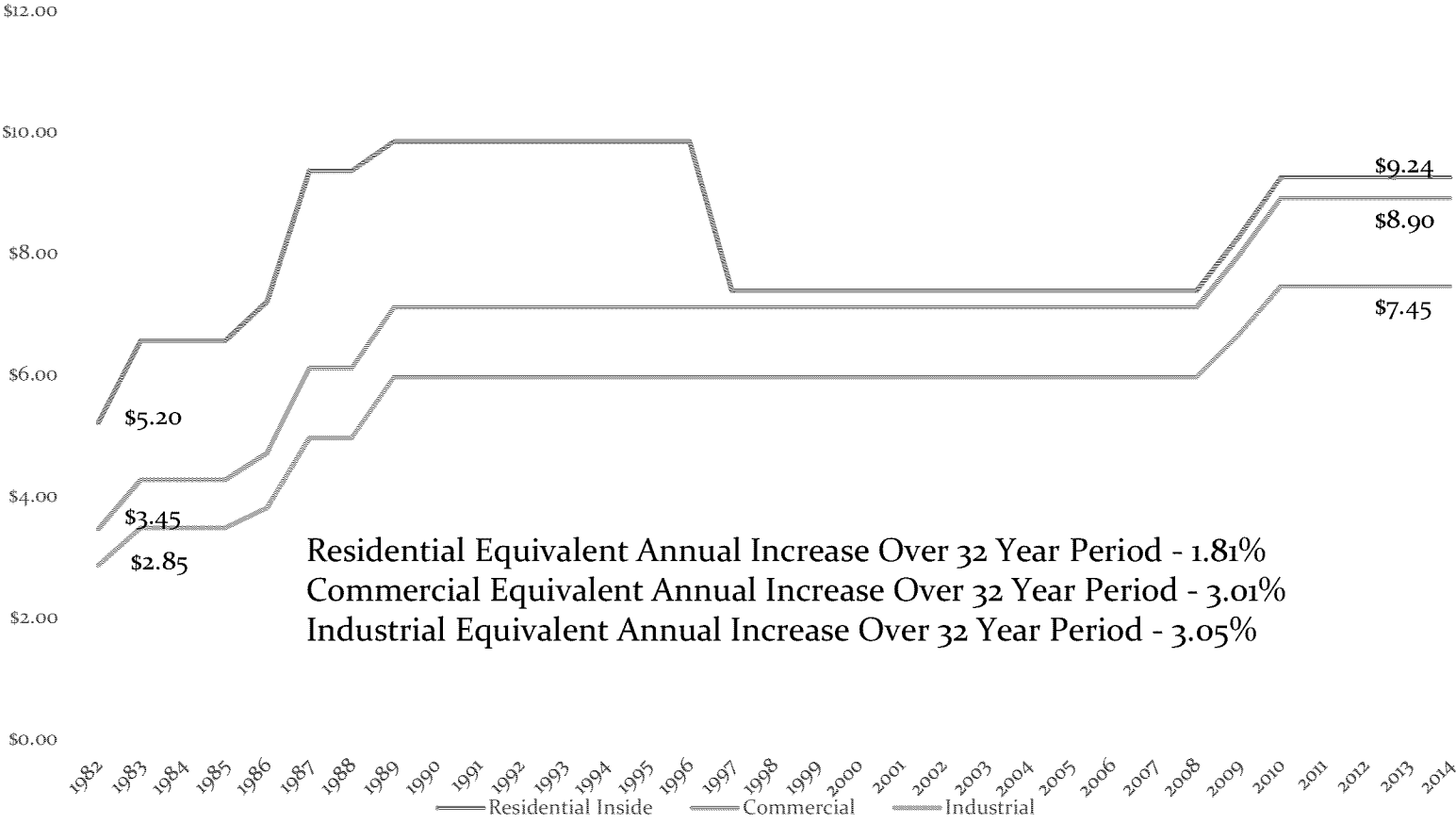
Fee Description	Old Fee	Recommendation	Comparison Utility Fees
Connection Fee	\$ 7.50	\$ 25.00	HSW-\$10.00, CCRWDD-\$25.00, TCRWDD-\$25.00, NEYCWA-\$10.00
Returned Check Fee	\$25.00	\$25.00 + banking fee	HSW- max fee allowed, CCRWDD-\$25.00, TCRWDD-\$25.00, NEYCWA-\$30.00
Tampering Fee	\$ -	\$ 100.00 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





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

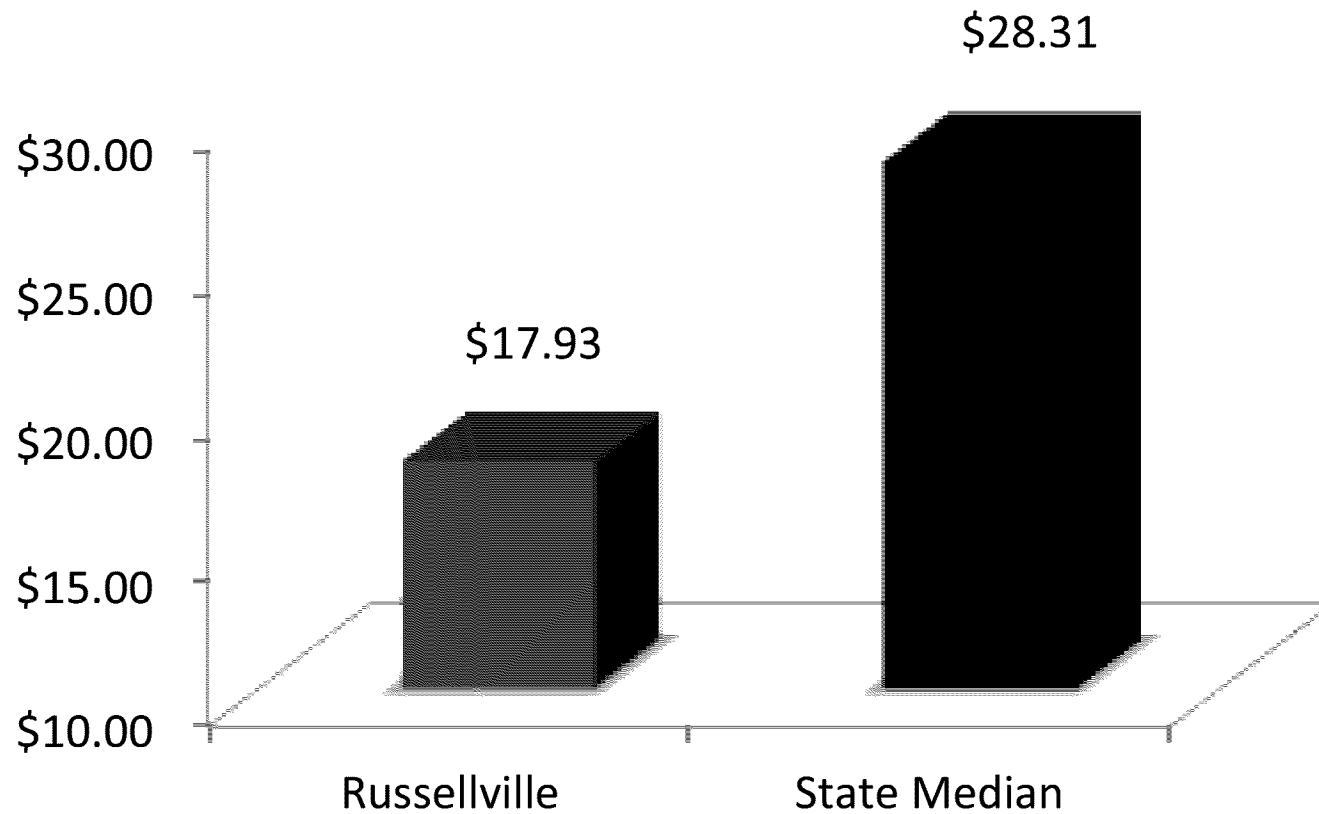
City Council Presentation

economists.com

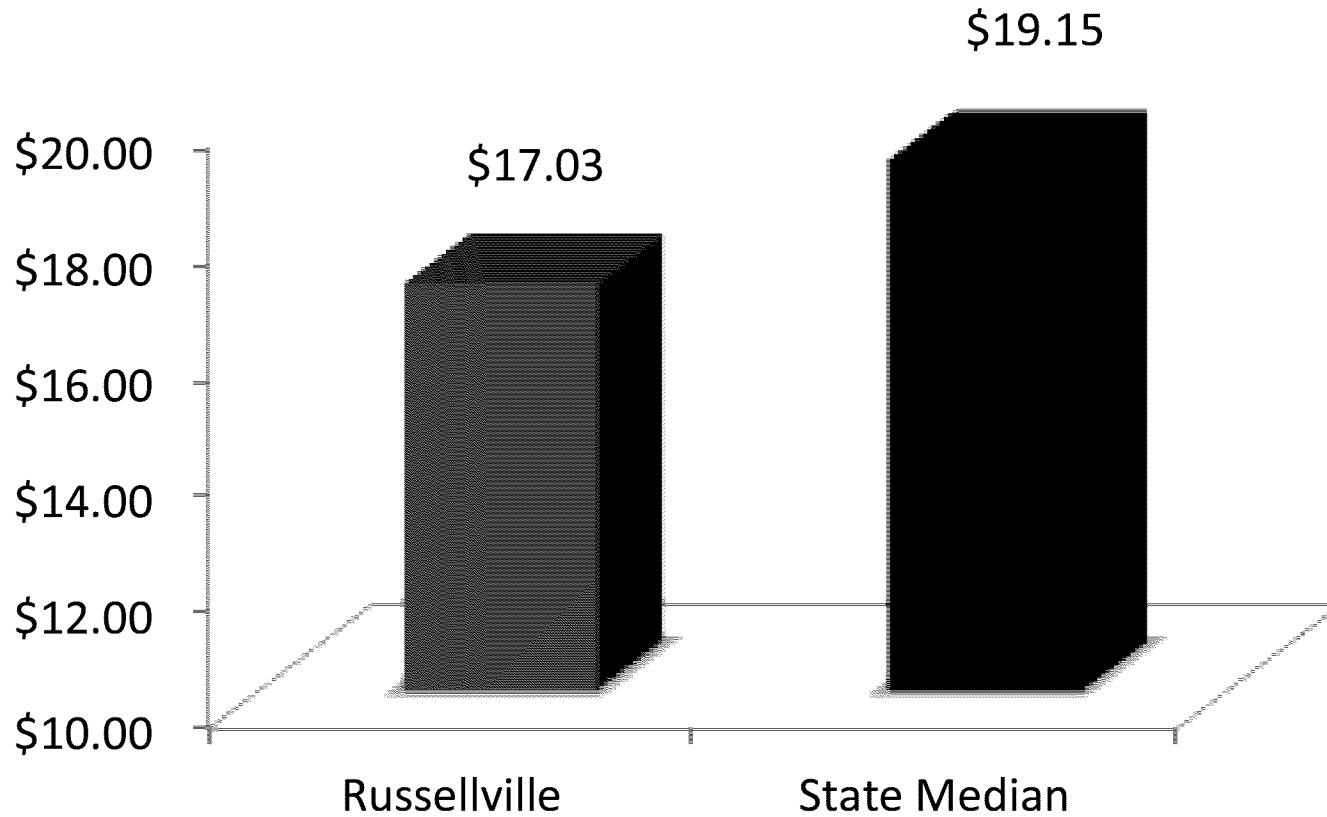


January 2015

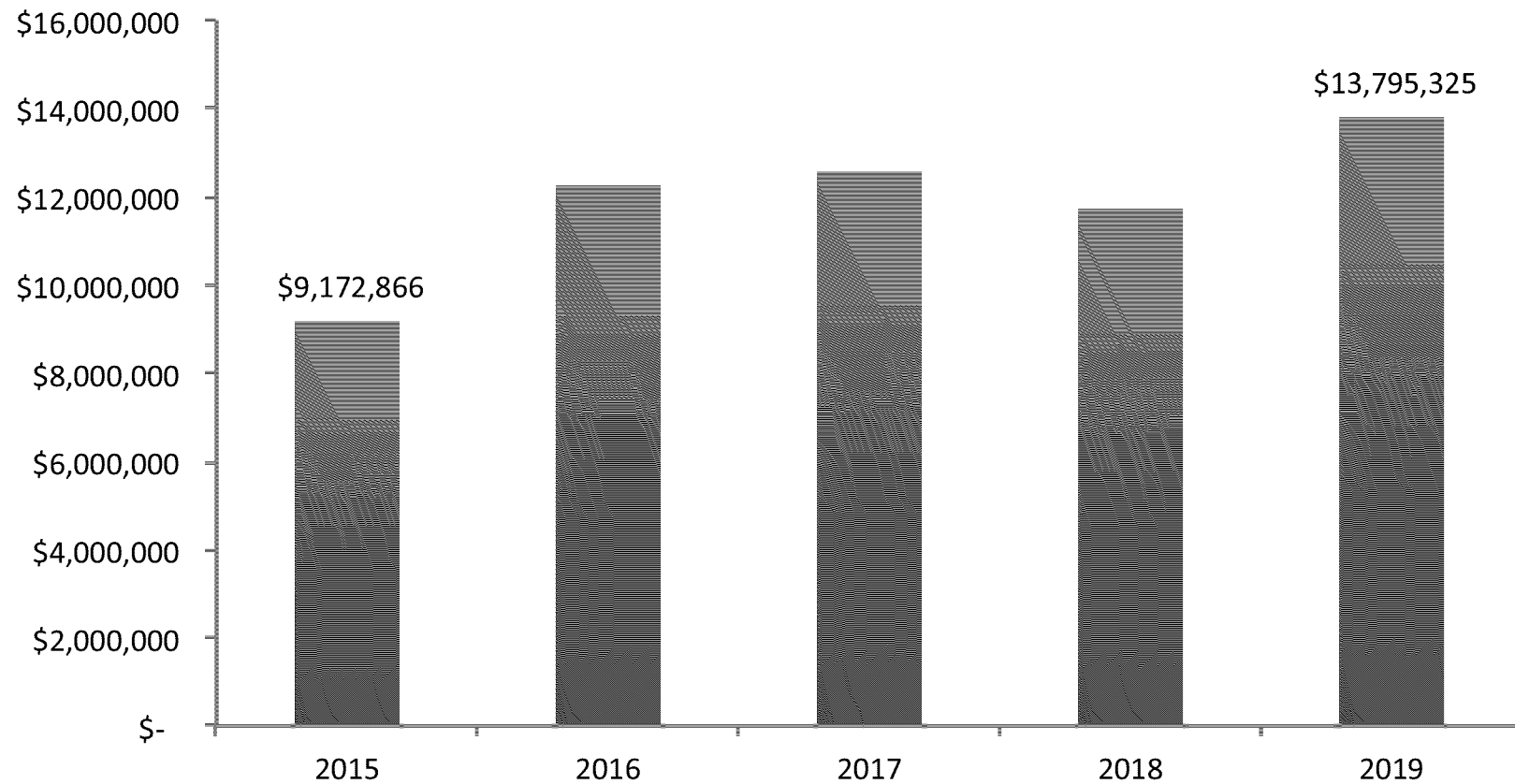
Average Monthly Water Charges Total Gallons = 5,000



Average Monthly Wastewater Charges Total Gallons = 5,000



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

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
<hr/>		
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

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
<hr/>						
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?

U-Specifications

STANDARD CONDITIONS OF APPROVAL OF
ENGINEERING PLANS FOR PROPOSED WATER
OR SEWER MAIN EXTENSIONS
NOVEMBER 2002

All plans for proposed extensions of the water distribution system, sewage collection system or appurtenances to either system shall be prepared by and bear the stamp of a Professional Engineer currently registered by the *Arkansas State Board of Registration for Professional Engineers and Land Surveyors* and shall conform to the latest edition of the "City Corporation Standard Specifications and Details and Policies and Procedures for the Extension of the Water and Wastewater Facilities".

City Corporation's approval of a plan for a particular water and/or sewer main extension or appurtenances to either system is contingent on several standard conditions.

1. The engineer of record must also submit the same plan to the Arkansas Department of Health and to any other agencies or local entities for approval. City Corporation does not submit proposed plans to regulatory agencies or local entities for approval.
2. No construction is permitted on the proposed water and/or sewer main extension or appurtenances to either system until City Corporation, the regulatory agencies and all local entities have approved the proposed plans in writing. In addition, approval of the Russellville City Council is required for any proposed service outside of the City limits.
3. Approval of proposed plans for water and/or sewer main extensions or appurtenances to either system by City Corporation is subject to the condition that all materials, construction procedures and tests are to be as specified in the latest edition of the City Corporation Standard Specifications. The only deviations from published City Corporation Standards, which are permitted, are those which are specifically approved in writing by City Corporation for the particular water and/or sewer main extension or appurtenances to either system proposed. City Corporation inspectors do not have the authority to waive or modify City Corporation standards in the field.
4. When City Corporation approves plans for water and/or sewer main extensions or appurtenances to either system, the approval process does not stop with the plan approval. The City Corporation approval is with the express understanding that the engineer of record will remain responsible for the construction as shown on the approved plans, until all work is complete and the project has been "Accepted for Service" by City Corporation.
5. The engineer of record for an approved water and/or sewer main extension or appurtenances to either system is responsible for advising City Corporation when

construction is to begin on the proposed water or sewer main extensions. Please provide a minimum of 24 hours notice of commencement of construction. If construction is to be performed on a weekend, holiday or after normal working hours (8:00 a.m. to 4:30 p.m.), make arrangements in advance for a City Corporation inspector to be present.

6. No permits for water meters or sewer taps will be issued for main extensions or appurtenances, which have not been "Accepted for Service" by City Corporation. "Accepted for Service" is defined as follows:
 - a. All construction and cleanup is complete and all test have been passed with the documentation in City Corporation files.
 - b. As-builts have been received by City Corporation and have been field checked and found acceptable.
 - c. All appropriate agreements have been executed and filed with City Corporation. All applicable pro-rata rebates have been collected as appropriate.
 - d. Easements and/or street dedications have been filed for record in the Courthouse and copies furnished to City Corporation.
 - e. City Corporation has by letter accepted the main extension or appurtenances for service and maintenance, subject only to the one-year's maintenance period.

PART M - MATERIALS

PAGE

M1 - DESCRIPTION	SM-1
M2 - SANITARY SEWER PIPE	SM-1
M3 - MANHOLES	SM-4
M4 - CONCRETE AND REINFORCING STEEL	SM-6
M5 - PIPE EMBEDMENT MATERIALS	SM-7
M6 - PAVEMENT REPAIRS	SM-8
M7 - LOW PRESSURE SEWER SYSTEM	SM-9

PART C - CONSTRUCTION METHODS

C1 - DESCRIPTION	SC-1
C2 - EXCAVATION, BEDDING, EMBEDMENT, AND BACKFILLING	SC-1
C3 - DEWATERING OF TRENCHES	SC-6
C4 - SHEETING AND SHORING	SC-7
C5 - PIPE LAYING	SC-8
C6 - PIPE JOINTS	SC-10
C7 - PIPE FITTINGS	SC-11
C8 - MANHOLES	SC-12
C9 - CONCRETE AND REINFORCING STEEL	SC-15
C10 - PAVEMENT REPAIRS	SC-16
C11 - BACKFILL DENSITY TESTS	SC-16
C12 - SEWER LINE TESTING	SC-17

M1 - DESCRIPTION

General

This part of the specifications shall govern for all materials used in the construction of sanitary sewerage facilities under the jurisdiction of City Corporation. Projects that would necessarily involve materials other than those included in this specification shall be approved by City Corporation. Complete specifications covering all materials not included herein shall be submitted for approval. Any material proposed for use other than materials herein specified shall be of kind and type normally used in the construction of sewerage facilities and compatible with City Corporation's maintenance program and financial abilities.

M2 - SANITARY SEWER PIPE

Description

The different kinds of strengths of sewer pipe outlined in this section shall be used in the construction of sanitary sewer lines in accordance with methods specified in Section C - Construction Methods. The strength of pipe used shall be based upon standard engineering design procedures and manufacturer or trade association recommendations and approved by City Corporation. The strength proposed shall be shown on the drawings. All pipe shall be circular unless otherwise approved. Only pipe materials listed in this section shall be used for main extensions or building sewers unless specifically authorized in writing by City Corporation.

Concrete Sewer Pipe

Reinforced Pipe:

All concrete sewer pipe for main extensions shall be reinforced concrete pipe conforming to the requirements of current ASTM Designation C76. Additional requirements shall include permeability and hydrostatic tests in accordance with current ASTM Designation C497. Non-reinforced concrete pipe shall not be used for main extensions.

Clay Sewer Pipe

Not acceptable for sanitary sewer construction.

PVC or ABS Truss Pipe

Not acceptable for sanitary sewer construction.

Polyvinyl Chloride (PVC) Sewer Pipe

Gravity Sewers:

PVC pipe for sanitary sewer gravity mains in 6" and larger sizes shall conform to the current ASTM designation D-3034, PVC gravity sewer pipe SDR-26. Service laterals from the main to the property line shall be PVC gravity sewer pipe SDR-26, unless specified otherwise.

Sewage Force Mains:

PVC Pipe for sanitary sewer force mains in 2" and 3" sizes shall conform to the current ASTM designation D-2241, PR 200 (SDR- 21). PVC pipe for force mains 4" and larger in diameter shall conform to ASTM D1785, SDR-18, AWWA C-900, Class 150 psi.

Cast Iron Pipe

Cast iron pipe shall meet the requirements of ASTM Designation A 74-66. Cast iron pipe shall not be used for sewer lines other than service lines and then when specified by an engineer. Pipe shall be made with bell and spigot gasketed joints as specified in this section. "No Hub" cast iron pipe is specifically forbidden for buried installation.

Ductile Iron Pipe

Gravity Sewers:

Ductile iron pipe shall conform to ANSI/ASTM Standard A 746 (gravity sewer pipe) or ANSI Standard C150/A21.5. It shall be lined with cement mortar in accordance with ANSI Standard A21.4. Pipe shall be manufactured for use with the type joints specified.

Sewage Force Mains:

Ductile iron pipe shall conform to ANSI/AWWA C151/A21.51 thickness Class 50. It shall be lined with cement motor in accordance with ANSI Standard A21.4. Pipe shall be manufactured for use with the type joints specified.

Encasement Pipe

Steel encasement pipe shall be smooth wall, welded steel pipe or asphalt coated corrugated metal pipe of the size and wall thickness called for on the plans and approved by City Corporation. Steel pipe shall conform to the requirements of AASHO Designation M-190 for Type C Coating. Corrugated metal pipe shall conform to the requirements of current AHTD specifications.

Wall thickness or gauge shall be as shown on the plans and as approved by City Corporation.

The annular space between the inside of the encasement pipe and the sewer pipe shall be as shown on the plans.

Pipe Joints

Concrete Pipe

Joints for concrete pipe shall be flexible gasket, bell and spigot type joint conforming to the requirements of ASTM Designation C 443-70 for pipe less than 24" in diameter and ASTM Designation C 361-70a for pipes having a diameter of 24" and over.

PVC Sewer Pipe

Joints shall be the rubber gasket push-on, conforming to the requirements of ASTM Designation D3139.

Cast Iron Soil Pipe

All joints shall be as shown on the plans and as specified herein.

All joints shall be rubber gasket push-on, mechanical, or flange to flange and shall conform to the requirements of ANSI Specification A 21.11.

Ductile Iron Pipe

All joints shall meet with the requirements for ductile iron pipe, as required by current manufacturers recommendations and be approved by City Corporation.

Encasement Pipe

All joints for smooth-wall steel encasement pipe shall be welded joints unless otherwise approved. Joints for corrugated metal pipe shall meet with the manufacturer's recommendation and be approved by City Corporation.

Pipe Fittings

Standard Fittings - Gravity Sewers:

All bends, tees, plugs, adaptors, wyes, or other fittings shall meet with the requirements of the type and kind of pipe used and all joints shall meet with the requirements for the joints listed above.

Standard Fittings - Force Mains:

All bends, tees, plugs, adaptors, reducers, wyes and other fittings shall be ductile iron mechanical joint conforming to ANSI/AWWA Standard C100/A21.10 and C111/A21.11.

Special Fittings:

All special fittings shall be in accordance with the pipe manufacturer's recommendations and as approved by City Corporation. Connections between different kinds of pipe and for future connections shall be detailed on the plans and shall be such as to provide watertight joints and connections and approved by City Corporation.

Service Lines

All service lines shall meet with the requirements of this section of the specifications for pipe and joint materials as outlined below. Service lines under paved areas shall be bedded, as required for mains, from the main to the limits of the pavement.

Minimum size of any service line or building sewer shall be 4" nominal diameter. Size of service line for multi-family or non-residential applications shall be as required by the Arkansas State Plumbing Code latest revision.

All 4" service lines must be constructed of ductile iron or cast iron pipe or PVC Pipe as specified in Sections M2.5, M2.7 and M2.8 of these specifications. Service lines larger than 4" shall be constructed of material approved for main extensions by City Corporation.

M3 - MANHOLES

Concrete:

Concrete used in the construction of manholes shall conform to the requirements of concrete and reinforcing steel for either Class A or Class B concrete.

Mortar:

Mortar shall be composed of one part Portland cement to two parts fine aggregate by volume to which shall be added seven pounds of hydrated lime with each sack of cement. Cement and fine aggregate shall conform to the requirements of Concrete and Reinforcing Steel. Masonry cement shall be strictly prohibited for use in any part of manhole construction.

Brick or Block Manholes

Brick or block manholes shall be permitted only when specifically approved by the Utility.

Precast Manholes:

Precast concrete manhole sections shall be approved for use on a

case-by-case basis. No precast manhole bottoms shall be used. The first barrel section shall be embedded in the poured-in-place manhole bottom and shall form a structurally sound and water-tight joint.

Poured-In-Place Manholes:

Poured-in-place manholes shall be made of Class A concrete conforming to the requirements for concrete and reinforcing steel.

Drop Manholes

Materials used in the construction of drop manholes shall conform to the requirements of paragraphs above and other applicable parts of this specification. The fittings and pipe sections of the drop shall be ductile iron gasketed slip joint.

Manhole Rings and Covers

Covers shall have SANITARY SEWER cast on cover.

Combined weights of manhole ring and cover shall not weigh less than 260 pounds. The individual minimum weight for the lid shall be 125 pounds; and for the ring shall be 135 pounds.

Rings and Covers shall be free from porosity, blowholes, hard spots, shrinkage, distortion, and other defects. They shall be smooth and well cleaned by shotblasting.

Metal used in the manufacture of the manhole rings and covers shall conform to ASTM A48-76 Class 35B for gray iron or ASTM A536-80, GRADE 65-45-12 for ductile iron.

All manhole rings and covers shall be manufactured true to pattern. Component parts shall fit together in a satisfactory manner, and shall be of nonrocking design, or shall have machined bearing surfaces to prevent rocking and rattling under traffic.

The dimensions of the ring and cover shall conform to those as shown on the standard details for sewer line construction. Cast dimensions may vary one-half the maximum shrinkage possessed by the metal or +/- 1/16 inch per foot.

Self-sealing covers shall be required when the top rim elevation is below the 100-year floodwater elevation. The self-sealing gasket shall be installed as per the Standard Details and manufacturer recommendations.

The manhole ring and cover shall be similar and equal to Model 250-24A as manufactured by Western Iron Works.

Manhole Steps:

Manhole steps shall be corrosion resistant, coated and reinforced, and shall be similar and equal to Perma-Step 100-2 as manufactured by Utility Products, Incorporated, 402 West Rhapsody, San Antonio, Texas or polypropylene coated and reinforced steps as manufactured by ICM, Incorporated, Jacksonville, Arkansas.

M4 - CONCRETE AND REINFORCING STEEL

Cement:

Cement shall be Portland Cement conforming to AASHO Designation M 85, Type I. Type III cement, high early strength, may be used if approved by the Engineer.

Water:

Water used in mixing concrete and mortar shall be free from injurious amounts of acids, alkalis, oils, sewage, and vegetable matter. It shall be fit for drinking.

Composition and Strength:

Concrete shall be composed of Portland Cement, fine and course aggregate and water proportioned in keeping with the following:

	<u>Class A Concrete</u>	<u>Class B Concrete</u>
Min. Sacks of Cement Per CY	6	5
Consistency Range in Slump-In.	2 - 4	2 - 4

Proportioning of concrete shall be by weight except that water may be measured by volume.

A 1 cubic foot sack of Portland Cement will be considered as 94 pounds in weight.

A gallon of water will be considered as weighing 8.33 pounds.

All Class "A" concrete shall be ready mix concrete conforming to ASTM Standard C94. Job site mixed Class "A" concrete shall not be permitted.

Class "A" concrete made with ordinary Portland Cement shall have a minimum compressive strength at 28 days of 3,500 psi. Class "B" concrete made with ordinary Portland Cement shall have a minimum compressive strength at 28 days of 3,000 psi. If made with high early strength cement, those strengths shall be attained at the age of 7 days.

All reinforcing bars shall be "Billet-Steel Concrete Reinforcement Bars" conforming to ASTM Designation A15 or "Rail-Steel Concrete Reinforcement Bars" conforming to ASTM Designation A16. Billet-

Steel bars shall be intermediate grade with minimum yield point of 40,000 psi.

All reinforcing bars shall be deformed bars. Deformation shall comply with the "Minimum Requirements for the Deformation of Deformed Steel Bars for Concrete Reinforcement - ASTM Designation A305".

Use

Class "A" concrete shall be used on all structures including manholes and for Class "A" pipe bedding.

Class "B" concrete may be used for all concrete work except as specified above and as shown on the standard details.

Class of concrete shall be shown on the plans in all locations where concrete is required.

Admixtures

Admixtures, other than air-entraining agents and High Early Strength agents shall be used only with the written permission of City Corporation or Engineer.

Placement

Concrete shall be placed in accordance with "Recommended Practice for Measuring, Mixing and Placing Concrete" (ACI - 304).

M5 - PIPE EMBEDMENT MATERIALS

Description

This section covers materials used for embedment of sanitary sewer mains. Unless otherwise specified herein or shown on the plans, embedment materials shall be restricted to Class I or Class II materials as described below and in accordance with ASTM D 2321-74 (Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe). Class III, IV or V embedment materials are unacceptable.

Class I Embedment Material

Class I material consists of angular, 9.5 to 19-mm (3/8 to 3/4-inch) clean, graded stone with minimum fine material (less than 5% by weight passing #4).

Class II Embedment Material

Class II material consists of crushed graded stone with maximum particle size of 40 mm (1 1/2 inch), variously graded and

containing small percentages of fines (less than 5% by weight passing #4). Materials shall be granular and non-cohesive, either wet or dry.

M6 - PAVEMENT REPAIRS

State Highways

Materials used in the repair of State Highways shall meet with the approval of the Arkansas Highway and Transportation Department.

City and County Roads

Materials used in the repair of County roads shall meet with the approval of the City or County Roads Department or as specified below. Thickness of pavement repair shall not be less than the existing thickness or as specified below.

All pavement, gravel, native material shall be removed from site. Backfill of street cut sections shall be 3/4" minus crushed stone as approved by City Corporation and compacted to a density of 95% AASHO T-180 modified or greater. Moisture shall be added as required to attain specified density. Immediately after laying the pipe in a street crossing, the crushed stone shall be added in 9-inch lifts. Use a vibrating plate compactor to achieve the density requirements. Top of base shall be a minimum of 4-inches below existing asphalt pavement edge or a minimum of 6-inches below existing portland cement pavement edge.

Asphaltic concrete hot mix surface course or cold mix surface course, if approved by the ENGINEER, shall be a minimum of two (2) inch layers of two (2) inches thick and shall meet with the requirements of the Arkansas State Highway Commission Specifications for Type I or Type II Asphaltic Concrete Hot Mix Surface Course. Immediately after base is placed, asphalt concrete, as specified above, shall be placed to final density using a vibrating plate compactor or other approved method.

Gravel surfacing shall meet with the requirements of the Arkansas State Highway Commission Specifications for Crushed Stone Base Course, Grade SB-2. Base shall be full depth thickness when placed under any asphaltic concrete hot mix surface course as specified in this section. Where an existing gravel road is to be repaired, a minimum of eight (8) inches thickness shall be used.

Prime coat shall meet with the Arkansas State Highway Commission Specifications for Prime Coat. Prime Coat shall be a minimum of 0.30 gallons per square yard or as otherwise approved.

Concrete and reinforcing steel shall meet with the requirements of SECTION M4 - CONCRETE AND REINFORCING STEEL. Concrete shall be a

minimum of Class A concrete or as approved by the governing agency. A minimum of six (6) inches thickness shall be placed as road surface. Immediately after base is placed, concrete surface shall be placed. In the event the City requires the street be immediately opened for emergency vehicles, one-half the street width shall be paved. The one-half street width for traffic shall be brought to grade with 3/4-inch minus crushed stone and maintained until concrete strength is attained and approved by Utility or City. When approved, the remaining concrete placement shall be completed. Contractor shall be responsible for proper traffic control devices as approved by the City.

Other Roads or Streets

Repair of roads, streets or other public rights-of-way not covered in these specifications, shall meet with the approval of the local governmental agency or private property owner having jurisdiction. Materials used shall meet with the requirements of Paragraph M6.3 above, or as otherwise approved.

Temporary Repairs

All temporary repairs made in order to properly maintain traffic shall meet with the approval of the governmental agency or private owner having jurisdiction. Materials shall meet with the requirements of these specifications or as otherwise approved.

M7 - LOW PRESSURE SEWER SYSTEM

DESCRIPTION

Low Pressure Sewer Systems are not to be preferred or used in applications that can be served by gravity sewer systems. Each grinder pump system shall be approved by the UTILITY on a case by case basis.

Low Pressure Sewer System shall be planned and designed to incorporate an approved limited area with defined area and topography boundaries. The designing engineer shall specify the limits of ultimate development. Design data shall include the number and type of residential and commercial units planned.

SYSTEM DESIGN

Design shall include a plan and profile drawing of the entire pressure system. Pump locations on the lots, location and direction of flow of each lateral, branch and main, and the point of discharge should be shown. For ease of identification each pipe branch and section should be numbered.

Clean out and flushing stations should be incorporated into the

pipe layout. In general, cleanouts should be installed at the terminal end of each main, a maximum of 400 feet on straight runs of pipe, and whenever two or more mains come together and feed into another main.

The Low Pressure Sewer System shall be designed for normal pressures of 40 psi or less. Mains shall be a minimum of 2 inches in diameter with design velocities between 2 feet per second and 5 feet per second.

The system should be designed so that the maximum heads at the branch ends approximate 92 feet. This will provide optimum scouring velocity, minimum sewage holding capacity, and the most economical pipe installation.

PIPE MATERIAL

Polyvinyl Chloride (PVC) Sewer Pipe - PVC pipe for mains and service lines of the Low Pressure Sewer System shall conform to current ASTM D-2241 PVC pipe SDR-21 PR 200, IPS - PVC gasket pipe.

Ductile Iron Pipe - DIP for mains of the Low Pressure Sewer System shall conform to current ANSI/AWWA C150/A21.50 Class 50 and lined with cement mortar in accordance with current ANSI Standard A21.4. Pipe shall be manufactured for use with the type joints specified.

Force mains shall have a minimum depth of cover over the top of pipe of 30 inches. A continuous 14-gauge THNN copper wire shall be installed with all non-metallic pipe including service lines. The wire shall be laid along the pipe passing completely around the pipe at intervals not to exceed 20 feet. The wire shall be looped around valves, saddles, curb stops and other appurtenances in such manner that there is not interference with the operation of the appurtenances.

VALVE MATERIAL

Isolation valves shall be bronze gate valves Class 125 Threaded Non-rising Stem, Screwed Bonnet, Solid Wedge Disc Crane No. 438, or equivalent.

Check valves shall be bronze swing type, Class 125 Threaded, Bronze Disc, "Y" Pattern, Screwed Cap Crane No. 37, or equivalent.

CONSTRUCTION METHODS AND POLICIES

Low Pressure Sewer System shall be constructed according to the standard methods as outlined in the general section of the specification contained herein, except for the following special construction specifications.

Service lines from individual residences shall be PVC SDR-21 Class

200 pipe. Service lines shall be 1 1/2 inch diameter or a larger size specified by the ENGINEER and approved by the UTILITY. Service lines shall be buried a minimum of 18 inches below finish grade. Isolation valves and check valves shall be installed in a single valve box at the property line in a designated easement and a location approved by the UTILITY. Said valve box may be plastic and shall be a type and size approved by the UTILITY.

Cost and installation of the grinder pump system shall be provided by the property owner or improvement district. All material and labor shall be warranted by the installer and/or supplier for a period of one (1) year after the system is first placed in operation. The UTILITY will provide maintenance and service as required due to normal wear and tear for the pump and controls, check valve and isolation valve at the main after the one (1) year warranty period. Actual costs to repair failures due to abuse by the owner shall be paid by the owner.

The property owner shall be responsible for proper maintenance, upkeep and replacement of the service line, power supply and basin.

Property owners and developers shall furnish all easements and access required by the UTILITY to properly maintain and service the sewer mains and associated pumping equipment.

The property owner shall not bury, build over or in any other way make inaccessible the lines and pumps for which the UTILITY is responsible.

When grinder pump systems are included in a sewer extension, the developer/owner shall furnish the UTILITY, without cost, the number of complete pump/motor assemblies according to the following schedule:

<u>Grinder Pumps in District</u>	<u>Spares Furnished to UTILITY</u>
1 - 10	1
11 - 20	2
21 or more	10% (Add one for any fraction)

SERVICE LINE

The 1 1/2 inch discharge line and service line shall be installed 24 inches below the top of the basin. A section of galvanized pipe shall be connected to the basin and extend a minimum of 4 feet or to a longer length if required to reach the service line trench having an undisturbed trench bottom.

The service line shall be pressure tested from the basin connection to the force main prior to final installation of the pump assembly.

The pressure test shall be performed in accordance with the Force Main Leakage Test procedure as outlined in the general section of

the specification contained herein.

SIMPLEX GRINDER PUMP SYSTEM

GENERAL DESCRIPTION

Simplex (one pump) grinder pump systems mounted in a fiberglass sewage collection basin shall be provided as a minimum for each single family or duplex dwelling served by a sewer collection force service line. The pump shall be automatically controlled through the use of mercury level controllers functioning in coordination with a control panel mounted remote from the basin. The basin shall be installed below ground and plumbed in by a plumber licensed in the State of Arkansas.

PUMP DESIGN

The pump shall be of a centrifugal design for submersible use and shall have a minimum horsepower rating of two. The sewage cutter/grinder mechanism shall be of hardened and ground stainless steel capable of macerating solids into fine slurry. The grinder cutting impeller shall extend beyond the shredding ring to minimize the possibility of large solids clogging the suction inlet. Recessed grinder cutting impeller designs will not be acceptable. The pump motor shall be oil cooled and have a high temperature cut-off switch imbedded in motor windings. The pump seal chamber shall be equipped with a moisture sensing seal failure probe with shall cause a warning light to glow bright in the control panel in the event of seal leakage. Pump shall be Myers WGL 20-21 grinder pump or equivalent.

FIBERGLASS BASIN

The basin shall be fiberglass and be manufactured to be water tight through a filament wound or hand lay up system and shall be a type of construction strength and material approved by the UTILITY. A resin rich mixture shall be used. Stainless steel fasteners shall be encapsulation in the top lip to which a cover of fiberglass or epoxy coated steel shall be bolted. Finished dimensions shall be 30 inch diameter by 60 inch or 72 inch deep as required by elevation of piping. The circumference of the basin bottom shall be equipped with anti-flotation hold downs which shall be imbedded in concrete. Basin shall be Myers grinder pump station package or equivalent. Basin shall be backfilled with select material with no rocks or stones larger than 3 inches.

The top of the basin shall be elevated a minimum of 4 inches above finish grade with positive run off grade around all sides. The basin and pump assembly shall be located a minimum of 20 feet from all buildings, property lines and water systems.

STATION INTERNAL COMPONENTS

- A. **Liftout Rail** - The pump station shall be equipped with the following provisions. A liftout and rail system for pump placement and removal shall not require personnel to enter basin for service or maintenance. The pump shall be removable by sliding upward while being controlled on a stainless steel guide rail. The connecting and disconnecting of the pump shall be accomplished through the use of a two piece brass sliding disconnect device. This device shall seal through the use of an "O"-ring. A portion of this device shall remain in the basin as an integral part of the discharge piping. The removable portion shall contain the "O"-ring and shall be an integral part of the pump and check valve piping.
- B. **Mercury Level Controls - High Level Alarm Switch** Three (3) mercury level control switches shall be provided for: Pump On, Pump Off and High Level Alarm functions. The switches shall be a mercury switch, encapsulated in polyurethane foam for corrosion and shock resistance. The switch shall be weighted to hold desired position in the sump. To ensure optimum longevity, mercury contacts shall be of the mercury to mercury type and encapsulated in a steel tube and shall be rated for 20 amps at 115 VAC.

JUNCTION BOXES

Junction box shall be non-metallic in construction and shall have brass threaded inserts for which to secure the cover. The cover will be fastened to the junction box by means of stainless steel machine screws. To preclude the possibility of dropping the screws into the basin, the junction box cover will be furnished with screw retainers. The screws will have large non-metallic heads so that the heads can be tightened by hand using the thumb and finger. The junction box shall have a lower chamber which will house all electrical conductors entering the basin. The lower chamber will be used to seal off the junction box from ground water. All cords shall be potted into the lower chamber of the junction box.

The sealing compound used shall be Chico AZ used in conjunction with Chico "X" fiber or equal. Sealing compound will be furnished by pump station vendor.

CONTROL PANEL

A Master lock, type #3, or equal, shall be furnished with each control enclosure. All locks furnished for the system shall be keyed alike such that only one key will be required to open all panels. Keys and locks shall be furnished by the pump station vendor consistent with those previously installed.

All panels shall be in NEMA 3 enclosures for outdoor use and box

cover shall have hasp for lock, a flashing red high level alarm light, and a main disconnect with door interlock so that power from the panel must be switched off before the door is opened. The alarm light shall have flashing red indication, shall be NEMA 4 rated, shall be oil tight and water tight, and shall be 1 1/2 inch diameter or larger.

Panels shall be for 230 volt single phase. Control circuit and alarm circuit shall be for 115 volts.

The following components shall be provided for each pump; circuit breaker, magnetic contactor with 2 leg, quick trip ambient compensated overload block, H-O-A switch, green run light, amber seal fail light, alarm switch for on-off and test, connection terminal strip, start capacitor, run capacitor, start relay, and an elapsed time meter.

The control panel shall include a schematic wiring diagram permanently posted to the inside cover of the box. All terminals will be clearly labeled with proper designation.

The power cable shall be of wire size and run in conduit in accordance with the National Electrical Code from the junction box at the basin to a disconnect box at the building exterior wall.

Control panel shall be Myers CGL-21SW or equivalent.

INLET HUB

Shall be provided loose by the pump station vendor and shall be constructed of PVC with a rubber pipe gasket to accommodate PVC inlet pipe. The hub shall be provided with stainless steel nuts, bolts and washers for bolting to tank side wall.

Installer shall cut the inlet hole and install the hub in a workmanlike manner at a level between the discharge level and 1-foot above the manufacturers recommended alarm float level.

SERVICE LINE

VARIABLE REQUIREMENTS

Where the static discharge head of the pumping unit is less than 15 feet, or in any pumping stations designated by the ENGINEER a spring loaded check valve shall be installed in the discharge line of each pumping unit.

Where field conditions require, or in any pumping station designated by the ENGINEER, a siphon breaker shall be installed in the discharge line of each pumping unit. Siphon breakers shall be a minimum of 1 1/4-inch in size and be approved by the ENGINEER prior to installation. Manufacturer/Supplier shall furnish the

UTILITY with a minimum of two operations and maintenance manuals and parts lists.

DUPLEX GRINDER PUMP SYSTEM

GENERAL DESCRIPTION

Duplex (two pump) grinder pump systems mounted in a fiberglass sewage collection basin shall be provided as a minimum for each three family or larger residential unit or commercial unit served by a sewer collection force service line.

Pump shall be a grinder pump of the centrifugal type with recessed type impeller an integrally built-in grinder and submersible motor. Motor shall have seal failure detector and high temperature shut off. The pump shall be installed on a lift out rail type system in such a way that solids are fed in an up-flow direction to the grinder impeller, with no feet, rails, or other obstructions below the grinder inlet. Unless specified otherwise in this section of the specifications, all requirements for the simplex grinder pump systems are applicable to the duplex grinder pump systems.

OPERATING CONDITIONS

The pump shall be capable of operating, without overloading, at any point on the pump performance curve.

MOTOR

The motor shall be 5 HP and will operate at 1750 or 3450 rpm.

The motor shall be three phase, 460 volt, and shall be of the capacitor start, capacitor run type.

To ensure optimum concentricity, the motor shall have a heat shrunk stator. The stator windings shall be of the open type with insulation rated for 150°C maximum operating temperature. The winding housing shall be filled with a clean high dielectric oil that will lubricate bearings and transfer heat from the windings to the outer shell.

Motor shall have three bearings; an upper ball bearing, an intermediate ball bearing, and a lower sleeve guide bearing to accommodate radial load from the grinder impeller. Ball bearings shall be designed for a B-10 life.

A heat sensor thermostat shall be attached to the windings, and shall be connected in series with the motor starter coil to stop motor operation if the motor temperature exceeds 220°F. The high temperature shut off shall cause the pump to cease operation should a control failure cause the pump to run in a dry wetwell. The high temperature shut off shall automatically reset and restart the

motor when the temperature drops to a safe limit.

The common motor pump, and grinder shaft shall be of one piece and shall be 416 stainless steel. The pump impeller and grinder impeller shall thread onto shaft.

SEAL CHAMBER

The motor shall be protected by two mechanical seals, mounted in tandem, with an oil filled chamber between the seals for lubricating seal faces. Seal faces shall be carbon and ceramic lapped to a flatness tolerance of one light band. Metal parts and spring for seals shall be stainless steel.

SEAL FAIL DETECTOR

A double electrode shall be mounted in the lower end of seal chamber to detect any water leakage into the chamber. Electrodes are connected to an amber seal failure light in the control panel. The seal failure warning system shall not stop the motor, but indicate leakage so that pump lower seal can be serviced before motor is damaged.

PUMP IMPELLER

The impeller shall be of the recessed type to provide for an open unobstructed passage through the volute. The impeller shall be constructed of 85-5-5-5 bronze and shall have pump out vanes on the back side of the impeller to help keep trash away from seal and reduce pressure at the seal faces.

GRINDER CONSTRUCTION

Grinder assembly shall consist of a grinder impeller and a shredding ring mounted directly below the pump volute inlet. Grinder impeller shall thread onto shaft and will be locked with a screw and washer. The shredding ring shall be held in the housing by a snap ring and steel retaining ring. Both the shredding ring and impeller shall be removable from the outside without dismantling the pump.

Grinder assembly shall be of such construction that no clearance adjustments are required when reassembling. The grinder impeller and shredding ring shall be of 440 C stainless steel and shall be hardened to 58-60 Rockwell.

PUMP AND MOTOR CASTINGS

All castings shall be of high tensile cast iron and shall be treated with phosphate and chromic rinse and be painted inside and outside with baked on epoxy paint before machining. Likewise, the interior of the volute shall be coated with baked on epoxy paint.

POWER CORDS

Motor power cords shall be #14 type ST, four conductor, and motor control cord to be #16 ST, four conductor. All cord lengths shall be such that no splices will be required between the pump and junction box at the top of the basin. Both cords shall be potted into motor end cap with epoxy potting compound. In addition, a rubber grommet that seals both cords shall be clamped on the cords by the end holding cap. Cords shall withstand a pull of 150 pounds without loosening. The end cap shall have female thread tapping for 1 1/2-inch conduit.

LIFT OUT RAIL SYSTEM

Rail system shall consist of a combined free flow check valve and seal fitting that mounts vertically into a stationary discharge casting. A check valve and seal fitting shall seal with "O"-rings and a tapered rubber seal ring into funnel of discharge casting. Check valve flapper shall be spring loaded to prevent water hammer slam. Discharge castings shall be furnished with right and left hand discharge pipe connections for duplex systems. Discharge pipe tapping shall be 1 1/4-inch standard pipe thread. Valve casting and discharge casting shall be painted inside and outside after machining, with baked on epoxy paint.

An upper guide plate shall be attached to liftout fitting and will guide pump on rails. A lifting eye shall be attached to plate and 5/6-inch galvanized chain and clevice shall be furnished for lifting pump.

The lift out rail system must also employ ball type check valves with a bronze disconnect utilizing an "O"-ring sealing device. This system shall use a 3/16 inch stainless steel lifting cable.

Guide rails shall be 3/4 inch 304 stainless steel installed parallel.

Alternate guide rail systems utilizing other means of disconnect devices are not acceptable.

LEVEL CONTROLS

Sump level shall be controlled with Myers model FLCW level controls or equivalent. These controls shall be of the mercury tube sealed in polyurethane float and weighted to hold position in the sump. The cord connecting the control shall be SJO type.

Three switches shall be provided; Pump On, Pump Off, and High Level Alarm.

A mounting bracket that attaches to the basin wall shall be provided to support the controls.

Control cords shall connect to junction box with cord grip seal connectors.

ELECTRICAL CONTROL PANELS GENERAL

All panels shall be in NEMA 3 enclosures for outdoor use and box cover shall have hasp lock, and a flashing red high level alarm light with globe guard.

Panels shall be for 460 volt three phase. Control circuit and alarm circuit shall be 115 volts.

The following components will be provided for each pump; circuit breaker, magnetic contactor with 2 leg, quick trip ambient compensated overload block, H-O-A switch, green run light, amber seal fail light, alarm switch for on-off and test, and connection terminal strip.

Single phase panels shall also have start and run capacitors and start relay.

The control panel shall have the following options:

1. Elapsed Time Meter for each Pump
2. Lightning Arrestor
3. Phase Monitor
4. Thermostatically Controlled Condensate Strip Heater
5. Remote Alarm Terminals and Circuitry
6. Audible Alarm Horn
7. Intrinsically Safe Relays
8. Mounting Stand for Control Panel
9. Duplex 115 Volt Utility Receptacle
10. Panel Mounted Service Light

The control panel shall include a schematic wiring diagram permanently posted on the inside cover of the box. All terminals will be clearly labeled with proper designation.

STARTUP

Startup services shall be performed by the authorized factory representative with UTILITY personnel observing. Manufacturer shall furnish two operation and maintenance manuals and parts lists per system.

C1 - DESCRIPTION

General

This part of the specifications shall govern the construction procedures used in the installation of sanitary sewerage facilities under the jurisdiction of City Corporation. Construction procedures other than those outlined in this specification shall meet with the approval of City Corporation. Complete specifications covering any unusual or special construction procedures shall be submitted for approval and approval must be received prior to beginning any construction operations.

IMPORTANT: No sewer construction activity shall commence, either initially or after interruption of construction for two (2) normal working days, until the manager or engineer of City Corporation has been notified and notifications has been acknowledged. Violations of notification may require the Contractor to restore all activities to their previous condition or to uncover all construction work for inspection and approval.

C2 - EXCAVATION, BEDDING, EMBEDMENT, AND BACKFILLING

Excavation - General:

All excavation shall be carried accurately to the line and grade shown on the Plans and as established by the Engineer. When excavation is carried below or beyond that required, the space shall be filled with bedding or with concrete, in accordance with the Engineer's instructions.

Where necessary to protect the labor, the work, or adjacent property, the Contractor shall provide and install shoring. Such shoring shall remain in place until the backfill has proceeded to a point where it can be safely removed, except that, if in the opinion of the Engineer, damage is liable to result from withdrawing shoring, it shall remain in place.

All excavation shall be dewatered before any construction is undertaken therein. Concrete shall be placed only upon dry, firm foundation material and pipe shall be laid only in dry trenches. All pipe ends shall be closed using devices or materials approved by City Corporation at the end of each day's operation.

Excavation - Trench Sewage Force Mains

Trenches for force mains shall be of the width and depth necessary for the proper installation of the pipe. All pipe lines shall be laid in trenches of such depth as to provide a minimum cover of thirty inches (30") over the top of pipe barrel unless otherwise shown on the Plans.

Width of pipe trench for sewage force mains shall be adequate for the installation of the pipe and make-up of joints, but in no case shall the width of the trench at the top of the pipe be wider than the outside diameter of the pipe plus two (2) feet.

The bottom of the trench shall be accurately graded so that the pipe will be in continuous and uniform contact with and have a longitudinal bearing on undisturbed soil for the full length of the barrel of the pipe. The trench bottom shall be excavated by hand below the bell ends so that the bell does not bear on the trench bottom.

If the soil at the bottom of the trench is mucky or if the subgrade is too soft to properly support the pipe, the Contractor shall excavate below the lower extremity of the pipe as directed by the Engineer, and place select material as defined in Section C2.6. Said select material shall be thoroughly tamped into place to receive the pipe.

Excavation - Structural:

The Contractor shall perform all structural excavation required on the Plans. Excavation shall extend a sufficient distance from walls and footings to allow for forms and for proper inspection. Except where the Plans indicate that concrete may be deposited directly against excavated surfaces.

Excavation - Trench for Gravity Sewer Pipe:

All pipe lines shall be laid in trenches of such depth as to provide a minimum cover of thirty inches (30") over the top of pipe barrel unless otherwise shown on the Plans.

In order to avoid superimposed loading in excess of the designed and specified pipe strength and to provide sufficient room for proper installation and bedding of sewer pipe, the trench widths for the pipe sizes used shall be kept within the limits specified as follows:

<u>Inside Pipe Diameter</u>	<u>Maximum Width of Trench at Top of Pipe</u>	<u>Maximum Width of Trench 12" Above Outside Top of Pipe</u>
6"	2' - 6"	2' - 10"
8"	2' - 6"	2' - 10"
10"	2' - 6"	3' - 0"
12"	3' - 0"	3' - 4"
14"	3' - 0"	3' - 6"
15"	3' - 0"	3' - 6"
16"	3' - 0"	3' - 6"
18"	3' - 6"	4' - 0"
21"	3' - 6"	4' - 4"
24"	4' - 0"	4' - 8"

27"
30"

4' - 0"
4' - 6"

5' - 0"
5' - 6"

If it becomes necessary to reduce the earth load on the trench banks back to prevent sliding and cave ins, it will be permissible to cut the trench banks on a slope above an elevation two (2) feet above the outside top of the pipe. Under no circumstances, however, shall the specified maximum width twelve (12) inches above the outside top of the pipe be exceeded, except at points where the combined superimposed earth and live loads on the pipe are sufficiently low to permit an increase in the specified maximum trench width, and then only where such an increase in trench width is authorized by the Engineer.

Shaping of the trench bottom and bedding procedures shall be as specified in this section. Under certain conditions, excavation below the planned invert of the pipe will be required before preparation of the bedding is begun, as listed in the following paragraphs:

If the soil at the bottom of the trench is mucky or in such condition that it cannot be properly shaped and graded, or if the subgrade material is too soft to properly support the pipe, the Contractor shall excavate below the normal subgrade elevation as directed by the Engineer. Wherever excavation is carried below the specified subgrade, at the direction of the Engineer, the Contractor shall provide and install a fill of Class II bedding thoroughly tamped into place up to an elevation sufficient to prepare the subgrade as specified in this section for the particular classification of bedding that may be required.

Where water occurs in trenches, they shall be excavated to a depth of approximately six (6) inches below grade and backfilled with gravel to a point approximately 1/6 of the internal pipe diameter or 2", whichever is the greater, above grade. Pumps shall then be kept operating, taking suction out of a sump below the gravel so as to hold the water level well below the bottom of the pipe until the joints have been placed and firmly bedded in position.

The Contractor will be required to keep the sides of the excavation vertical, except as herein before provided. Shoring shall remain in place until the backfill has proceeded to a point where it can safely be removed, except that, if, in the opinion of the Engineer, damage is likely to result from withdrawing sheeting and shoring, it shall remain in place.

Excavation for manholes and other accessories shall be sufficient to leave at least twelve (12) inches in the clear between their outer surfaces and the embankment or timber which may be used to protect them.

The excavation of trenches shall not advance more than three

hundred (300) feet ahead of the completed pipe work and backfill, except by permission of the Engineer or Inspector.

Excavation for Manholes:

Excavation for manholes shall be as specified in Section C8 - Manholes.

Disposal of Excavated Materials:

Excavated material shall be stockpiled adjacent to the work to be used for backfilling as required. Excavated material which is unsuitable for backfilling and excess material and all excavated material from a street cut shall be removed from the site and disposed of in a manner approved by the Engineer.

Use of Explosives:

In the event the use of explosives is necessary for the efficient prosecution of the work, the Contractor shall notify the Engineer in advance of their use and shall exercise every precaution to prevent damage to adjoining improvements or property by reason of their use. Any damage to private property resulting from the use of explosives shall be the liability of the Contractor. In all cases where the explosives are necessary, a permit from the local governmental agency shall be obtained by the Contractor prior to their use.

Bedding, Embedment, and Backfilling of Sewer Lines:

General Requirements:

All gravity sewer pipe shall be installed using Class I embedment materials as specified in Section M5 - Pipe Embedment Materials, except that cast or ductile iron pipe conforming to Sections M of these specifications may be bedded as specified for "Type 1" laying conditions in ANSI A21.50. "Thickness Design of Ductile-Iron Pipe", latest revision, unless structural or foundation requirements indicate otherwise.

Backfilling of gravity sewer lines shall include the refilling and consolidation of the fill in the excavation up to the surrounding ground surface when required by the Engineer. In all cases, it is essential that the complete backfill be done in such a manner to minimize voids in the backfill.

Select materials shall be used for backfilling up to a point 12 inches above the top of the pipe. The select material shall be good soil material, sand, gravel, or bedding, and shall be free from rocks larger than three (3) inches or hard lumpy materials. No materials of perishable, spongy, or otherwise unsuitable nature shall be used as select material.

All sewer pipe shall be bedded and backfilled in accordance with this section. Also the appropriate ANSI/ASTM specifications for all sewer pipe must be complied with if the ANSI/ASTM specifications are more stringent than City Corporation's requirements.

Where trenches are excavated across existing or proposed paved areas, the entire trench shall be backfilled with 3/4" minus crushed stone or SB-2 crushed stone and compacted to a density of 95% AASHTO T-180 modified or greater. In the case of city streets, Section M6 shall govern.

The backfill of materials in trenches under existing or proposed paved areas shall be compacted with mechanical devices manufactured for that purpose from the top of the pipe to the top of the existing or proposed subgrade/base as directed by the Engineer.

Bedding and Backfilling of Rigid Pipe:

The bedding of rigid pipe (concrete, ductile iron) shall be completed as described below and in accordance with the trench detail shown on the standard details sheet appended to these specifications.

Excavation shall be done to a depth of 6" below the bottom of the pipe wherever the bottom of the trench is rock, Where excavation is done below the pipe for any reason, the space shall be filled with select material as defined in Section C2.6 and compacted as required to provide a firm non-settling foundation for the bottom of the pipe. Said select material shall be brought to the required grade. The bottom of the trench shall be accurately graded so that the pipe will be in continuous and uniform contact with and have a longitudinal bearing on undisturbed soil for the full length of the barrel of the pipe. The trench bottom shall be excavated by hand below the bell ends so that the bell does not bear on the trench bottom.

The pipe and joints shall be bedded with select materials to the spring line of the pipe and along the full width of the trench. The intent is to cradle the pipe so that the full length of each joint is uniformly supported on firm bedding and the weight of pipe and fill is borne uniformly by the lower half of the pipe barrel.

Embedment and Backfilling of Flexible (PVC) Pipe:

The bedding and backfilling of PVC pipe shall be completed as described below and in accordance with the trench details shown on the standard detail sheet appended to these specifications.

Excavation shall be done to a depth of six (6) inches below the bottom of the pipe and wherever excavation is done below this depth for any reason, the space shall be filled with Class I bedding

material unless otherwise approved in writing by City Corporation.

The pipe and joints shall be bedded in Class I bedding materials to the top of the pipe and along the full width of the trench at all depths.

The Class I bedding materials shall be compacted as required to provide a firm non-settling foundation for the bottom of the pipe. The purpose is to cradle the pipe so that the full length of each joint is uniformly supported on firm bedding and the weight of pipe and fill is borne uniformly by the pipe barrel.

Service Lines:

In areas to be paved, the bedding of service lines shall meet the requirements set forth above.

Manholes:

Backfilling of manholes is specified in Section C8 -Manholes.

C3 - DEWATERING OF TRENCHES

Well Pointing:

Well pointing where required to keep the excavation dry and the subgrade stable, shall be installed when the excavation is within two (2) feet of the water table, except as hereinafter provided, and shall be in continuous operation until backfill is completed to this level. When construction equipment is to be operated in an area that has been excavated and well pointing is required to keep trench excavation dry and the subgrade stable, the well pointing shall be installed when the excavation is within five (5) feet of the water table. There shall be sufficient pumping equipment, in good working order, available at all times, to remove any water that accumulates in excavations to the extent that a stable subgrade is obtained. Where the pipe line crosses natural drainage channels, the work shall be conducted in such a manner that unnecessary damage or delays in the prosecution of the work shall be prevented. Provision shall be made for the satisfactory disposal of surface water pumped so as to prevent damage to public or private property.

Trench Dewatering:

Dewatering of trenches other than by well pointing shall be accomplished by whatever means elected by the contractor; however, bedding material or pipe may not be placed in wet or unstable trenches. Soil that cannot be properly dewatered shall be excavated and dry material tamped in place to such a depth as may be required to provide a firm trench bottom.

Surface Runoff

Surface runoff water shall be diverted away from the trenches. Such diversion shall be into existing drainage structures, such as storm sewers, ditches or streams. Diversion of surface runoff shall be in such a manner to prevent flooding of streets or private property. All pipe ends shall be sealed water tight at the end of each day's operation, see Section C2.

Disposition of Water from Dewatering

All water removed from the trenches by well pointing or any other means shall be pumped, piped or drained into existing drainage structures, such as storm sewers, ditches or streams. The disposition of water from dewatering operations shall be accomplished in a manner that will prevent the flooding of public or private property. Discharge of trench water into a sanitary sewer is a violation of City of Russellville Sewer Ordinance and violators will be prosecuted as prescribed by law.

C4 - SHEETING AND SHORING

Cave-ins:

Where trench cave-ins are a possibility, adequate sheeting and/or shoring shall be provided so as to maintain the trench free from slides or cave-ins and safe for workmen.

Existing Structures:

Where existing buildings, other utilities, streets or other structures are in close proximity to the trench, adequate protection shall be provided by the use of sheeting and shoring to protect the structure from possible damage. In the case of streets or utilities, the contractor may elect to remove the street or utility provided that the removal and subsequent replacement meets with the approval of the City of Russellville, the utility owner, or whoever has jurisdiction of the structure. In all cases, it shall be the responsibility of the contractor to protect public and private property and any person or persons who might, as a result of the contractor's work, be injured.

OSHA (Occupational Safety and Health Administration) Regulations:

All trench and structural excavation shall be conducted as required by OSHA Subpart P - Excavations, as found in CFR 1926.650, 29CFR 1926.651 and 29CFR 1926.652. The Contractor shall maintain a "NUCA Competent Person" on the job site at all times while excavations are open or in progress.

C5 - PIPE LAYING

Gravity Sewer Lines:

Each joint of pipe shall be inspected carefully before being placed in the trench. Any joint found to be cracked, or otherwise so damaged as to impair its usefulness, shall be plainly marked in such a manner that the marking will not rub or wash off. Damaged joints shall be removed from the site as soon as feasible.

All sewer pipe shall be laid with the bell up-stream and work shall progress upgrade. Each pipe shall be laid to plan line and grade, or to line and grade directed by the Engineer, Laser beam type grade lights shall be used for all gravity sewer construction.

All lines shall be proved for alignment and grade by lamping. Care shall be taken that each spigot is centered properly in the bell of the proceeding pipe and properly seated, and that each pipe is solidly bedded. As the work progresses, the pipes shall be cleaned of all dirt and other foreign matter. They shall be maintained clean until accepted or put in service.

At the end of each day's work, and when for any reason the laying of pipe will be discontinued for an appreciable period, all open ends of pipe shall be closed in accordance with Section C2.

All service line ends shall be permanently capped in accordance with manufacturer's recommendations to provide a water tight seal.

The cutting of pipe for any reason shall be done in a neat and workmanlike manner without damage to pipe or pipe lining.

Pipe shall be lowered carefully into the trench in such manner that spigot and bell will not become contaminated. Spigot and bell shall be checked for cleanliness immediately before lubricating and insertion of spigot into bell.

Proper facilities shall be provided for lowering sections of pipe into trenches. Under no circumstances shall pipe be laid in water and no pipe shall be laid when trench conditions or weather are unsuitable for such work. Full responsibility for the diversion of drainage and for dewatering of trenches during construction shall be borne by the Contractor.

Spigot and bells shall be cleaned thoroughly before the application of lubricant and attachment of the preformed joint gasket. Application of lubricant and attachment of the gasket shall be in strict accord with manufacturer's recommendation.

Pipe shall not be placed in the trench without excavating for bells so that the entire barrel of the pipe is uniformly supported on the pipe bedding.

Pipe shall be supported to proper line and grade, and secured against upheaval or floating during the placement of the specified bedding for the pipe material being used.

In areas of known perched water tables above levels of the sewer mains and when instructed by Utility, the contractor shall construct one clay dam between each manhole. The dam shall be a nominal three (3) feet in width and extend the full width of the trench and from trench bottom to finish grade, except in paved areas.

Force Mains:

All pipe and fittings shall be installed to the line and grade as detailed on the plans. Subject to the approval of the Engineer, other fittings may be added to or substituted for those shown on the plans, should the need therefore arise during construction. This permissive stipulation in no way shall relieve the Contractor of the responsibility for furnishing and installing all fittings required for a complete and proper installation of main as detailed on the plans.

All dirt and other foreign matter shall be removed from the inside of pipe and fittings before they are lowered into the trench. They shall be kept clean during and after laying, care shall be taken to keep dirt out of the jointing space. At the end of each days work, and when pipe laying is discontinued for an appreciable period, open ends of pipe shall be closed with a cast plug or cap firmly secured in place by tamped jute or hemp or as specified in Section C2.

All pipe and fitting shall be lowered carefully into the trench in such a manner as to prevent damage to pipe, fittings or linings. Neither pipe nor fittings shall be dropped or dumped into the trench.

Spigot and bells shall be cleaned thoroughly before the application of lubricant and attachment of the preformed joint gasket. Application of lubricant and attachment of the gasket shall be in strict accord with manufacturer's recommendation.

Cutting of pipe, where needed, shall be done in a neat and workmanlike manner without damage to pipe or pipe lining.

Unless otherwise directed by the Engineer, pipe shall be laid with bell ends facing in the direction of laying and shall be laid up grade. Whenever necessary to deflect pipe from a straight line in either the horizontal or vertical plane, to avoid obstructions, or for other allowable reasons, the degree of deflection at any joint shall be not greater than that which will provide adequate gasket space entirely around the spigot end of pipe.

Deflections shall not exceed the maximum recommended by the pipe manufacturer.

Steep Grades:

Type of Pipe - Ductile iron pipe, meeting the requirements of Section M2 of the specifications, shall be used on all sewer lines when the grade is fifteen percent (15%) or greater. Mechanical joints with joint restraints may be required by City Corporation.

Connections to existing Sewers:

Connections to existing sewers shall not be made without approval of City Corporation.

All work shall be completed in a workmanlike manner using materials specified or as approved by City Corporation. Watertight connections shall meet with the requirements concerning tests of these specifications.

C6 - PIPE JOINTS

Pipe Joint Installation:

All pipe joints other than those specified herein shall be made in strict accordance with the manufacturer's recommendation and as approved. All joints shall be made watertight in accordance with the latest ASTM Standards. Excavation for bells or other joint protrusions shall be made to insure that the bottom of the pipe firmly rests against the bedding for entire length of the pipe. All joints between pipes of different material shall not be backfilled until City Corporation has inspected same for proper materials and methods

Installation of Push-On Joints:

Prior to jointing, the bell and spigot end of the pipes shall be cleaned thoroughly by whatever means are necessary to remove all foreign matter and attain the required cleanliness and not damage the joint and gasket surfaces. A wire brush shall be used as necessary. Particular care shall be exercised to clean the gasket seat.

Joints shall be made in strict accord with the recommendations of the pipe manufacturer. The rubber gasket shall be cleaned, lubricated and if required inserted in the gasket seat within the bell of the pipe to which connection is being made, and forced to a firm contact with the shoulder of the bell. When this initial insertion is made, the alignment of the added pipe shall be deflected from true alignment not more than 5° for 4" pipe, nor more than 3° for 12" pipe; deflections for intermediate size pipes shall be in conformance with the stated maximum deflections of the

manufacturer.

Installation of Mechanical Joints

The spigot end of pipe and the bell of fitting and the rubber gasket shall be cleaned thoroughly as specified for pipe joints in the paragraph above. The gland shall also be cleaned in a like manner.

After the gland and gasket are lubricated and placed on the spigot end of the pipe, a sufficient distance from the end to avoid fouling the bell, the spigot end shall be inserted in the fitting bell to firm contact with the bell shoulder. The rubber gasket then shall be advanced into the bell and seated in the gasket seat. Care shall be exercised to center the spigot end within the bell.

The gland shall be brought into contact with the gasket, all bolts entered, and all nuts made hand tight. Continued care shall be exercised to keep the spigot centered in the bell. The joints shall be made tight by turning the nuts with a wrench - first partially tightening a nut, then partially tightening the nut 180 therefrom and working thus around the pipe with uniformly applied tension until the required torque is applied to all nuts. Required torque ranges and indicated wrench lengths for standard cast iron bolts are as follows:

<u>Diameter</u> <u>Inches</u>	<u>Range of Torque</u>		<u>Length of Wrench</u> <u>Inches</u>
	<u>Foot</u>	<u>Pounds</u>	
5/8	40	60	8
3/4	75	90	10
1	100	120	14
1 1/4	120	150	16

Jointing dissimilar pipe materials:

Joints shall be as shown on the standard details unless otherwise authorized by City Corporation.

C7 - PIPE FITTINGS

Pipe Fittings Installation:

All pipe fittings shall be installed in strict accordance with the manufacturer's recommendations. Joints created by the installation of fittings shall meet with the requirements of Section C6 - Pipe Joints. Pipe fittings shall meet with the requirements of Sections M2 - Sanitary Sewer Pipe.

Wye or Tee Connections

Wye or tee connections placed in sanitary sewer lines for services

shall be installed in accordance with the manufacturers recommendations and as approved by City Corporation. Installation of wye branches shall be as indicated on the standard construction details. PVC wye fittings shall be SDR-26.

C8 - MANHOLES

Excavation and Backfill:

Excavation:

Excavation for manholes shall be completed in a workmanlike manner. The area of excavation of the base shall be only that necessary to provide an adequate base with its sides poured against undisplaced earth. All excavations shall be dewatered in accordance with Section C3 -Dewatering of Trenches before any permanent construction is started. Sheet piling and shoring shall meet with the requirements of Section C4 - Sheet piling and Shoring.

Where excavation is carried below plan grade because of unsuitable soil or for any other reason, the space below plan grade shall be filled with Class I bedding material thoroughly tamped or the space may be filled with concrete poured monolithically with the base.

Backfill:

Backfill of manholes shall be compacted to the specified density when and as specified by the Engineer. Where manholes are within the limits of paved areas, backfill shall be in accordance with the backfill requirements of pipe laying for those areas.

Backfill around manholes shall not be completed until adequate strength has been obtained to support the backfill without damage to the manhole. In no case will backfill be allowed on precast manholes, or poured-in-place manholes until the concrete is at least 48 hours old except as approved by City Corporation.

Inverts:

All pipe lines shall extend entirely through the manhole to a joint approximately 6" outside the manhole except where change in direction or where sizes of pipes makes such construction unfeasible. Pipe in a manhole at the upper end of the line or discharging into an existing manhole shall not extend entirely through the manhole. In all cases, the pipe or pipes shall extend entirely through the manhole wall so that a joint occurs approximately 6" outside the manhole wall. Depth and cross section of the invert of the manhole bottom flow line shall be approximately 1/2 the diameter of the outfall pipe. Curves in inverts shall have as long radius as feasible to facilitate flow. Shape of the invert shall be that approximating the bottom half of the pipe and inverts shall be brushed smooth.

The surface of the mortar fill used in forming the invert shall be sloped upward from the edge of the invert to the manhole wall. The upper half of any pipe extending inside the manhole wall shall be cut substantially flush with the wall. Any rough edge shall be smoothed with mortar.

Mortar for forming inverts shall be mixed in the proportions specified in Section M3 and an approved bonding agent shall be used over the entire surface of the bond. The use of masonry cement shall be strictly prohibited. When approved by City Corporation, mortar may be mixed in a mortar box. Mortar shall have a workable consistency, but shall be as dry as practical. Mortar thickness shall meet or exceed the bonding agent manufacturer's recommendation.

Inverts shall be formed in accordance with details shown on the standard manhole details.

Precast Manholes:

Precast concrete manhole sections shall be approved for use on a case-by-case basis. No precast manhole bottoms shall be used. The first barrel section shall be embedded in the poured-in-place manhole bottom and shall form a structurally sound and water-tight joint. Pipe penetrations shall be fully encased within the poured-in-place manhole bottom. Manholes of precast sections shall be positioned carefully upon the concrete base and be raised in a truly vertical plane.

Poured-in-Place Manholes:

Forms for poured-in-place manholes shall have cutouts to fit around the sewer pipe entering the manhole so that the form rests upon the concrete base. The space around cut-outs shall be filled with concrete and made water-tight. Aqua-plug, Preco, or Utility approved equal shall be used to fill voids after concrete is 48 hours old.

Poured-in-place manholes shall meet the requirements and details as shown on the standard details. The top section or cone shall be concentric.

Construction of poured-in-place manholes shall be in accordance with Section C9 - Concrete and Reinforcing Steel and other applicable parts of these specifications.

Drop Manholes:

Drop manholes shall be constructed as outlined above and as shown on the standard details.

Water-tight Manholes:

Construction of watertight manholes shall meet with the requirements outlined above for manholes and as shown on the standard details. Manholes shall be tested for infiltration and repaired in accordance with Utility requirements.

Manhole Details:

All manholes shall be constructed in accordance with the standard manhole details or as approved by City Corporation. Manholes 4' 0" or less in height shall have a 24" minimum, 30" maximum high cone section and maximum 12" high throat section.

Connection to Existing Manholes:

No connection or alteration to any manhole shall be made without the express approval of City Corporation. Connections requiring cutting through the wall of the manhole shall be done in a good workmanlike manner with a maximum hole size 4-inches larger than outside diameter of pipe. The hole shall be concentric with the pipe. No void space shall be allowed between the pipe and wall and the space shall be filled in accordance with Section C8.

Where an existing gravity outfall line requires the flow of sewage be diverted around the new construction, the contractor shall intercept the sewage flow at the existing manhole first upstream from the construction and shall provide suitable pumping equipment and rerouting conduit to pump the sewage around the involved construction. Discharge shall be into an appropriate manhole downstream from the construction. The temporary by-pass line shall be approved by City Corporation.

Manhole Stubouts:

Where it is anticipated that a sewer line is to be extended in future construction work or where required by City Corporation, one short joint of pipe shall be stubbed out from the manhole for each future connection. The size of the stubout shall be of the size pipe required for the future construction or as required by the Utility and terminating in a standard bell and with a removable water tight plug as approved by City Corporation.

Manhole Rings and Covers:

Manhole ring setting shall be set in Portland cement mortar as shown on the standard details. Tops of the manhole rings and covers shall be set four (4) to six (6) inches above planned finish grade and shall have positive back slope away from the top when finish grading is complete. In public rights-of-way the top shall be set one (1) to two (2) inches above surrounding pavements, sidewalks, or other surface areas and surfacing shall be sloped to match surrounding grade.

Manhole Steps:

Manhole steps shall be placed at locations as shown on the standard details. The first step shall be set approximately 27" down from the top of the manhole ring.

Steps shall be securely or cast in place to fully develop adequate bearing support. Distances between steps shall be as shown on the standard details but said distance shall not be greater than 15 inches.

C9 - CONCRETE AND REINFORCING STEEL

Ready-Mixed Concrete:

All concrete for poured-in-place manholes and other structural applications shall be ready-mixed concrete. Ready-mixed concrete shall conform to ASTM Standard D 94 and to applicable portions of these specifications for on-site mixing. The concrete shall be delivered and placed within one hour after all materials, including mixing water, shall have been placed in the mixing drum.

Reinforcing Steel:

Reinforcing steel shall be as specified in section M4. Steel reinforcement shall be free from rust, scale, and from mortar, dirt, or other objectionable coatings. It shall be placed accurately in accordance with details shown on the plans and properly secured in position.

Vibration:

All structural concrete must be vibrated as it is placed. The use of form vibrators is not acceptable. Internal vibrators shall be capable of transmitting vibration to the concrete at frequencies not less than 4,500 impulses per minute. Duration of vibration shall be limited to the time necessary to provide satisfactory consolidation without causing segregation. The vibrator shall not be inserted into the lower courses previously vibrated. Vibrators shall be applied in a substantially vertical position and at uniformly spaced points not further apart than the visible effectiveness of the vibrator. Vibration shall be supplemented by such spading and spudding as the Engineer may require. All concrete shall be vibrated except that the concrete in manhole bases and pipe foundations need not be vibrated if other methods produce satisfactory results.

Application of Structural Concrete Other Than Manholes:

Utilization of reinforced or unreinforced concrete for structural uses other than poured-in-place manholes shall be subject to individual design and specification of the responsible Engineer to

meet the specific needs of the project. Design and specification shall be in keeping with current engineering practice, applicable codes of practice, and subject to the review and approval of City Corporation.

C10 - PAVEMENT REPAIRS

Permanent Repairs:

Asphaltic concrete hot mix surface course construction shall meet with the current requirements of the Arkansas State Highway Department Commission Specifications for the Construction of Asphaltic Concrete Hot Mix Surface Course or as otherwise approved.

Concrete pavement repairs shall meet with the current requirements of the Arkansas State Highway Department Commission Specifications for the Construction of Concrete Rigid Pavements.

Gravel surfacing shall meet with the current requirements of the Arkansas State Highway Department Commission Specifications for the Construction of Crushed Stone Base Courses.

Prime coats shall be applied in accordance with the current requirements of the Arkansas State Highway Department Commission Specifications for the Application of Prime Coat to Crushed Stone Based Courses.

All permanent repairs of streets, roads, or other public rights-of-way shall meet with the construction requirements of the governing agency or private owner and shall meet with the requirements of all local Ordinances, Regulations, Permits, or Codes governing the repairs to roads, streets, or other public rights-of-way.

Temporary Surfacing:

Methods of temporary surfacing shall meet with the requirements of Paragraph C10 or as otherwise approved to adequately maintain traffic and proper drainage.

C11 - BACKFILL DENSITY TESTS

Requirements:

Backfill density requirements, when directed by City Corporation for a specific project as specified therein, shall be required.

Methods of Testing:

The moisture density relation of material shall be determined in the laboratory in accordance with AASHO Designation T-180 modified to use material passing a 3/4" sieve.

Field density of backfill density shall be determined in accordance with AASHO Designation T-147.

C12 - SEWER LINE TESTING

Sanitary Sewer Acceptance Tests:

Upon completion of the sewer system construction, acceptance tests will be conducted in the presence of a City Corporation representative to determine the acceptability of the system.

All defects in the sewers shall be repaired to the satisfaction of the Engineer.

Lamping:

Each section of the sewer line between manholes is required to be straight and uniformly graded. Each such section will be lamped by the Engineer and must show a minimum of one-half (1/2) circle of light.

Infiltration:

All newly laid pipe, after backfill, before replacing pavement, and prior to conductance of any exfiltration test shall not leak in excess of 100 gallons per inch of nominal diameter per mile of sewer per day. If the infiltration in any reach between manholes exceeds the specified allowance, the Contractor shall locate the principle leakage and shall make such repairs as are necessary to control the infiltration. The time of determining and lines to be checked shall be selected by the Engineer.

Exfiltration Test:

The Contractor shall conduct an exfiltration test on each reach of sewer between manholes. The first line between manholes shall be tested before backfilling and before any sewer pipe is installed in the remainder of the work. Thereafter, individual or multiple reaches may be tested at the option of the Contractor.

Exfiltration tests shall be conducted by blocking off all manhole openings except those connecting with the reach being tested, filling the line, and measuring the water required to maintain a constant level in the manholes. Each manhole shall be subject to at least one exfiltration test. During the exfiltration test, the minimum water depth above the pipe invert shall be ten (10) feet.

When existing sewer service lines or septic tank drainfield lines are encountered during trenching operations, such service lines shall be maintained in service, or if accidentally broken, shall be repaired.

Reaches of sewer in which sewer service lines are encountered between manholes shall be completed, including manholes, and the exfiltration test acceptably completed, prior to connecting such service lines. Tee branches shall be plugged as specified herein, or may be fitted with a temporary pipe riser, extended above the gradient at which exfiltration testing will be done.

The total exfiltration shall not exceed 100 gallons per inch of nominal diameter per mile of pipe per day for each reach tested. For purposes of determining maximum allowable leakage, manholes shall be considered sections of 48 inch pipe. The exfiltration tests shall be maintained on each reach for at least two (2) hours and as much longer as necessary, in the opinion of City Corporation, to locate all leaks.

The Contractor shall provide, at his own expense, all necessary piping between the reach to be tested and the source of water supply, together with equipment and materials required for the tests. The methods used and the time of conducting exfiltration tests shall be acceptable to City Corporation.

If leakage in any reach exceeds the allowable maximum, it shall be retested after the leaks are repaired.

Air testing may be used as a substitution for exfiltration testing for sewer pipe. Methods of air testing shall be submitted to City Corporation for review and approval before testing is started.

The time required for the internal air pressure to drop from 3 1/2 to 3 psi between manholes within various pipe sizes shall not be less than the values shown on the following table.

SPECIFICATION TIME REQUIRED FOR A 0.5 PSIG PRESSURE DROP
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 Pipe Diameter (in.)	2 Minimum Time (min: sec)	3 Length for Minimum Time (ft)	4 Time for Longer Length (sec)	Specification Time for Length (L) Shown (min:sec)							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	1:53	597	.190 L	1:53	1:53	1:53	1:53	1:53	1:53	1:53	1:53
6	2:50	398	.427 L	2:50	2:50	2:50	2:50	2:50	2:50	2:51	3:12
8	3:47	298	.760 L	3:47	3:47	3:47	3:47	3:48	4:26	5:04	5:42
10	4:43	239	1.187 L	4:43	4:43	4:43	4:57	5:56	6:55	7:54	8:54
12	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50
15	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02
18	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51
21	9:55	114	5.235 L	9:55	13:05	17:27	21:49	26:11	30:32	34:54	39:16
24	11:20	99	6.837 L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17
27	12:45	88	8.653 L	14:25	21:38	28:51	36:04	43:16	50:30	57:42	66:54
30	14:10	80	10.683 L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07
33	15:35	72	12.926 L	21:33	32:19	43:56	53:52	64:38	75:24	86:10	96:57
36	17:00	66	15.384 L	25:39	38:28	51:17	64:06	76:55	89:44	102:34	115:23

(Table Courtesy of Uni-Bell PVC Pipe Association)

If the time required is less than the values shown, the sewer shall be considered to show significant leakage and necessary repairs shall be made until the time required for the pressure drop equals or is greater than the values shown.

If air testing is utilized as a substitute for exfiltration testing for sewer pipe, manholes shall still be tested by a vacuum test performed as follows:

A vacuum of 10" Hg shall be placed on the manhole, and the time measured for the vacuum to drop to 9" Hg shall not be less than 60 seconds.

Deflection Test:

After the pipe has been laid and backfilled, the contractor shall perform a deflection test on all PVC sewer pipe. This test shall consist of pulling a mandrill through the pipe with a maximum allowable deflection of 5%.

Safety Provisions for Air Testing:

Plugs used to close the sewer pipe for the air test must be securely braced to prevent the unintentional release of a plug which can become a high velocity projectile. Gauges, air piping manifolds, and valves shall be located at the top of the ground. No one shall be permitted to enter a manhole where a plugged pipe is under pressure. Four pounds (gauge) air pressure develops a force against the plug in a 12" diameter pipe of approximately 450 pounds. Pipes larger than 24" in diameter shall not be air tested because of the difficulty of adequately blocking the plugs.

Force Main Leakage Tests:

Leakage tests for force mains shall be made by filling the force main with water and increasing the pressure to testing pressure of 150% of working pressure.

The duration of the leakage per hour for cast iron, ductile iron, PVC, or concrete pipe shall be calculated by the following formulas:

All rubber gasket or o-ring joints (cast iron and concrete) -

$$L = \frac{ND \sqrt{P}}{7400}$$

- L = Allowable Leakage (gallons per hour)
- N = Number of Joints in Pipeline Tested
- D = Nominal Diameter (inches)
- P = Test Pressure (psi)

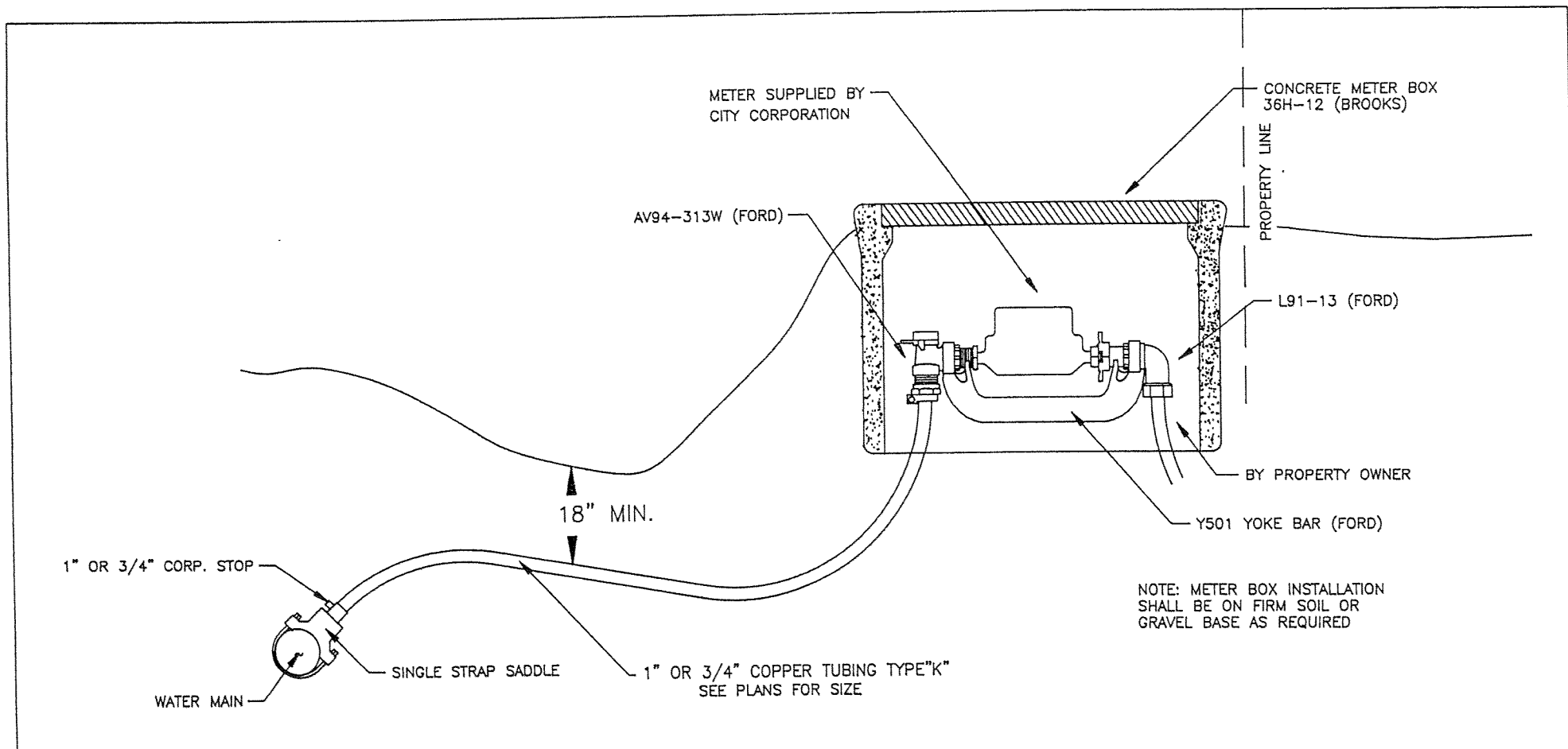
The force main will not be accepted until the actual leakage is equal to or less than the allowable. In addition, all obvious leaks shall be required.

Leaks Encountered in Final Inspection:

In addition to passing the above described leakage tests, all obvious running leaks which may be observed in the final inspection shall be satisfactorily repaired.

Pipe Deflection Testing:

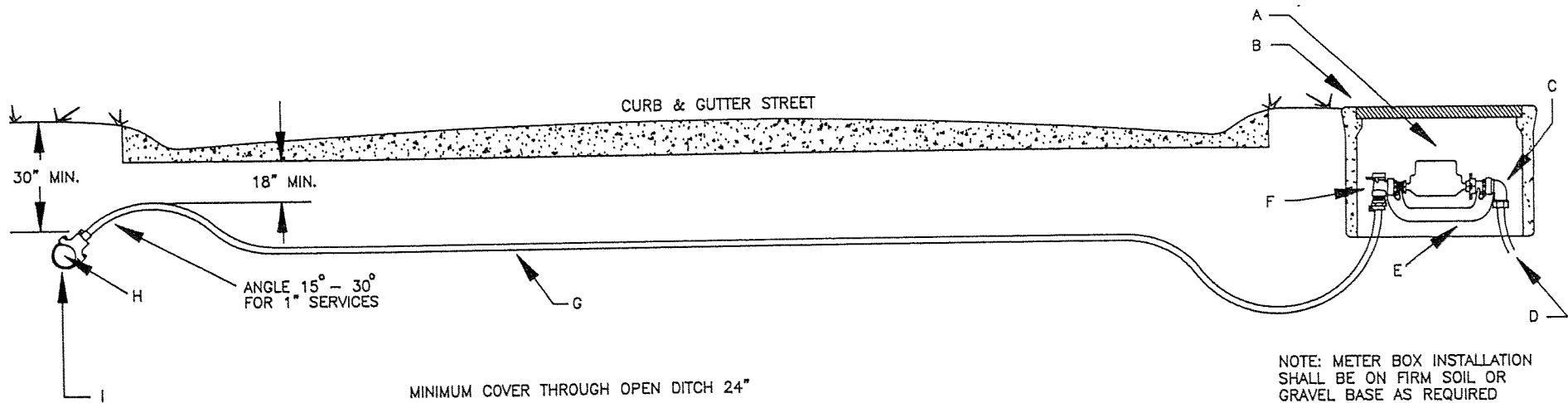
City Corporation reserves the right to mandrel test any sewer pipe before acceptance, and also prior to expiration of the first year of operation. If a previously accepted line fails a mandrel test performed during the first year of operation, the defects must be corrected at the contractor's expense.



POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

"SHORT SIDE"
 WATER SERVICE DETAIL

W-1	Approved:	Scale: NONE
		Date: MAR '95



- A METER SUPPLIED BY CITY CORPORATION
- B 36H-12 (BROOKS)
- C L91-13 (FORD)
- D BY PROPERTY OWNER
- E Y501 YOKE BAR (FORD)
- F AV94-313W (FORD)
- G 1" OR 3/4" COPPER TUBING TYPE "K"
- H SINGLE STRAP SADDLE
- I WATER MAIN



POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

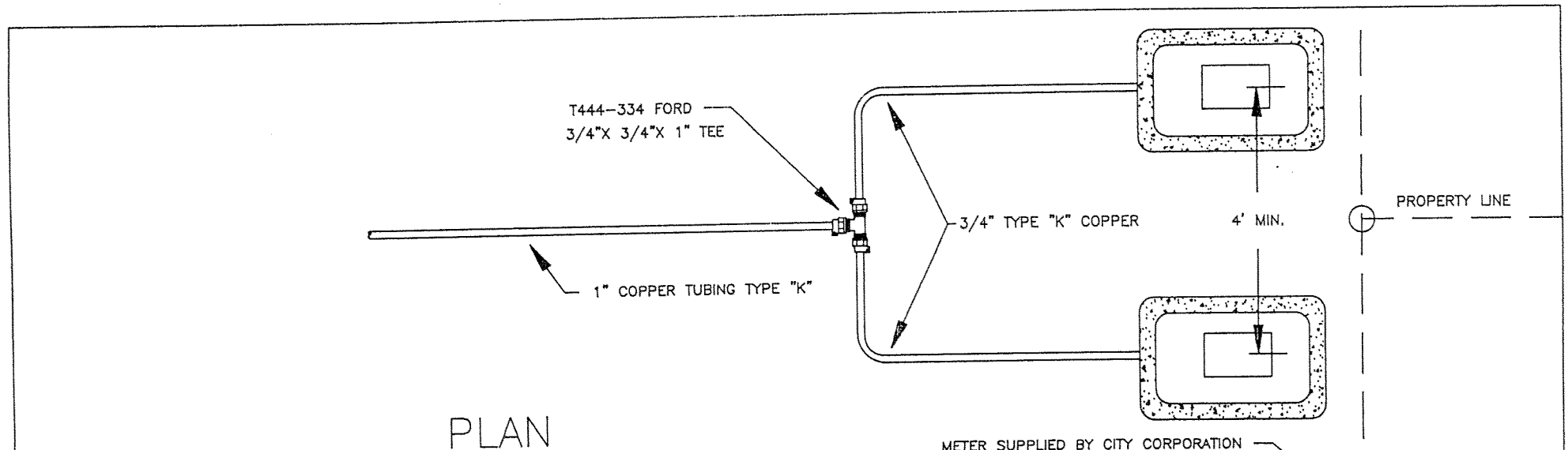
"LONG SIDE"
 WATER SERVICE DETAIL

W-2

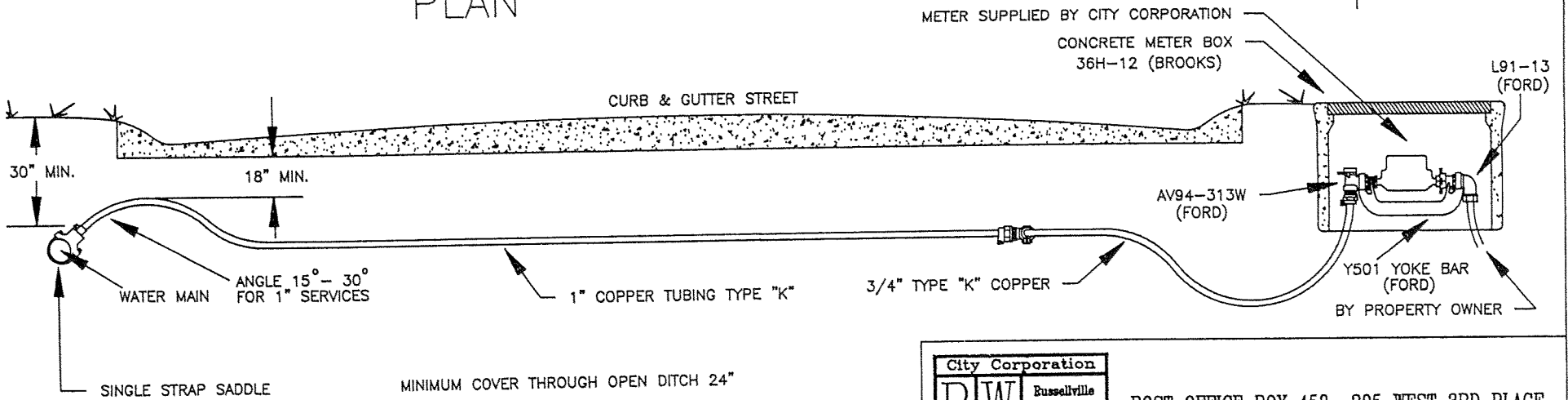
Approved:

Scale: NONE

Date: MAR '95



PLAN



ELEVATION

NOTE: METER BOX INSTALLATION SHALL BE ON FIRM SOIL OR GRAVEL BASE AS REQUIRED



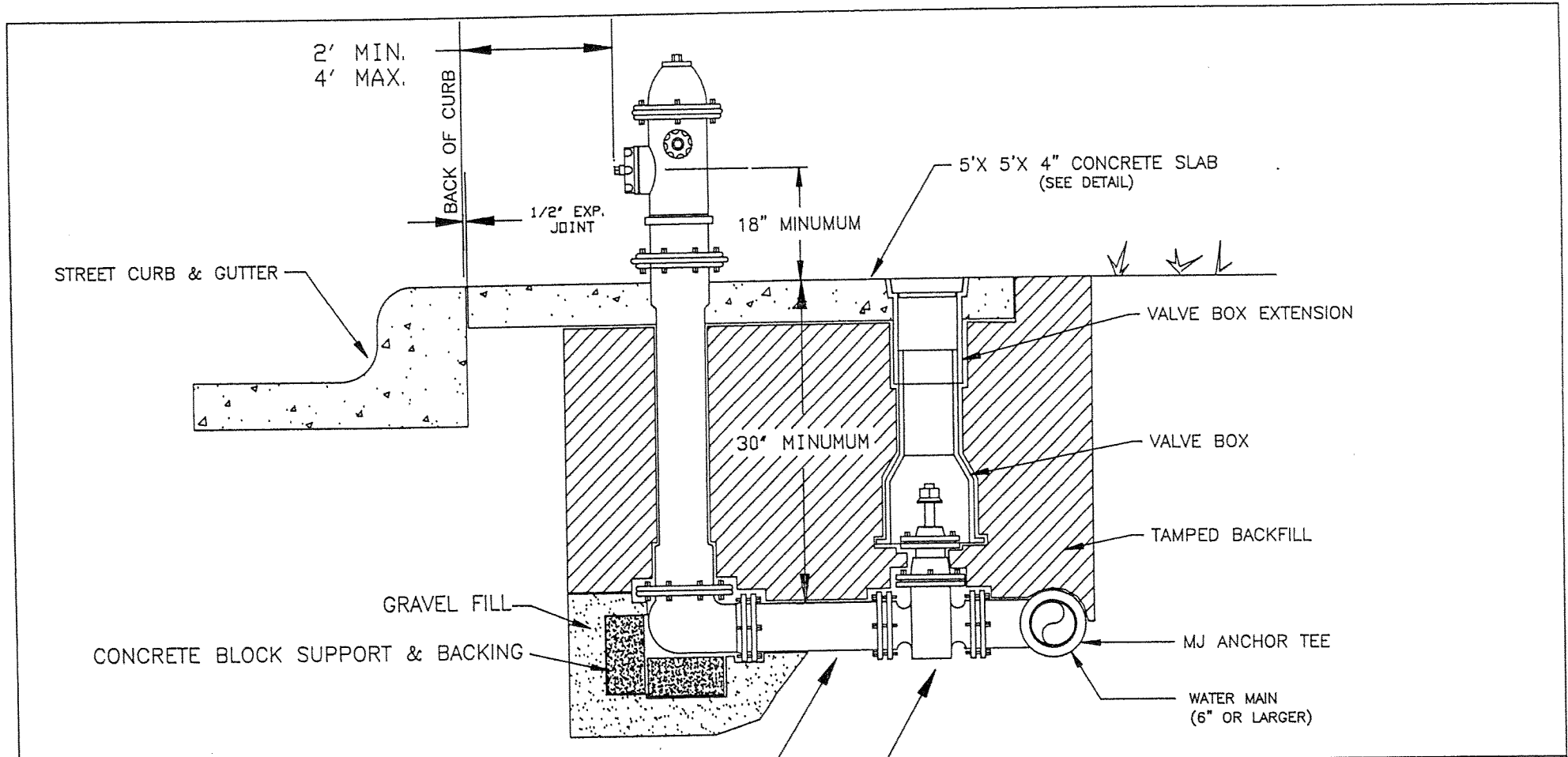
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

"LONG SIDE"
WATER SERVICE DETAIL
TWO SERVICES "BULL-HEADED"

W-3

Approved:

Scale: NONE
Date: MAR '95



2' MIN.
4' MAX.

BACK OF CURB

1/2" EXP. JOINT

18" MINIMUM

5' X 5' X 4" CONCRETE SLAB
(SEE DETAIL)

STREET CURB & GUTTER

VALVE BOX EXTENSION

30" MINIMUM

VALVE BOX

TAMPED BACKFILL

GRAVEL FILL

CONCRETE BLOCK SUPPORT & BACKING

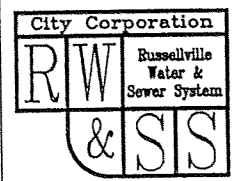
MJ ANCHOR TEE

WATER MAIN
(6" OR LARGER)

17" SWIVEL ADAPTER *

6" GATE VALVE

* IF HYDRANT LEAD MUST BE LONGER THAN 17", USE 6" DI NIPPLE
W/ MJ RETAINER GLANDS - MUST BE PRESSURE TESTED.



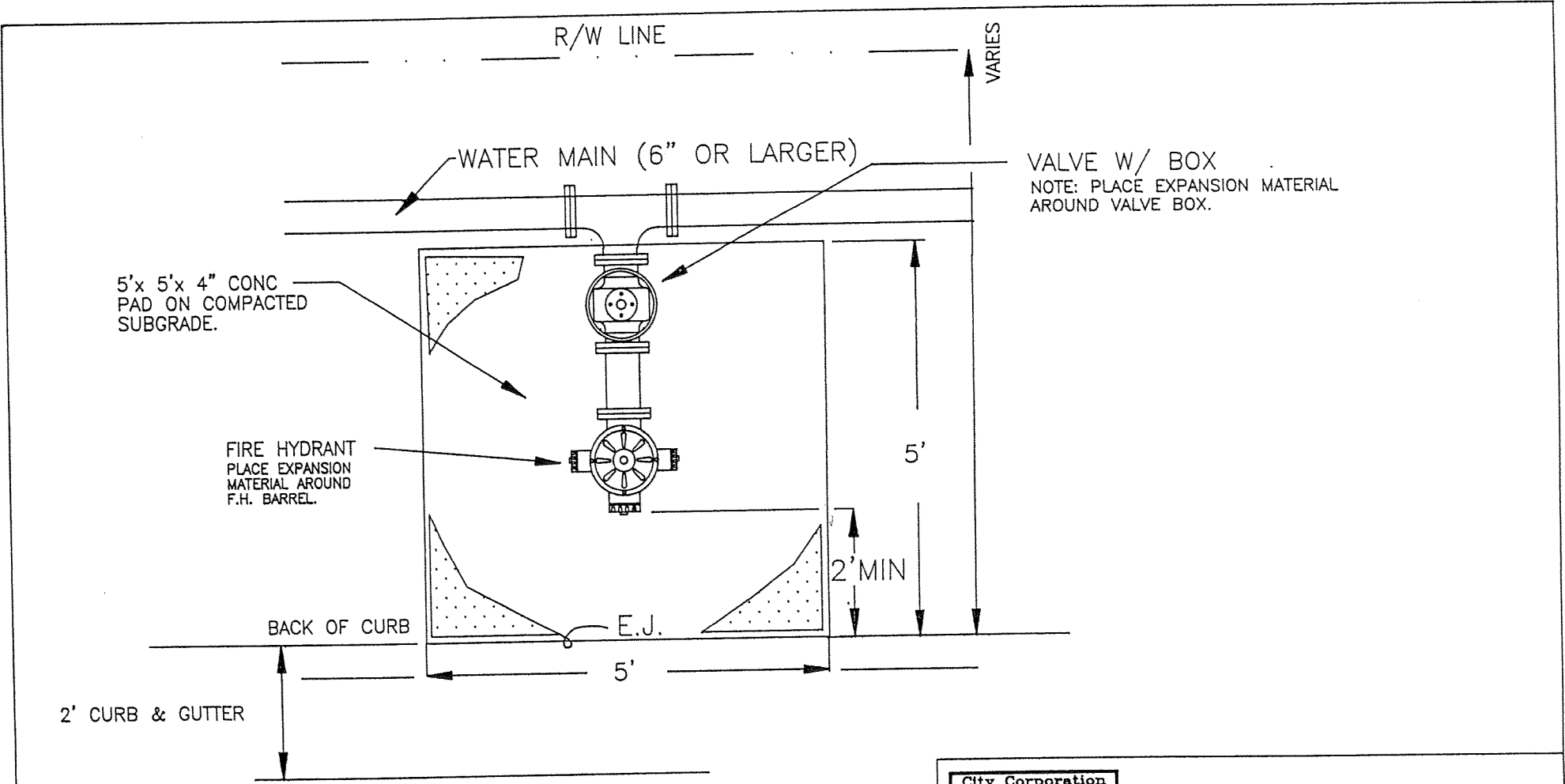
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

FIRE HYDRANT ASSEMBLY & GATE VALVE DETAIL

W-4

Approved:

Scale: NONE
Date: MAR '95



5'x 5'x 4" CONC
PAD ON COMPACTED
SUBGRADE.

FIRE HYDRANT
PLACE EXPANSION
MATERIAL AROUND
F.H. BARREL.

VALVE W/ BOX
NOTE: PLACE EXPANSION MATERIAL
AROUND VALVE BOX.

BACK OF CURB

2' CURB & GUTTER

(CITY OF RUSSELLVILLE REQUIREMENT FOR ALL)
FIRE HYDRANT INSTALLATIONS.

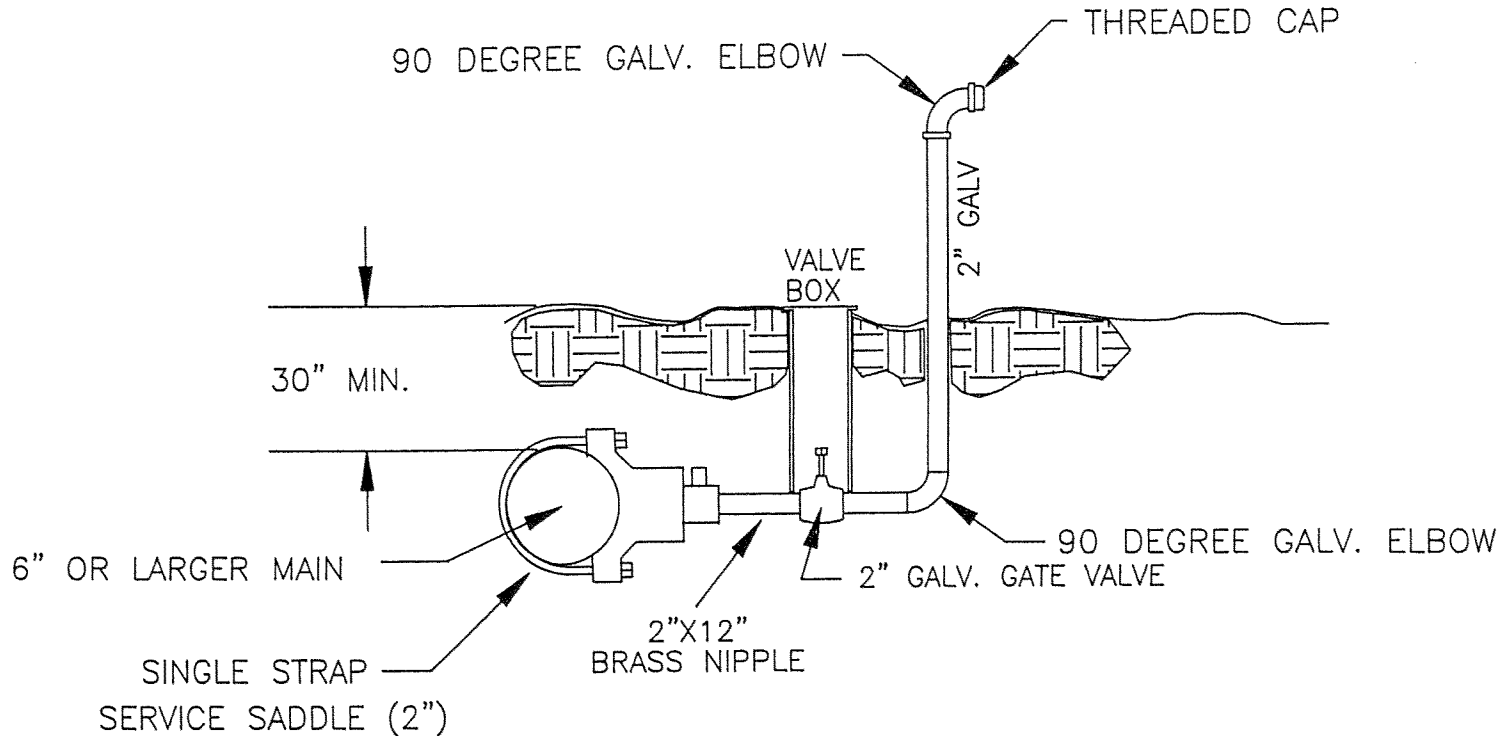
NOTE: FIRE HYDRANT SETTINGS ON SITES NOT ADJACENT
TO CURB & GUTTER STREET REQUIRE INDIVIDUAL DESIGN.



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

FIRE HYDRANT CONCRETE PAD DETAIL

W-5	Approved:	Scale: NONE
		Date: MAR '95



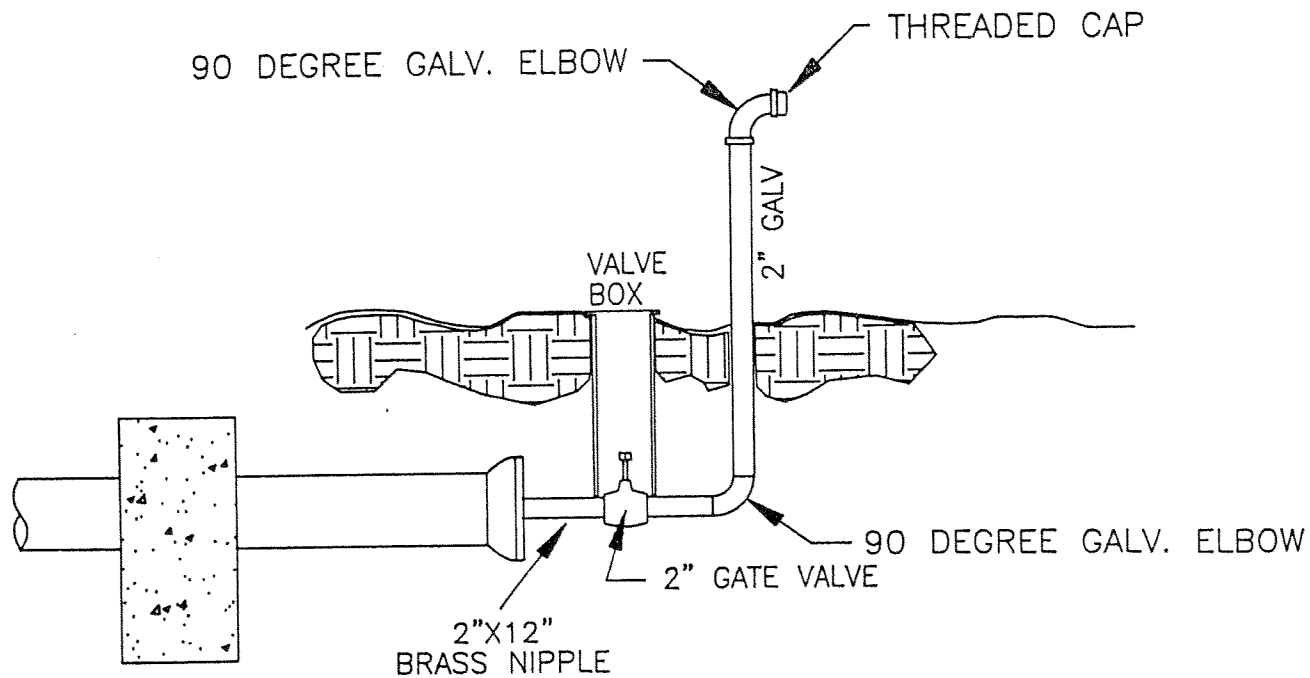
City Corporation
 Russellville
 Water &
 Sewer System
 POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

SIDE OUTLET 2" BLOW-OFF DETAIL

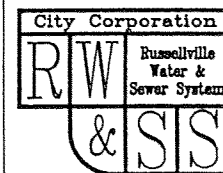
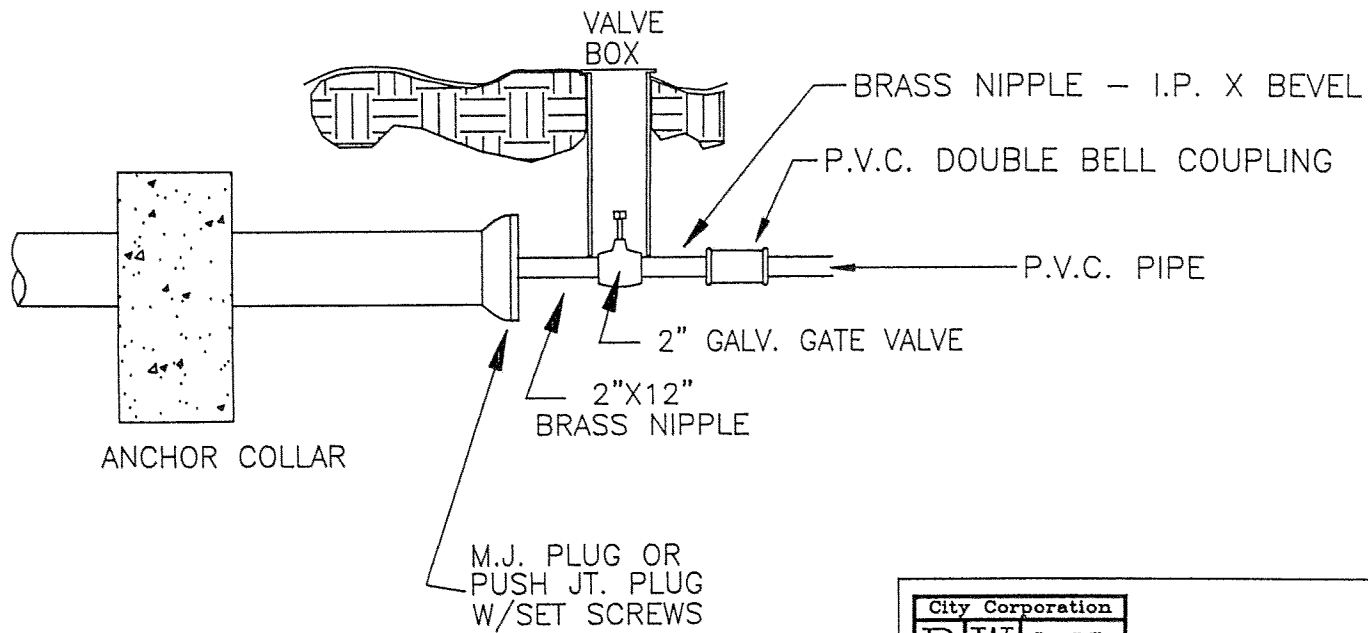
W-6

Approved:

Scale: NONE
 Date: MAR '95



<p>City Corporation</p> <p>RW & SIS</p> <p>Russellville Water & Sewer System</p>	<p>POST OFFICE BOX 458 205 WEST 3RD PLACE PHONE 968-2105 RUSSELLVILLE, ARKANSAS 72801</p>	
<p>END OUTLET 2" BLOW-OFF DETAIL</p>		
<p>W-7</p>	<p>Approved:</p>	<p>Scale: NONE Date: MAR '95</p>



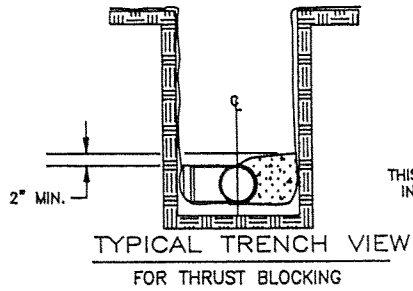
POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

2" PVC CONNECTION TO 6" OR LARGER MAIN

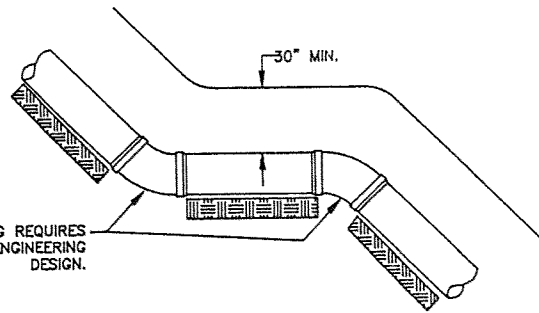
W-8

Approved:

Scale: NONE
 Date: MAR '95

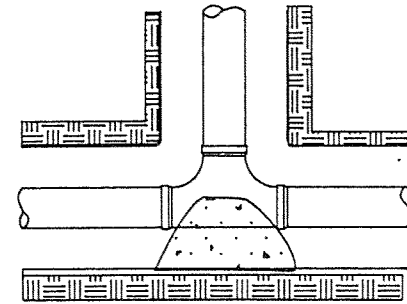


TYPICAL TRENCH VIEW
FOR THRUST BLOCKING

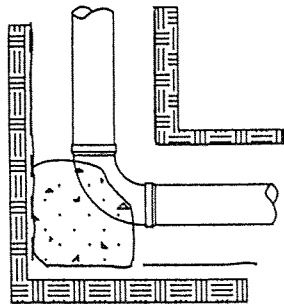


THIS BLOCKING REQUIRES
INDIVIDUAL ENGINEERING
DESIGN.

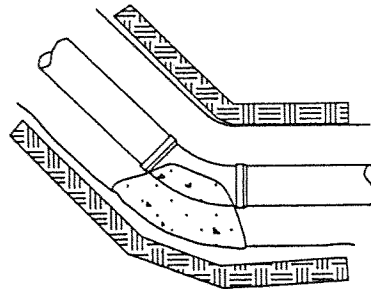
VERTICAL PIPE FITTING SUPPORTS



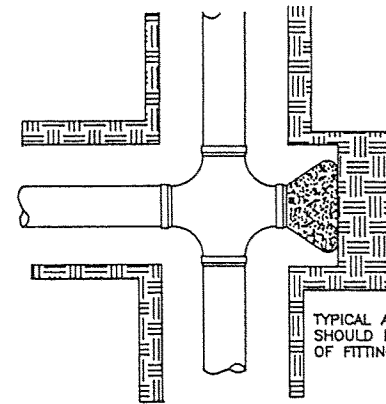
TEE FITTING



90° ELBOW



22.5° OR 45° ELBOW



TYPICAL ALL BLOCKING: CONCRETE
SHOULD NOT EXTEND PAST HUB
OF FITTING.

PLUGGED CROSS BLOCKING

NOTE: ALL CONCRETE THRUST
BLOCKING SHALL BE AGAINST
UNDISTURBED SOIL. SEE SPECS
FOR MINIMUM BEARING AREA.



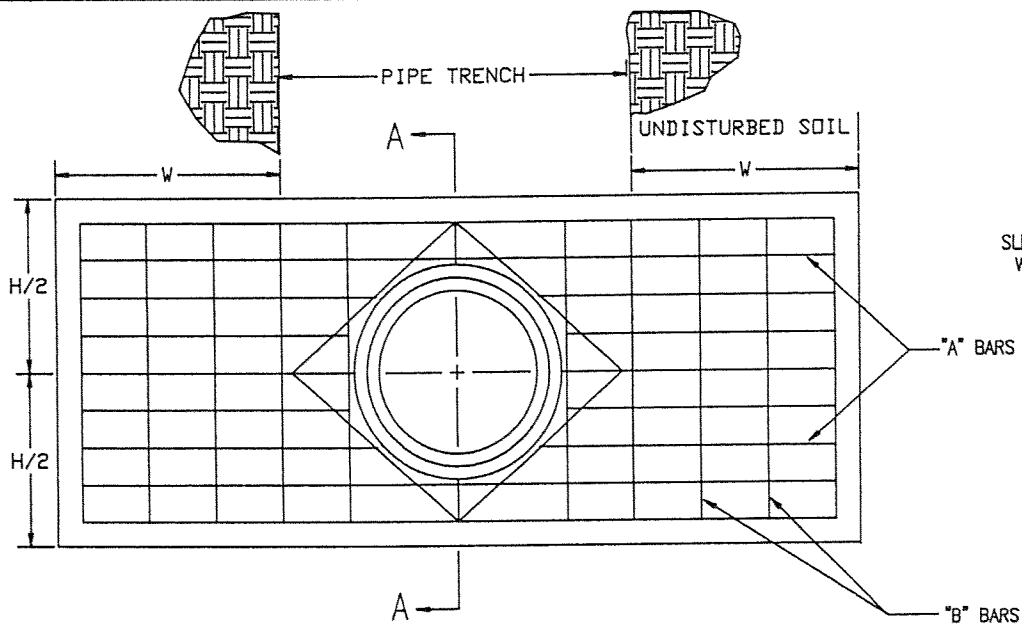
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

THRUST BLOCKING DETAILS

W-9

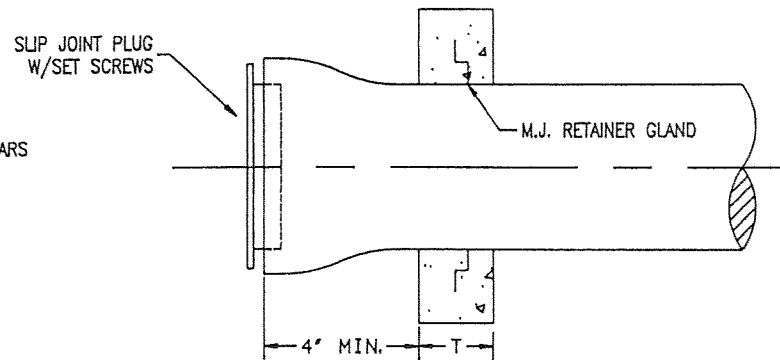
Approved:

Scale: NONE
Date: MAR '95



ELEVATION - ANCHOR COLLAR

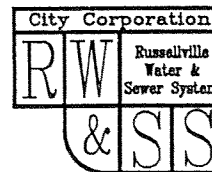
NOTE: PIPE SURFACES SHALL BE
CLEANED OF ALL FOREIGN MATERIAL
BEFORE CONCRETE COLLAR
IS POURED



SECTION A-A

ANCHOR COLLAR SCHEDULE

SIZE PIPES	DIMENSIONS			M	REINFORCING BARS	
	W	H	T		"A" BARS	"B" BARS
6"	1.5'	2'	1'	M.J. RETAINER GLAND	#6 @ 6"	#6 @ 6"
8"	1.5'	2.5'	1'	M.J. RETAINER GLAND	#6 @ 6"	#6 @ 6"
12"	2'	4'	1.5'	M.J. RETAINER GLAND	#6 @ 6"	#6 @ 6"
16"	3'	4.5'	1.5'	M.J. RETAINER GLAND	#6 @ 6"	#6 @ 6"
20"	3'	5'	2'	M.J. RETAINER GLAND	#6 @ 6"	#6 @ 6"
24"	3.5'	5.5'	2'	M.J. RETAINER GLAND	#7 @ 6"	#6 @ 10"



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

ANCHOR COLLAR ON DUCTILE IRON PIPE

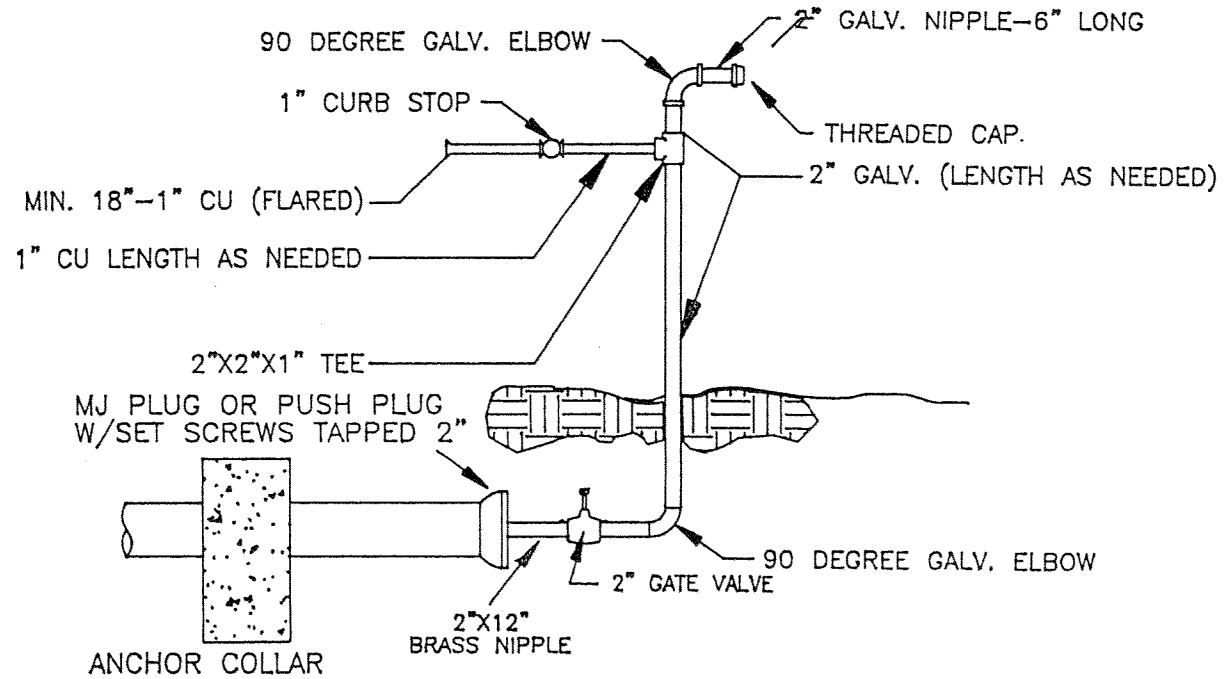
W-10

Approved

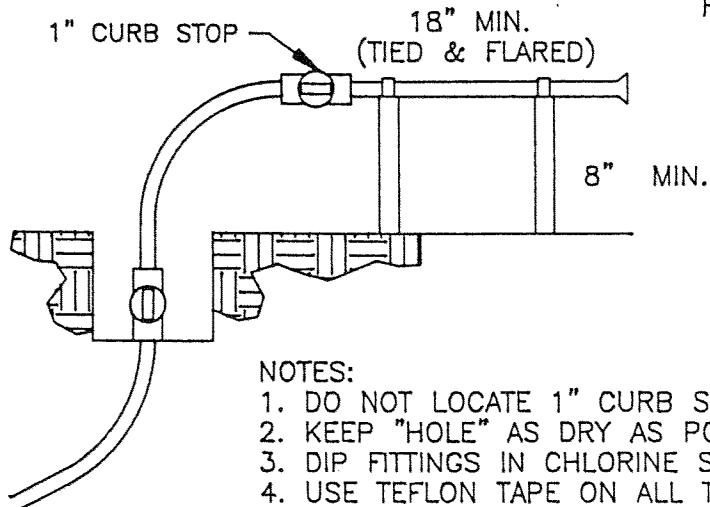
Scale None

Date MAR '95

2" BLOW OFF



1" BLOW OFF



NOTES:

1. DO NOT LOCATE 1" CURB STOP OVER "HOLE"
2. KEEP "HOLE" AS DRY AS POSSIBLE
3. DIP FITTINGS IN CHLORINE SOLUTION
4. USE TEFLON TAPE ON ALL THREADED JOINTS

FOR NEW CONSTRUCTION ONLY—LOCATE WHERE SHOWN ON PLANS



City Corporation
 POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

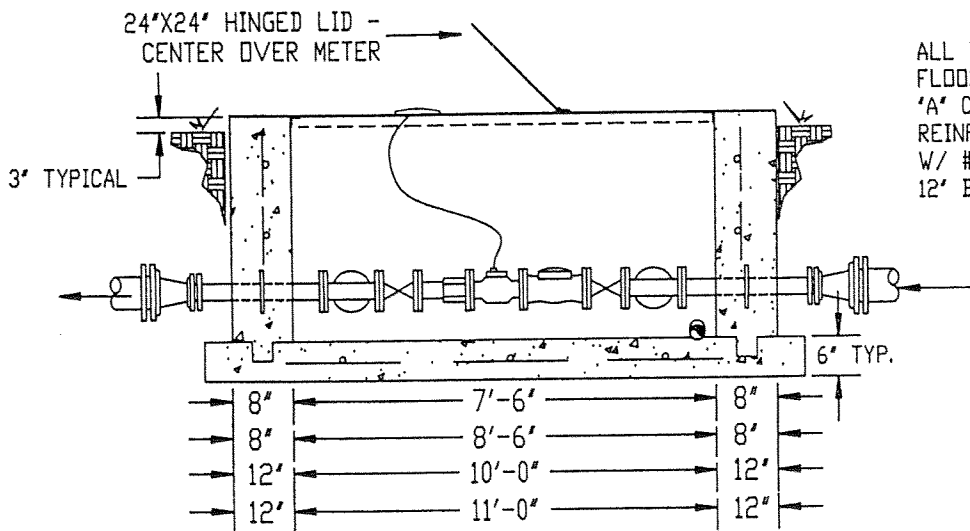
BACTERIOLOGICAL SAMPLING STATION DETAIL

W-11

Approved:

Scale: NONE

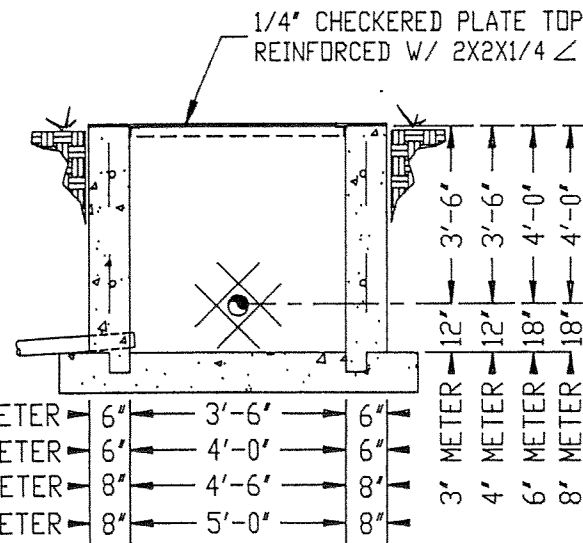
Date: MAY '95



SECTION A-A

* A FLANGED X FLANGE SPOOL MAY BE USED IN PLACE OF THE FLANGE X PLAIN END & FLANGED COUPLING ADAPTER SPECIFIED AT THIS LOCATION.

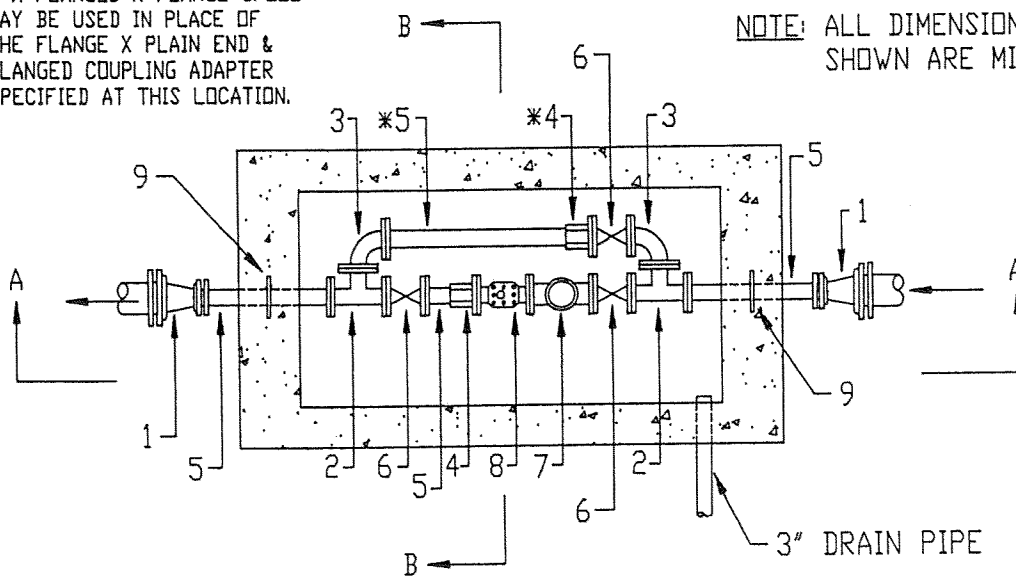
ALL WALLS & FLOORS CLASS 'A' CONCRETE REINFORCED W/ #4'S & 12' B.W.



SECTION B-B

ALL FITTINGS CAST OR DUCTILE IRON
ALL FITTING SIZES TO MATCH METER FLANGE

1. REDUCER, M.J. X M.J.
2. TEE, FLANGED
3. 90 ELBOW, FLANGED
4. FLANGED COUPLING ADAPTER
5. D.I.P., FLANGED TO PLAIN END
6. GATE VALVE, FLANGED, HAND WHEEL OPERATED
7. STRAINER, FLANGED (SEE SPECS.)
8. PRO-READ TURBO METER, FLANGED (SEE SPECS.)
9. M.J. RETAINER GLAND



NOTE: ALL DIMENSIONS SHOWN ARE MINIMUMS.



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 988-2105
RUSSELLVILLE, ARKANSAS 72801

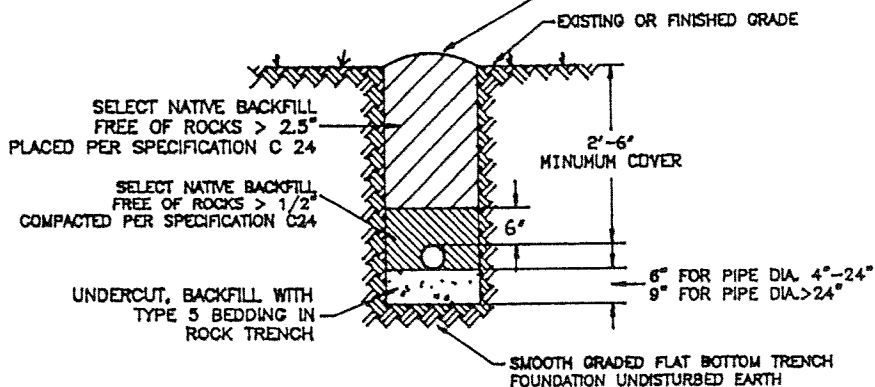
METER STATION
3"-4"-6"-8" METERS

W-12

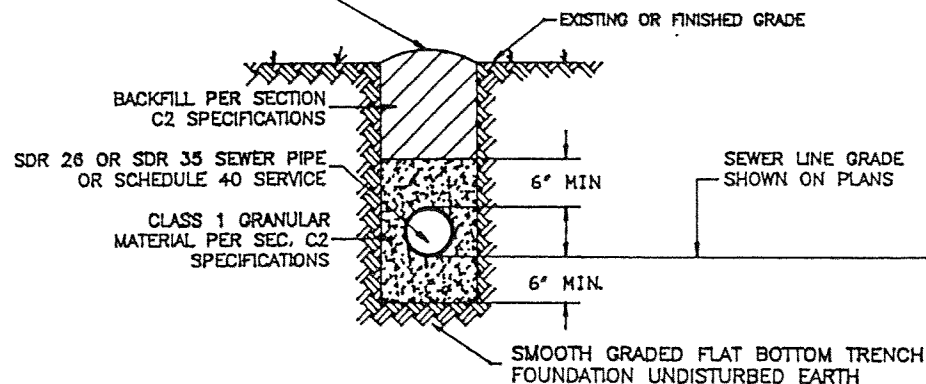
Approved:

Scale: NONE
Date: JUNE 95

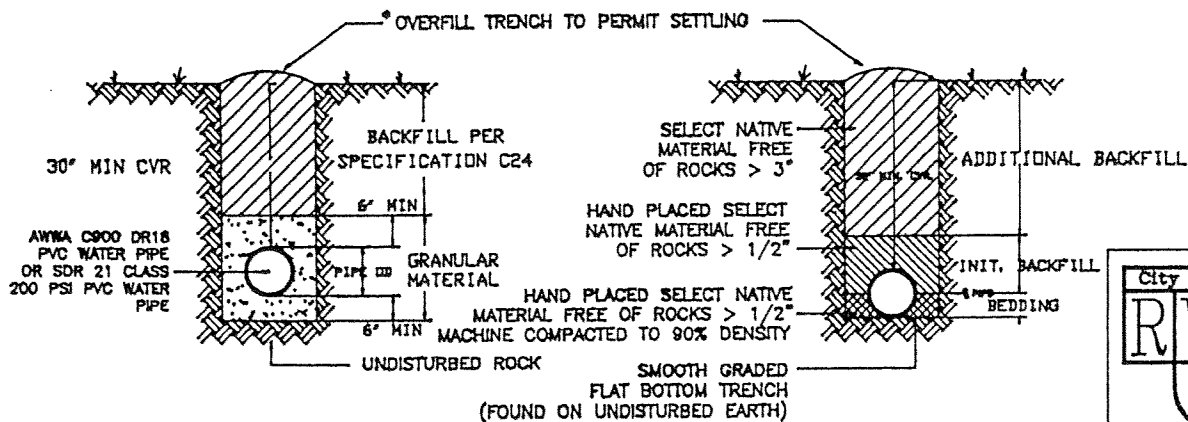
* OVERFILL TRENCH TO PERMIT SETTLING



TRENCH & BACKFILL DETAIL
DUCTILE IRON PIPE FOR WATER MAINS



TRENCH & BACKFILL DETAIL
6" & LARGER SDR 26 SEWER MAIN
4" SCHEDULE 40 OR SDR 35 SEWER SERVICE LINE



TYPE 5 BEDDING
TRENCH & BACKFILL DETAIL
4"-12" DIA C900 DR18 PVC WATER MAIN
2"-3" DIA SDR21 PVC WATER MAIN
(FOR INSTALLATION WHERE ROCK IS ENCOUNTERED IN TRENCH)

TRENCH & BACKFILL DETAIL
C-900 DR18 PVC WATER PIPE
SDR 21 CLASS 200 PVC WATER PIPE



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 988-2105
RUSSELLVILLE, ARKANSAS 72801

TYPICAL PIPE BEDDING & BACKFILL

*ALL TRENCH BACKFILL IN STREET RIGHT-OF-WAYS
SHALL BE COMPACTED IN 6" LAYERS TO 90% MODIFIED PROCTOR DENSITY

WS-1

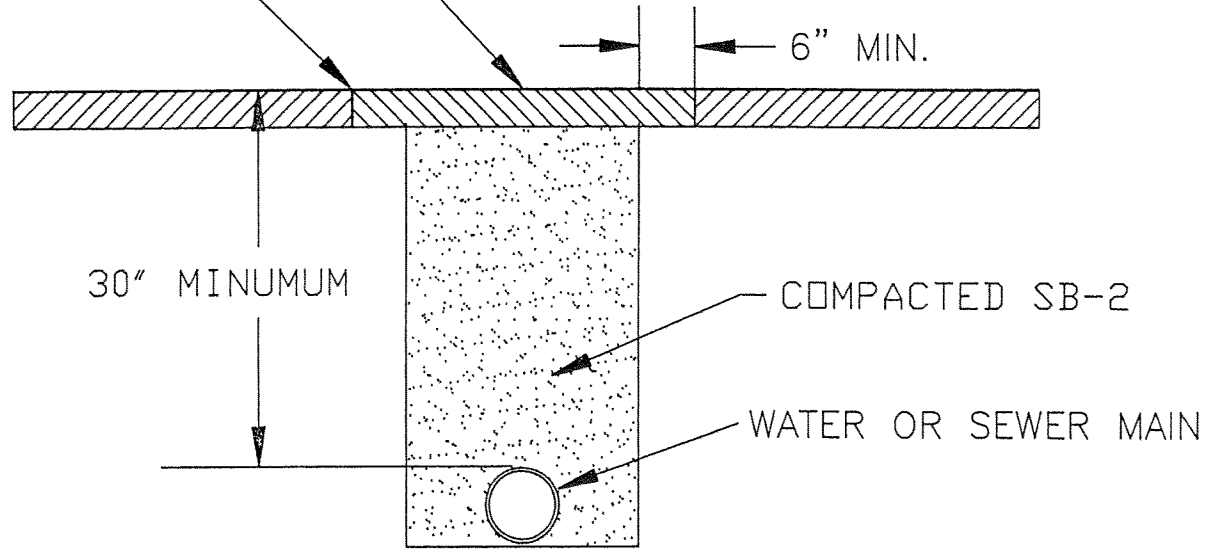
Approved:

Scale: NONE

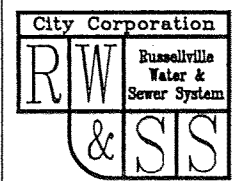
Date: MAY '95

REPLACE WITH APPROVED MATERIAL
AT THICKNESS EQUAL TO EX. PAVEMENT

SAWCUT ASPHALTIC PAVEMENT



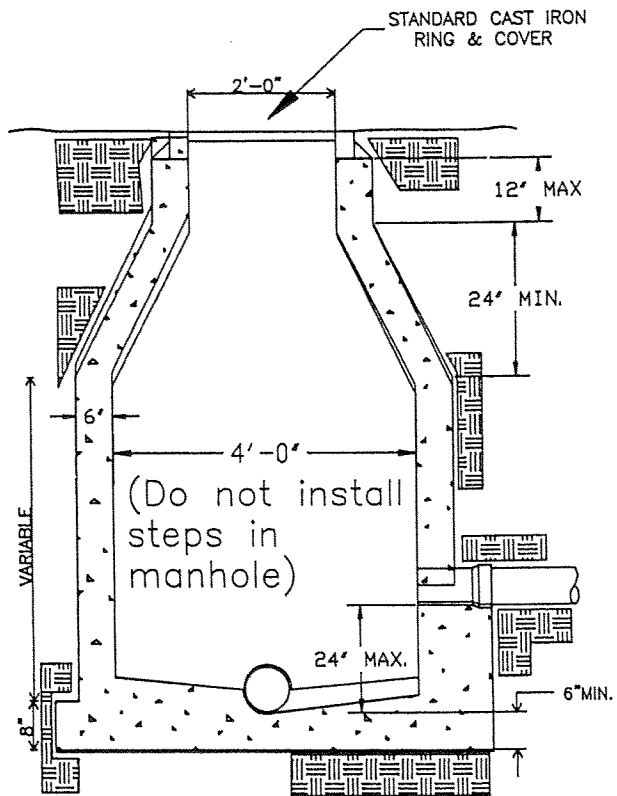
(OTHER THAN STATE HIGHWAY)



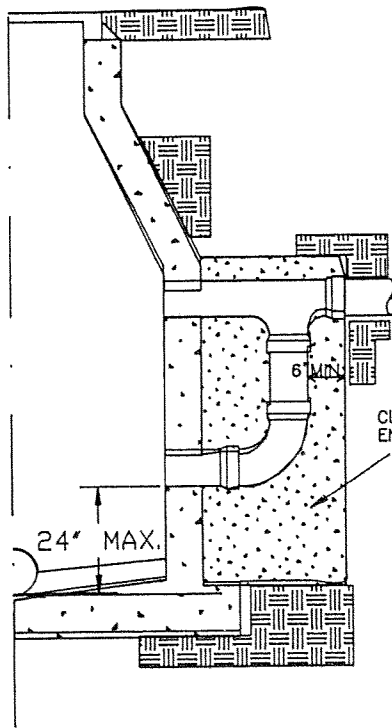
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

ASPHALTIC ROAD CROSSING DETAIL

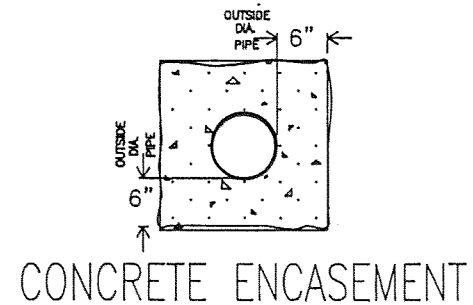
WS-2	Approved:	Scale: NONE
		Date: MAR '95



STANDARD MANHOLE



DROP MANHOLE



CONCRETE ENCASEMENT

CLASS "B" CONCRETE ENCASEMENT

"TO BE USED WHERE DIFFERENCE IN FLOW LINE ELEVATION OF INTERSECTING LINES EQUALS OR EXCEEDS 24 INCHES"

Manholes shall be constructed of monolithically poured Class "A", or Precast wall sections on a Class "A" concrete base slab. Manholes shall be pressure tested to prove water tightness



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

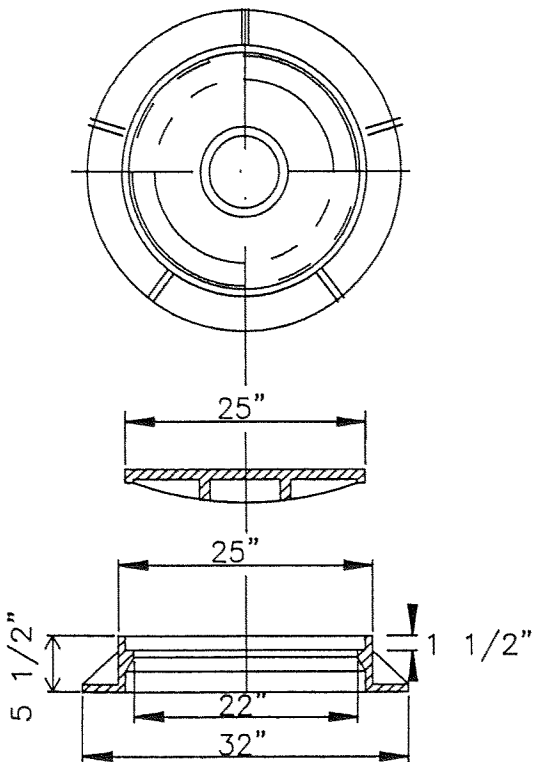
MANHOLE SECTIONS & DETAILS

S-1

Approved:

Scale: NONE

Date: MAR '95



NOTE: MINIMUM WEIGHTS
 COVER 125 LBS.
 RING 135 LBS
 COMBINED WEIGHT 260 LBS.



POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

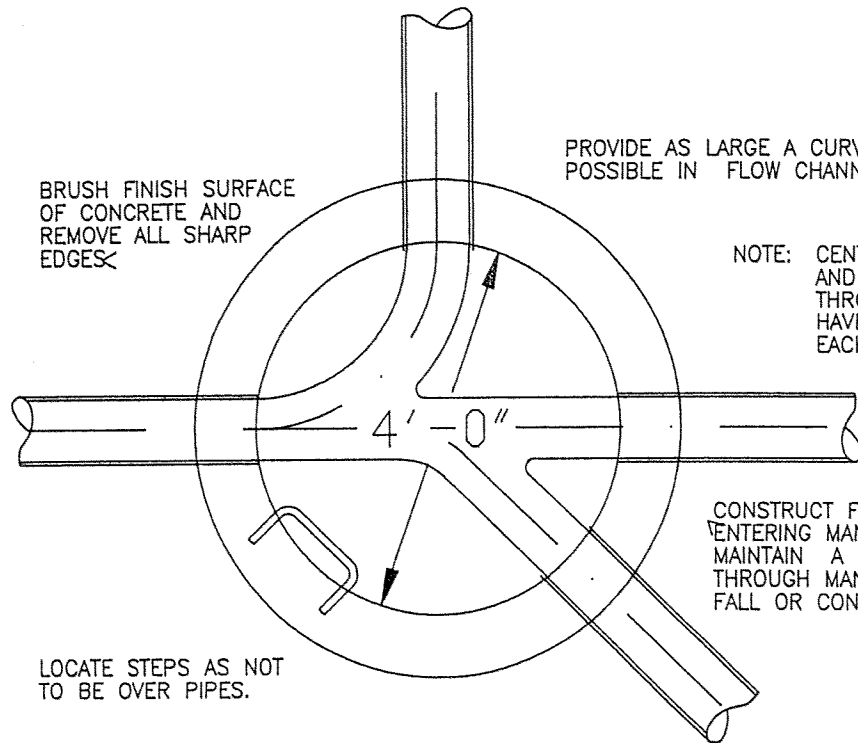
MANHOLE RING & COVER DETAIL

S-2

Approved:

Scale: NONE

Date: MAR '95



BRUSH FINISH SURFACE
OF CONCRETE AND
REMOVE ALL SHARP
EDGES

PROVIDE AS LARGE A CURVE AS
POSSIBLE IN FLOW CHANNEL.

NOTE: CENTERLINE OF ALL PIPES ENTERING
AND EXITING MANHOLE SHALL PASS
THROUGH CENTER OF MANHOLE AND
HAVE A FLOW LINE PROVIDED FOR
EACH PIPE.

CONSTRUCT FLOW CHANNEL FOR ALL PIPES
ENTERING MANHOLE, INCLUDING SERVICES.
MAINTAIN A CONSTANT HYDRAULIC GRADE
THROUGH MANHOLE WITH A MINIMUM OF 0.2'
FALL OR CONTINUOUS RUN OF PIPE.

LOCATE STEPS AS NOT
TO BE OVER PIPES.

(MANHOLES FOR SEWERS LARGER THAN 24" REQUIRE INDIVIDUAL DESIGN)



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

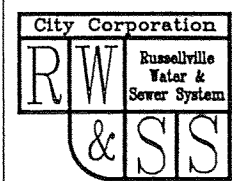
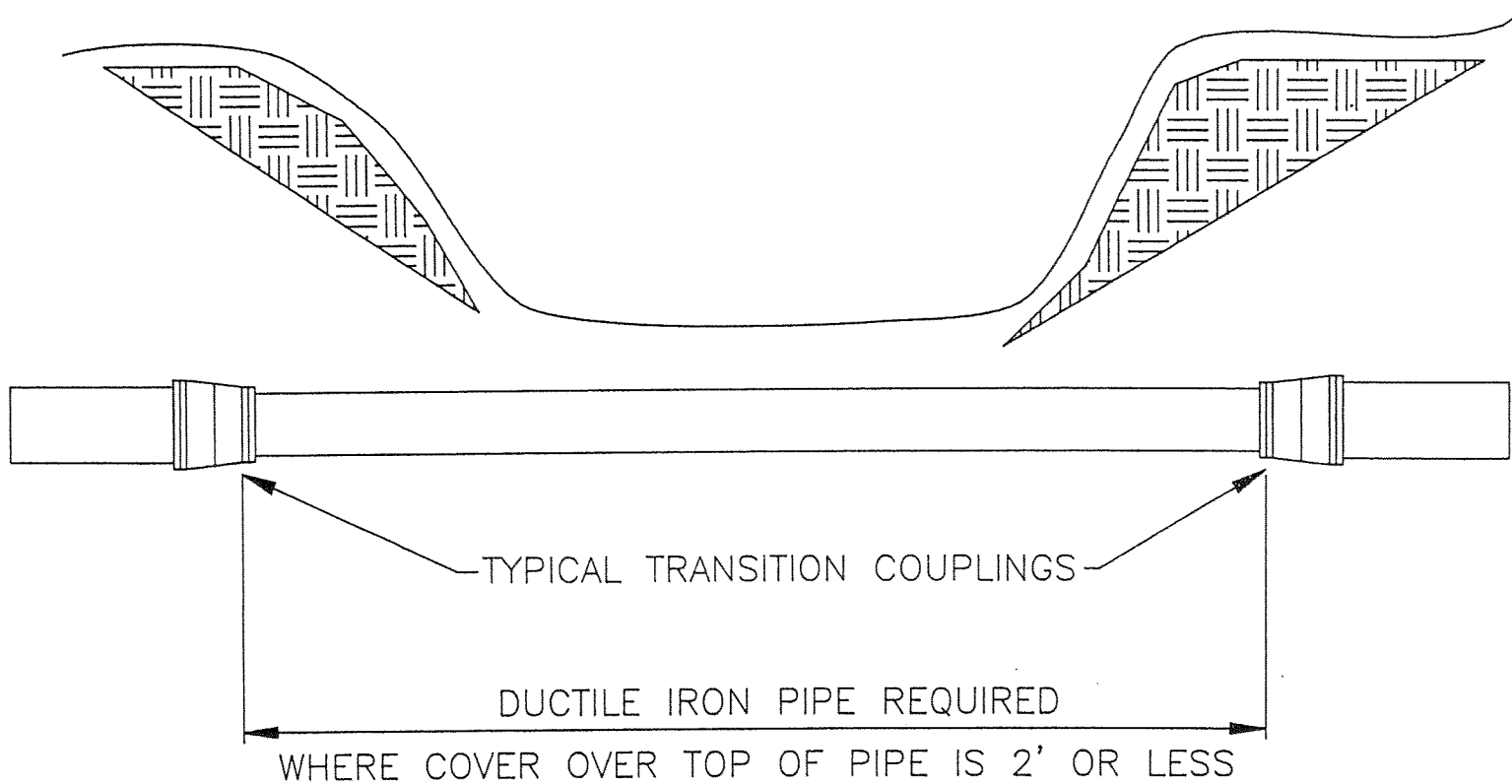
MANHOLE BOTTOM DETAIL
FOR 6" THROUGH 24" SEWERS

S-3

Approved:

Scale: NONE

Date: MAR '95



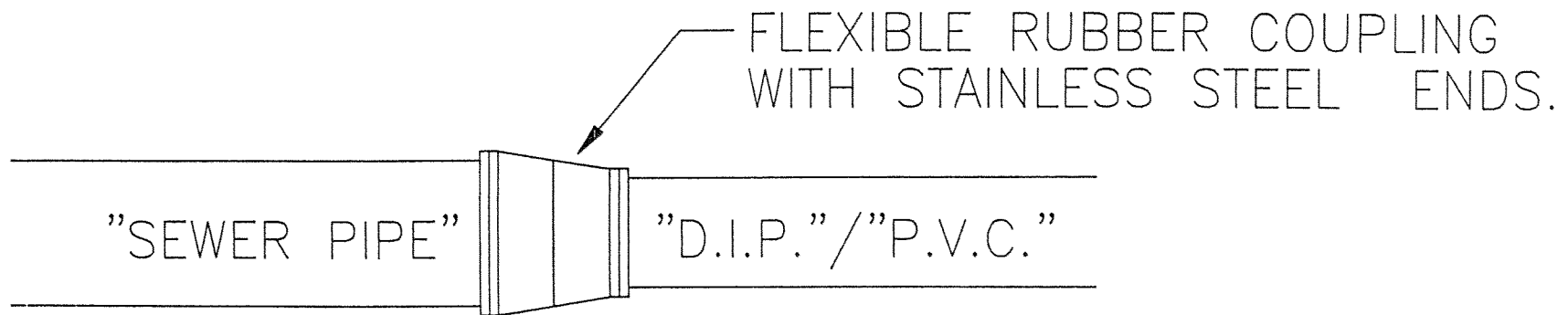
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

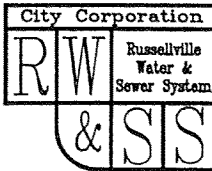
BURIED CREEK CROSSING

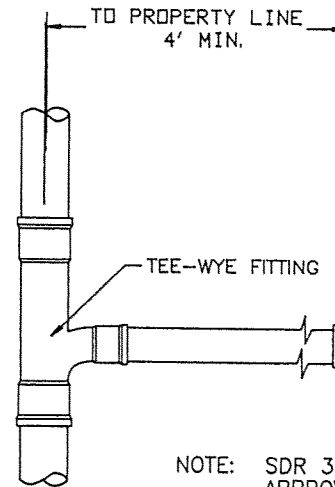
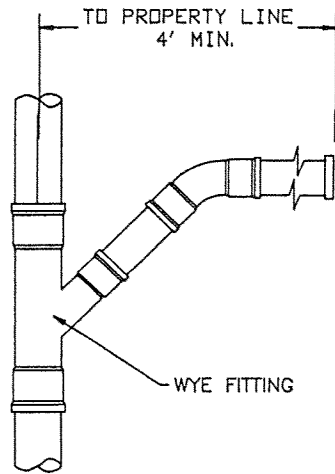
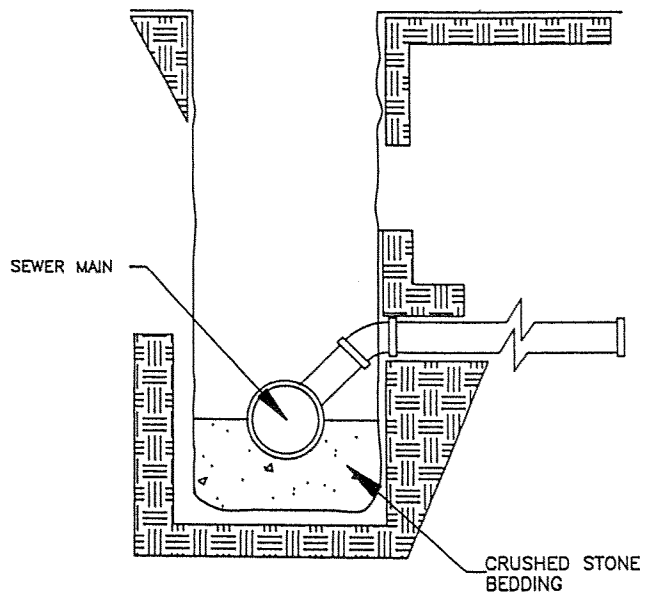
S-4

Approved:

Scale: NONE
Date: MAR '95




		City Corporation Russellville Water & Sewer System	POST OFFICE BOX 458 205 WEST 3RD PLACE PHONE 968-2105 RUSSELLVILLE, ARKANSAS 72801
JOINT AT PIPE TRANSITION 6" THROUGH 12" PIPES			
S-5	Approved:	Scale: NONE	Date: MAR '95

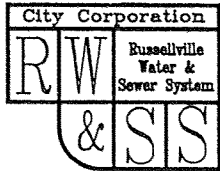
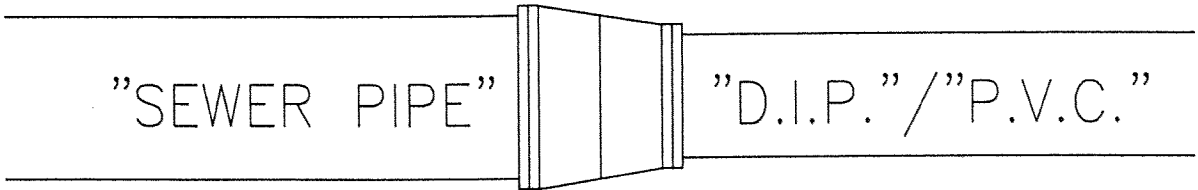


NOTE: SDR 35 FITTINGS MAY BE USED IF APPROVED BY THE ENGINEER AND SDR 26 FITTINGS ARE NOT AVAILABLE.

NOTE: End of service lateral shall be marked with either a treated 2"x4" placed vertically, a buried metal stake, or a brightly colored rope from the end of the pipe to the surface of the ground.

		POST OFFICE BOX 458 205 WEST 3RD PLACE PHONE 968-2105 RUSSELLVILLE, ARKANSAS 72801
SERVICE LINE DETAILS		
S-6	Approved:	Scale: NONE Date: MAR '95

FLEXIBLE RUBBER COUPLING
WITH STAINLESS STEEL ENDS.



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

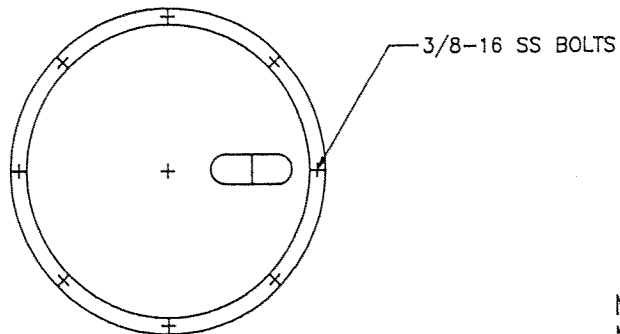
JOINT AT PIPE TRANSITION
6" THROUGH 12" PIPES

S-7

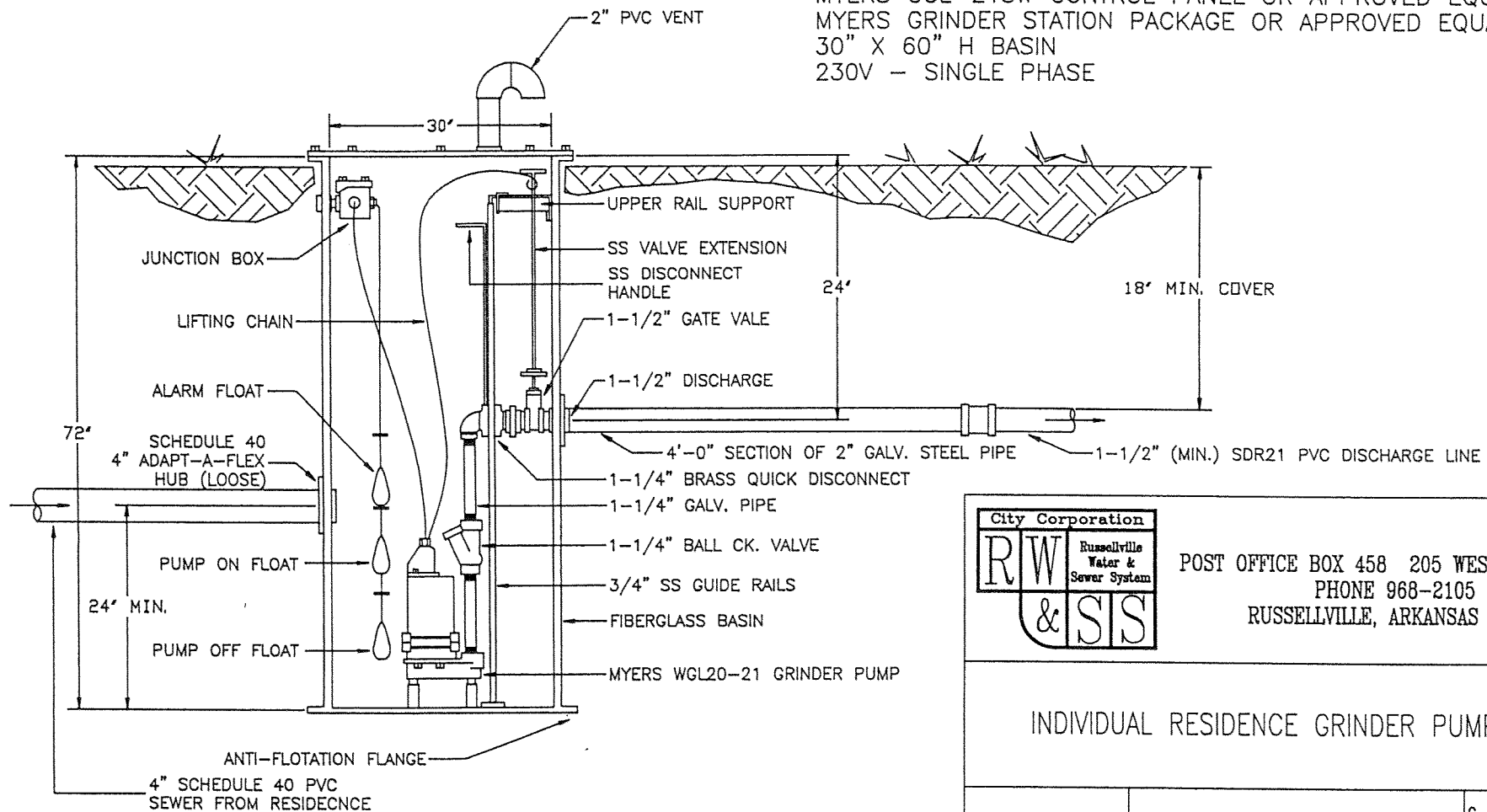
Approved:

Scale: NONE

Date: MAR '95



MYERS WGL 20-21 GRINDER PUMP OR APPROVED EQUAL
 MYERS CGL-21SW CONTROL PANEL OR APPROVED EQUAL
 MYERS GRINDER STATION PACKAGE OR APPROVED EQUAL
 30" X 60" H BASIN
 230V - SINGLE PHASE



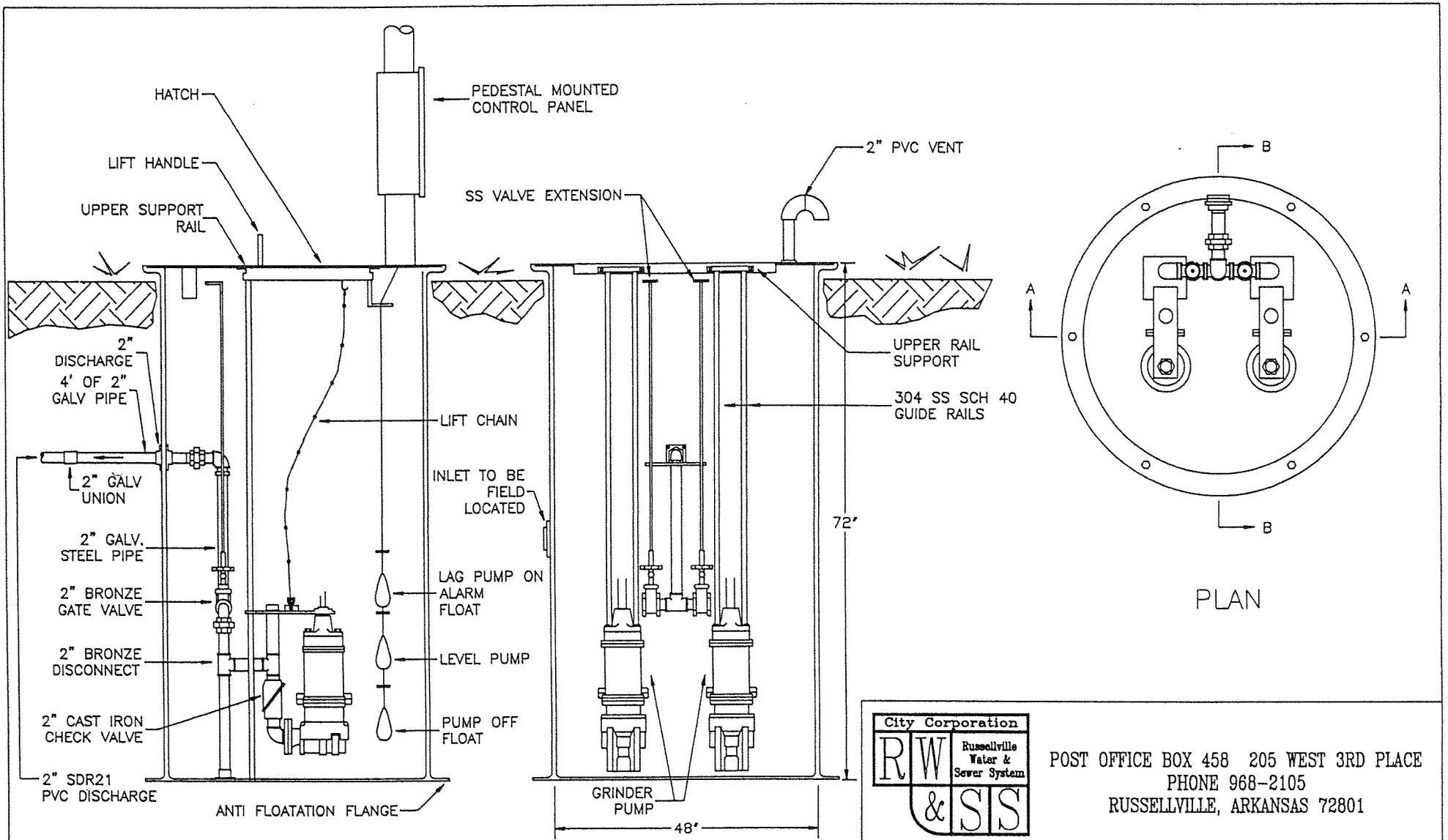
City Corporation
 Russellville
 Water &
 Sewer System
 POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

INDIVIDUAL RESIDENCE GRINDER PUMP STATION

S-8A

Approved:

Scale: NONE
 Date: MAR '95



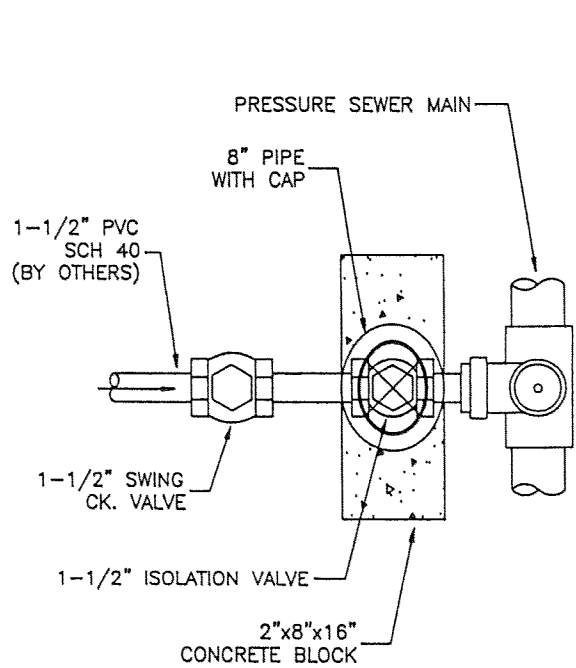
SECTION B-B

SECTION A-A

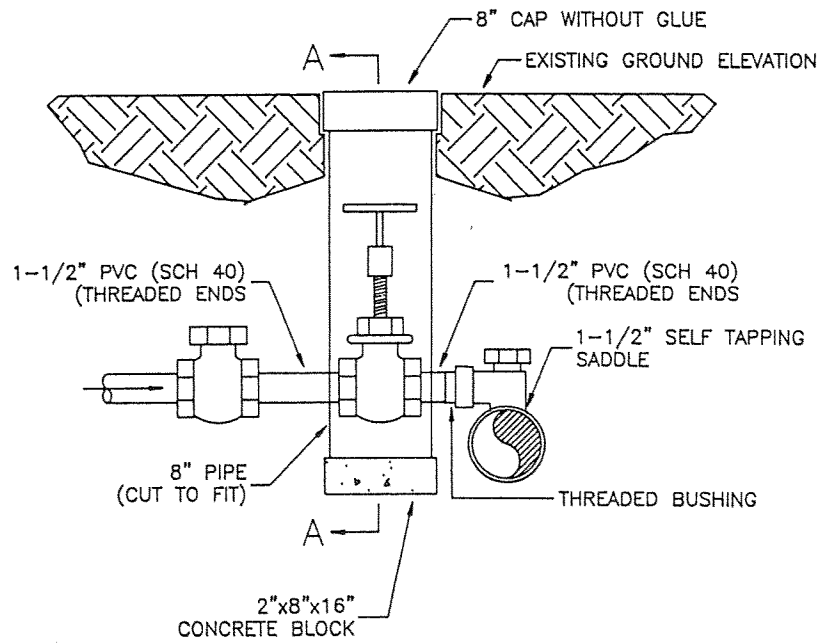
City Corporation RW & SIS Russellville Water & Sewer System		POST OFFICE BOX 458 205 WEST 3RD PLACE PHONE 968-2105 RUSSELLVILLE, ARKANSAS 72801
--	--	--

DUPLEX GRINDER PUMP STATION
 (FOR MULTIFAMILY OR COMMERCIAL INSTALLATION)

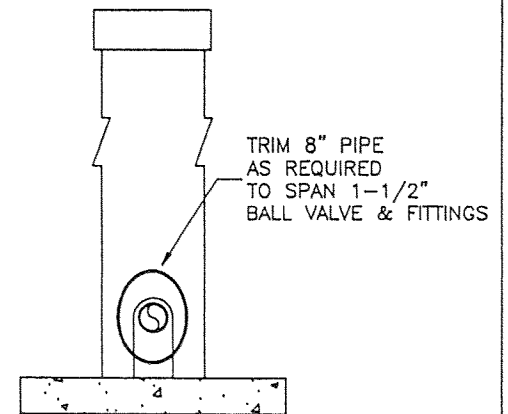
S-8B	Approved:	Scale: NONE
		Date: MAR '95




PLAN



SECTION



SECTION A-A

		POST OFFICE BOX 458 205 WEST 3RD PLACE PHONE 968-2105 RUSSELLVILLE, ARKANSAS 72801
PRESSURE SEWER SERVICE DETAIL		
S-9	Approved:	Scale: NONE Date: MAR '95

THREADED PLUG
WITH TEFLON TAPE



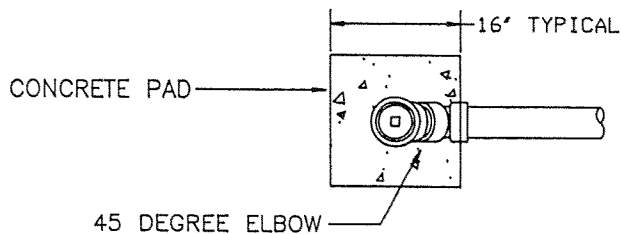
4' TYPICAL

RISER TO GRADE

BACK FILL ALL CLEAN OUT
PIPING WITH COMPACTED
SB-2 TO EXISTING GROUND
LEVEL

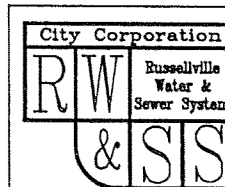
45 DEGREE ELBOW

SECTION



PLAN

NOTE: ALL PIPE MATERIAL TO BE SCHEDULE 40 PVC



City Corporation
POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

ONE WAY CLEAN OUT
(SERVICE LINES ONLY)

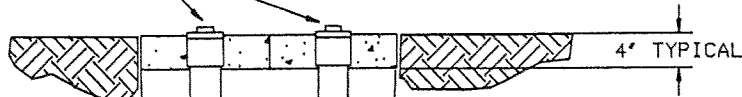
S-10

Approved:

Scale: NONE

Date: MAR '95

THREADED PLUG WITH TEFLON TAPE



4' TYPICAL

RISER TO GRADE

BACK FILL ALL CLEAN OUT PIPING WITH COMPACTED SB-2 TO EXISTING GROUND LEVEL

WYE

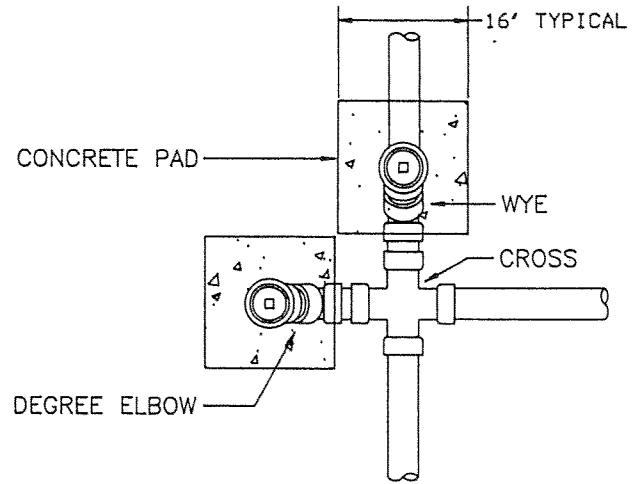
45 DEGREE ELBOW

CROSS

NOTE: A WYE SHALL BE USED WHEN TWO WAY CLEAN OUTS ARE USED AT THREE WAY INTERSECTIONS

SECTION

NOTE: ALL PIPE MATERIAL TO BE SCHEDULE 40 PVC



16' TYPICAL

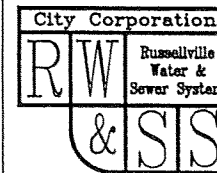
CONCRETE PAD

WYE

CROSS

45 DEGREE ELBOW

PLAN



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

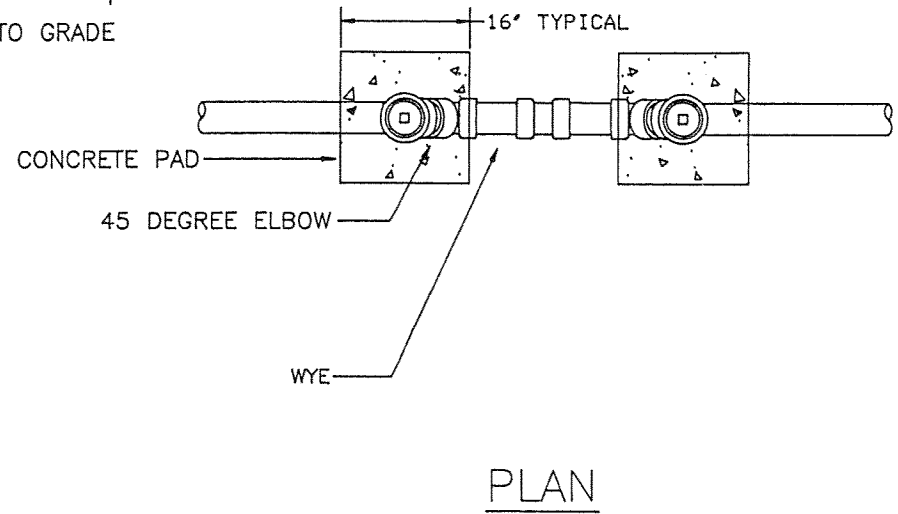
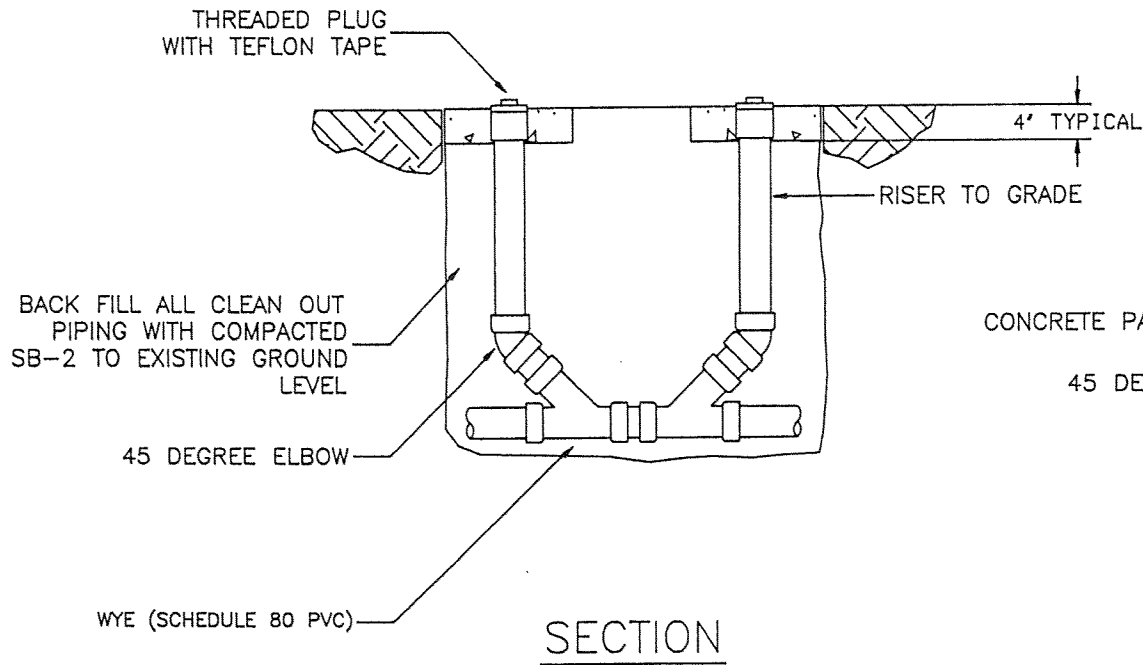
TWO WAY CLEAN OUT

S-11

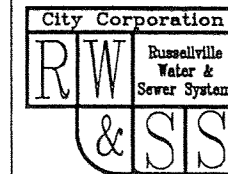
Approved:

Scale: NONE

Date: MAR '95



NOTE: ALL PIPE MATERIAL TO BE SCHEDULE 40 PVC



POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

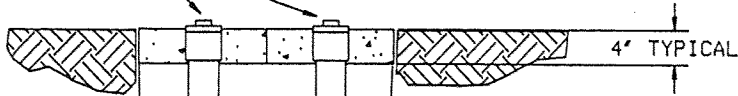
TWO WAY CLEAN OUT

S-11A

Approved:

Scale: NONE
 Date: 1/30/95

THREADED PLUG
WITH TEFLON TAPE



RISER TO GRADE

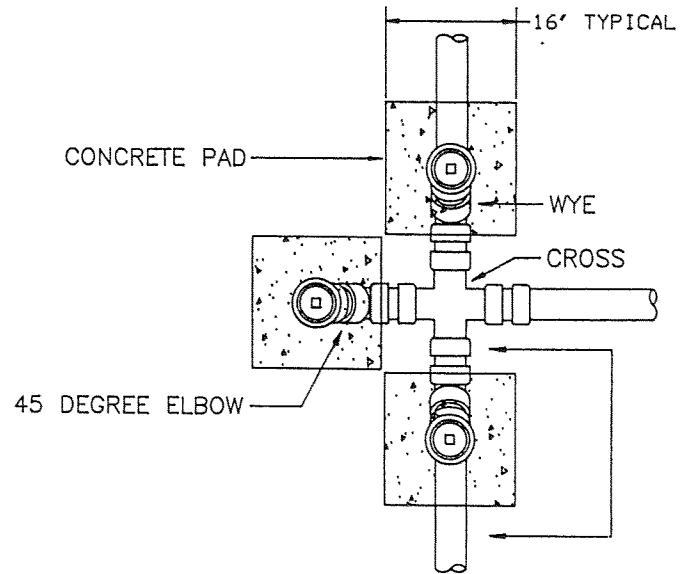
BACK FILL ALL CLEAN OUT
PIPING WITH COMPACTED
SB-2 TO EXISTING GROUND
LEVEL

45 DEGREE ELBOW

WYE

CROSS

SECTION



PLAN

NOTE: ALL PIPE MATERIAL TO BE SCHEDULE 40 PVC



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

THREE WAY CLEAN OUT

S-12

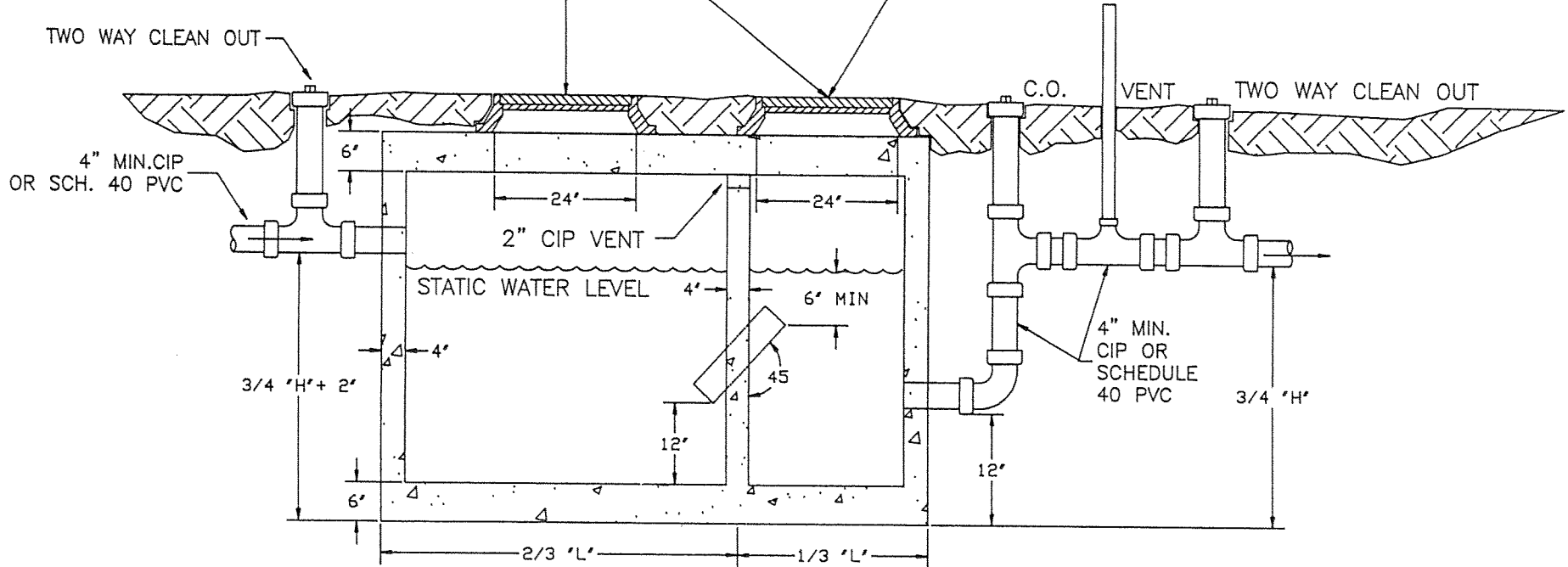
Approved:

Scale: NONE

Date: MAR '95

STANDARD CC SANITARY
SEWER FRAME & COVER AS
IN STANDARD SPECIFICATIONS
TO GRADE.

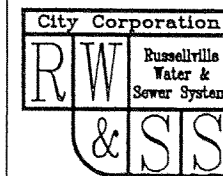
NOTE: 6" C.O. MAY BE SUBSTITUTED
FOR MANHOLE OVER SECOND
COMPARTMENT WHEN 500 GAL.
TRAP IS USED



TANK SIZED FOR A 12 MINUTE DETENTION TIME WITH A
MINIMUM SIZE OF 500 GALLONS
ONE TANK - TWO COMPARTMENTS

MAX. CAPACITY	STANDARD TANK DIMENSIONS		
	L	W	H
500 GAL.	83	42	56
750 GAL.	90	52	57
1000 GAL.	90	64	59

NOTE: TANKS WITH DIMENSIONS OTHER THAN
THESE SHALL BE SUBMITTED TO
CITY CORPORATION FOR REVIEW.



POST OFFICE BOX 458 205 WEST 3RD PLACE
PHONE 968-2105
RUSSELLVILLE, ARKANSAS 72801

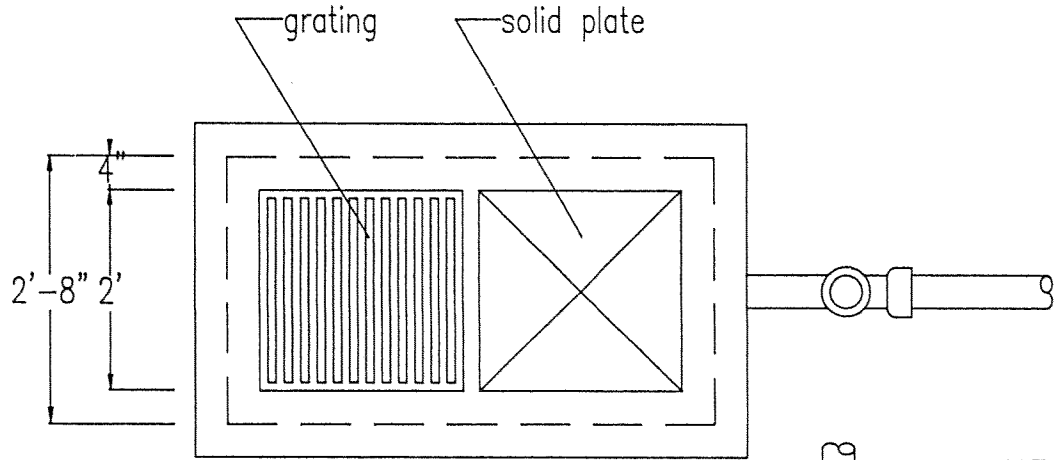
GREASE TRAP DETAIL

S-13

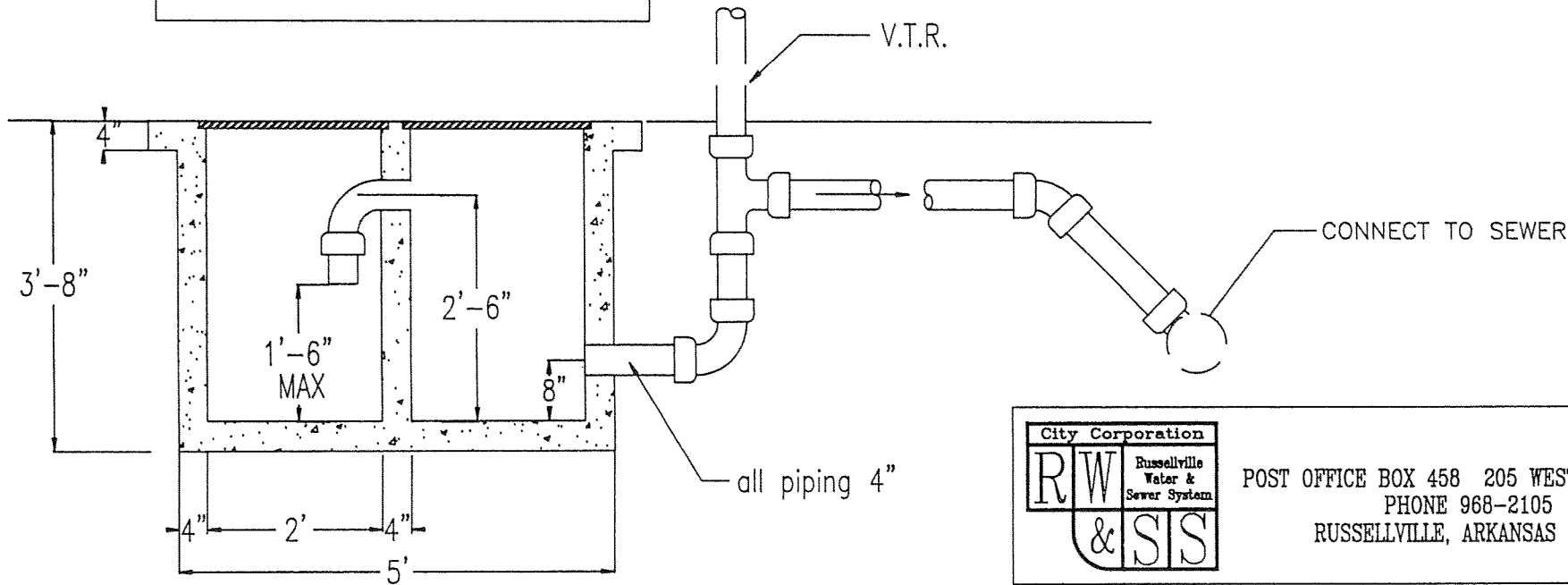
Approved:

Scale: NONE

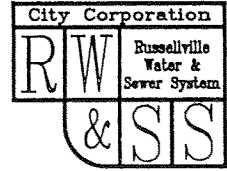
Date: MAR '95



GRATING TO BE USED ONLY WHEN UNDER ROOF. OUTSIDE INSTALLATIONS SHALL HAVE SOLID COVERS ONLY.



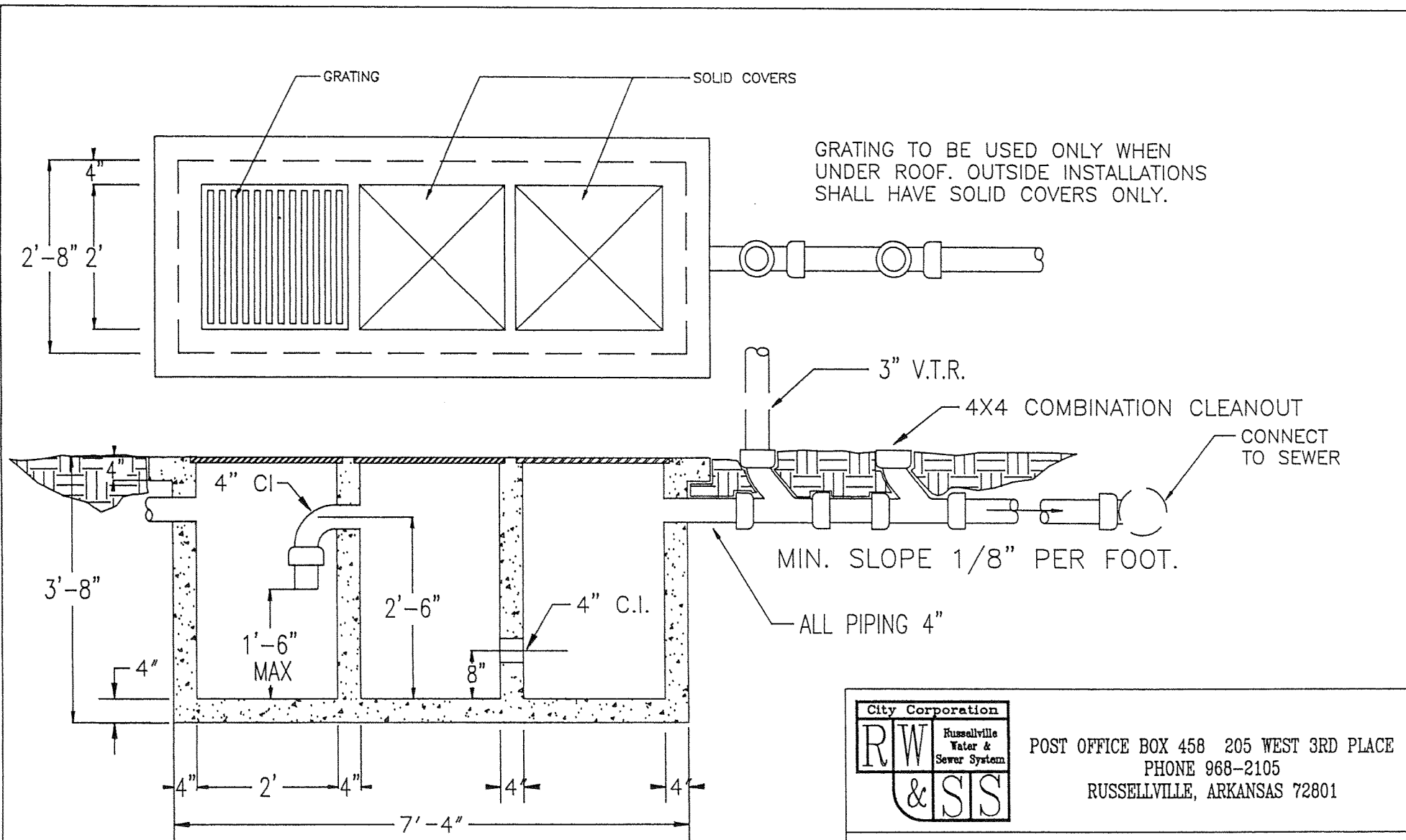
NOTE: THIS INSTALLATION IS APPROVED FOR FLOWS OF 50 GPM OR LESS. FLOWS ABOVE 50 GPM REQUIRE INDIVIDUAL DESIGN.



City Corporation
 POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

TWO COMPARTMENT SAND TRAP DETAIL

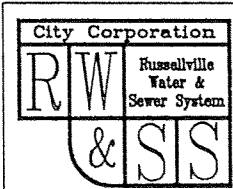
S-14A	APPROVED	SCALE: NONE
		DATE: MAR '95



GRATING TO BE USED ONLY WHEN UNDER ROOF. OUTSIDE INSTALLATIONS SHALL HAVE SOLID COVERS ONLY.

MIN. SLOPE 1/8" PER FOOT.

NOTE: THIS INSTALLATION IS APPROVED FOR FLOWS OF 50 GPM OR LESS. FLOWS ABOVE 50 GPM REQUIRE INDIVIDUAL DESIGN.



City Corporation
 Russellville Water & Sewer System
 POST OFFICE BOX 458 205 WEST 3RD PLACE
 PHONE 968-2105
 RUSSELLVILLE, ARKANSAS 72801

THREE COMPARTMENT SAND TRAP DETAIL

S-14B

APPROVED

SCALE: NONE

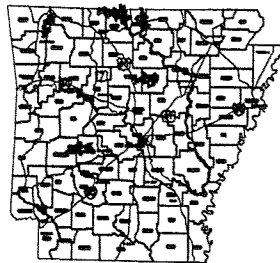
DATE: MAR '95

CITY CORPORATION

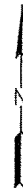
RUSSELLVILLE WATER AND SEWER SYSTEM
RUSSELLVILLE, ARKANSAS

STANDARD DUPLEX PUMP STATION PUMP CONTROL PANEL DESIGN

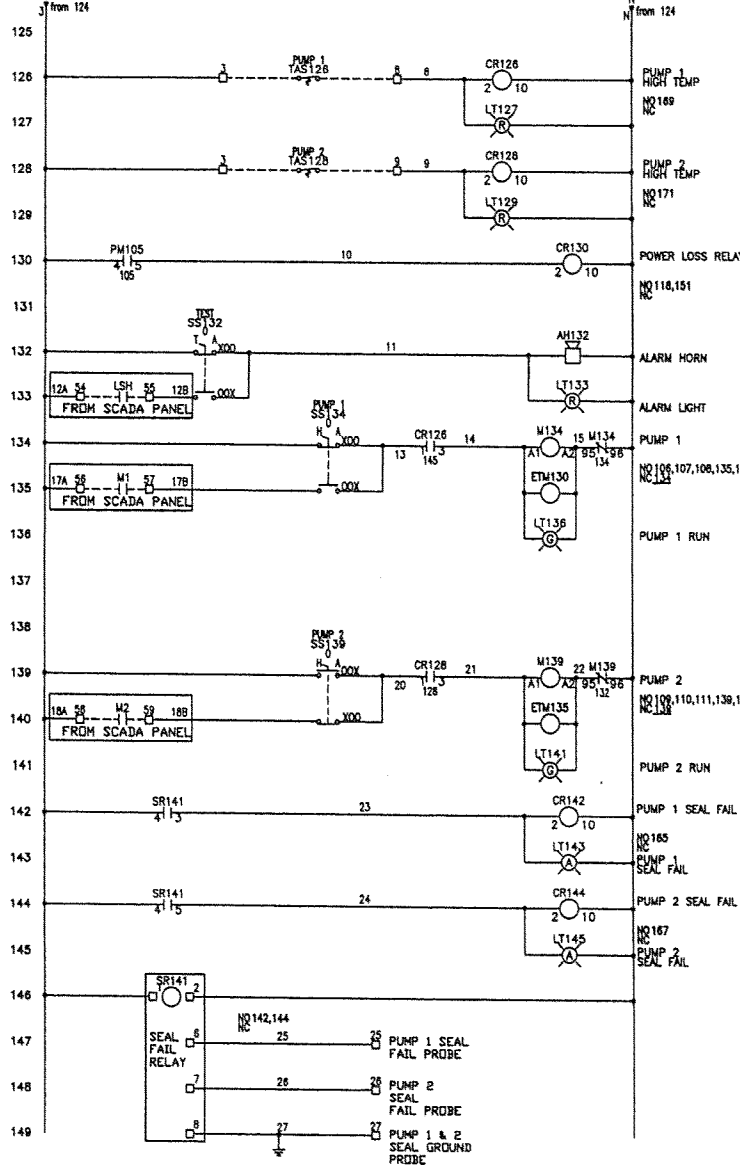
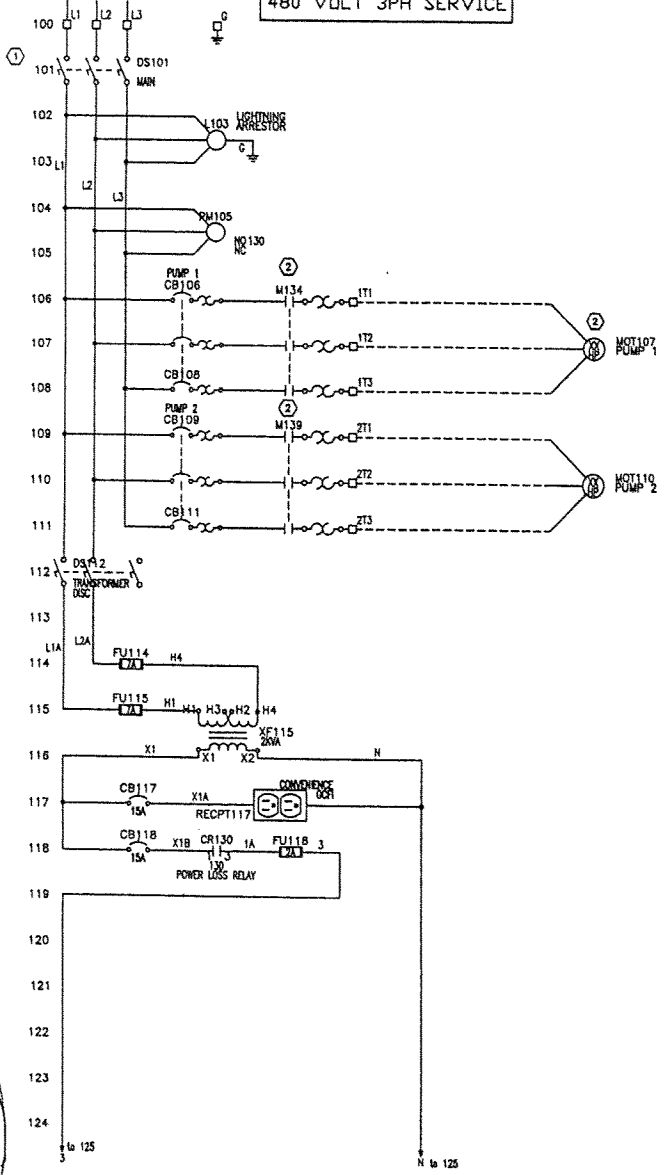
FEBRUARY, 2005



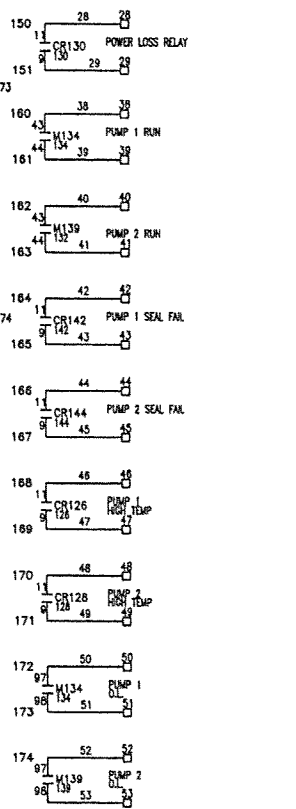
ARKANSAS



480 VOLT 3PH SERVICE



- KEYED NOTES**
- SIZE DISCONNECT IN ACCORDANCE WITH CONNECTED LOAD.
 - SIZE MOTOR STARTER BASED ON MOTOR NAMEPLATE HORSEPOWER (NEMA BASED STARTERS ONLY - IEC RATED NOT ALLOWED).
- GENERAL NOTES**
- FURNISH AND INSTALL STAINLESS STEEL NEMA 4X ENCLOSURE
 - REFER TO ATTACHED SPECIFICATION SHEETS
 - FURNISH AND INSTALL PUSH TO TEST PILOT LIGHTS
 - COORDINATE SEAL FAILURE ALARM RELAY WITH PUMPS SUPPLIED
 - SUBMIT FOR APPROVAL PRIOR TO INSTALLATION: ALL PROPOSED MATERIAL INCLUDING BUT NOT LIMITED TO CONDUIT, WIRE, SUPPORTING MATERIAL, CONTROL PANEL, MATERIAL CONTROL PANEL, CONTROL PANEL, CUT SHEETS, WIRING DIAGRAMS, CONTROL SCHEMATICS, AND INTERCONNECTION DIAGRAMS.
 - THE CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL TESTED AND ACCEPTED DUPLEX PUMP CONTROL PANEL FULLY INTEGRATED AND CONNECTED TO THE SCADA CONTROL PANEL.



POST OFFICE BOX 458 205 WEST 3RD PLACE
PRIME 986-2105
ROSSLEVILLE, ARKANSAS 72091

RW & S

STANDARD DUPLEX PUMP STATION
PUMP CONTROL PANEL DESIGN

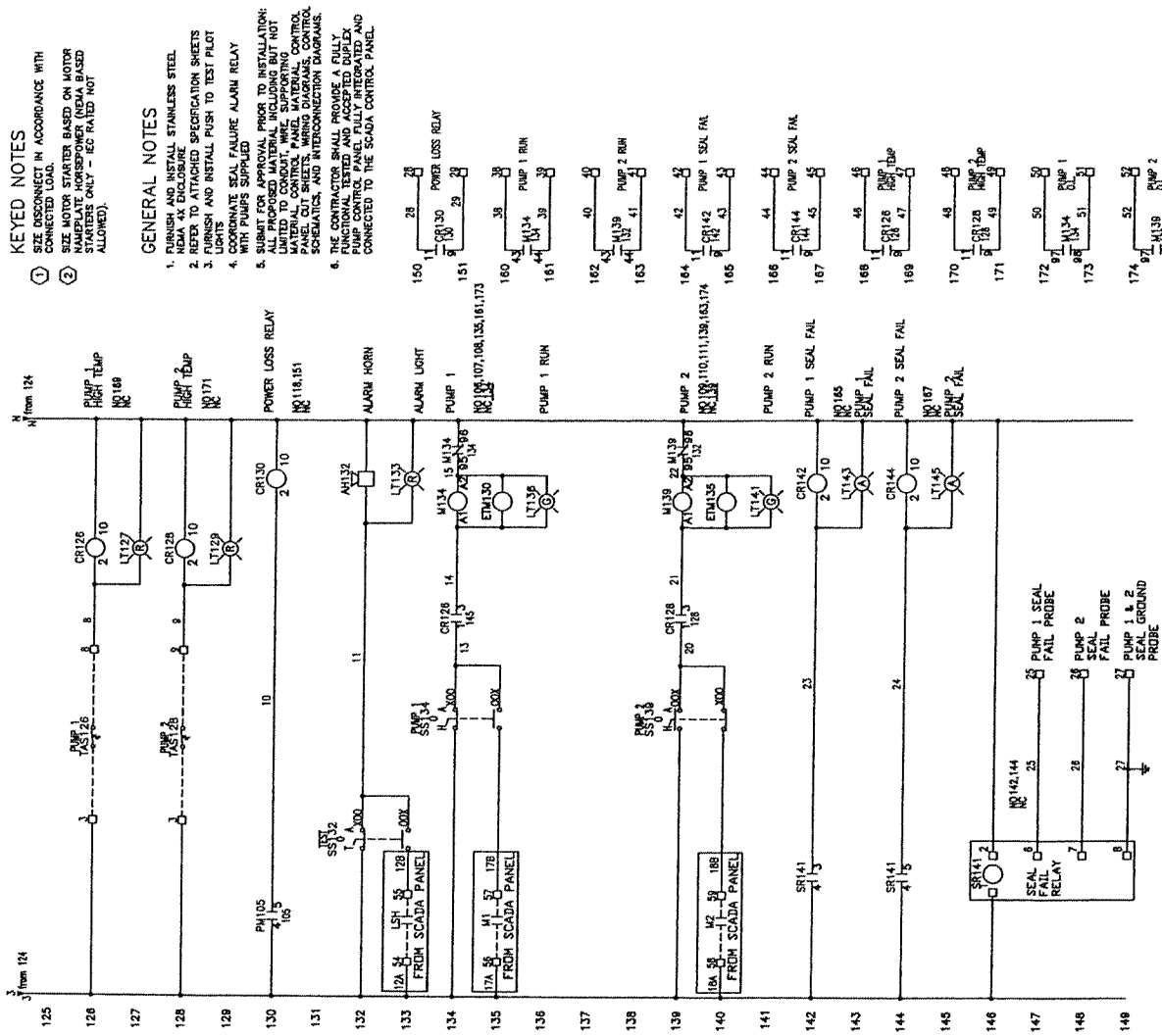
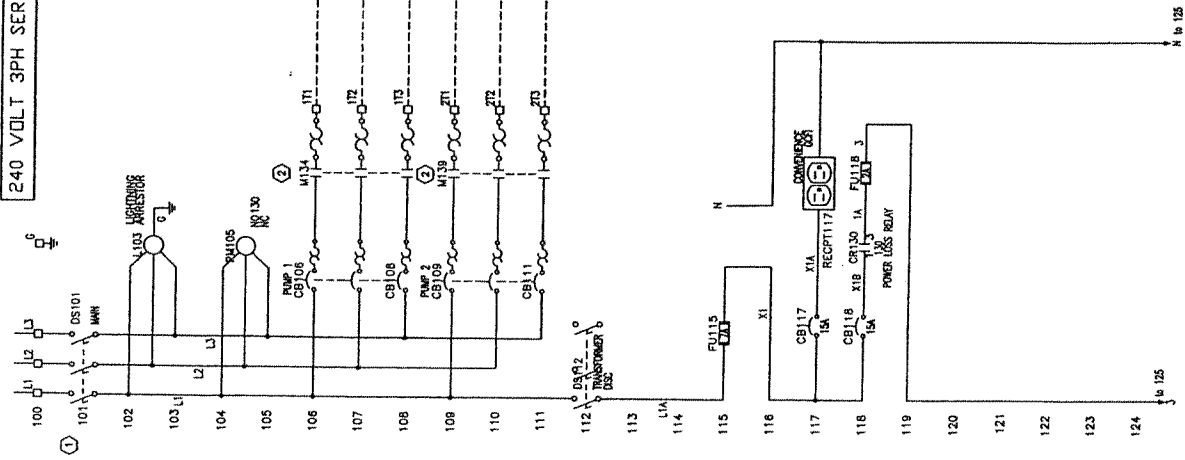
PUMP CONTROL PANEL SCHEMATIC
480 VOLT - 3 PHASE

Job No.
Date:
Designed by:
Drawn by:

Sheet Number
1 OF 3

origin: RUFLEX - 480 VOLT, 3PH L1, L2, L3, N, GND, standard duplex pump control panel design, Z23234 1=1 2/11/2008 4:00 pm
 project: L1, L2, L3, N, GND, standard duplex pump control panel design, 48, 124
 2008

240 VOLT 3PH SERVICE

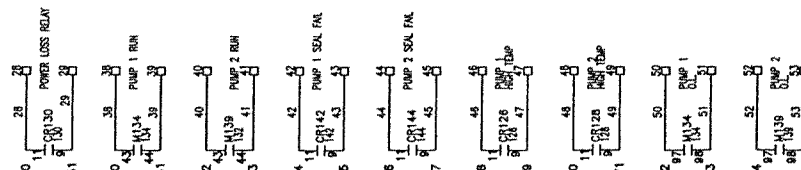


KEYED NOTES

1. SIZE DISCONNECT IN ACCORDANCE WITH CONNECTED LOAD.
2. SIZE MOTOR STARTER BASED ON MOTOR NAMEPLATE HORSEPOWER (NEMA BASED STARTERS ONLY - EC RATED NOT ALLOWED).

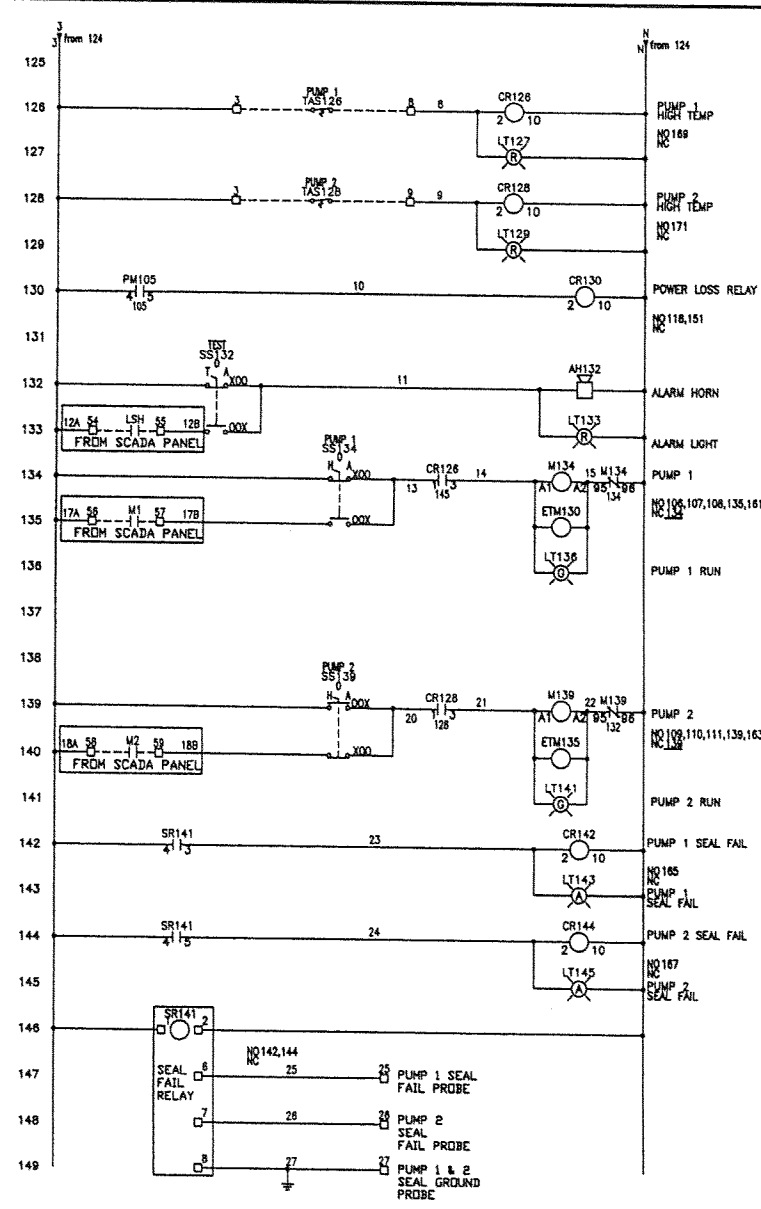
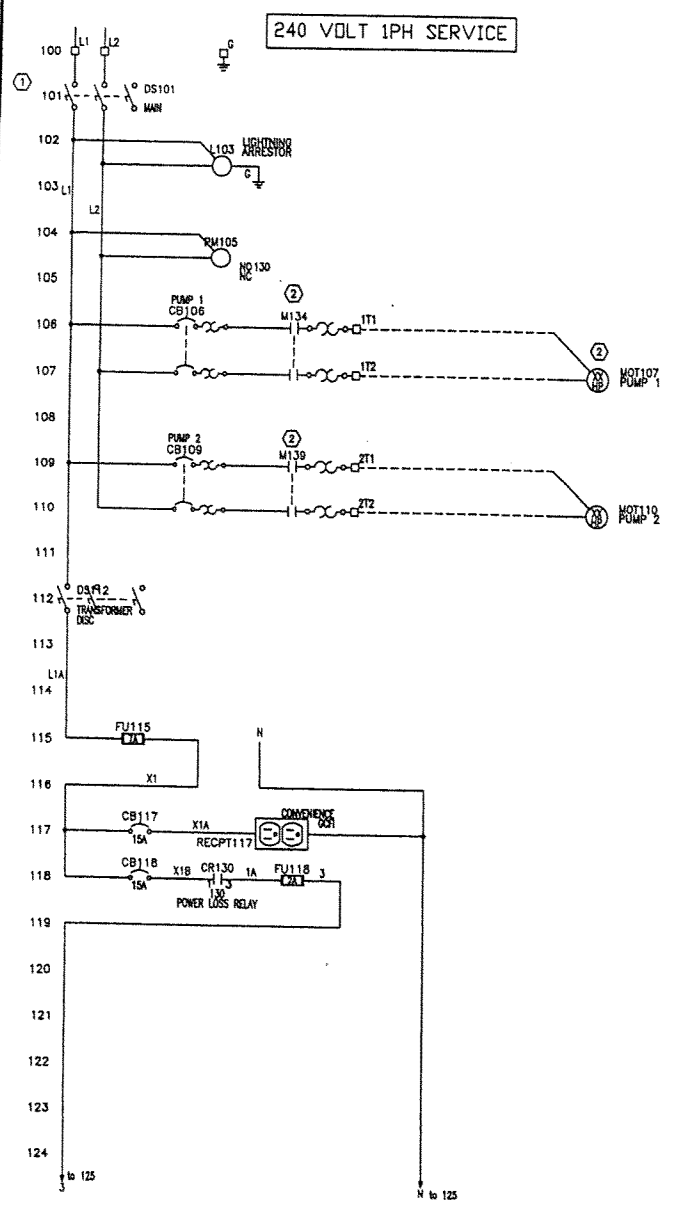
GENERAL NOTES

1. FURNISH AND INSTALL STAINLESS STEEL. NEMA 4X ENCLOSURE.
2. REFER TO RELATED SPECIFICATION SHEETS FOR LIGHTS AND INSTALL PUSH TO TEST FLUET.
3. COORDINATE SEAL FAILURE ALARM RELAY WITH PUMPS SUPPLIED.
4. SUBMIT FOR APPROVAL PRIOR TO INSTALLATION: CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL TESTED AND ACCEPTED DUPLEX PUMP CONTROL PANEL FULLY INTEGRATED AND CONNECTED TO THE SCADA CONTROL PANEL.

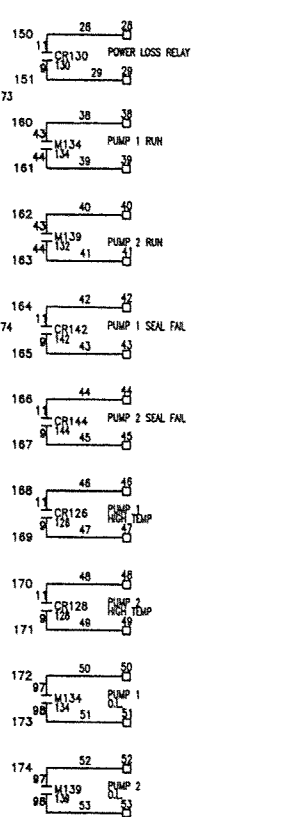


Copyright © 2004 RW & S Engineers, Inc. All rights reserved. No part of this document may be reproduced without written permission from RW & S Engineers, Inc.

concept: DUPLEX - 240 VOLT - 1PH, dwg: L:\V00A\04971800 - City Corp EE Services\standard duplex pump control panel design\ 222034 1-1 2/7/2005 4:01 pm
 work: L:\V00A\04971800 - City Corp EE Services\standard duplex pump control panel design\ 44a.dwg



- KEYED NOTES**
- ① SIZE DISCONNECT IN ACCORDANCE WITH CONNECTED LOAD.
 - ② SIZE MOTOR STARTER BASED ON MOTOR NAMEPLATE HORSEPOWER (NEMA BASED STARTERS ONLY - IEC RATED NOT ALLOWED).
- GENERAL NOTES**
1. FURNISH AND INSTALL STAINLESS STEEL NEMA 4X ENCLOSURE
 2. REFER TO ATTACHED SPECIFICATION SHEETS
 3. FURNISH AND INSTALL PUSH TO TEST PILOT LIGHTS
 4. COORDINATE SEAL FAILURE ALARM RELAY WITH PUMPS SUPPLIED
 5. SUBMIT FOR APPROVAL PRIOR TO INSTALLATION: ALL PROPOSED MATERIAL INCLUDING BUT NOT LIMITED TO CONDUIT, WIRE, SUPPORTING MATERIAL, CONTROL PANEL MATERIAL, CONTROL PANEL CUT SHEETS, WIRING DIAGRAMS, CONTROL SCHEMATICS, AND INTERCONNECTION DIAGRAMS.
 6. THE CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL TESTED AND ACCEPTED DUPLEX PUMP CONTROL PANEL FULLY INTEGRATED AND CONNECTED TO THE SCADA CONTROL PANEL.



POST OFFICE BOX 458 205 WEST 3RD PLACE
 MURRELLVILLE, ARKANSAS 72001

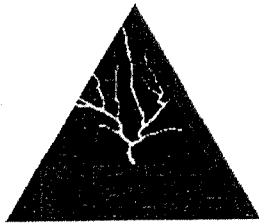
STANDARD DUPLEX PUMP STATION
 PUMP CONTROL PANEL DESIGN

PUMP CONTROL
 PANEL
 SCHEMATIC
 240 VOLT - 1 PHASE

Job No.
 Date:
 Designed by:
 Drawn by:

Sheet Number
3 OF 3

OILFIELD ARRESTORS



Rapid Response, High Current Delta Arrestors™ For Industrial Use Help Prevent Voltage Surge and Lightning Damage to Motors and Control Equipment.

600 SERIES SPECIFICATIONS

Type of design	Silicon Oxide Varistor
Maximum current	100,000 amps
Maximum energy	3000 joules
Maximum number of surges	Unlimited
Response time one milliamp test	5 nanoseconds
Response time to clamp 10,000 amps	10 nanoseconds
Response time to clamp 50,000 amps	25 nanoseconds
Leak current at double the rated voltage	none
Leads	36" #12 THHN
Case material	PVC
Locknut and Washer furnished	



NIPPLE
1/2" Thread

CASE DIMENSIONS: 4 1/2" High
2 1/4" Diameter

SIMPLE INSTALLATION

Fasten the arrester to the service entrance equipment. Connect the black wires to the lines below the main disconnect. Connect the white wire to the grounded neutral bus.

- LA 603 for 440-600 Volt 3 Phase 3 or 4 Wire Service**
- LA 602 for 440-600 Volt Single Phase 3 Wire Service**
- LA 601 for 440-600 Volt Single Phase 2 Wire Service**

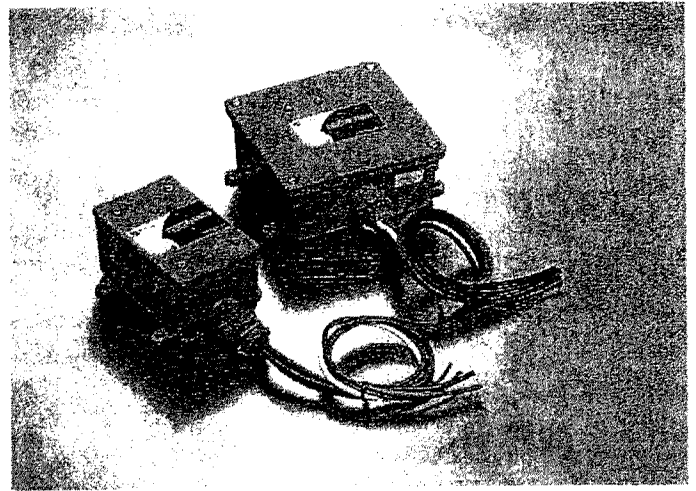
Conduction Characteristics								8 X 20 microsecond wave shape ANSI IEEE NEMA STANDARD	
Discharge Current	5000 A	10000 A	20000 A	40000 A	60000 A	80000 A	100000 A		
Clamping Voltage	450 V	920 V	1040 V	1500 V	2300 V	4000 V	5000 V		
Unlimited Operations						One Operation			
DELTA LIGHTNING ARRESTORS,™ INC.								P. O. BOX 750 BIG SPRING, TEXAS 79721	

ZoneDefender

80kA power surge protection for small distribution panels, tower lights, equipment cabinets and confined spaces



- AC or DC application
- Straightforward and simple installation – wall or flush mounting
- LED status indication via solid state diagnostics plus remote indication contacts
- Thermal and short circuit fusing
- UL 1449 2nd Edition Listed
- 10 year product warranty



The ZoneDefender Series of power surge protection devices has been specifically designed for interior lighting and small distribution panels. These compact and durable devices offer cost effective, high capacity protection along with application versatility, features which make the Series the ultimate surge protection solution.

ZoneDefender units, with a 80kA surge handling capability per phase, provide protection between Line to Neutral, Line to Ground, Line to Line and Neutral to Ground. Utilizing Metal Oxide Varistor (MOV) technology, the ZoneDefender's protection circuits are highly reliable, dual-redundant varistor networks ensuring your site is never unprotected. Fully automatic in operation, ZoneDefender reacts immediately, clamping voltage surges without causing undue leakage losses under normal operation. No operator intervention is required, ZoneDefender resets automatically and is maintenance free.

Suitable for AC or DC applications, ZoneDefender devices provide protection for AC or DC power supplies with no restriction to the amount of load current. ZoneDefender DC versions are available utilizing SAD (Silicon Avalanche Diode) technology in addition to the standard MOVs. DC versions are also available with EMI filtering, should this be required.

Thermal fusing is incorporated into each ZoneDefender as an additional safety feature. Short circuit protection is also supplied, as standard, for added peace of mind.

ZoneDefender offers an LED Status indication facility allowing each varistor network to be continually monitored and indicated by LEDs on the front panel of the device. In addition, remote monitoring is enabled by the units' remote indication contacts.

Installation is simple - the NEMA 4X enclosure of ZoneDefender devices can be easily 'wall mounted'. Alternatively, ZoneDefender units may be flush mounted by way of an optional mounting plate which should be specified at time of order placement.

The ZoneDefender Series is UL 1449 2nd Edition Listed and boasts an unrivalled 10 year 'no questions asked' manufacturers product warranty. Zone-Defender devices also exceed the requirements of ANSI/IEEE C62.45 and ANSI/IEEE C62.41.

AC & DC Power Protection

Specification

All figures typical at 77°F (25°C) unless otherwise stated

Maximum surge current

80kA (8/20µs)*

* except ZoneDefender DC versions.

See specifications table for details.

Lines protected AC

L-N, L-G, L-L, N-G

Lines protected DC

V+, V-

Ambient temperature limits

-40°F to +185°F (-40°C to +85°C) -working

Humidity

95% RH (non-condensing)

Enclosure

NEMA 1, 2, 3, 3R, 4, 4X, 12 and 13 (IP66)

Terminals

12 AWG (3mm²)

Mounting

Surface mount by 0.21" (5mm) diameter holes

or flush mount via mounting plate

(Optional at time of order)

Remote contacts

NC 250Vac, 5A rated

Indication

Green LED on Protection present

Green LED off Internal failure

Weight

Three phase units

3.6 lbs (1.64Kg)

Split phase units

2.0 lbs (0.91Kg)

Single phase units

1.9 lbs (0.86Kg)

Dimensions

Three phase units

5.3" x 5.3" x 2.3"

(134.5mm x 134.5mm x 58.4mm)

Split phase units & single phase units

4.5" x 2.9" x 2.5"

(114.3mm x 73.6mm x 63.5mm)

Compliance

BS EN 60950: 1992

BS EN 61000-6-2: 1999

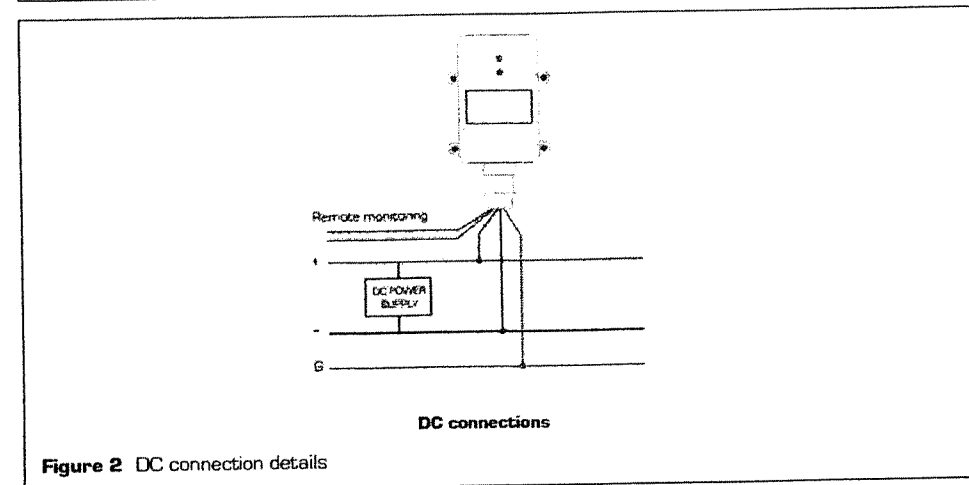
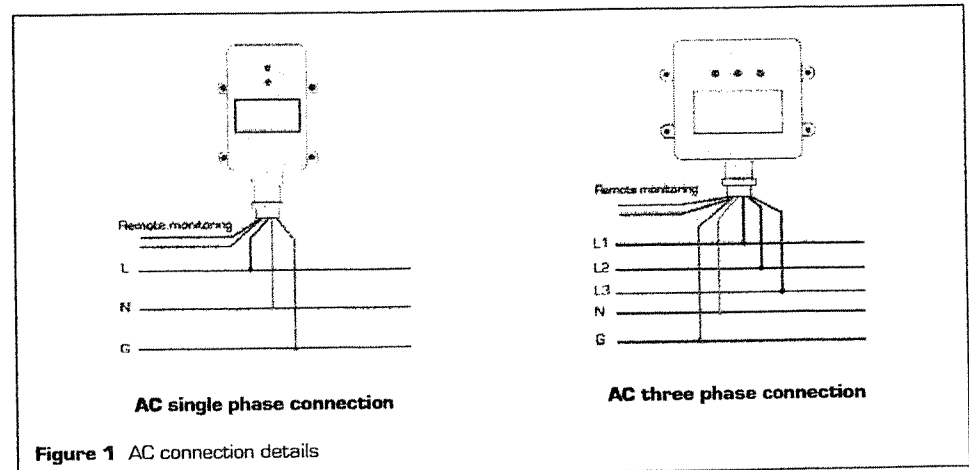
To order specify -

As per table above.

Note: In accordance with our policy of continuous improvement, we reserve the right to change the product's specification without notice.

Model	Working voltage (V)	UL1449 Listing (V)	Let-through voltage		Max. continuous operating voltage (Vac)	Phase types
			@ 3kA†	@ 10kA†		
AC versions						
14400	120	400	435	730	140	Single phase 2-wire
14401	120/240 split*	400	435	730	140	Split phase 3-wire
14402	120/208	400	435	730	140	Three phase 4-wire WYE
14404	277/480	700	890	1200	320	Three phase 4-wire WYE
14406	480	1500	1600	2100	550	Three phase 3-wire Delta
14407	220/380	700	790	1200	275	Three phase 4-wire WYE
14408	240/415	700	890	1200	320	Three phase 4-wire WYE
14409	220	700	790	1200	275	Single phase 2-wire
DC versions						
14612	12V DC	N/A	120	292	15kA	—
14624	24V DC	N/A	140	340	36kA	—
14648	48V DC	N/A	280	504	53kA	—
14712	12V DC	N/A	120	292	15kA	EMI filter
14724	24V DC	N/A	140	340	36kA	EMI filter
14748	48V DC	N/A	280	504	53kA	EMI filter
14812	12V DC	N/A	120	292	15kA	EMI filter & remote LED
14824	24V DC	N/A	140	340	36kA	EMI filter & remote LED
14848	48V DC	N/A	280	504	53kA	EMI filter & remote LED

* Suitable for US use only † 8/20µs waveform - Tested as per ANSI/IEEE C62.45 and ANSI/IEEE C62.41



Approvals

Country	Standard/Authority	Approved for	Product
United States Canada	UL 1449 2nd Edition Listed [C-UL US Listed]	AC power product	14400, 14401, 14402, 14404, 14406, 14407, 14408, 14409

Atlantic Scientific Corporation
4300 Fortune Place, Suite A W. Melbourne, FL 32904 USA
Tel: +1 800-544-4737 +1 321-725-8000 Fax: +1 321-727-0736
Email: sales@atlanticscientific.com, Web: www.atlanticscientific.com

A member of the MTL Instruments Group plc



Features

Four adjustment pots provide versatility for all kinds of applications.

Universal range from 190-480 VAC 50/60 Hz provides the versatility needed to handle global applications.

Diagnostic LEDs indicate trip status and make trouble shooting a snap.

Microcontroller based circuitry provides better accuracy and higher reliability than analog designs.

Transient protected to meet IEEE and IEC standards to stand up under tough conditions.

Will detect single phase condition regardless of regenerated voltages.



Motorsaver
THREE PHASE ELECTRIC
MOTOR PROTECTOR

Model 460

**Three Phase
Voltage Monitor**

**Engineered
Protection**

**Microcontroller
Based**

**Protects 3-Phase
motors from:**

- Loss of any Phase
- Low Voltage
- High Voltage
- Voltage Unbalance
- Phase Reversal
- Rapid Cycling

Additional Features:

- Compact Design
- UL and cUL listed
- CE Compliant
- Finger Safe Terminals
- 5 year Warranty
- Made in USA
- Standard Surface or
DIN Rail Mount
- Standard 1-500 sec.
Variable Restart Delay
- Standard 2-8% Adj.
Voltage Unbalance
- Standard Trip Delay
1-30 sec.
- One 10 Amp General
Purpose Form C Relay

The **Model 460** is designed to protect 3-phase loads from damaging power conditions. The 460's wide operating range combined with UL and CE compliance enables quick access to domestic and global markets.

A unique microcontroller-based voltage and phase sensing circuit constantly monitors the three phase voltages to detect harmful power line conditions. When a harmful condition is detected, the MotorSaver's output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to an acceptable level for a specified amount of time (Restart Delay). The trip and restart delays prevent nuisance tripping due to rapidly fluctuating power line conditions.

The Model 460 automatically senses whether it is connected to a 190 to 240V 60 Hz system, or a 440-480V 60 Hz system, or a 380 to 416V 50 Hz system. An adjustment is provided to set the nominal line voltage from 190-240 or 380-480 VAC. Other adjustments include a 1-30 second trip delay, a 1-500 second restart delay, and a voltage unbalance trip point adjustment from 2-8%.

 **SymCom***Inc*
Motor Protection & Controls Since 1974

2880 North Plaza Drive • Rapid City, SD 57702
(800) 843-8848 • (605) 348-5580 • FAX (605) 348-5685
www.symcominc.com • email: sales@symcominc.com

Motorsaver

THREE-PHASE ELECTRIC MOTOR PROTECTOR

Specifications
Operating Points
Special Options

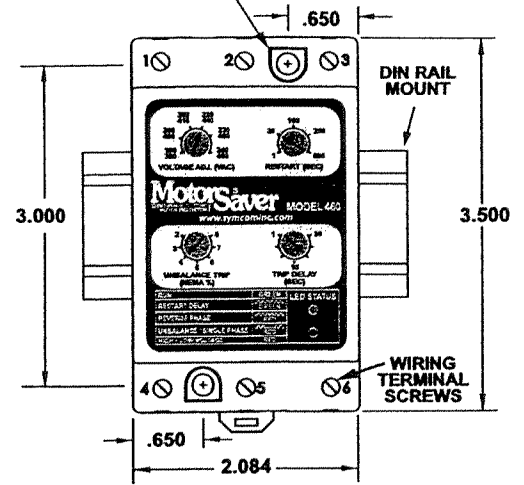
Model 460 Three Phase Voltage Monitor

Specifications

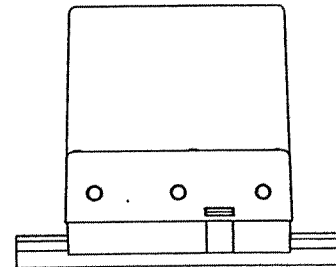
3-Phase Line Voltage	190 - 480 VAC (475 - 600 VAC Optional) (95 - 120 VAC Optional)
Frequency	50* or 60 Hz
Low Voltage (% of set point)	
• Trip	90% ±1%
• Reset	93% ±1%
High Voltage (% of set point)	
• Trip	110% ±1%
• Reset	107% ±1%
Voltage Unbalance (NEMA)	
• Trip	2 - 8% Adjustable
• Reset	Trip setting minus 1% (5 - 8%) Trip setting minus .5% (2 - 4%)
Trip Delay Time	
• Low & High Voltage and Unbalance	1 - 30 seconds adjustable
• Single Phasing Faults (>25% UB)	1 second fixed
Restart Delay Time	
• After a Fault	1 - 500 seconds adjustable
• After a Complete Power Loss	1 - 500 seconds adjustable
Output Contact Rating	
• 1-Form C	10 A General Purpose @240 VAC Pilot Duty 480VA @ 240 VAC, B300
Power Consumption	6 Watts (Max.)
Weight	14 oz.
Enclosure	polycarbonate
Terminal Torque	6 in.-lbs.
Safety Marks	
• UL	UL508
• CE	IEC 60947-6-2
Standards Passed	
• Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6kV contact, 8kV air
• Radio Frequency Immunity, Radiated	150 MHz, 10V/m
• Fast Transient Burst	IEC 1000-4-4, Level 3, 3.5 kV input power & controls
Surge	
• IEC	IEC 1000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground
• ANSI/IEEE	C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
• Hi-potential Test	Meets UL508 (2 x rated V +1000V for 1 minute)
Environmental	
Temperature Range	Ambient Operating: -20° - 70° C (-4° - 158°F) Ambient Storage: -40° - 80° C (-40° - 176°F)
Class of Protection	IP20, NEMA 1 (FINGER SAFE)
Relative Humidity	10-95%, non-condensing per IEC 68-2-3
*Note: 50 Hz will increase all delay timers by 20%	

SymCom warrants its microcontroller based products against defects in material or workmanship for a period of five (5) years from the date of manufacture. All other products manufactured by SymCom shall be warranted against defects in material and workmanship for a period of two (2) years from the date of manufacture. For complete information on warranty, liability, terms, returns, and cancellations, please refer to the SymCom Terms and Conditions of Sale document.

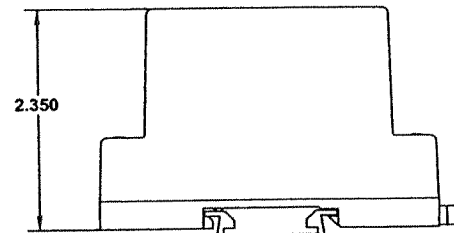
Surface Mount
2- #6 or #8 x 5/8 Screws



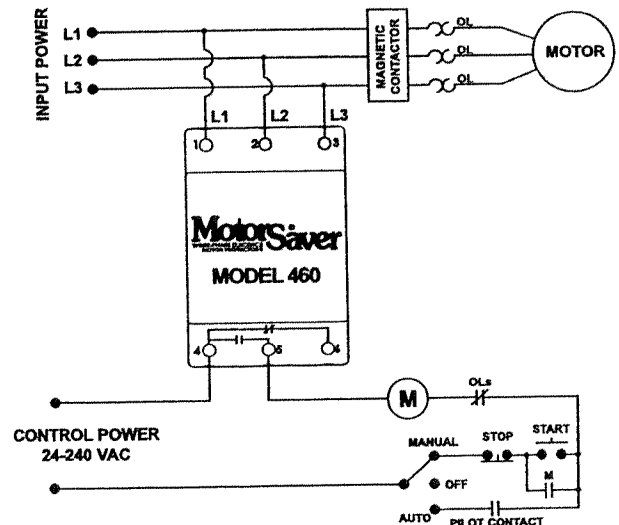
FRONT VIEW



BOTTOM VIEW



SIDE VIEW



TYPICAL WIRING DIAGRAM

Molded Case Circuit Breakers

SELECTION

ED 125A Frame Sentron Series

Ordering Instructions

- All ED Frame Sentron circuit breakers are supplied with load side lugs. If line side lugs are required, add "L" suffix to catalog number, and breaker will be supplied with line lugs installed at no charge.
- 50°C Calibration, 400HZ - see page 111. All ED frame circuit breakers may be reverse connected.

Type ED2

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	120V AC		125V DC		240V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED21B015	98.00	ED22B015	226.00	ED23B015	336.00
20	ED21B020	98.00	ED22B020	226.00	ED23B020	336.00
25	ED21B025	98.00	ED22B025	226.00	ED23B025	336.00
30	ED21B030	98.00	ED22B030	226.00	ED23B030	336.00
35	ED21B035	98.00	ED22B035	226.00	ED23B035	336.00
40	ED21B040	98.00	ED22B040	226.00	ED23B040	336.00
45	ED21B045	98.00	ED22B045	226.00	ED23B045	336.00
50	ED21B050	98.00	ED22B050	226.00	ED23B050	336.00
60	ED21B060	98.00	ED22B060	226.00	ED23B060	336.00
70	ED21B070	180.00	ED22B070	369.00	ED23B070	480.00
80	ED21B080	180.00	ED22B080	369.00	ED23B080	480.00
90	ED21B090	180.00	ED22B090	369.00	ED23B090	480.00
100	ED21B100	180.00	ED22B100	369.00	ED23B100	480.00

Type ED4

Continuous Current Rating @ 40°C	1-Pole		2-Pole		3-Pole	
	120V AC		277V AC		480V AC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED41B015	121.00	ED42B015	409.00	ED43B015	535.00
20	ED41B020	121.00	ED42B020	409.00	ED43B020	535.00
25	ED41B025	121.00	ED42B025	409.00	ED43B025	535.00
30	ED41B030	121.00	ED42B030	409.00	ED43B030	535.00
35	ED41B035	121.00	ED42B035	409.00	ED43B035	535.00
40	ED41B040	121.00	ED42B040	409.00	ED43B040	535.00
45	ED41B045	121.00	ED42B045	409.00	ED43B045	535.00
50	ED41B050	121.00	ED42B050	409.00	ED43B050	535.00
60	ED41B060	121.00	ED42B060	409.00	ED43B060	535.00
70	ED41B070	227.00	ED42B070	537.00	ED43B070	630.00
80	ED41B080	227.00	ED42B080	537.00	ED43B080	630.00
90	ED41B090	227.00	ED42B090	537.00	ED43B090	630.00
100	ED41B100	227.00	ED42B100	537.00	ED43B100	630.00
110	—	—	ED42B110	1086.00	ED43B110	1249.00
125	—	—	ED42B125	1086.00	ED43B125	1249.00

Type ED6

Continuous Current Rating @ 40°C	1-Pole ⁽¹⁾		2-Pole		3-Pole	
	347V AC		600V AC		500V DC	
	Catalog Number	List Price \$	Catalog Number	List Price \$	Catalog Number	List Price \$
15	ED61B015	273.00	ED62B015	480.00	ED63B015	610.00
20	ED61B020	273.00	ED62B020	480.00	ED63B020	610.00
25	ED61B025	273.00	ED62B025	480.00	ED63B025	610.00
30	ED61B030	273.00	ED62B030	480.00	ED63B030	610.00
35	ED61B035	273.00	ED62B035	480.00	ED63B035	610.00
40	ED61B040	273.00	ED62B040	480.00	ED63B040	610.00
45	ED61B045	273.00	ED62B045	480.00	ED63B045	610.00
50	ED61B050	273.00	ED62B050	480.00	ED63B050	610.00
60	ED61B060	273.00	ED62B060	480.00	ED63B060	610.00
70	ED61B070	376.00	ED62B070	606.00	ED63B070	763.00
80	ED61B080	376.00	ED62B080	606.00	ED63B080	763.00
90	ED61B090	376.00	ED62B090	606.00	ED63B090	763.00
100	ED61B100	376.00	ED62B100	606.00	ED63B100	763.00
110	—	—	—	—	ED63B110	1467.00
125	—	—	—	—	ED63B125	1467.00

Note: ED frame circuit breakers qualified to UL 489 Supplement SB "Naval" - See page 111 for additional information

CSA Certified only (Not UL)

- For CED types and all 110-125 ampere ED frames.
- See Note: A, page 108.
- SWD rated.

Shipping Weights

Number of Poles	Number per Carton	Shipping Weight (lbs.)
ED2, ED4, ED6, HED4, HHED6		
1	30	38
2	10	25
3	10	38
CED6		
2	5	20
3	5	30

Lugs

Ampere Rating	No. of Poles	Catalog Number	Wire Range
Aluminum Body Lugs			
All 15-25A	1, 2, 3	Line/Load SA1E025	#14-#10 Cu #12-#10 Al
All 30-100A	1, 2, 3	Line Side LN1E100	#10-1/0 Cu/Al
ED2, 4, CED6 30-60A	1	Load Side LD1E060	#10-#4 Cu/Al
ED2, 4, CED6 70-100A	1	Load Side LD1E100	#6-#1/0 Cu/Al
ED2, 4, 6, HED4, HHED6 30-100A	2, 3	Load Side LN1E100	#10-1/0 Cu/Al
All 110, 125A	2, 3	Line/Load TA1E6125	#3-3/0 Cu #1-2/0 Al
Copper Body Lugs			
All 30-125A	1, 2, 3	Line/Load TC1E6150	#10-1/0 Cu only
Compression Lugs			
All ED, HHED, CED		CCE125	#14-2/0

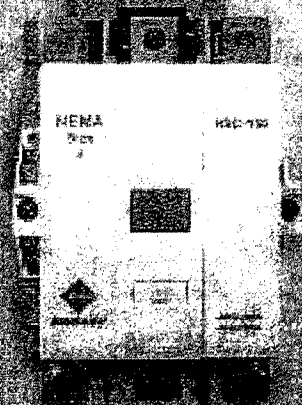
Enclosures (Neutral Included)

Type	Catalog Number	List Price \$
1 (Surface)	E2N1S(15-100A)	117.00
1 (Flush)	E2N1F(15-100A)	117.00
3R	E2N3R(15-100A)	321.00
4-4X	ED6SS4(15-100A)	2227.00
7-9	EA (15-60A)	1371.00
7-9	EB (70-100A)	1371.00
12	E2N12 (15-100A)	199.00
1 (Surface)	CED6N1S	211.00
1 (Flush)	CED6N1F	211.00
3R	CED6N3R	568.00
12	CED6N12	352.00

Modifications page 111
Enclosures pages 34-46
Accessories pages 108-126

Built to order. Consult sales office for factory lead time.

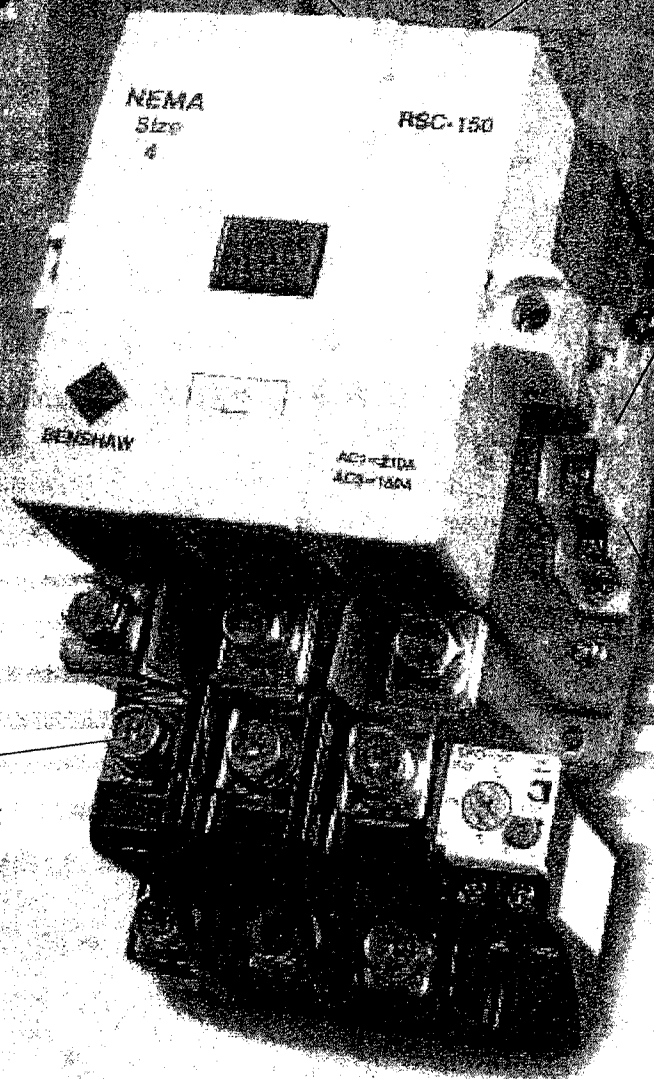




*Draw out
cassette-type
coil*

*Integral
electrical
protection*

- Phase barriers
- Surge suppression



*Modular
accessories*

- Auxiliary contacts
- Mechanical interlocks
- Mechanical latches
- AC/DC coils
- Reset plungers

*Simple, fully
adjustable
overload relays*

- ◆ Test button
- ◆ Trip-free mechanism
- ◆ Trip indicator
- ◆ Manual or auto reset
- ◆ Separate mountable to 150A

*Expanded
control
functions
standard*

- ◆ 2 normally open auxiliary contacts
- ◆ 2 normally closed auxiliary contacts

Guaranteed for two years.

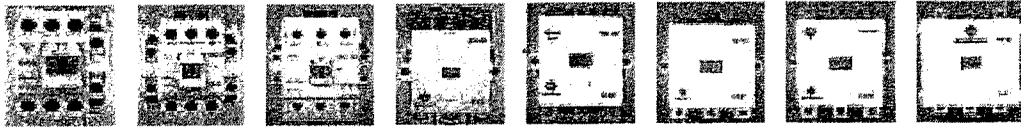
Every RS series contactor and SP series overload is guaranteed for two full years.

Other manufacturers limit their warranties to just one year. But at Benschaw, we build them better, and we guarantee them longer. We call that "the Benschaw Promise."



Select the contactor and overload relay that meets your application...

Contactor Technical information



Specification		Contactor Type	RSC 9	RSC 12	RSC 18	RSC 22	RSC 32	RSC 40	RSC 50	RSC 65	RSC 75	RSC 85	RSC 100	RSC 125	RSC 150	RSC 180	RSC 220	RSC 300	RSC 400	RSC 600	RSC 800										
IEC-947	AC 1 Duty	200-240V	20A	25A	30A	32A	50A	60A	80A	100A	110A	135A	160A	160A	210A	230A	275A	350A	450A	660A	840A										
		380-440V	11A	13A	18A	22A	32A	40A	55A	65A	75A	85A	100A	125A	150A	180A	220A	300A	400A	630A	800A										
	AC 2B Duty	500-550V	9A	12A	18A	22A	32A	40A	50A	60A	75A	85A	100A	120A	150A	180A	220A	300A	400A	630A	800A										
		200-240V	7A	12A	13A	22A	28A	32A	43A	60A	64A	75A	80A	90A	140A	180A	200A	250A	350A	500A	720A										
	AC 3 Duty	200-240V	11A	13A	18A	22A	32A	40A	55A	65A	75A	85A	105A	125A	150A	180A	250A	300A	400A	630A	800A										
		380-440V	9A	12A	18A	22A	32A	40A	50A	65A	75A	85A	105A	120A	150A	180A	250A	300A	400A	630A	800A										
		500-550V	7A	12A	13A	22A	28A	32A	43A	60A	64A	75A	85A	90A	140A	180A	200A	250A	350A	500A	720A										
	AC 4 Duty	690V	5A	9A	9A	18A	21A	25A	33A	42A	47A	52A	65A	70A	100A	120A	150A	200A	300A	420A	630A										
		200-220V	8A	11A	18A	18A	20A	25A	35A	50A	55A	65A	80A	93A	125A	150A	180A	220A	300A	400A	630A										
	UL-508	MAX. HP	380-440V	6A	9A	9A	13A	17A	24A	32A	47A	52A	62A	75A	90A	110A	150A	180A	220A	300A	400A	630A									
			115V (1PH)	0.5	0.5	1	2	2	3	3	5	5	7.5	7.5	10	15	15	15													
			230V (1PH)	1	2	3	3	5	5	7.5	10	15	15	15	20	25	30	40													
208V (3PH)			2	3	5	7.5	7.5	10	10	15	20	25	30	40	40	60	60	100	125	150	200										
240V (3PH)			2	3	5	7.5	10	10	15	20	25	30	30	40	50	60	75	100	150	200	250										
480V (3PH)			5	7.5	10	10	20	25	30	40	50	50	60	75	100	125	150	200	300	400	500										
UL (1th)		7.5	10	15	15	20	25	30	40	50	60	75	100	125	150	200	300	400	500												
NEMA	MAX. HP	600V (3PH)	20A	25A	30A	32A	45A	50A	70A	80A	90A	100A	160A	160A	210A	230A	275A	350A	450A	660A	840A										
		SIZE	00		0		1	1P	2			3			4			5		6											
		115V (1PH)	0.33		1		2	3	3			7.5																			
		230V (1PH)	1		3		3	5	7.5			15																			
		200V (3PH)	1.5		3		7.5	10				25			40				75		150										
		230V (3PH)	1.5		3		7.5	10				30			50				100		200										
460/575V (3PH)	2		5		10	25				50			100				200		400												
LIGHTING DUTY (INCAN.)	120-690V	11A	13A	18A	22A	32A	40A	50A	65A	75A	85A	105A	120A	150A	180A	250A	300A	400A	630A	800A											
CAPACITOR SWITCHING	120-690V	6A	9A	12A	15A	25A	32A	45A	50A	58A	60A	64A	76A	92A	110A	152A	182A	242A	382A	485A											
RATED LIFE (x10,000)	ELECTRICAL	250	250	250	250	200	200	200	200	200	200	200	100	100	100	100	100	100	50	50	50										
	MECHANICAL	2500	2500	2500	2500	1500	1500	1000	1000	1000	1000	1000	500	500	500	500	500	500	500	500	500										
INSULATION RATING	8000V																														
AMBIENT TEMPERATURE RANGE	-5 TO 50°C OPERATION, -40 TO 65°C STORAGE WITHOUT DERATING																														
OPERATING TIMES - AC/DC	CLOSING ms	10-18/50					11-20/50					16-25/25					30-50			37-60			45-60			45-68			66-70		
	OPENING ms	6-9/8-15					6-10/8-15					9-16/13-20					49-67			44-52			41-45			43-52			45-55		
RESISTANCE TO SHOCK	5g/ms OPERATION, 50g/ms MECHANICAL																														
CONDUCTOR SIZE (MAX.)	#10 AWG					#6 AWG			#4			#1 AWG			LIMITED ONLY BY CRIMP SIZE																
SWITCHING FREQUENCY (OP/HR) AC3	1800	1800	1800	1800	1800	1800	1800	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200										
INTERRUPTING CURRENT @ 600 VAC	5KA	5KA	5KA	5KA	5KA	5KA	5KA	5KA	5KA	10KA	10KA	10KA	10KA	10KA	10KA	10KA	18KA	18KA	30KA	30KA											
MAXIMUM MAKE CURRENT (A)	240V, AC3	132	156	216	240	312	420	600	780	900	960	1050	1250	1500	1800	2500	3000	4000	6300	8000											
	480V, AC3	90	120	180	240	320	400	576	780	900	960	1050	1200	1500	1800	2500	3000	4000	6300	8000											
MAXIMUM BREAK CURRENT (A)	240V, AC3	110	130	180	200	260	350	500	650	750	800	1050	1250	1500	1800	2500	3000	4000	6300	8000											
	480V, AC3	70	90	130	200	250	320	480	650	750	800	1050	1200	1500	1800	2500	3000	4000	6300	8000											
PANEL INSTALLATION	SCREW OR DIN RAIL										SCREW																				

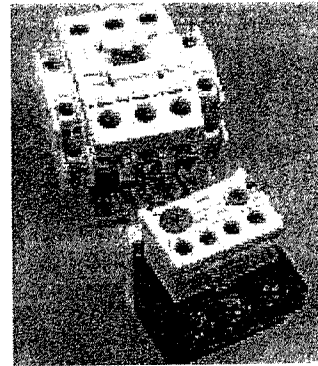


Overload Technical Information

SurProtex™ simple, fully adjustable overload relays.

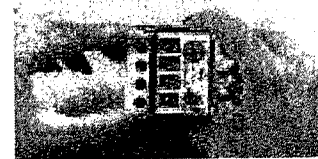
Extended Part No.	Setting Range Min. (A) Max. (A)	Overload Frame (Contactor Mount)
0.14	0.1 TO 0.16	SPO-22 (RSC-9 - 22)
0.21	0.16 TO 0.25	
0.33	0.25 TO 0.4	
0.52	0.4 TO 0.63	
0.82	0.63 TO 1	
1.3	1 TO 1.6	
2.1	1.6 TO 2.5	SPO-40 (RSC-32 - 40)
3.3	2.5 TO 4	
5	4 TO 6	
6.5	5 TO 8	
7.5	6 TO 9	SPO-85 (RSC-50 - 85)
8.5	7 TO 10	
11	9 TO 13	
15	12 TO 18	
19	16 TO 22	SPO-150 (RSC-100 - 150)
22	18 TO 26	
30	24 TO 36	
34	28 TO 40	
42	34 TO 50	SPO-220 (RSC-180 - 220)
55	45 TO 65	
65	54 TO 75	
74	63 TO 85	
80	65 TO 100	SPO-400 (RSC-300 - 400)
107	85 TO 125	
130	100 TO 160	
150	120 TO 180	
200	160 TO 240	SPO-800 (RSC-600 - 800)
250	200 TO 300	
350	260 TO 400	
500	400 TO 600	
660	520 TO 800	

Benshaw SP overload relays integrally mount to RS contactors and provide thermal overload protection with Class 10 trip characteristics.



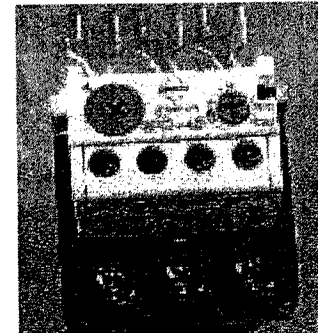
The SurProtex Overload Relay

The SurProtex overload relay can be mounted directly to the magnetic contactors without additional brackets.



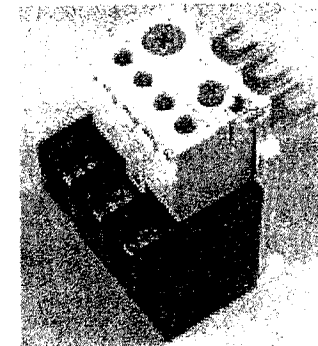
Safety Cover

A "finger-proof" safety cover prevents any contact with live parts.



Simple Adjustments

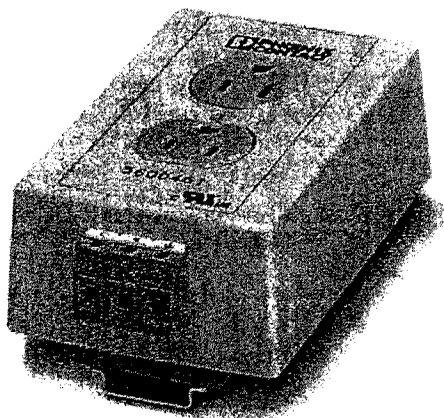
Overload adjustments are easy to access and straightforward to set.



Trip/Reset Indicator

Each overload relay has a manual trip operator and indicator flag.

► General data



Rail-mountable double socket, for mounting on 35 mm mounting rail in acc. with EN 50 022, housing color: white, with screw connection, national version: USA

Order number	5600461
Type	EM-DUO 120/15

Barcode number	4017918929930
Unit pack	1 Pcs.
Customs tariff	85366990900

► Technical data

General data

Nominal voltage U_N	120 V AC
Nominal current I_N	15 A
For country-specific use in	USA
Color	white
Insulating material	PVC 94 V0
Ambient temperature (operation)	-40 ° C ... 70 ° C

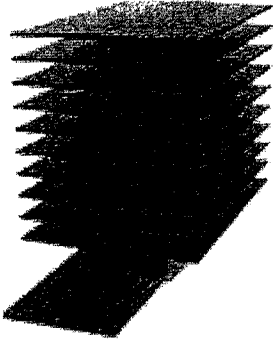


Anti-Condensation Space Heater

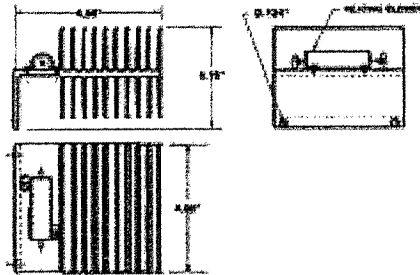
ACH-15W, ACH-30W, ACH-50W



E121431



[click to enlarge](#)



[click to enlarge](#)

Features

- Recognized, File No. E121431
- Touch Safe, will not burn skin when touched.
- Size it right and no thermostat is required.
- No moving parts to wear out.
- Compact size, small foot print.
- Corrosion resistant black anodized finish.

Specifications

- Operating voltage 120VAC.
- Current draw:
 - ACH-15W = .125 amps.
 - ACH-30W = .250 amps.
 - ACH-50W = .417 amps.
- Extruded aluminum, black anodized finish.
- Life expectancy is 20 years minimum.

The ACH series anti-condensation space heaters are designed to maintain the temperature inside of an enclosure several degrees above surrounding ambient temperature and above the dew point. This will prevent corrosion inside due to condensation.



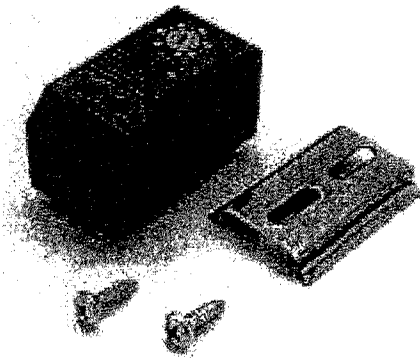
4949 Sunbeam Road • Building 12 • Jacksonville, Florida 32257
Phone : (904) 733-2221 or (888) 875-2221 • Fax: (904) 733-2230
www.ingramproducts.com



A Pentair Company

Thermal Management Accessories

Temperature Control Switches (Thermostats)



These easy to install thermostats are designed to regulate and monitor air temperature in switch-gear enclosures that are set up to operate with heaters, fans, filter ventilators, heat exchangers, and/or signal transmitters. Thermostat A-TEMNC is specifically designed for use with heaters (contacts close on temperature drop), while thermostat A-TEMNO is designed to control fans, filter ventilators, or for switching signal transmitters in the event of overheating (contacts close on temperature rise). Both thermostats have a bi-metallic adjustable set point range of 30 to 140° F. An additional label is provided to convert set point range to degrees Celsius. A preset label is also provided to cover the set point range label after the thermostat is put at desired temperature.

When the enclosure reaches the pre-determined set point, temperature contacts in the thermostat are activated and the fan or heater automatically begins to operate. Thermostats prolong the life expectancy of heaters and fans by curtailing their operating hours and also increase the working efficiency of electrical components by exposing them to fewer contaminants from the surrounding environment. Connections consist of tubular screw terminals for AWG 14 (0.04 in²). Provision for both panel mounting and DIN rail mounting. Housing is plastic

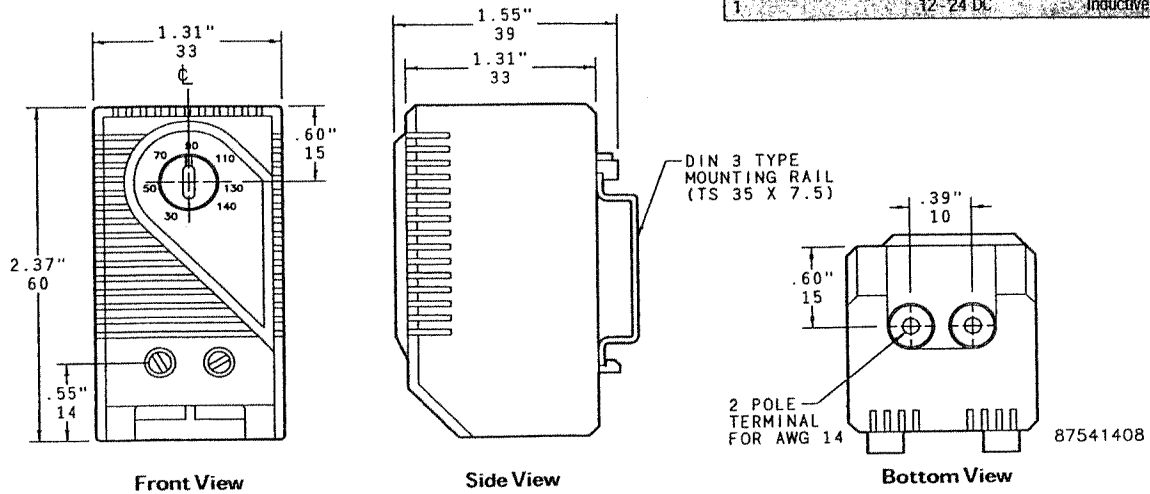
Industry Standards
 UL94-V0
 Protection rating IEC IP30
 UL/cUL Component Recognized
 CE



UL File Number E164102

Catalog Number	Contact Type
A-TEMNC	NC (normally closed), quickacting
A-TEMNO	NO (normally open), quickacting

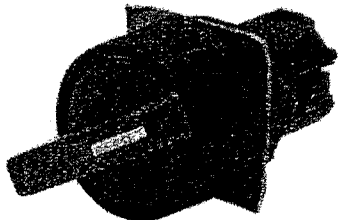
Switching Capacity Amp	Volts	Load
15	120 AC	Resistive
16	250 AC	Resistive
1	120-250 AC	Inductive
10	12-24 DC	Resistive
1	12-24 DC	Inductive



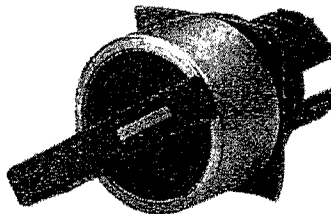
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

3-Position Selector Switch Operators, Non-Illuminated

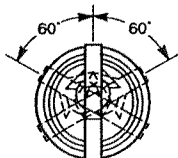


Standard Knob
Cat. No. 800EP-SM33



Knob Lever
Cat. No. 800EM-HM33

Switching Angles



Target Table and Operator Position (60° Switching Angle)

Contact Type	Position on Mounting Latch			
N.O.	Left	X	O	O
N.O.	Right	O	O	X
N.C.	Left	O	X	X
N.C.	Right	X	X	O

Note: X = Closed/O = Open

Color	Operator Type M = Maintained S = Spring Return			Standard Knob — Round		Knob Lever — Round	
				Plastic	Metal	Plastic	Metal
				Cat. No.	Cat. No.	Cat. No.	Cat. No.
Black knob with white insert	M	M	M	800EP-SM32	800EM-SM32	800EP-HM32	800EM-HM32
	M	M	S	800EP-SR32	800EM-SR32	800EP-HR32	800EM-HR32
	S	M	M	800EP-SL32	800EM-SL32	800EP-HL32	800EM-HL32
	S	M	S	800EP-SB32	800EM-SB32	800EP-HB32	800EM-HB32

Back-of-Panel Components, Non-Illuminated Operators

Mounting Latch

		Contact	2-Across Mounting Cat. No.	3-Across Mounting Cat. No.
		Mounting latch	800E-A2L	800E-A3L

Contact Block

		Type	Contact	2-Across Mounting Cat. No.	3-Across Mounting Cat. No.
		Standard	1 N.O.	800E-2X10	800E-3X10
			1 N.C.	800E-2X01	800E-3X01
		PenTUFF (low voltage) ①	1 N.O.	800E-2X10V	800E-3X10V
			1 N.C.	800E-2X01V	800E-3X01V

Mounting Latch and Contact Blocks ②

		Type	Contact	2-Across Mounting Cat. No.	3-Across Mounting Cat. No.
		Standard	1 N.O.	800E-2LX10	800E-3LX10
			1 N.C.	800E-2LX01	800E-3LX01
			1 N.O. - 1 N.C.	800E-2LX11	800E-3LX11
			2 N.O.	800E-2LX20	800E-3LX20
		PenTUFF (low voltage) ①	2 N.C.	800E-2LX02	800E-3LX02
			1 N.O.	800E-2LX10V	800E-3LX10V
			1 N.C.	800E-2LX01V	800E-3LX01V
			1 N.O. - 1 N.C.	800E-2LX11V	800E-3LX11V

① Patented PenTUFF contacts supplied only with 2-across mounting, gold-plated contacts supplied only with 3-across mounting.

② 2-across mounting latch and contact block combinations are factory assembled. When one contact block is specified, it is mounted in position 2 (right side/viewed from back). When 1 N.O. and 1 N.C. contacts are specified, the N.O. is mounted in position 2, and the N.C. is mounted in position 1 (left side/viewed from the back).

Accessories — Page 10-233
Legend Plates — Page 10-248

Approximate Dimensions — Page 10-256

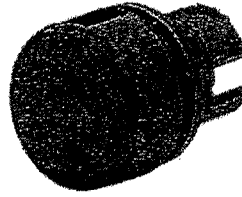
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Pilot Light Operators — Optically Enhanced and Diffuser Style



Optically Enhanced Pilot Light
Cat. No. 800EP-PL5

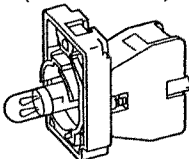
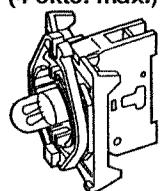


Diffuser Style Pilot Light
Cat. No. 800EM-P4

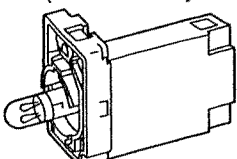
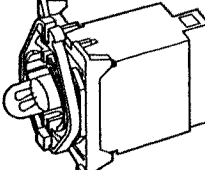
Color	Optically Enhanced — Round		Diffuser Style — Round	
	Plastic	Metal	Plastic	Metal
	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Green	800EP-PL3	800EM-PL3	800EP-P3	800EM-P3
Red	800EP-PL4	800EM-PL4	800EP-P4	800EM-P4
Amber	800EP-PL5	800EM-PL5	800EP-P5	800EM-P5
No lens	800EP-P9	800EM-P9	800EP-P9	800EM-P9

Back-of-Panel Components, Illuminated Operators

Full Voltage Power Module with Latch

	Type	Volts	2-Across Mounting	3-Across Mounting
			Cat. No.	Cat. No.
 	No lamp ❶	—	800E-2DL0	800E-3DL0
	Incandescent	24 AC/DC	800E-2DL3	800E-3DL3
		120 AC/DC	800E-2DL5	800E-3DL5
	LED ❷ (red)	24 AC/DC	800E-2DL3R	800E-3DL3R
		120 AC	800E-2DL5R	800E-3DL5R
	LED ❷ (green)	24 AC/DC	800E-2DL3G	800E-3DL3G
		120 AC	800E-2DL5G	800E-3DL5G
	LED ❷ (amber)	24 AC/DC	800E-2DL3A	800E-3DL3A
		120 AC	800E-2DL5A	800E-3DL5A

Transformer Power Module with Latch

	Type	Volts	2-Across Mounting	3-Across Mounting
			Cat. No.	Cat. No.
 	Incandescent	110/120 AC	800E-2TL5	800E-3TL5
		220/240 AC	800E-2TL7	800E-3TL7
	LED ❷ (red)	110/120 AC	800E-2TL5R	800E-3TL5R
		220/240 AC	800E-2TL7R	800E-3TL7R
	LED ❷ (green)	110/120 AC	800E-2TL5G	800E-3TL5G
		220/240 AC	800E-2TL7G	800E-3TL7G
	LED ❷ (amber)	110/120 AC	800E-2TL5A	800E-3TL5A
		220/240 AC	800E-2TL7A	800E-3TL7A

❶ Lamp must match line voltage. See replacement lamps table on page 10-247.

❷ LEDs are available in red, green, blue, amber, and white; color cap must match LED color.

Accessories — Page 10-233

Lamp Information — Page 10-247

Legend Plates — Page 10-248

Approximate Dimensions — Page 10-256

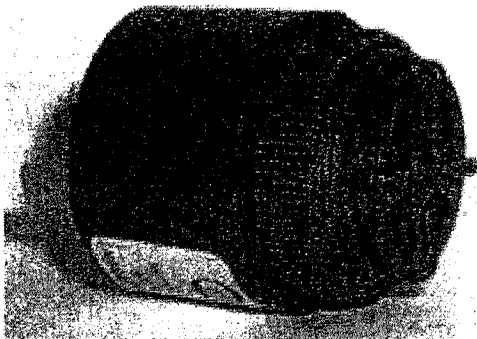


Piezo Warbler Sound Alarm

Our hottest seller!



Model PW120A: 120VAC; PW24D: 24VDC; PW12D: 12VDC

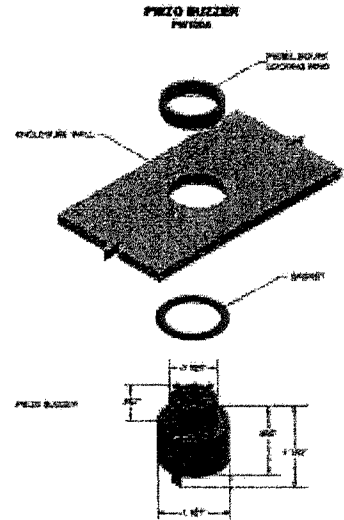


[click to enlarge](#)



[click to enlarge](#)

(Available in Red or Black)



[click to enlarge](#)

Features

- Distinctive WARBLE tone cuts through ambient noise.
- Adjustable volume damper (see photo)
- UL Recognized for use in UL Type 3, 3R, 4X, 12 and 13 environments
- Also meets NEMA 3, 3R, 4X, 12 and 13 requirements
- All solid state construction equals reliability
- Encapsulated for durability and corrosion resistance
- Molded from tough GE Valox
- Low power consumption
- Installs in 1.125" hole or 3/4" standard knock out
- Comes with installed gasket

Specifications

- Sound output: 95 dB min. @ 2 feet
- Resonant frequency 2.9± 0.5kHz
- Operating voltage:
 - Model PW120A: 120VAC (40 to 130VAC)
 - Model PW24D: 24VDC (10 to 28VDC)
 - Model PW12D: 12VDC (4 to 15VDC)
- Maximum current draw:
 - Model PW120A: 120VAC=40mA
 - Model PW24D: 24VDC=30mA
 - Model PW12D: 12VDC=20mA
- Operating temperature: -20°C to 50°C
- Electrical connections: 1/4" Quick connect terminals
- Fits panels up to 1/4" thick

The PW series of panel mount piezo sound alarms was designed to be a cost-effective audible alarm for use in industrial control systems. It is molded from tough GE Valox, comes in red or black, is weather-proof, volume adjustable and suitable for use in corrosive environments both outdoor and indoor.

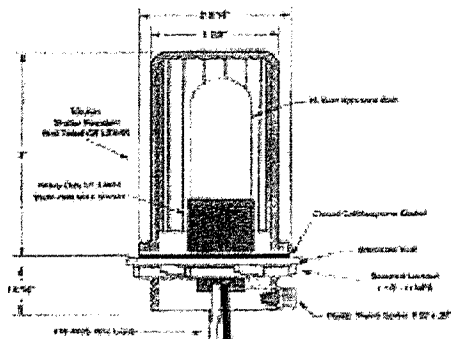


PANEL MOUNT ALARM LIGHT

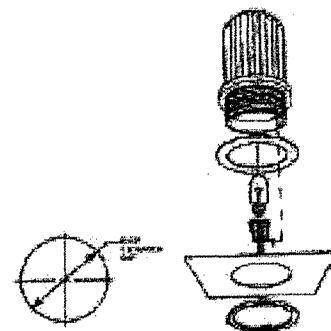
MX-15



[click to enlarge](#)



[click to enlarge](#)



[click to enlarge](#)

Features

- Molded from one-piece tough GE Lexan®.
- UL Recognized for use in UL Type 3, 3R, 4, 4X, 12 and 13 environments.
- Also meets NEMA 3, 3R, 4, 4X, 12 and 13 requirements.
- High intensity, visible in direct sunlight.
- Clear 15-watt, 120-volt light bulb included.
- Fast simple one hole mounting using standard 1 1/2" knock out.
- Light bulb socket comes with 36" long #18 AWG stranded wire.
- In stock, shipped within 24 hours.

Specifications

- UL Recognized for use in UL Type 3, 3R, 4X, 12 and 13 environments.
- Up to 15-watt maximum incandescent light bulb.
- Light bulb socket comes with 36" long #18 AWG stranded wire.
- Install dimensions are 3" high X 2.187" diameter @ base.

The MX-15 was designed for use as an alarm beacon for use on smaller, less expensive control panels. Most often used with our SSF15OW, solid state flasher.



4949 Sunbeam Road • Building 12 • Jacksonville, Florida 32257
 Phone : (904) 733-2221 or (888) 875-2221 • Fax: (904) 733-2230
www.ingramproducts.com

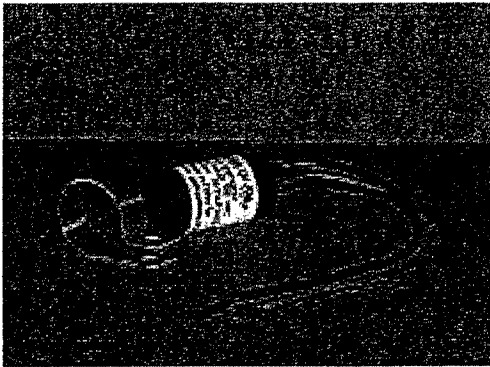


SOLID STATE FLASHER

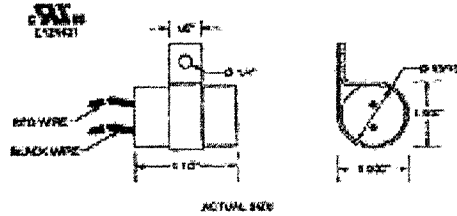
SSF-150W



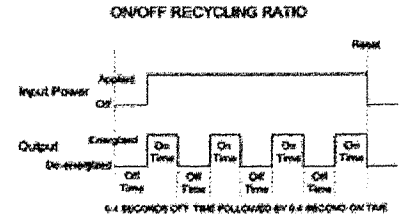
E121431



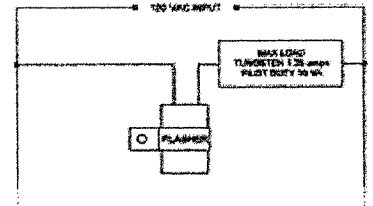
[click to enlarge](#)



[click to enlarge](#)



CONNECTION



[click to enlarge](#)

Features

- Full wave 120VAC output = full brilliance.
- Suitable for use with tungsten, resistive or inductive loads.
- Totally encapsulated corrosion resistant.
- Mounting strap included.
- Can directly flash a 150-watt light bulb
- In stock, shipped within 24 hours

Specifications

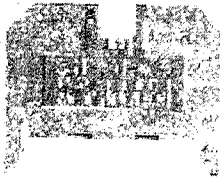
- Operating voltage: 120VAC
- Maximum tungsten load: 1.25 amps.
- Maximum resistive load: 1.25 amps.
- Maximum inductive load: 10VA.
- Flash rate: 75 flashes per minute.
- On off ratio: on time is <= 50%.
- Physical size: .937" diameter X 1.5" long.
- Operating temperature -20°C to 40°C.
- 6" #20 AWG wire leads.

This highly reliable encapsulated solid state flasher is designed for use with incandescent, resistive and inductive loads. It can be used to directly flash a 150-watt incandescent light bulb. It also may be used to drive a relay or contactor coil in order to handle larger loads.

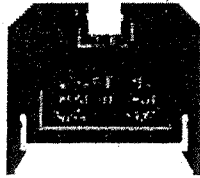


4949 Sunbeam Road • Building 12 • Jacksonville, Florida 32257
 Phone : (904) 733-2221 or (888) 875-2221 • Fax: (904) 733-2230
www.ingramproducts.com

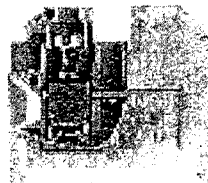
Through-type terminals



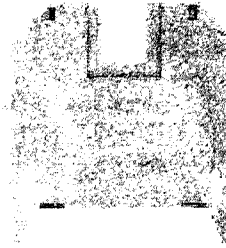
2.5 mm² / 6 mm
 8WA1 011-1DF11, beige
 8WA1 011-1BF21, red
 8WA1 011-1BF22, orange
 8WA1 011-1BF23, blue
 8WA1 011-1PF11, green/yellow
 8WA1 011-3DF21, 3-pole
 8WA1 011-ODF22, 10-pole with inscription
 8WA1 011-ODF21, 10-pole without inscription



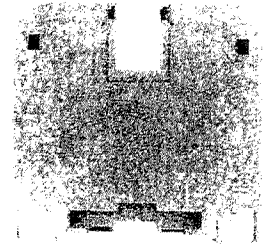
4 mm² / 6.5 mm
 8WA1 011-1DG11, beige
 8WA1 011-1BG11, blue
 8WA1 011-1BG21, red
 8WA1 011-1BG22, orange
 8WA1 011-1PG11, green/yellow
 8WA1 011-3DG21, 3-pole
 8WA1 011-ODG22, 10-pole with inscription
 8WA1 011-ODG21, 10-pole without inscription



6 mm² / 8 mm
 8WA1 011-1DH11, beige
 8WA1 011-1BH23, blue
 8WA1 011-1PH11, green/yellow
 8WA1 011-3DH21, 3-pole



16 mm² / 10 mm
 8WA1 204, beige
 8WA1 011-1BK11, blue
 8WA1 304, 3-pole

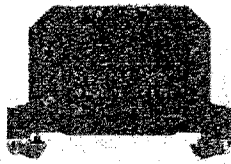


35 mm² / 16 mm
 8WA1 205, beige
 8WA1 011-1BM11, blue
 8WA1 305, 3-pole

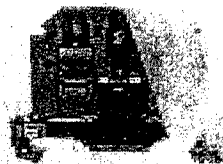
PE terminals with connection to standard mounting rail



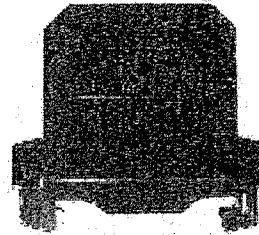
2.5 mm² / 6 mm
 8WA1 011-1PF01, 1 connection
 8WA1 011-1PF00, 2 connections



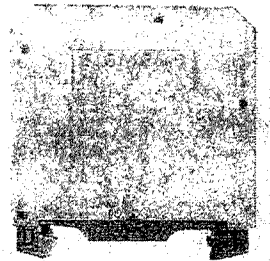
4 mm² / 7.2 mm
 8WA1 011-1PG01, 1 connection
 8WA1 011-1PG00, 2 connections



6 mm² / 8 mm
 8WA1 011-1PH00, 2 connections
 8WA1 011-1PH01, bare

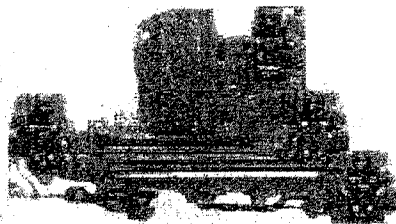


16 mm² / 12 mm
 8WA1 011-1PK00, 2 connections



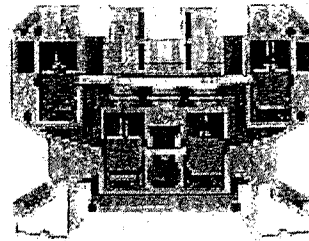
35 mm² / 16 mm
 8WA1 011-1PM00, 2 connections

Insta or three-tier terminals

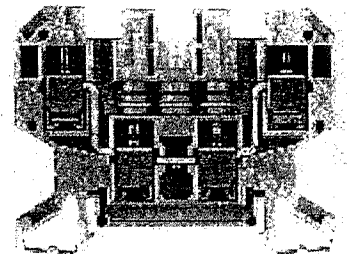


2.5 mm² / 6 mm **Version** *PE, L, NT*
 8WA1 011-3JF20 PE, L, NT
 8WA1 011-3JF16 PE, L, L
 8WA1 011-3JF17 PE, L, N,
 8WA1 011-3JF18 L, L

Two-tier terminals

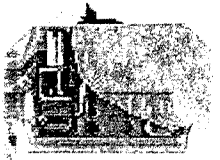


4 mm² / 6.5 mm
 8WA1 011-2DG11, 2-pole
 8WA1 011-2BG11, 2-pole blue

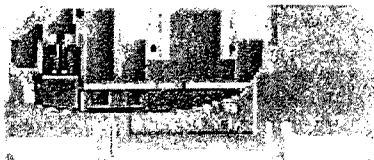


4 mm² / 6.5 mm
 8WA1 011-6DG11, 1-pole
 8WA1 011-6BG11, 1-pole blue

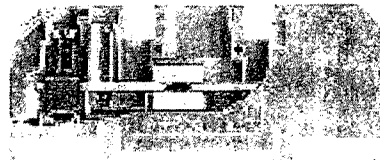
Isolating terminals, measuring transformer terminals, fuse terminals



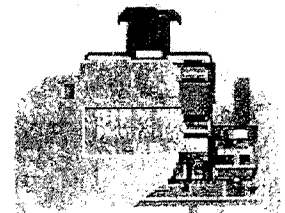
2.5 mm² / 6 mm
 8WA1 501, screw/screw
 8WA1 511, screw/solder



6 mm² / 8 mm
 8WA1 011-1MH10, without test sockets



6 mm² / 8 mm
 8WA1 011-1MH11, without test sockets
 8WA1 011-1MH15, with test sockets



2 x 1.5 mm² / 10 mm
 8WA1 011-1SF12

Appendix D

Overflow Response Plan

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.

February 2010

**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

- A. 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 this plan will be **February 23, 2010**.

A. Objectives

The primary objectives of the SSORP is to protect public health and the environment, comply with regulatory agencies and waste discharge permit conditions, and minimize risk of enforcement actions against Russellville City Corporation.

Additional objectives of the SSORP are as follows:

- Provide appropriate customer service;
- Protect wastewater treatment plant and collection system personnel;

- Protect the collection system, wastewater treatment facilities, and all appurtenances; and
- Protect private and public property beyond the collection and treatment facilities.

This plan shall not supersede existing emergency plans or standard operating procedures (SOPs).

B. Organization of Plan

The key elements of the SSORP are addressed individually as follows:

Section IV	Overflow Response Procedure
Section V	Public Advisory Procedure
Section VI	Regulatory Agency Notification Plan
Section VII	Media Notification Procedure
Section VIII	Distribution and Maintenance of SSORP

C. SSO Tracking

A procedure to track the frequency, type, and location of SSOs has been prepared under Appendix A.

Data on each SSO occurrence is maintained in a database that can be analyzed based on certain SSO parameters. The database is maintained and organized by the Network Operations Center/Safety Director.

IV. OVERFLOW RESPONSE PROCEDURE

The Overflow Response Procedure presents a strategy for Russellville City Corporation to mobilize labor, materials, tools, and equipment to correct or repair any condition which may cause or contribute to an unpermitted discharge. The plan considers a wide range of potential system failures that could create an overflow to surface waters, land, or buildings.

A. Receipt of Information Regarding an SSO

A SSO may be detected by employees or by others. The Customer Service Representatives are primarily responsible for receiving phone calls from the public of possible SSOs from the wastewater collection system, and forwarding service requests to the Network Operations Center/Central Dispatch (NOC). The Network Operations Center will then dispatch the appropriate Response Crew.

Generally, Customer Service Representatives 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 Network Operations Center obtains 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 Emergency crews to quickly locate, assess and stop the SSO.

The Network Operations Center then records/inputs the possible 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 Network Operations Center, if a SSO has occurred. A completed overflow form shall be sent, via e-mail or interoffice mail to the Network Operations Center for documentation.
3. SSOs detected by any personnel in the course of their normal duties are reported immediately to the Network Operations Center who records all relevant SSO information and dispatches an Emergency crew and additional response crews, as needed.

4. After hours emergency crew or 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 crew leader completes the appropriate Overflow Report form (See Figure IV-1). Within 24 hours of the sewer investigator's confirmation, overflow report information is forwarded to the Network Operations Center, or designated back-up personnel, who then enters the data into the SSO database. The Pretreatment Coordinator is responsible for complying with all ADEQ notification reporting requirements. Table IV-1 summarizes the SSO response tracking protocol.

FIGURE IV-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: _____
Date Overflow Began: _____ **Time:** _____

Facility Name: _____
Date Overflow Ended: _____ **Time:** _____

Description: Comments

(Give address, manhole number-if numbered. Include where the overflow went-yard, ditch, stream, storm sewer, building, other).

Cause of SSO Additional Comments

- Manhole Overflow _____
- Lift Station Overflow _____
- Main Line Overflow _____
- Service Line Overflow _____
- Other: Describe _____

- I & I - Rainfall _____
- Roots _____
- Grease _____
- Debris _____
- Equipment Failure _____
- Construction _____
- Vandalism _____
- Power Failure _____
- Line Failure/Break _____
- Other - Describe _____

Volume: _____ *(Give an estimate in gallons)*

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 IV-1. SSO RESPONSE TRACKING PROTOCOL

SSO RESPONSE TRACKING

1. Crew that locates overflow notifies Network Operations Center.
2. Crew that locates overflow completes overflow report.
3. Response Crew cleans and sanitizes.
4. Response Crew installs warning signs.
5. Construction Supervisor or Network Operations Center verifies overflow report is correct.
6. Response Crew takes photographs before cleanup.
7. Construction Supervisor verifies cleanup is done correctly.
8. Construction Supervisor removes warning signs.
9. Construction Supervisor takes photographs after cleanup.
10. Construction Supervisor verifies overflow reports are turned into Network Operations Center (Immediately following cleanup or first business day following cleanup, if after hours).
11. Network Operations Center down loads photographs into database.
12. Network Operations Center enters overflow information into the SSO database.
13. Pretreatment Coordinator or Network Operations Center reports SSO data to ADEQ and other departments as required by NPDES Permits

B. Dispatch of Appropriate Crews to Site of Sewer Overflow

Failure of any element within the wastewater collection system that threatens to cause or causes an SSO triggers an immediate response to isolate and correct the problem. Crews and equipment are available to respond to any SSO location 24-hours a day. Additional maintenance personnel are designated "on call" in the event extra crews are needed. Appendix B summarizes the SSO Response Plan.

1. Dispatching Crews

- Network Operations Center receives notification of possible SSOs as outlined in Section IV.A “Receipt of Information Regarding an SSO” and dispatch a Response crew or the appropriate crews and resources as required.
- Network Operations Center notifies the appropriate Supervisor, Coordinator, or Manager by phone or radio regarding SSOs and field crew locations.

2. Crew Instructions

- The Construction Supervisor coordinates with the Network Operations Center on a daily basis as to the appropriate Response Crews. Additionally, the Construction Supervisor provides instructions regarding appropriate materials, supplies, and equipment needed.
- All employees being dispatched to the site of a SSO proceed immediately to the site of the overflow. Report any delays or conflicts in assignments immediately to the Network Operations Center for resolution.
- In all cases response crews report their findings, including possible damage to private and public property to the Network Operations Center immediately upon making their investigation. If Network Operations Center has not received findings from the field crew within 1 hour, they shall contact the response crew to determine the status of the investigation.

3. Additional Resources

- Network Operations Center receives and conveys to appropriate parties requests for additional personnel, material, supplies, and equipment from crews working at the site of a SSO.

4. Preliminary Assessment of Damage to Private and Public Property

- The focus is to resolve the problem. The response crews use discretion in assisting the property owner/occupant as reasonably as they can. Be aware that Russellville City Corporation could face increased liability for any further damages inflicted to private property during such

assistance. In the event the SSO occurs inside a structure, the Construction Supervisor shall be notified. The Construction Supervisor shall personally assess and document all damages as well as notify Operations Manager of event. The response crew shall enter private property for purposes of assessing damage. Crew shall take appropriate still photographs, if possible, of the area of the SSO and impacted area in order to thoroughly document the nature and extent of impact.

5. Field Supervision and Inspection

- The Construction Supervisor, visits the site of the SSO, if possible, takes photos and installs warning sign to ensure that provisions of this overflow response plan and other directives are met.

6. Coordination with Hazardous Material Response

- Upon arrival at the scene of a SSO, should a suspicious substance (e.g., oil sheen, foamy residue) be found on the ground surface, or should a suspicious odor (e.g., gasoline) not common to the sewer system be detected, the responding crew should secure the immediate area; then, contact the Safety Manager. **Remember that any vehicle engine, portable pump or open flame (e.g., cigarette lighter) can provide the ignition for an explosion or fire if flammable fluids or vapors are present. Keep a safe distance and observe caution until assistance arrives.**
- Only after the Safety Manager determines it is safe and appropriate for personnel to resume activities can they then proceed under the SSORP with the containment, clean-up activities and remediation.

C. 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. Russellville City Corporation is constantly on alert and ready to respond upon notification and confirmation of an overflow.

This section describes specific actions to be performed by the crews during a SSO.

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. For example, repair of a force main could require the temporary shutdown of the pump station and diversion of the flow at an upstream location. If the closure is not handled properly, sewage system backups may create other overflows.

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 a 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:

- 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, repairs pipe, 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

Initiate measures to contain and/or recover the overflowing sewage in order to minimize the impact to public health or the environment.

- Determine the immediate destination of the SSO, e.g. storm drain, street curb gutter, body of water, creek bed, etc.;
- Identify and request the necessary materials and equipment to contain or isolate the overflow, if not readily available; and
- Take immediate steps to contain the overflow, e.g., block or bag storm drains, recover through vacuum truck, divert into downstream manhole, etc. if conditions allow as determined by the Response Crew.

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.

- Take appropriate measures to determine the proper size and number of pumps required to effectively handle the sewage flow.
- Implement continuous or periodic monitoring of the bypass pumping operation, as required.
- Address regulatory agency issues in conjunction with emergency repairs.

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.

- Where practical, thoroughly flush the area and remove any sewage or wash-down water. Solids and debris are to be swept, raked, picked-up, and transported for proper disposal.
- Secure the overflow to prevent contact by members of the public until the site has been thoroughly cleaned. If posting is required, refer to Section V.
- Where appropriate, disinfect and deodorize the overflow site.
- Where sewage has resulted in ponding, pump the pond dry and dispose of the residue in accordance with applicable regulations and policies.
- If a ponded area contains sewage which cannot be pumped dry, it may be treated with bleach. If sewage has discharged into a body of water that may contain fish or other aquatic life, do not use bleach or other appropriate disinfectant and contact the Arkansas Game & Fish Commission for specific instructions.
- Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.

D. Overflow Report

Response crew completes an Overflow Report Form (See Figure IV-1). Response crew promptly notifies Network Operations Center when the SSO is eliminated. Information regarding the SSO includes the following:

- Indication that the SSO reached surface waters, i.e., all SSO where sewage was observed running to surface waters, or there was obvious indication (e.g. sewage residue) that sewage flowed to surface waters.
- Indication that the SSO reached and discharged without containment into a storm drain, ditch, drop inlet, or catch basin.
- Indication that the SSO had not reached surface waters. Guidance in characterizing these overflows to include:
 - a. SSO to covered storm drains (with no public access) where personnel verify, by inspection, that the entire volume is contained

in a sump or impoundment and where complete cleanup occurs leaving no residue.

- b. Preplanned or emergency maintenance jobs involving bypass pumping if access by the public to a bypass channel is restricted and subsequent complete clean up occurs leaving no residue. Any preplanned bypass under these circumstances will not be considered an overflow; and
 - c. SSOs where observation or on-site evidence clearly indicates all sewage was retained on land and did not reach a surface water and where complete cleanup occurs leaving no residue.
- Determine the start time of the SSO by one of the following methods:
 - a. Date and time information received and/or reported to have begun and later substantiated by the Response Crew;
 - b. Visual observation; or
 - c. Pump station and lift station flow charts and other recorded data.
 - Determine of the stop time of the SSO by one of the following methods:
 - a. When the blockage is cleared or flow is controlled or contained; or
 - b. The arrival time of the Response Crew, if the SSO stopped between the time it was reported and the time of arrival.
 - Visual observations

An estimation of the rate of SSO in gallons per minute (GPM) by one of the following criteria

 - a. Direct observation of the overflow. See Appendix C for guidance on estimating sewer overflow rates.
 - b. Measurement of actual overflow from the sewer main.
 - Determination of the volume of the SSO:
 - a. When the rate of overflow is known, multiply the duration of the overflow by the overflow rate; or
 - b. When the rate of overflow is not known, investigate the surrounding area for evidence of ponding or other indications of overflow volume.

- Photographs of the event, before and after cleanup, when possible.
- Assessment of any damage to the exterior areas of public/private property. Personnel shall enter private property only for purposes of estimating damage to structures, floor and wall coverings, and personal property.

E. Customer Satisfaction

When a SSO is reported by a citizen, the Network Operations Center will notify the Front Office or Customer Service Representatives when all work is completed on the SSO. The Customer Service Representative will then contact the reporting citizen and discuss the actions taken and the resolution of the problem.

V. 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. Sample notices are provided in Appendix D.

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.

Table V-1 outlines the decision process to recommend to the General Manager that posting of a confirmed SSO be undertaken or that there is reasonable potential for an SSO to occur thus the need to post in advance. If posting is deemed necessary, ADEQ shall be notified.

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. A list of applicable manholes has been provided in Appendix A, Table A-1.

Table V-1. Decision Matrix to Post Temporary Signage

Action Taken	
1	Construction Supervisor or Response Crew confirms SSO that is not posted has resulted in ponded wastewater (ground surface or ditch ponding), or direct discharge to body-contact recreational waters between May 1st and September 30th.
2	Construction Supervisor notifies Network Operations Center and provides relevant SSO information. <ul style="list-style-type: none"> a) SSO Location b) Remedial actions being taken
3	Network Operations Center consults with Construction Supervisor on remedial actions and posting requirements, if necessary.
5	Network Operations Center consults General Manager for final decision on posting
6	If General Manager decides posting is required, Manager directs Construction Supervisor to post warning sign(s).
7	Warning sign(s) is/are posted by Construction Supervisor or Response Crew.

C. Other Public Notification

If the General Manager determines additional public notification is needed, the Network Operations Center will make said notifications under the General Manager's direction.

VI. REGULATORY AGENCY NOTIFICATION PLAN

The Regulatory Agency Notification Plan establishes procedures that Russellville City Corporation follows to provide formal notice to the 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 Network Operations Center 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 Network Operations Center 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 Network Operations Center will notify other federal, state, and local agencies, as well as other interested and possibly impacted parties as directed by the General Manager.

VII. MEDIA NOTIFICATION PROCEDURE

When a 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 Network Operations Center.

- B. The Network Operations Center informs the Operations Manager and the General Manager. The primary contact should be the General Manager. Table VII-1 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. Craig Noble, General Manager
 2. Larry Collins, Operations Manager

Table VII-1. Russellville City Corporation Media Contacts

Contact	Contact Name	Office	Mobile
Primary	Craig Noble, General Manager	(479) 968-2080 Ext 113	(479) 747-2710
Backup	Larry Collins, Operations Manager	(479) 968-2080 Ext 132	

VIII. 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 the following positions:

- Manager
- Operations Manager
- Pretreatment Coordinator
- Construction Manager
- Legal Counsel
- Engineering Consultants

Familiarize all other personnel who may become incidentally involved in responding to overflows with the SSORP.

B. Review and Update of SSORP

Review the SSORP annually and amend as appropriate. Russellville City Corporation should:

- Update the SSORP with the issuance of a revised or new NPDES permit or state waste discharge permit;
- Conduct annual review and training with appropriate personnel; and
- Review and update, as needed, the various contact person lists included in the SSORP.

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. There is also a reference for estimating sewer overflow volumes in Appendix C.

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.

APPENDIX A

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, which will always be the upstream manhole number of blockage or defect on the sewer main.
- 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 within a set time frame.
- E. Monthly reports will be prepared from the database giving the number of wet-weather and dry-weather SSOs. These reports will be presented by the Operations Manager monthly at the City Corporation Board Meeting.
- F. An initial list of reported capacity related SSOs is being developed for inclusion in the Permanent Signage phase of this SSORP. The list will be developed through field investigation of City Corporation staff during rainfall events. This list shall be maintained and updated annually as conditions and overflow mitigation efforts work to improve capacity related deficiencies in the collection system. Table A-1 provides an example of the information that will be included as the list is developed.

Table A-1. SSOs Eligible for Permanent Signage

SSO Manhole Number	Subbasin Number	General Description of Location

G. A second list has been developed that defines each potential capacity related SSO manhole 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 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 manholes that only trigger in excess of a two year frequency storm event. Rainfall amounts will be monitored by City Corporation and respond when Storm Level A or B has been reached. The following list, Table A-2, provides the known, or suspected, SSO manholes that have the potential to discharge during wet weather events. Initially, all overflows will be categorized as Storm Level A. Additional information will be gathered to properly categorize the manholes with their respective Storm Levels.

Table A-2. Capacity Related SSOs by Storm Level

Storm Level	Status	Manhole #	Address	# of Occurrences (past 4 years)
A	Active	1510	413 S. Commerce	1
A	Active	1564	Marina Rd.	1
A	Active	1567	C and Boston	1
A	Active	1624	115 E. Parkway	1
A	Active	1675	E. Main and Nashville	1
A	Active	1706	1022 Parker	1
A	Active	1735	1317 N. Frankfort	1
A	Active	1823	City Mall	1
A	Active	1825	N. Arkansas Ave	2
A	Active	1848	1500 N. Jackson	1
A	Active	2023	Cedar and N. Commerce	2
A	Active	2028	Birch and Commerce	2
A	Active	2032	Birch and Commerce	1
A	Active	2048	ATU Pasture	3
A	Active	2050	ATU Pasture	2
A	Active	2815	Arkansas Tech	1
A	Active	2816	Arkansas Tech	1
A	Active	2817	N Glenwood	2

A	Active	2859	321 W. B	1
A	Active	3027	2502 W 2nd St.	1
A	Active	3094	215 S. Portland	1
A	Active	3114	106 S. Hastings	1
A	Active	3193	John Trusty Lane	1
A	Active	4015	1900 E. Main	1
A	Active	4019	1611 E. Main St.	1
A	Active	4043	N. Glenwood	1
A	Active	4116	806 E. 4th St.	1
A	Active	4214	Flying J Truck Stop	1
A	Active	4225	2709 E. Main	1
A	Active	5032	E. 11th and Boston	3
A	Active	5054	14th and Boston	2
A	Active	5120	11th and Glenwood	1
A	Active	5136	111 E. 8th St.	1
A	Active	5668	710 E. 23rd	1
A	Active	6231	3509 E. 4th St.	1
A	Active	6415	300 Industrial	1
A	Active	7017	106 Lakeshore Drive	1

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 non-verified information has lead to the inclusion on this listing and shall require field conformation, while "Pending" indicates a rehabilitation effort has been conducted with field conformation to follow to conclude positive mitigation.

- H. 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.

APPENDIX B

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 Network Operations Center at which time all relevant information is collected, as outlined in Section IV-A. NOC 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 NOC.

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 Network Operations Center when cleanup is complete. NOC 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 Network Operations Center 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 our Response Crews to investigate possible recurring SSO sites to verify if an overflow has occurred. These crews will be furnished a list of possible SSO sites (see Table A-2), which has been determined as being locations that have potential to overflow. After crews have completed a check of the entire list, they will begin clean-up at each site.

APPENDIX C

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. If the exact length of discharge is unknown, criteria for determining an estimated time has been established in the Section IV-D. Overflow Report.

**APPENDIX D
SIGNAGE FOR OVERFLOWS**

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 Keith Gray – 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 Keith Gray – City Corporation
(479) 968-2080 ext 134**

V-TR-525USW Spec Sheet-rain gauge



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 Repellent
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

W-Policies and Procedures

CITY CORPORATION
RUSSELLVILLE, ARKANSAS, WATER AND SEWER SYSTEM

POLICIES AND PROCEDURES
FOR
EXTENSIONS OF THE WATER AND SEWER FACILITIES

To assure the orderly, reliable, economical and safe operation of the water and sewer system, it is necessary to establish, promulgate, and enforce a uniform set of policies and procedures for the design, construction and acceptance for service and maintenance of extensions to the system. This document consists of three sections:

- Policies and Procedures
- Design Criteria and Plan Requirements
- Standard Specifications and Details

These policies and procedures, Design Criteria and Plan Requirements, and Standard Specifications and Details shall apply uniformly to all proposed water distribution main or sewage collection main extension plans approved by City Corporation from and after the date of approval of this document.

Approved by The City Corporation Board of Directors

By:  James Biggers, Chairman

Date: March 20, 1995

Approved by the Arkansas Department of Health May 22, 1995.

POLICIES AND PROCEDURES

1. Service Policy:

The tapping of a water distribution main for water service, or connection of a building sewer to a sewage collection main will be permitted only to those water or sewer mains which have been officially accepted by City Corporation for service and maintenance. City Corporation will determine the location, size, and other details of requested water or sewer connections.

The property to be served by a proposed water or sewer service connection must have frontage on the public road or street, or utility easement in which the water or sewer main is constructed, and the water or sewer main must be adjacent to the property being served. If a water or sewer main is not adjacent to the property proposed for service, the property owner (or developer) shall construct an extension of the water or sewer main to a point adjacent to the property proposed for service.

2. Policy on Extensions of Water or Sewer Mains:

City Corporation will determine the size, location, materials and other details for extensions to the water distribution or sewage collection systems. The criteria for this determination includes the Design criteria and Standard Specifications in this document, and other generally accepted engineering practices.

All plans for proposed extensions of the water distribution system, sewage collection system, or appurtenances to either system, shall be prepared by and bear the stamp of a Professional Engineer currently registered by The Arkansas State Board of Registration for Professional Engineers and Land Surveyors. The engineering design and construction inspection for proposed water main or sewer collection system extensions shall be performed by an engineer retained or employed by the individual or developer desiring the extension.

All plans for construction of proposed extensions of the water distribution system or sewage collection system must be approved by City Corporation and the Arkansas State Department of Health before construction of the proposed extensions may commence. Approval of extension plans by City Corporation is subject to the standards and criteria included in this document.

The extension of water or sewer facilities shall include the execution of a Water Main Extension Agreement, or Sewer Main Extension Agreement, as appropriate. This agreement is prepared by City Corporation for execution by the individual or developer constructing the water or sewer main extension. A sample agreement form for water main extensions, and for sewer main extensions, is included in this document.

The total cost of construction, including engineering design and Health Department review fees, shall be paid by the individual or developer desiring water or sewer service. Any financial participation by City Corporation will be as approved in writing prior to or coincident with approval of the proposed plans, and will be limited to oversizing of mains for future extensions, or extensions in addition to those required to provide the service requested, as determined by City Corporation to be necessary to improve the level of service in the community. All construction of approved water or sewer main extensions shall be by contractors employed by the individual or developer desiring service. City Corporation will not provide any construction services or materials for extensions of water or sewer mains, unless specifically approved in writing.

3. Policy on Service Connections to Newly Constructed Water or Sewer Main Extensions:

Requests for water or sewer service connections will only be approved when the water or sewer main to be tapped for service has been accepted for service by City Corporation. The following is a list of conditions for acceptance for service by City Corporation.

1. The main extension must have been constructed in accordance with plans which have been previously approved by City Corporation and the Arkansas Department of Health.
2. All construction and cleanup is complete, and all specified tests have been satisfactorily completed, with documentation in City Corporation files.
3. As constructed plans and construction cost statements have been received by City Corporation, and have been field checked for accuracy by City Corporation.
4. All easements and / or street right of way dedications have been provided to City Corporation, and filed for record in the Courthouse.
5. All appropriate agreements have been executed by the developer, and all applicable prorata rebates have been collected from the developer. Execution of the appropriate extension agreement by City Corporation constitutes acceptance for service.

DESIGN CRITERIA AND PLAN REQUIREMENTS

1. The following requirements and standards are incorporated by reference in this design criteria:
 - City of Russellville Ordinance No. 1,458, concerning water and wastewater extensions outside the City Limits of Russellville.

- Fire Protection Policy, A Joint Agreement between the Russellville Fire Department and City Corporation, dated January 29, 1993.
 - City of Russellville Ordinance No. 1,401, Land Subdivision and Development Code.
 - Rules and Regulations pertaining to Public Water Systems, as issued by The Arkansas Department of Health on January 29, 1991.
2. Unless specifically approved in writing otherwise, or authorized by this design criteria, all extensions to the water distribution system, or appurtenances, shall be designed as recommended in Recommended Standards for Water Works, (1992), as issued by the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers.
 3. Unless specifically approved in writing otherwise, or authorized by this design criteria, all extensions to the sewage collection system, or appurtenances, shall be designed as recommended in Recommended Standards for Wastewater Facilities (1990), as published by the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers.

City Corporation will promptly review and either approve as submitted, or request changes in writing, plans submitted for review. If City Corporation does not either approve submitted plans, or request changes in writing, within thirty (30) days of submittal, the plans shall be assumed to be approved as submitted.

4. Water Extension Design Criteria:

The pipe size of proposed water main extensions shall be at least as large as the minimum specified in the Fire Protection Policy.

Water main extensions proposed to serve more than one existing or proposed lot or parcel shall also include the construction of a water service line and meter box setting for each anticipated lot or parcel. Water main extensions requiring future road crossings by City Corporation crews will not be approved, except in extraordinary situations.

A minimum separation of 10 feet horizontal, and 1.5 feet vertical shall be maintained between water mains and sewer mains. Except for extraordinary situations the water main shall be at least 1.5 feet higher than the sewer main.

5. Sewer Extension Design Criteria:

All sewer mains must be constructed on a tangent (straight) horizontal alignment and on a constant grade from manhole to manhole.

All sewer mains must begin and end with a standard manhole. Sewer mains ending in cleanouts will not be approved.

All sewer main extensions shall be a minimum of 8 - inch inside diameter pipe, with the following exception:

- A sewer main constructed of 6 - inch inside diameter pipe will be approved if the extension cannot be extended in the future, and further provided that a maximum of eight (8) single family residential dwellings, or the hydraulic equivalent, will be served by the proposed 6" extension.

A wye shall be installed for the future connection of a sewer service line for each lot or parcel of property anticipated to be served by the proposed extension. Where lots or parcels anticipated to be connected to a proposed sewer main extension are located across an existing or proposed paved street or road from the sewer main, a sewer service stub extending to the property line of the lot to be served shall be constructed coincident with the sewer main construction.

A minimum separation of 10 feet horizontal, and 1.5 feet vertical shall be maintained between water mains and sewer mains. Except for extraordinary situations the sewer main shall be at least 1.5 feet lower than the water main.

Water Main or Sewage Collection System Extension Plan Criteria:

Proposed plans for extensions to the water distribution system or sewage collection system shall be prepared on reproducible media 24" x 36" in size, with the plan of the proposed extension drawn to scale, at a minimum scale of 1" = 100'. The plan of the proposed extension shall indicate the property lines, legal description and dimensions of the property proposed to be served. The plan sheet shall also include a vicinity map of scale 1" = 2,000' or larger showing the area of the City where the proposed extension is located.

Water distribution or sewage collection systems proposed to serve properties which are subject to the approval of the Russellville Planning Commission shall include a copy of the approved preliminary plat or site plan, or other evidence of prior Planning Commission approval. All proposed plans for water distribution main extensions shall be submitted with evidence of prior approval of the Russellville Fire Department.

The details for construction of the proposed water distribution or sewage collection extension shall be the City Corporation Standard

Details, unless departures to these standard details are specifically approved in writing by City Corporation. Drawings of standard details need not be included with proposed plans for extensions; instead the proposed extension plans may include notes incorporating these City Corporation Standard Details by reference.

Proposed plans for sewage collection main extensions shall include a profile of the proposed sewer main drawn to the same horizontal scale as the plan drawing, with the vertical information drawn at an exaggerated vertical scale of 1" = 10' or 1" = 5'. All vertical information must be referenced to National Geodetic Vertical Datum of 1929, commonly referred to as "MSL datum". Proposed sewage collection main extension plans prepared utilizing assumed datum will not be accepted for review.

A minimum of five (5) sets of plans shall be submitted to City Corporation for review. Three (3) sets of the approved plans, bearing the approval stamp of City Corporation, will be returned to the submitting engineer.

The submitting engineer shall be responsible for submitting the extension plan as approved to the Arkansas State Department of Health for further review. Proposed extension plans are not approved for construction until approved in writing by City Corporation and the Arkansas State Department of Health, and other agencies having jurisdiction.

Easements and Rights-of-Way for Water and Sewer Mains:

All water distribution main or sewage collection main extensions shall be constructed in dedicated public rights-of-way or in easements that grant the City of Russellville the right to own and maintain a water distribution or sewage collection main. a sample water distribution main easement and sewage collection main easement is included in the Appendix to this Policies and Procedures section.

Inspection and Administration of Construction of Approved Extensions:

The submitting engineer whose stamp appears on approved plans for water distribution or sewage collection main extensions (The Engineer of Record) shall be responsible for inspection and administration of the construction of the proposed extensions. The Engineer of Record shall be responsible for ensuring that the proposed extension is constructed of materials and procedures, and to the specifications and details as approved by City Corporation and the Arkansas Department of Health.

On completion of construction and testing of the extension, the Engineer of Record shall make revisions to the plans to reflect actual dimensions and configurations of facilities as constructed,

and otherwise revise the plans to reflect the actual installation. The "as constructed" plan shall include the location of and reference dimensions for all service points for future connections to the water and sewer mains. The Engineer shall submit two (2) copies of the "as constructed" plans to City Corporation promptly on completion of all construction and testing.

Included with the "as constructed" plans shall be an itemized statement of the cost of construction of the water or sewer main extension.

APPENDIX

1. Ordinance 1458
2. Fire Protection Policy
3. Water Distribution Main Extension Agreement
4. Water Distribution Extension Offsite Service Agreement
5. Sewage Collection Main Extension Agreement
6. Sewage Collection Extension Offsite Service Agreement
7. Right-of-Way Permit - Water
8. Right-of-Way Permit - Sewer

ORDINANCE NO. 1458

AN ORDINANCE ADOPTING CITY CORPORATION POLICY GOVERNING WATER AND WASTEWATER EXTENSIONS OUTSIDE THE CITY LIMITS AND APPROVING EXISTING WATER AND WASTEWATER EXTENSIONS, DECLARING AN EMERGENCY AND FOR OTHER PURPOSES

WHEREAS, the Board of Directors for City Corporation (City of Russellville Water & Sewer Company) and the City Council for the City of Russellville recently recognized the need for the establishment of a policy governing the extension of water and sewer services outside the corporate limits of the City of Russellville; and

WHEREAS, in January 1994 the Board of Directors of City Corporation appointed a committee made up of knowledgeable individuals representing City government and the business community; and

WHEREAS, with the assistance of the aforementioned committee, the City Corporation Board of Directors has adopted the policy attached hereto known as the policy effecting "City Corporation Water & Wastewater Extensions Outside City Limits"; and

WHEREAS, the City Council of the City of Russellville has determined that it is appropriate for the City Council to adopt this policy as being the policy governing such water and sewer line extensions, along with other applicable City Ordinances and State laws; and

WHEREAS, the City Council has also determined that it is appropriate to approve all water and sewer service lines currently in place providing City Corporation water and sewer service to

individuals, businesses, industries, and governmental entities located outside the city limits of the City of Russellville.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Russellville, Pope County, Arkansas, that:

Section 1: The City Corporation (Russellville Water & Sewer System) line extension policy approved by the City Corporation Board of Directors on March 9, 1994, a copy of which is attached hereto, is hereby approved by the City Council of the City of Russellville. The attached document is adopted by reference and incorporated herein as if set out herein word for word.

Section 2: Persons, businesses, industries, or governmental entities desiring to receive water or sewer service line extensions from City Corporation, outside the corporate limits of the City of Russellville, shall follow the aforementioned policy. This policy requires that no water or sewer line extensions shall be allowed outside the city limits without the approval of the Russellville City Council, Russellville Planning Commission, City Corporation, and the Arkansas Department of Health.

Persons desiring approval of water or sewer line extensions shall petition the Russellville Planning Commission for such services. Prior to the filing of the petition, the applicant shall receive approval for the service from the City Corporation Board of Directors. Such approval shall be evidenced by a letter from City Corporation signed by the City Corporation General Manager or other designated representative. In considering the application, the

Planning Commission shall ensure that the provisions of the aforementioned policy are complied with together with the City Subdivision and Development Code, and other applicable City ordinances and State laws.

If the Planning Commission, after considering the aforementioned policies, ordinances, and laws, determines that it is in the best interest of the citizens of the City of Russellville for water or sewer service line extensions to be provided to the applicant, then the Commission shall approve said application by majority vote. In considering the applications for water or sewer service, due consideration shall be given to the cost, if any, to the current customers of City Corporation, as well as the impact the proposed service shall have on the entire water and sewer system, including, but not limited to, the water treatment plant and the wastewater treatment plant. The granting of the service outside the city limits to an applicant or proposed customer outside the city limits shall not be deemed to guarantee service to the applicant or proposed customer on a permanent, indefinite basis. Said service shall only be continued for as long as it is found to be in the best interest of the citizens of Russellville, and economically feasible as determined by the City Corporation Board of Directors and the City Council of the City of Russellville.

After approval by the Planning Commission, the application shall be forwarded to the Russellville City Council together with a proposed ordinance prepared by the applicant. The proposed

ordinance shall contain and provide for all the information required by the applicable policies, ordinances, and State laws. If the City Council determines that it is in the best interest of the citizens of the City of Russellville for the application to be approved, then the ordinance shall be passed by a majority vote of the City Council.

Section 2: All water and sewer service lines currently providing service to individuals, businesses, industries, and governmental entities outside the city limits of the City of Russellville, having been put into place prior to the adoption of the aforementioned policy, shall remain in operation and are hereby approved. No future water or sewer service lines shall be extended outside the city limits until the aforementioned policy, ordinances, and State laws have been complied with, and appropriate approval has been obtained as evidenced by the passage of an ordinance.

Section 3: An emergency is hereby declared and this ordinance being necessary for the preservation of the public peace, health and safety shall be in full force and effect from and after its passage this 31 day of March, 1994.


WOODY HARRIS, MAYOR

ATTEST:


HELEN PRICE, CITY CLERK

revised 3/29/94

CITY CORPORATION
WATER AND WASTEWATER EXTENSIONS
OUTSIDE CITY LIMITS

The purpose of this policy is to establish guidelines for extending water and wastewater services outside the corporate limits of the City of Russellville, Arkansas to include, but not necessarily limited to:

Provide an adequate infrastructure requirement for developers that will minimize future upgrading of these developments in the event the area is annexed.

Provide a rational manner of interfacing other water systems with the Russellville Water System in order to promote better fire protection planning and avoid legal confrontations over service territories.

Provide an equitable cost sharing of improvements, when required, as the service area extends outward from the City limits and not place a financial burden on the citizens of Russellville.

Provide City Corporation with an acceptable means of collecting for sewer service without Russellville Water service.

Provide a means of charging for allocation of wastewater treatment capacity by users outside the City boundaries.

All extensions shall be consistent with the Land Subdivision and Development Code, as adopted by the City Council on July 9, 1992 and effective January 1, 1993. All regulations and policies that govern line extensions inside the City limits also apply outside the City limits. All appropriate approvals must be obtained by the parties responsible for the line extension. No water or sewer extensions outside the City limits shall be allowed without the following approvals:

1. City of Russellville, City Council
2. City of Russellville, Planning Commission
3. City Corporation
4. Arkansas Department of Health

Water Line Extension to Single Customer (Non-Development)

1. The line shall be sized for fire protection. Customer(s) shall bear all extension costs. Single line customers are not eligible for the recovery of any of their construction costs through contract agreement provision normally extended to developments.

Water Line Extensions for Developers

1. Water service in developments shall be solely served by the Russellville Water System. No splitting of service with another water system in the same development will be permitted.
2. If improvements not including lines and isolation valves are required to properly serve the area, the City Corporation engineer shall determine the improvements required to serve both the development and the adjacent areas that should be planned for future connections. The developer shall pay a pro-rata share of the construction costs for the facilities and related improvements required to serve the proposed development based on the capacity required to serve the proposed development as it relates to the total capacity of the facility, and City Corporation shall bear the remaining costs, upon City Corporation Board of Director approval for City Corporation's contribution. Future developments that connect within ten (10) years of completion of said improvements shall pay a pro-rata share of the construction costs based on the capacity required by the future development as it relates to the total capacity of the facility.
3. The system must provide fire protection capability in accordance with the then current Russellville Fire Protection Policy, except that flows at system connection are not mandated.

Sewer Line Extensions to Single Customer (Non-Development)

1. The customer shall bear all extension costs. If the customer is not served by the Russellville Water System, the customer is responsible for and shall obtain an agreement from the water system they are served by for the collecting of monthly sewer service charges. Said agreement shall be in a form acceptable to and provided by City Corporation. Single line customers are not eligible for the recovery of any of their construction costs through contract/agreement provisions

normally extended to developments.

Sewer Line Extensions for Developers:

1. The developer shall bear all extension costs. The developer shall also pay a pro-rata share of the cost of construction for a proposed Wastewater Treatment Plant expansion based on the capacity that will be required for the proposed development as it relates to the total capacity of the treatment plant expansion, either as a lump sum or as a connection fee in an amount and manner approved by the City Corporation Board of Directors and the City Council.
2. If the development is not served by the Russellville Water System, the developer is responsible for and shall obtain an agreement from the water system they are served by for the collecting of monthly sewer service charges. Said agreement shall be in a form acceptable to and provided by City Corporation.

This policy shall not constitute an approval procedure of any line extension outside the corporate limits of the City of Russellville without the proper review, consideration and approval of the appropriate agencies and shall not be deemed to create any rights to water and sewer services to parties outside the city limits of Russellville.

FIRE PROTECTION POLICY
A JOINT AGREEMENT BETWEEN
THE
RUSSELLVILLE FIRE DEPARTMENT
AND
CITY CORPORATION

Revised January 29, 1993

The fire protection design policy for the City of Russellville is as follows:

GENERAL

Flow criteria, as stated herein, are intended for the purpose of sizing mains for extensions from existing facilities where practical (i.e. where the system is capable of delivering the required pressures and flows) and for the design of large system improvements.

New water line extensions and Fire protection facilities, such as mains and hydrants, shall be in working order and have been accepted by the City prior to building permits being issued in a new development.

RESIDENTIAL

1. In residential areas a public main not less than six (6) inches is required for fire hydrant service and should have a minimum of 750 gpm at 20 psi residual pressure.
2. Main extensions along through streets (primary mains) that connect other residential areas shall not be less than eight (8) inches.
3. Hydrant spacing in residential areas containing one and two family dwellings not exceeding two stories in height:
 - A. Through Streets: Maximum distance measured along the curb line between hydrants should not exceed 850 feet.
 - B. Dead End Streets and Cul-de-sacs: The last hydrant in the cul-de-sac should be located 250 feet plus or minus 50 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 700 feet of the last hydrant.

4. Hydrant spacing in residential areas containing buildings having three or more living units, or residential units exceeding three stories in height:
 - A. Through Streets: Maximum distance between hydrants should not exceed 350 feet.
 - B. Dead End Streets and Cul-de-sacs: The last hydrant in the cul-de-sac should be located 250 feet plus or minus 50 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 500 feet of the last hydrant.
5. Where at all possible, fire hydrants should not be located on dead end mains. Exceptions should be limited to cul-de-sacs as outlined above, and mains which are planned for future extensions.

AREAS OTHER THAN RESIDENTIAL

1. Public mains shall be designed to provide adequate fire flow requirements, but not be sized less than eight (8) inch.
2. Through Streets: Maximum distance between hydrants shall not exceed 500 feet and should have a minimum of 1,000 gpm at 20 psi residual pressure.
3. Dead End Streets and Cul-de-sacs: The last hydrant in the cul-de-sac should be located 250 feet plus or minus 50 feet from the farthest building set back line at the end of the street. The next nearest hydrant outside of the dead end street should be within 500 feet of the last hydrant.
4. Buildings larger than 15,000 square feet such as commercial, industrial and residential buildings other than one and two family dwellings, that are located farther than 150 feet from a public fire hydrant system shall be provided with the required minimum number of fire hydrants and be connected to a water system capable of supplying the fire flow as determined by an ISO review by the Fire Chief. The location and number of such on-site hydrants shall have a hydrant available for distribution of hose to any portion of any building on the premises at distances not to exceed 500 feet. Where at all possible, this should be a looped system.
Refs: Arkansas State Fire Code, Sec.18.201,C.
5. Along major arterial streets that are outside residential areas and are provided with four (4) or more traffic lanes, which are divided, hydrants shall be spaced every 500 feet on each side of the street and be arranged on an alternating basis. Neither City Corporation nor the City of Russellville

shall be responsible for the cost of installation of water main extensions along new public funded street projects in undeveloped areas.

As these areas develop, each developer shall bear the cost of water main extensions to the limits of their development.

HYDRANT SPECIFICATIONS

1. All fire hydrants shall be AWWA approved and shall meet the following criteria:

A. Hydrants shall be the three-way type with two 2½ inch nozzles and one 4½ inch steamer.

B. The barrel shall be a minimum of 4½ inches in diameter.

C. The operating nut shall open counterclockwise.

D. Hydrants shall be traffic type (break away).

E. Each hydrant shall have its own auxiliary valve. This valve shall be as close to the water main as practical.

F. Leads going from the main to the hydrant shall not be less than six (6) inch.

G. Hydrants shall be painted to these specifications:

1. Hydrants and all exposed parts shall be painted with the required primer and finish coats in accordance with current AWWA standards. Finish coats shall be Benjamin Moore #071-15 Safety Yellow Industrial Enamel or equivalent. The developer shall supply the hydrant with the above mentioned coating.

2. The outlet caps shall be painted according to flow rates represented:

Black	-	Dead End Mains
Red	-	500 gpm or less
Orange	-	500 - 1,000 gpm
Green	-	1,000 - 1,500 gpm

3. All hydrants that receive pressure from a Fire Department connection or an on-site suppression system shall be classified as private hydrants and shall be painted red.

City Corporation and the Russellville Fire Department shall be responsible for flow color coding.

- H. When hydrants are put into service, the chains shall be removed. All new and existing hydrant caps shall be kept wrench tight to avoid theft. If need replacing, gaskets will not be removed, but reported to City Corporation.

HYDRANT INSTALLATION

1. Hydrants shall be installed in accordance with City Corporation specification drawings.
2. Hydrants shall be installed so that the steamer connection will face the street.
3. Where practical, hydrants shall be installed within ten (10) feet of the street intersection.
4. Replacement hydrants in developed areas shall be located at least three (3) feet from driveways, street lights, utility poles or any other objects that may obstruct the use of the hydrant. In new developments, driveways, street lights, utility poles or any other objects that may obstruct the use of the hydrant shall be located at least three (3) feet from any hydrant installation.
5. Each hydrant shall have a french drain at the shoe in order for the hydrant to drain correctly.
6. All new hydrants shall be installed with a 5' X 5' X 4" concrete slab on compacted subgrade surrounding the hydrant base and isolation valve. One edge of slab shall be contiguous with the curb back. If a sidewalk is planned, a minimum of 4' clear walk area will be provided around the hydrant. The Russellville Fire Department shall enforce and the developer shall be responsible for conforming with this requirement.
7. Proper installation and acceptance by the Fire Department and City Corporation of mains and hydrants are required prior to building permits being issued.
8. New hydrants being installed shall be inspected by City Corporation and/or the Fire Department. The developer is responsible for contacting either agency prior to backfilling. Necessary corrections shall be the responsibility and at the expense of the developer.

REVIEW OF PLANS

The Russellville Fire Department and City Corporation shall review all proposed water line extensions for residential, commercial and industrial developments and additional hydrants on existing mains. The Fire Department shall determine the need for on-site fire protection systems. Approved fire protection layouts cannot be altered, abandoned, or added to without prior approval of the Russellville Fire Department and City Corporation. Any request for such alterations must be made in writing, complete with drawings, noting the alterations being requested. Plans shall be provided to City Corporation and the Russellville Fire Department.

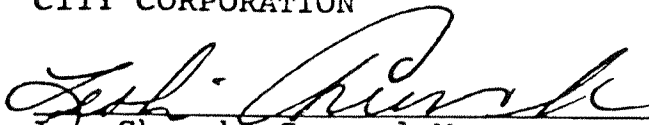
A sufficient number of copies of proposed extensions shall be submitted to the Fire Department for review, prior to submission to City Corporation and the Russellville Planning Commission for approval. This is to provide all agencies and governing bodies with an approved, stamped copy with Fire Department approval.

Plans for new or updated hydrant installations shall include:

1. Exact location and size of existing and proposed water mains and hydrants.
2. Flow calculations for each hydrant.
3. Details of hydrant installation and concrete pad.
4. Details of concrete pad and hydrant location in regard to proximity to curbs, corners, sidewalks, catch basins, etc.

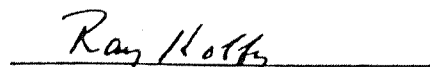
This cooperative policy and its enforcement, is required for the health, safety and welfare of the citizens and for the protection of property within and adjacent to the City of Russellville.

CITY CORPORATION


Les Church, General Manager

2/6/93
Date

RUSSELLVILLE FIRE DEPARTMENT


Ray Hobby, Fire Chief

2/9/93
Date

WATER DISTRIBUTION MAIN
EXTENSION AGREEMENT

This agreement, made and entered into this _____ day of _____, 19____, by and between City Corporation, operators of the Russellville, Arkansas Water and Sewer system, hereinafter called "Utility", and _____, hereinafter called "Applicant", witnesseth:

1. The applicant agrees to construct water distribution mains and appurtenances, as described herein and depicted on attached engineering plans, and the Utility agrees to accept these water distribution mains and appurtenances as a part of the Russellville Water and Sewer System.
2. The applicant states that his total cost to construct these water distribution mains and appurtenances is \$ _____ DOLLARS (\$ _____) as documented by the attached itemized cost statement. Total cost is inclusive of construction, engineering and surveying, and right-of-way costs.
3. It is further mutually understood and agreed that the water distribution mains and appurtenances constructed under this agreement within the limits of the streets, avenues, roadways, or easement areas, whether or not attached to or serving customers, but constructed as a part of this extension, shall be and remain the property of the Utility, its successors and assigns. The Utility shall have the right to extend, relocate, modify or adjust any or all parts of this water main extension, acting in the best interests of the Water and Sewer System, so long as water service and fire protection is continued to the properties of Applicant for which this water main extension was intended to serve. Applicant shall not be entitled to any refund of cost or rebate as a result of extensions, adjustments, relocations or modifications to this water main extension.
4. Applicant warrants that the materials and workmanship utilized in constructing this extension are in conformance with Utility's standard specifications, and Applicant further warrants that if the materials or workmanship utilized in constructing this extension are found by Utility to be defective within a period of one (1) year from the date of this agreement, Applicant will promptly and without cost to Utility repair, remedy or otherwise make good the defect to the satisfaction of Utility.
5. As a part of execution of this agreement, Applicant grants to Utility an exclusive and irrevocable easement, at no cost to the Utility, for the installation, maintenance, operation, repair and replacement of said water distribution main extension and appurtenances. Said easement is in a form acceptable to Utility, and is recorded in the Circuit Clerk's office of Pope County, Arkansas.
6. If the water distribution main constructed by Applicant fronts property of potential water customers other than the property intended for service by Applicant, Applicant is entitled to

recover a portion of his costs incurred in constructing the water main extension. The recovery of the said portion of these costs shall be through the issuance of Connection Certificates by the Utility to the Applicant. The Connection Certificates issued by Utility as a part of this agreement shall constitute the total cost recovery remedies available to Applicant, unless this agreement is accompanied by an Addendum describing additional cost recovery remedies to which Applicant is entitled.

Connection Certificates will be issued in number equal to the number of potential lots or building sites along and with frontage on the extension, in agreement with the Applicant. The value of the Certificates shall be determined by dividing the total cost of the extension, as stated in Paragraph 2 of this agreement, by the number of potential lots or building sites fronting on the Water Distribution Main Extension. The number of total lots and building sites shall include the lots and building sites intended to be served by Applicant. Applicant will, on execution of this agreement, surrender Certificates equal in number to the lots and building sites intended to be served by this extension.

Each outstanding Certificate shall earn interest at the rate of _____ percent (____%) per year, for a period of five years from the date of issue. Utility will permit service connections to this Water Distribution Main extension only on presentation of an appropriate Connection Certificate, or payment of the face value of the Certificate plus interest earned. If the utility accepts payment of the value of the Certificate in lieu of an actual certificate, Applicant agrees to surrender the certificate to the Utility in return for payment of the amount collected. Certificates shall become null and void after ten (10) years, and Utility shall have the right to connect potential customers without certificates or payment of the value of the Certificate, after ten years from the date of issue of the Certificates

7. Applicant agrees to indemnify Utility and to hold Utility harmless against any loss or damage including costs and attorney fees incurred or sustained by Utility in the administration and enforcement of this agreement.
8. This agreement is valid and binding on the Utility only when approved and executed by its General Manager.

Executed in duplicate by the parties hereto on the day and year first above mentioned.

CITY CORPORATION

By: _____
Its: General Manager

APPLICANT

OFFSITE SERVICE ADDENDUM TO
WATER DISTRIBUTION MAIN
EXTENSION AGREEMENT

This Addendum is a part of and is attached to the Water Distribution Main Extension Agreement entered into between City Corporation, operators of the Russellville, Arkansas Water and Sewer System, hereinafter called "Utility", and _____, hereinafter called "Applicant", dated this _____ day of _____, 19__.

1. The intent of this addendum is to acknowledge that Applicant, in constructing the Water Distribution Main, has invested in water distribution facilities of greater capacity than normally required for domestic water service and fire protection to Applicant's properties, and this greater capacity facilities will make water service potentially available to properties which do not front on the Water Distribution Main.
2. Due to this investment in facilities with excess capacity, Applicant is entitled to recover some of his costs in constructing said Water Distribution Main from future applicants who will construct water distribution main extensions which utilize some or all of the Water Distribution Main constructed by Applicant.
3. The recovery of that portion of the cost of the Water Distribution Main and Appurtenances which makes possible water service to properties which do not front on the Water Distribution Main shall be through the issuance of Offsite Connection Certificates. Offsite Connection Certificates shall be issued in number equal to the number of lots or building sites which do not front on the Water Distribution Main Extension, but, in the opinion of the Utility, can be provided with water service by the future construction of a water distribution main extension by applicants other than Applicant. The value of each Offsite Connection Certificate shall be the fraction of the total cost of the Water Distribution Main Extension constructed by Applicant which is not attributable to providing service to Applicant's properties or lots and building sites which front on the Water Distribution Main Extension constructed by applicant, divided by the number of offsite lots or building sites, or acreage of unplatted property.
4. The Applicant states, and the Utility agrees, that the fraction of the total cost of constructing the Water Distribution Main attributable to excess capacity, which may be in the future be utilized by future applicants who construct future water distribution main extensions to provide water service to their properties offsite from the Water Distribution Main constructed by Applicant is

_____ DOLLARS (\$ _____), inclusive of construction, engineering and surveying, and right-of-way costs.

5. The location of the properties offsite from the Water Distribution Main Extension which can be provided water service in the future by construction of water distribution main extensions connecting to the Water Distribution Main Extension constructed by Applicant is shown on the engineering plans attached to and a part of the Water Distribution Main Extension Agreement.
6. The administration of the Offsite Connection Certificates shall be identical to the administration of the Connection Certificates described in Paragraph 5 of the Water Distribution Main Extension Agreement, of which this addendum is a part.
7. Applicant agrees to indemnify Utility and to hold Utility harmless against any loss or damage including costs and attorney fees incurred or sustained by Utility in the administration and enforcement of this agreement.
8. This agreement is valid and binding on the Utility only when approved and executed by its General Manager.

Executed in duplicate by the parties hereto on the day and year first above mentioned.

CITY CORPORATION

By: _____
Its: General Manager

APPLICANT

SEWAGE COLLECTION MAIN
EXTENSION AGREEMENT

This agreement, made and entered into this _____ day of _____, 19____, by and between City Corporation, operators of the Russellville, Arkansas Water and Sewer system, hereinafter called "Utility", and _____, hereinafter called "Applicant", witnesseth:

1. The applicant agrees to construct sewage collection mains and appurtenances, as described herein and depicted on attached engineering plans, and the Utility agrees to accept these sewage collection mains and appurtenances as a part of the Russellville Water and Sewer System.
2. The applicant states that his total cost to construct these sewage collection mains and appurtenances is \$ _____ DOLLARS (\$ _____) as documented by the attached itemized cost statement. Total cost is inclusive of construction, engineering and surveying, and right-of-way costs.
3. It is further mutually understood and agreed that the sewage collection mains and appurtenances constructed under this agreement within the limits of the streets, avenues, roadways, or easement areas, whether or not attached to or serving customers, but constructed as a part of this extension, shall be and remain the property of the Utility, its successors and assigns. The Utility shall have the right to extend, relocate, modify or adjust any or all parts of this sewage collection extension, acting in the best interests of the Water and Sewer System, so long as sewer service is continued to the properties of Applicant for which this sewage collection main extension was intended to serve. Applicant shall not be entitled to any refund of cost or rebate as a result of extensions, adjustments, relocations or modifications to this sewage collection main extension.
4. Applicant warrants that the materials and workmanship utilized in constructing this extension are in conformance with Utility's standard specifications, and Applicant further warrants that if the materials and workmanship utilized in constructing this extension are found by Utility to be defective within a period of one (1) year of the date of this agreement, Applicant will promptly, and without cost to Utility repair, remedy, or otherwise make good the defect to the satisfaction of Utility.
5. As a part of execution of this agreement, Applicant grants to Utility an exclusive and irrevocable easement, at no cost to the Utility, for the installation, maintenance, operation, repair and replacement of said sewage collection main extension and appurtenances. Said easement is in a form acceptable to Utility, and is recorded in the Circuit Clerk's office of Pope County, Arkansas.
6. If the sewage collection main constructed by Applicant fronts property of potential sewage customers other than the property intended for service by Applicant, Applicant is entitled to recover a portion of his costs incurred in

constructing the sewage collection main extension. The recovery of the said portion of these costs shall be through the issuance of Connection Certificates by the Utility to the Applicant. The Connection Certificates issued by Utility as a part of this agreement shall constitute the total cost recovery remedies available to Applicant, unless this agreement is accompanied by an Addendum describing additional cost recovery remedies to which Applicant is entitled.

Connection Certificates will be issued in number equal to the number of potential lots or building sites along and with frontage on the extension, in agreement with the Applicant. The value of the Certificates shall be determined by dividing the total cost of the extension, as stated in Paragraph 2 of this agreement, by the number of potential lots or building sites fronting on the Water Distribution Main Extension. The number of total lots or building sites shall include the lots or building sites intended to be served by Applicant. Applicant will, on execution of this agreement, surrender Certificates equal in number to the lots or building sites intended to be served by this extension.

Each outstanding Certificate shall earn interest at the rate of _____ percent (___%) per year, for a period of five years from the date of issue. Utility will permit service connections to this sewage collection main extension only on presentation of an appropriate Connection Certificate, or payment of the face value of the Certificate plus interest earned. If the utility accepts payment of the value of the Certificate in lieu of an actual certificate, Applicant agrees to surrender the certificate to the Utility in return for payment of the amount collected. Certificates shall become null and void after ten (10) years, and Utility shall have the right to connect potential customers without certificates or payment of the value of the Certificate, after ten years from the date of issue of the Certificates

7. Applicant agrees to indemnify Utility and to hold Utility harmless against any loss or damage including costs and attorney fees incurred or sustained by Utility in the administration and enforcement of this agreement.
8. This agreement is valid and binding on the Utility only when approved and executed by its General Manager.

Executed in duplicate by the parties hereto on the day and year first above mentioned.

CITY CORPORATION

By: _____
Its: General Manager

APPLICANT

OFFSITE SERVICE ADDENDUM TO
SEWAGE COLLECTION MAIN
EXTENSION AGREEMENT

This Addendum is a part of and is attached to the Sewage Collection Main Extension Agreement entered into between City Corporation, operators of the Russellville, Arkansas Sewer and Sewer System, hereinafter called "Utility", and _____, hereinafter called "Applicant", dated this _____ day of _____, 19____.

1. The intent of this addendum is to acknowledge that Applicant, in the opinion of the Utility, in constructing the Sewage Collection Main Extension and Appurtenances, has invested in sewage collection facilities of larger pipe diameter than the minimum diameter pipe normally required for sewage collection service or has constructed sewage pumping and/or offsite sewer collection facilities of a capacity greater than needed for Applicant's properties, and these greater capacity facilities will make sewer service potentially available to properties which do not front on the Sewage Collection Main.
2. Due to this investment in facilities with excess capacity, Applicant is entitled to recover some of his costs in constructing said Sewage Collection Main and Appurtenances from future applicants who will construct sewage collection main extensions which utilize some or all of the Sewage Collection Main and Appurtenances constructed by Applicant.
3. The recovery of that portion of the cost of the Sewage Collection Main and Appurtenances which makes possible sewer service to properties which do not front on the Sewage Collection Main shall be through the issuance of Offsite Connection Certificates. Offsite Connection Certificates shall be issued in number equal to the number of lots or building sites which do not front on the Sewage Collection Main Extension, but, in the opinion of the Utility, can be provided with sewer service by the future construction of a sewage collection main extension by applicants other than Applicant. The value of each Offsite Connection Certificate shall be the fraction of the total cost of the Sewage Collection Main Extension constructed by Applicant which is not attributable to providing service to Applicant's properties or lots and building sites which front on the Sewage Collection Main Extension constructed by applicant, divided by the number of offsite lots or building sites, or acreage of unplatted property.
4. The Applicant states, and the Utility agrees, that the fraction of the total cost of constructing the Sewage Collection Main which is attributable to excess capacity, which may be in the future be utilized by future applicants who construct future sewage collection main extensions to provide sewer service to their properties offsite from the

Sewage Collection Main constructed by Applicant is _____ DOLLARS (\$ _____), inclusive of construction, engineering and surveying, and right-of-way costs.

- 5. The location of the properties offsite from the Sewage Collection Main Extension which can be provided sewer service in the future by construction of sewer collection main extensions connecting to the Sewage Collection Main Extension constructed by Applicant is shown on the engineering plans attached to and a part of the Sewage Collection Main Extension Agreement.
- 6. The administration of the Offsite Connection Certificates shall be identical to the administration of the Connection Certificates described in Paragraph 5 of the Sewage Collection Main Extension Agreement, of which this addendum is a part.
- 7. Applicant agrees to indemnify Utility and to hold Utility harmless against any loss or damage including costs and attorney fees incurred or sustained by Utility in the administration and enforcement of this agreement.
- 8. This agreement is valid and binding on the Utility only when approved and executed by its General Manager.

Executed in duplicate by the parties hereto on the day and year first above mentioned.

CITY CORPORATION

By: _____
Its: General Manager

APPLICANT

RIGHT OF WAY PERMIT
WATER

KNOW ALL MEN BY THESE PRESENTS: That _____, hereinafter called Grantor, for and in consideration of the sum of One and No/100 Dollars (\$1.00), and other valuable considerations, to us cash in hand paid, the receipt whereof is hereby acknowledged, do hereby grant and convey unto the City of Russellville, hereinafter called Grantee, and unto its successors and assigns, the right, privilege and easement to build and maintain over, upon and across the land hereinafter described, a pipe line with the necessary fittings for the transmission and distribution of water. The rights hereby conferred provide for the privilege and authority to enter on said lands for the purpose of construction and building said pipe line, maintenance and operation thereof, with the right to clear and keep clear a right of way, of needed width, and for the repairing, reconstructing, operating and removing of same at any and all times.

The said right of way hereby conferred shall be at or near the pipe line as staked or indicated, over, under, upon and across the following lands located and situated in Pope County, Arkansas, to-wit:

and the right of free ingress and egress over adjacent lands to or from said right of way is hereby conferred upon said Grantee, its successors and assigns, at any time for the purpose recited herein.

Grantor agrees that no building will be erected on the easement granted by this instrument, and Grantor agrees not to perform or permit any action which will interfere with the rights granted by this instrument.

The right to farm and cultivate and otherwise use said right of way by the Grantor, except for the purpose herein granted to the Grantee, is especially reserved, and if the Grantee should ever permanently abandon the use of said right of way for the purposes herein contracted, it shall revert to the Grantor, their heirs or assigns.

It is also agreed and understood by both parties that the said ground will be returned to its natural look after line is installed. Any future repairs requiring earth moving will result in a return to present state after repairs are made. This would include repairs to blacktop or concrete, whichever may be the case.

IN WITNESS HEREOF we hereto set our hands and affix our seal this _____ day of _____ 19____.

ACKNOWLEDGMENT

State of _____
County of _____

BE IT REMEMBERED that on this day came before me the undersigned, a Notary Public, within and for the county and state aforesaid, duly commissioned, and acting, _____, to me well known as the Grantor in the foregoing permit and acknowledged that they had executed the same for the consideration, uses and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public this _____ day of _____, 19 _____.

Notary Public

My Commission Expires: _____

RIGHT OF WAY PERMIT
WASTEWATER

KNOW ALL MEN BY THESE PRESENTS: That _____, hereinafter called Grantor, for and in consideration of the sum of One and No/100 Dollars (\$1.00), and other valuable considerations, to us cash in hand paid, the receipt whereof is hereby acknowledged, do hereby grant and convey unto the City of Russellville, hereinafter called Grantee, and into its successors and assigns, the right, privilege and easement to build and maintain over, upon and across the land hereinafter described, a pipe line with the necessary fittings for the collection of wastewater. The rights hereby conferred provide for the privilege and authority to enter upon said lands for the purpose of construction and building said pipe line, maintenance and operation thereof, with the right to clear and keep clear a right of way, of needed width, and for the repairing, reconstructing, operating and the removing of same at any and all times.

The said right of way hereby conferred shall be at or near the pipe line as staked or indicated, over, under, upon and across the following lands located and situated in Pope County, Arkansas, to-wit:

and the right to free ingress and egress over adjacent lands to or from said right of way is hereby conferred upon said Grantee, its successors and assigns, at any time for the purpose recited herein.

Grantor agrees that no building will be erected on the easement granted by this instrument, and Grantor agrees not to perform or permit any action which will interfere with the rights granted by this instrument.

The right to farm and cultivate and otherwise use said right of way by the Grantor, except for the purpose herein granted to the Grantee, is especially reserved, and if the Grantee should ever permanently abandon the use of said right of way for the purposes herein contracted, it shall revert to the Grantor, their heirs or assigns.

It is also agreed and understood by both parties that the said ground will be returned to its natural look after line is installed. Any future repairs requiring earth moving will result in a return to present state after repairs are made. This would include repairs to blacktop or concrete whichever may be the case.

IN WITNESS HEREOF we hereto set our hands and affix our seals this _____ day of _____ 19, ____.

ACKNOWLEDGMENT

State of _____
County of _____

BE IT REMEMBERED that on this day came before me the undersigned, a Notary Public, within and for the county and state aforesaid, duly commissioned, and acting, _____, to me well known as the Grantor in the foregoing permit and acknowledged that they had executed the same for the consideration, uses and purposes therein mentioned and set forth.

WITNESS my hand and seal as such Notary Public this _____ day of _____, 19 _____.

Notary Public

My Commission Expires: _____

STANDARD SPECIFICATIONS AND DETAILS

Introduction:

These material and construction specifications, and standard details of construction, are intended to describe the minimum quality of materials and construction acceptable for the extension of the water distribution system or the sewage collection system operated by City Corporation, the Russellville, Arkansas, Water and Sewer System.

The approval of proposed plans for water distribution main extensions, or sewage collection main extensions, shall be with the explicit understanding that the extensions are designed and constructed in accordance with these Standard Specifications and Details, unless City Corporation has given specific written approval for a departure from these standards for the particular extension to be constructed.

Summary:

The following summary is intended as a brief condensation of the City Corporation STANDARD SPECIFICATIONS AND DETAILS, for the convenience of those individuals planning to construct extensions to the water distribution main system or the sewage collection main system of Russellville, AR. It is not intended to substitute or replace the full text of the STANDARD SPECIFICATIONS AND DETAILS, which follows this summary.

Water Main Extensions - Materials

2" and 3" Pipe	PVC, Class 200 psi, SDR 21, Gasketed Joints
6" - 12" Pipe	PVC, Class 150 psi, AWWA C900, Gasketed Joints, Ductile Iron, Class 50, Push-on Joints
14" and Larger Pipe	Ductile Iron, Class 50, Push-on Joints
3/4" & 1" Water Service Line	Type "K" Copper
2" Valves	Screw Thread Brass Body "Tee" Head, Open CCW
6" - 10" Valves	Resilient Seat MJ End Gate Valves with 2" Square Operating nut, Open CCW
12" and Larger Valves	Butterfly Valves with MJ Ends, 2" Square Operating Nut, Open CCW

Fire Hydrants

4-1/2" Barrel "3-way" AWWA Standard Hydrants with 6" MJ Shoe, Painted Yellow, Open CCW, set with 6" "Anchor" Tee

Water Main Extensions - Procedures

30 " minimum cover over all water distribution mains.

All valves must have standard valve boxes.

Fire hydrants on curb and gutter streets require concrete pad around hydrant barrel and isolation valve box.

PVC pipe must be installed with copper tracer wire.

All water main installations shall be pressure tested, 150 psi minimum.

Contractors are not permitted to make connections to existing water lines, only City Corporation personnel may make connections or operate valves.

Completed and sterilized mains shall be flushed and sampled by City Corporation personnel. No service connections permitted or meters set until water samples are certified bacteriologically pure by the Arkansas State Department of Health.

Sewer Main Extensions - Materials

4" Service Line Pipe	SDR 26 PVC with Gasket Joints, or Schedule 40 PVC with Solvent Welded Joints
6" and Larger Sewer Main	SDR 26 PVC with Gasket Joints Class 50 Ductile Iron where specified
Manholes	Monolithically Poured Concrete Precast Reinforced Concrete
Manhole Covers	Cast Iron Traffic type, 260 lb Minimum Weight for Frame and Cover

Sewer Main Extensions - Procedures

All PVC pipe laid in full bed of gravel.

Sewer mains with less than 2'-0" of cover shall be ductile iron.

All sewer main pipe shall be laid with construction laser, on constant grade and straight alignment.

All sewer mains shall be air tested prior to acceptance.

SEWER STOPPAGES PROCEDURE

A procedure for making problem tickets to check sewer mains or customer sewer lines when the customer calls in for stoppages or other sewer related problems.

1. Obtain the name, address, and phone # for the customer with the sewer stoppage. Verify account and update as necessary. Look at notes on the account and ticket history to determine if stoppage is a reoccurring problem. This will aid you in determining if this customer needs to call a plumber or you need to place an order to check our mains for stoppages. If a reoccurring problem exists here, contact the NOC manager and discuss situation. NOC manager will advised you on how to proceed with ticket.
2. Ask the customer if stoppage is occurring in house and/or overflowing in house. If so ask the customer if they know where their clean out is. If the customer is able to take the cap off the clean out then stoppage will not overflow into house and it will make their cleanup easier.
3. Ask the customer if they have already contacted a plumber or been advised by a plumber to contact City Corp to check our sewer mains. It is common for Roto Rooter to advise customer to ask City Corp to camera their customer lines (in which we cannot do) when they cannot locate problem or clear stoppage. The customer responsibility is from the house to the main (for stoppages caused by a build up of grease, roots, trash, paper towels, etc).
4. Make a problem ticket to check City Corp mains for stoppage by selecting option 10 (S/O) next to the address and pressing F6 to create order. Select 6 (problem ticket) and press enter. Work center and work crew will be 450/450 for stoppages. Requested by must be enter by whom is calling in the stoppage and verify phone number to contact customer about results and press enter. Type stoppage on the find line on the next screen and select transaction # 52316 (sewer stoppage – main line) and press enter. Add notes as to what was discussed with customer and a phone number to contact or if customer will be home etc then press enter and schedule for the current days date and press enter. Print the order by selecting 6 (print) next to the order and choosing printer PRT04.

SEWER RATE ADJUSTMENT PROCEDURE

During the months of January, February, and March of every year, City Corporation readjusts the sewer rates for residential customers according to the average water usage during those 3 months. The new sewer rate goes into effect on the April invoice for the residential customers. The rate structure for sewer charges is set by Russellville city ordinance (see attached). If a residential customer had/has a water leak that did not flow into their sewer lines during the first 3 months of the year, their sewer rate will be set at that average effected by the leak. City Corporation can readjust the sewer rates if the residential customer effected will provide us with proof of leak and repair.

1. Ask customer to provide us a copy of plumbers receipt or if they fixed leak their selves, a receipt for parts to fix leak. We **CAN NOT** readjust sewer without a copy of the plumbers receipt or parts receipt. If the current month is before March, file the copy of the plumbers receipt in the current year's sewer adjustment folder with the customers name, address, and account number written on the receipt (this will be need by the Administrative Office to adjust sewer) and add notes (option 7) to the customer master (name) as to what was done.
2. If the current month is after March, the Business Office will take care of the readjustment. Verify on the customers account that usage was abnormal during Jan., Feb., and Mar. Look up the customers account (option 1 customer master information from the front office menu) ((type name on the find line and take option 9 (meters) on the profile (account address) take option 5 (display readings) and verify usage)). Look up the previous and current sewer rate. Current sewer rate can be found by looking at the transactions (option 15) on the profile (address). Previous sewer rate can be found by looking at invoice ((option 14 on profile then option 8 (detail) on the invoice) before April of the same year.
3. Readjust current sewer rate to previous year sewer rate. Choose transaction (option 15) on profile (address) tab down to sewer transaction and change (option 2) sewer to previous year amount. Add notes (option 7) on customer master (name) about changing sewer rate from current sewer amount to last year sewer amount. File plumber's receipt in the sewer adjustment folder for the correct year. If customer does not have previous year history to readjust sewer, see Business Office Supervisor for adjustment procedure.

COMMERCIAL SEWER RATE ADJUSTMENT PROCEDURE

Commercial sewer rates are not prorated for the average usage. The sewer rates are a direct result of the water usage used during the billing period. If a commercial customer has a leak during a billing period that did not flow into the sewer, an adjustment can be made on the sewer charges if the commercial customer will provide us with proof of leak and repair. A sewer adjustment can also be issued if a commercial customer fills a swimming pool. Proof of the dimensions of the swimming pool will need to be provided by the commercial customer to accurately measure the amount of water the pool contains.

1. Ask customer to provide us a copy of plumbers receipt or if they fixed leak their selves, a receipt for parts to fix leak. We **CAN NOT** readjust sewer without a copy of the plumbers receipt or parts receipt. We **CAN NOT** issue credit for leaks that flowed into the sewer. After obtaining the receipt you may issue the credit and file a copy of the receipt in the sewer adjustment folder for the correct year. Place notes on the customer master as to what occurred.
2. Figure a 12 month average water usage for the commercial customer by reviewing the meter usage. This will be used to give credit toward the sewer rate. You will also need to know the current sewer charged on the invoice you are giving credit toward. Subtract the average usage from the sewer charged (This will be the amount of credit you will issue).
3. Create a problem ticket for the address you want to issue the credit. On the credit invoice field you will need to press F4 for the drop down menu and select the invoice you are giving credit toward. The transaction you will choose is 52339 (ADJ SEWER RATE-OUTSIDE WTR USE) then take an option 2 to change the charge override amount to the credit you want to issue. You will need to place the dollar amount in the field without decimals and then a minus sign (field -) to issue credit on that invoice. Finish the ticket out by pressing enter and adding notes as to why you are giving the credit toward the sewer rate. Schedule the ticket for yourself and release the order to issue the credit.

DOVER MONTHLY SEWER REPORT PROCEDURE

1. Locate the "Dover Sewer Accts" folder. You can access this by choosing "My Computer" from your start menu or desktop, then under network drives choose "public on 'Ccrnws1' (P:)", next choose the "PC300" folder, finally choose the "Dover Sewer Accts" folder.
2. Choose the current year's excel file and locate the current month's tab and print the sheet by choosing file and print at the top of the page.
3. You will then look up the water usages and meter readings in the AS/400. Choose customer master information (option 1) then flop to work with service location information (F11). Enter the address on the find line and select readings (option 16) next to address. Write the reading and usage on the sheet for later use. Also, note the date the meter was read at the top of the sheet for later use. Complete for all addresses.
4. If any corrections need to be made with the customer name changing, meter being replaced, or account number changing, etc., note this on the sheet for later use.
5. Go back into the excel file and enter meter reading date in cell "A2" using the 2 digit month, 2 digit day, and 4 digit year format with slashes (/) in between. Example: 01/01/2010. The field "Date Read" will now be occupied by the date you entered in cell "A2".
6. Now enter the meter readings in row "G" next to the correct meter number and update all incorrect information for that address if applicable. The "Cons." field in row "I" should now recalculate the correct usage automatically. Check with your records written on the sheet to make sure these updated correctly.
7. After all the information has been updated and meter readings have been entered in you can print and save the excel file to the current year's spreadsheet. Print by selecting "file" and "print" at the top of the page and save by selecting "file" and "save as" and making sure the file name is correct, then select the "save" button from the window that popped up.
8. Take the updated and printed "Dover Monthly Sewer Report" to the fax machine and fax this to Dover Water fax # 331-3388.

NEW CUSTOMER MASTER SETUP

1. From front office menu choose option 1 (customer master information). Type customer name on find line and press enter. Check for name matches if no matches, then press F6 to add new customer. If name match verify social and if it matches update that customer master instead of making a new customer master.
2. After pressing F6 tab down to Soc. Sec. or Tax Id Number field and fill in social (residential accounts) or tax I.D. (commercial accounts). The first set is for the primary account holder the second set is for spouse or roommate. Tab down to Scan drivers license and swipe the magnetic strip to check for matches. If magnetic strip does not work or its an out of state I.D. without a magnetic strip you will need to tab back to the top and fill out the rest of the information (customer/business name, drivers license #, D.O.B.) required to set up account. Press enter when finished to scan for matches. (Note: last name goes first followed by first name then middle name or initial and finally the Sr., Jr., II, III, etc.)
3. The next screen will show you any matches to the information you have entered. Check all the matches with option 5 for 700 (bad debt) F/C (financial class) code and make sure the new customer you are setting up does not owe us any bad debt. If you found a match then select the match with option 1 and update that account instead of creating a new account and collect any debt owing. If no matches were found press enter for information review, then press enter again to proceed with account set up.
4. Financial class is set to default for new customers unless there is reason to change this. You can select a drop down menu by pressing F4 wherever you see a plus (+) sign next to an entry field.
5. Account type will usually be residential (1) or commercial (2). Again a drop down menu is provided, press F4 for menu to select correct account type. (Note: you will need to ask the customer questions if you are unsure of the account type. i.e. will you be living here, will you be running a business from this address, etc.) If this is a commercial account you will also need for the customer to fill out a nonresidential application before a connect order can be competed.
6. The customer name and sort sequence should already be filled out from the information you have already entered. Make sure the sort sequence matches the customer name.
7. Owner name must be filled in if this is a commercial account. If this is an Inc. or there are several owners, list at least one of the owners names in this field.
8. There are 3 address lines. For normal address you will type the address starting on line 3. Line 2 is for C/O (in care of). Line 1 is for additional info usually only used for commercial accounts. Fill out the City, State, and Zip. For Russellville addresses only you may type the zip code (72801) on the first line and after pressing enter this will update with the correct zip+4. If you are having trouble finding a zip code, tab over to the zip code line and press F4 for the drop down menu and enter the city on the find line. This will help you determine the correct zip code.
9. The social, D.O.B, and drivers license field should have already been entered. Verify to make sure they are correct. You will also need to add a phone number in the phone number field. This can be a home phone or cell phone. (Note: add the area code first to all phone numbers, local and out of town.) If there is and extension number you

- may also enter this in after the phone number field. If the customer has a fax number you can enter this in also. Press enter to move to the next data entry screen.
10. Own/Rent field is next. Again a drop down menu is provided. (O) for own (R) for rent. If this is a rent property type in the landlord name in the field provided.
 11. Next are how many persons in total live in the household. This is used to set the sewer rate outside of the proration period (Jan., Feb., Mar.)
 12. Terms code should always be N20 (Net 20) unless the customer is disabled and they only receive a check once a month. This is used to extend the due date 10 more days so they get paid before their bill is due. This will not be changed on a new customer set up because the due dates of the bills vary.
 13. Sales tax exempt ID is for sales tax exempt businesses and can only be entered after they supply us with a copy of their sales tax exempt ID form. Number of copies is for multiple invoices, special invoice print code is for sorting, job/PO/password required is for exceptions when more security is required on a customer account. You can select (Y) or (N) and add notes to the account if the customer requires a password to access their account.
 14. Next is employer information (i.e. unemployed, SSI, disability, retired, self employed) or any other company name and phone number. Enter the area code in first and if they have an extension enter this after the phone number. Press enter to move on to the next data entry screen.
 15. Spouse/Roommate info is next, if you entered a social during the initial set up on the secondary social line then this will already be entered in now. You will need to fill out the marital status and relationship to the primary, again there is a drop down menu here for selection. Fill out the name in the name filed, last name first unless they have a large last name that is the same as the primary last name, then you may only put the first name here. Enter the social if not already here and the D.O.B. their employer information and the phone number or a cell phone number for the secondary with area code first then extension number if applicable last.
 16. Finally nearest relative information is required. Ask the customer for a nearest friend or preferably relative that does not live in the household. Must at least have a name and phone number. Fill out as much info as you can. If they don't know the street address maybe they know the city and state their relative lives in. The last field is for the relationship to the primary account holder, again a drop down menu is provided. The relative information is mainly used for debt collection purposes but you need to explain to the customer that this is for an emergency contact in case we cannot reach them by any other means. This is required to set up an account. Press enter when complete and this will bring you to the next data entry screen.
 17. This next screen is for direct deposit information. If the customer chooses to set up their account on direct deposit there is a form to fill out and a voided check is needed to set this up. They can also set this up online and no voided check is needed. If the customer chooses to set up bank draft, place completed form with voided check attached in the administrative depts. box for bank drafts. The administrative dept. will set this up in the AS/400. Pressing enter from the bank draft screen will bring you back to the customer master account where you can now create the connect order.

CONNECT ORDER

1. Choose option 32 (service location) to check address before connecting. Type address on find line and choose option 10 (work with S/O) to check for service orders for no-billers or disconnects etc. You are looking for potential problems associated with address. Choose option 7 (notes pad) next to address to check for any notes associated with the address. Choose option 8 (transactions) next to address so you will know what transactions you will be connecting the customer to. Verify that the revenue & tax codes are correct (i.e. commercial, residential, inside city, outside city). Make sure the address is not on hold for any reasons, this would make it impossible for a connect order to be issued until the address is taken off hold by the customer service supervisor or the administrative department. If there are no holds or problems with the address proceed with making connect order.
2. Note: if you are connecting to an existing customer master, make sure you have updated the entire account and verified that the person you are speaking with has access to the account. You will need to verify with a state issued picture I.D. and social security number. You will also need to obtain a lease/rental agreement if the address is owned you will need to obtain acceptance or title papers showing the customer is purchasing the address in question. If you are setting up a new customer master, see the SOP on how to set up a new customer in the AS/400. Due to "The Red Flag Rule" you will need to stay diligent on asking for verification and making sure accounts are up to date. If you have any questions or problems updating or feel as if someone is not being honest with the information they are providing, you will need to notify your supervisor before moving forward in creating or updating the account.
3. From front office menu choose option 1 (customer master information). Type customer name on find line and press enter. Choose option 10 (S/O) next to name and press enter. Press F6 and choose selection 3 (connect) then press F4 on service location line to bring up the service location window and enter address to connect and press enter, finally choose option 1 next to address and press enter. Verify address and order option and press enter again to create connect order.
4. This next screen is a verification screen. Make sure the number of people in household, bank draft code, terms code, tax district/revenue code, and e-mail billing code are correct. Make modifications here if needed and press enter.
5. Next verify info at top of screen is correct and verify phone #, then schedule ticket for work center 300 (business office) and work crew 521 (service truck). The line for job, PO, or password is for added customer security. If a password is required you will have to go back to the customers notes on their master and verify the password with the customer before typing this password on this line to proceed with order. Type in customers name that is requesting the connect order. Note: this can only be connected for the primary or secondary on the account or in the case of property management or realty company type in whom you are speaking with. Do not just type in Mr. or Mrs.
6. The bottom of this screen will tell you if this is currently connected in a different customers name, if so you can schedule the connect order when the customer chooses and a disconnect order will generate on the day the connect order is worked for customer moving out. If there is already a disconnect date you will need to schedule the connect order for the same date and time as the disconnect order. Either way you

will type IN/OUT notes on this order to make the ticket an in & out order (this means someone is moving in and someone is moving out and we will not be turning the water on here because the water should already be on). Press enter to move to the next screen.

7. This screen will tell you the transactions connecting on this address. The deposit can be increased by taking a option 2 (change) next to the transaction with the deposit and typing the new deposit figure in dollar amount without decimal in the deposit amount line and pressing enter. Note: the deposit cannot be decreased, only increased according to the customer credit history. You can also wipe out this amount if this is a financial class that a security deposit is not required on (i.e. property mgmt, VIP, realtor, preferred contractor, etc.) The sewer transaction can also be changed at this screen. This would only apply to new construction or rental property. You may choose option 2 (change) next to the sewer transaction and change this to the current rate for new construction or rental property. The meter connection fee can also be changed at this screen. This would need to be changed for no-billers. Choose option 2 (change) next to the connection fee and change the charge override amount to \$10.00. You can also double the \$7.50 fee for repeat trips if the order has not been released. When you are finished press enter to move to the next screen.
8. Here you can take a payment with cash or check for the deposit amount only. Note: if the amount you want to apply to the account is more than just the regular deposit in cases of non-pay or no-billers you will need to apply the payment through the payment option screen. If this is just a regular connect order with just a deposit amount owing you can enter in the deposit amount and the check # or if paying by cash enter *cash and type your notes about the connect order or press enter for the receipt to print.
9. Next you will schedule the connect order for when the customer wants to meet us for water service. If the customer cannot meet us they can opt to give us a verbal release of liability to turn the water on without them home. (this option can cause house floods if faucets are not in the off position or they have water leaks) In cases of IN/OUT orders the water would already be on and you may just type IN/OUT on the notes. To access the notepad from here press F7 and type in notes for connect order. Choose the date and time frame when the customer can meet you or would like for the order to be worked. Note: IN/OUT orders should be placed with the already scheduled disconnect date if applicable. After entering date on the Pos to Date line choose the correct time frame with the number 1 next to the date/time and press enter.
10. The connect order should now be created. If you need to change this order select option 2 (change) next to the ticket number and repeat steps. If the order is for the same date print this order by choosing option 6 (print) next to the correct ticket #. If for some reason you need to cancel this order choose option 4 (cancel) next to the correct ticket #. Press enter from the service order screen and refresh (F5) and address and account number should show up under the customer name.
11. Choose option 7 (notepad) on the customer name and type notes about the lease agreement. Example (How many persons are living at address, whom the address is leased from, what are the lease terms (to and from dates of lease), any other information from the lease that may be needed to cross reference at a later date)

12. If customer has brought in a letter of credit you will need to place notes on the customer name about the letter of credit and e-mail the administration department to credit the deposit. Notes will need to be applied to the account for previous good credit history with City Corp., when you are waiving a deposit also. E-mail the administrative department to waive deposit. Note on the e-mail if this is an initial deposit or an additional deposit. You can also check the WUDB (water user data base) for a previous utility request if the customer has notified you that they are moving from a water system in the state of Arkansas. Note: before a connect order is placed the customer will have to pay the deposit or provide City Corp. with a letter of credit. City Corporation does not advertise that a deposit can be waived if the customer furnishes us with a letter of credit.

DISCONNECT ORDER

1. From front office menu choose option 1 (customer master information) and tab to the find line and enter the customer name that is requesting a disconnect order. If you are unable to locate the customer name you may need to look up the address and verify the name on the account. Verify the last 4 digits of the social security number on the account and verify the address the customer is requesting to disconnect. The disconnect order may only be requested by persons with access to the account. Choose option 10 (S/O) next to address to enter the service order selection screen.
2. Press F6 to add order. You should select 4 (disconnect) next to selection and the address should already show up in the service location field. Press enter to create disconnect order and verify the forwarding phone number from the customer. Update this phone number here if needed. Select work center (300) and work crew (521) and enter a job, PO, or password if needed. You will have to check notes if a password is active on account and verify password is correct with the customer. Type password into this field and fill in the requested by with the persons name requesting the disconnect order. If you wish to have the meter pulled you can change the (N) to a (Y) in the remove meter from service field. If another customer is connecting to this address this will show at the bottom of the screen in red notifying you to schedule the disconnect order on the same date and time as the connect order to make this an IN/OUT order. Press enter to proceed to next screen.
3. This is the transaction screen that you are disconnecting. There should not be a need to change any of the transactions here. This is just to verify what transactions you are disconnecting. Press enter to proceed to next screen.
4. You will need to ask the customer for a forwarding address. Change the current address on this screen to the forwarding address furnished by the customer. This will update the customer master when the disconnect order is released. If additional notes are needed you may type them in here on the notes lines. Unless this is something out of the ordinary, notes are not required on disconnect orders. Press enter to proceed.
5. Place a date in the pos to date field for when the customer is requesting the disconnect order and choose an open time slot by selecting the number (1) by the correct time. Ask the customer if they prefer this to be shut-off in the AM or PM or if it matters at all. If they request a specific time slot you should also add a note to the order by pressing F7 and typing in "cust. request PM or AM only". Note: orders can only be scheduled out 30 days or less. Press enter and the order is complete. If the order is to be worked in the same day make sure you print the order by selecting option 6 (print) next to the correct order and printing to the output printer (prt04) which is the NOC (network operations center) printer.

GRINDER PUMP PROCESS

1) CUSTOMER APPLIES FOR PERMIT

At this time, a connect order should also be generated. The need for a grinder pump (if not predetermined and reported to the Business Office) should be immediately reported back to the Business Office Manager upon this determination being made. Any changes necessary to the connect order will then be made by the Business Office. This includes adding the necessary transactions to the service address. The customer is contacted by the Business Office to be sure they have been notified of the need for this equipment. The customer should be made aware of the costs related to this (initial cost of the grinder pump and the monthly charge). The time and material ticket that is generated for sewer should have notes added stating the customer should be billed for the cost of the grinder pump on this ticket.

2) The grinder pump is ordered by the Construction Supervisor upon receipt of the permit order. If permit is printed to NOC, be sure that another copy of the permit is printed to the construction printer (CONPRT01).

3) Customer is billed for the cost of the grinder pump as soon as the pump is received. Customer should be notified of this fact at the time they have applied for service. The direct bill form for billing the customer (along with the time and material ticket) should be attached to the invoice when the invoice is submitted to the Administrative Dept. for payment. The construction supervisor will assign a unique serial number to identify the grinder pump. Before assigning this number, they will check with the Administrative Office to determine the number that is to be assigned. The construction supervisor will mark the grinder pump with this number and note the number assigned on the customer service order tickets.

4) The Permit/Connect Order should be closed at the time this pump is picked up. This will begin billing of the sewer and grinder pump transactions on the next customer invoice. The customer should be notified of this at the initial contact. This Permit/Connect Order should be turned into Administrative Department by the Construction Supervisor as soon as the pump is picked up (unless the paperwork has already been turned in with the grinder pump vendor's invoice) for the process to be completed.

RULES AND REGULATIONS GOVERNING THE RENDERING OF SEWER SERVICE

SECTION 1 Definitions

1.1 Utility: Shall mean City Corporation, acting through its properly authorized officers, agents or employees, each acting within the scope of the particular duties entrusted to him.

1.2 Customer: Shall be the party contracting for a supply of water through a single meter and service through each meter shall be considered, for billing purposes, as service to a separate customer.

1.2.1. Residential Customer:

A building under one roof, which is owned, leased or rented by one family and occupied as a residence.

Each family unit of a townhouse or apartment type building, which is individually owned or leased to tenants.

1.2.2. Commercial Customer:

A building under one roof containing two or more apartments or family units, which are rented or leased to tenants.

Any building occupied by a retail or service business.

Any building containing any combination of the above two items.

Any building or combination of buildings in the same compound whose primary use is for the manufacture, fabrication and or assembly of any product.

A publicly owned building such as a school, city hall, court house, fire house, hospital or other public institution.

A system which is city-owned and operated or a system which is operated or owned by a district or community.

The purpose of the foregoing definitions is to preserve to the maximum extent possible, the obligations of the Utility to furnish service, and to preserve the jurisdiction of City Corporation Board of Directors over service being furnished by the utility, and shall be construed and applied to accomplish that purpose

Section 2 Application for Installation of New Service

2.1 Service connection will be made and sewer service will be furnished upon application by the prospective customer (or his properly authorized agent) and after approval of such application by the Utility. The application for service shall state clearly the class, scope and type of use to be made of the service, as well as the purpose for which it will be used.

2.2 The application and these rules and regulations constitute the contract between the customer and the Utility and each customer, by the accepting of sewer service agrees to be bound thereby.

- 2.3 A new application must be made to and approved by the Utility upon any change in the identity of the contracting customer at a property or in the service as described in the application. The Utility may discontinue the sewer service until such new application has been made and approved.
- 2.4 Each application for service shall be made on the basis of rates applicable to customers under the existing ordinances.

Section 3 Service Connection

- 3.1 Each building shall be connected through a separate sewer line,
- 3.2 There shall be two (2) classes of building sewer permits: (a) for residential and commercial service, and (b) for service to establishments producing industrial wastes. In either case, the owner or his agent shall make application to the Utility. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent in the judgement of the Utility. A permit and inspection fee of \$150.00 dollars for a residential or commercial building sewer permit and \$500.00 dollars for an industrial building sewer permit shall be paid to the Utility at the time the application is filed.
- 3.3 All costs and expense incident to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the Utility from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.
- 3.4 Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the Utility, to meet all requirements of this ordinance.
- 3.5 All sewer connections must meet specifications set forth in City Ordinance No. 1075.
- 3.6 All service lines from the sewer main to the customer's building shall be approved by the Utility as to size, kind of pipe and installation, and shall be installed and kept in good repair by the customer at his expense.
- 3.7 The Utility shall in no event be responsible for maintenance of or damage caused by sewer escaping from the service line or any other pipe or fixture. The customer at all times shall comply with state and municipal regulations in reference thereto and shall make any changes thereon which may be required because of change of grade, relocation of mains or otherwise.
- 3.8 The property owner will be responsible for the cleanout of any stoppage of the sewer service line from the sewer main to the dwelling or other types of structures
- 3.9 The use of sewer service by a customer shall be in accordance with the class, scope, and type of use and for the purpose stated in his application and service contract. A customer shall not use or allow use of sewer service through his service facilities for others or for purposes other than those covered by his application. To make service available for other purposes or character of use a new application and contract is required.

Section 4 Bills

- 4.1 Each customer is subject to a minimum charge, the amount of which is set forth in the Schedule of Rates.
- 4.2 Bills for sewer service will be rendered and are due and payable as specified on the Schedule of Rates.
- 4.3 The presentation or non-presentation of a bill shall not be held to be a waiver of any of the rules or regulations.

Section 5 Discontinuance of Services

- 5.1 Whenever the customer desires to have his service contract terminated or his sewer service discontinued, he shall notify the Utility to that affect.
- 5.2 Service to any customer may be discontinued for violation of any of these rules and regulations. However, before service may be discontinued for any violation, the Utility shall give at least five (5) days written notice to the customer, stating the rule violated, the manner of violation, and the date after which service will be discontinued if the violation continues, with exception to disconnect due to invalid checks or obtaining service by fraudulent means. After service is thus discontinued for violation of rules and regulations, service will not be resumed until reasonable assurance is given that the customer will comply with the rules and regulations and until the Utility is reimbursed for costs of discontinuance and restoration of service.

Section 6 Customer Deposits

- 6.1 The Utility has the right to require a deposit of \$50.00 for those residential customers with sewer service only. The Utility will refund said deposit on notice to disconnect service and after payment in full has been made for all service rendered.
- 6.2 The payment of any undisputed bill within the meaning of these rules shall be payment of the bill within twenty (20) days following presentation of the bill, or the payment of any contested bill, payment of which is withheld beyond the period herein mentioned and the dispute is terminated substantially in favor of the customer and payment made by the customer within ten (10) days thereafter.

Section 7 Customer Service Charges

- 7.1 The Utility will require a service fee of \$_____ to be charged an applicant for service or an existing customer who is requesting service at a new location.
- 7.2 The Utility will assess the customer a \$_____ charge upon receipt of an invalid check other than in case of a bank error.
- 7.3 The Utility will charge a \$_____ collection fee when a trip to the customer's premises is required to collect for service.

Section 8 Miscellaneous

- 8.1 The Utility will not be liable for any claim or damage arising from the breaking of machinery or other facilities, or for any other cause.**
- 8.2 No agent or employee of the Utility shall have the right or authority to bind it by any promise, agreement or representation contrary to the letter or intent of these rules and regulations.**
- 8.3 The Utility reserves the right to alter or amend these rules and regulations in the manner provided by law.**

SEWER STOPPAGE/OVERFLOW QUESTIONS for Customer Service Representatives

1. Is the sewer backing up into the home, or just "slow" to drain?
2. Is this happening in all drains (toilets, baths) or just one?
3. Will the customer of record be the address in question?
4. What is phone or cell number that the customer can be reached on?
5. Has a plumber been contacted?
6. Is a plumber on site at this time?
7. If an overflow is reported to be running down the street, ask for the closest house number or street name (report to NOC).
8. If customer reports home flooding due to sewer backup:
 - a. Do not offer to provide clean-up services.
 - b. Create service order for NOC to dispatch a construction crew to check mains and manholes in the service area.
 - c. Ask the customer if their service line clean-out cap has been removed (if this advise is given, be sure to let customer know to open cap with caution as sewer will be under pressure and likely to spray from opening; also that the cap will have to be replaced once overflow stops).
 - d. Have customer call a plumber to check their service line.
 - e. Inform customer of their need to contact their homeowner's insurance agent to determine coverage and/or liability, and to ask agent what actions to take.
 - f. For after-hours callout, inform customer that the NOC/Safety Director will contact them during regular business office hours.

City Corporation "B" Report Procedures

Purpose - the "B" Report is used as an enforcement tool to ensure that privately owned plumbing, both water and sewer is maintained to required standards in order to protect the health, safety, and the environment for City Corporation Customers. The *Arkansas Plumbing Code* is used as the standard reference; more stringent local ordinance and codes may also be cited for references.

Scope – this procedure shall be applicable to water and/or sewer customers in the City Corporation service area. A licensed City Corporation plumbing inspector will make final determination of compliance with the required standards. Failure to meet the "B" Report requirements will result in termination of service.

Procedures:

1. Business Office is notified of possible plumbing code violation:
 - a) Business Office will create a service order for a "B" Report inspection.
 - b) Network Operations Center (NOC) will dispatch a licensed plumbing inspector to the address. Assignment of service orders will be rotated among all City Corporation licensed plumbing inspectors.
 - c) Plumbing Inspector will conduct inspection at reported address. Results will be hand written on blank "B" Report form and turned into NOC.
 - d) If no violation is found, the service order is closed with notes on the address. No "B" Report is filed. No further action is required.

2. Plumbing Inspector identifies a violation:
 - a) Plumbing Inspector will leave a door hanger with violation notice and required corrective actions.
 - b) Plumbing Inspector will meet with Safety Coordinator to discuss violation. Safety Coordinator may contact others for input. Utility officials and/or Arkansas Department of Health (ADH) officials shall be notified.
 - c) NOC will reschedule the original "B" Report inspection service order to a date coinciding with the required repair date written on the "B" Report by the Inspector/Coordinator.
 - d) Safety Coordinator will draft correspondence to accompany the original "B" Report to the customer stating the required actions and completion due date. Correspondence will be sent by certified mail.
 - e) NOC will dispatch plumbing inspector (preferably the inspector sent on the initial service order) to determine if required repairs were made by due date.

Procedures: (cont.)

- f) Plumbing inspector will conduct follow-up inspection. Results will be hand written on blank "B" Report form and turned into NOC.

3. Required actions and dates:

- a) If the follow-up inspection reveals that the customer has made repairs by the due date, the service order is closed, notes are entered on the service address, and no further action is required.
- b) If the customer fails to complete repairs in the required time:
 - o Plumbing Inspector will notify NOC and pull the water meter. The meter will be stored separately from regular inventory meters in the meter maintenance shop.
 - o NOC will add notes to disconnect order requesting the Administration Department to place service address on hold until required actions completed.
 - o NOC dispatches service order to disconnect water and/or sewer service at the customer's address. Safety Coordinator is notified upon completion.
- c) All printed correspondence will be maintained in a file cabinet located in the Business Office. Electronic files will be saved in the "Sewer B Reports" folder located in the "PC300" folder, inside the "Public" folder on the network.
- d) At the General Manager's discretion, certain violations discovered on a "B" Report inspection will be forwarded directly to the local State Plumbing Inspector for compliance actions.

CITY CORPORATION "B" REPORT

WATER _____ SEWER _____

Report Number: _____

Date: _____

Service
Location: _____

Customer Name: _____

Mailing Address: _____

Notice: The plumbing installation at this service location has violations of the Arkansas State Plumbing Code and/or City Corporation regulations as listed below. You are directed to change this installation to meet these requirements within _____ days. Failure to comply will result in charges against plumber's license, legal action, and disconnection of water service. If there are any questions, contact City Corporation immediately @ 479-968-2105, extension 117.

Code Violation & Description:

Action to be taken:

Inspector: _____

License
Number: _____ Signature: _____

CITY CORPORATION "B" REPORT

.....example.....

WATER _____ SEWER _____

Report Number: YY-## (consecutive)

Date: (use inspection date)

Service Location: _____

Customer Name: _____

Mailing Address: _____

Notice: The plumbing installation at this service location has violations of the Arkansas State Plumbing Code and/or City Corporation regulations as listed below. You are directed to change this installation to meet these requirements within (0-30) days. Failure to comply will result in charges against plumber's license, legal action, and disconnection of water service. If there are any questions, contact City Corporation immediately @ 479-968-2105, extension 117.

Code Violation & Description:

Action to be taken:

Inspector: _____

License Number: _____ Signature: _____

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

.....example letter.....

October 7, 2008

John Doe
1234 N Arkansas Ave
Russellville, AR 72802

Mr. Doe:

Please find the enclosed City Corporation "B" Report, No. 08-##. This report is used to notify the property owner of violations with the Arkansas State Plumbing Code or City Corporation plumbing regulations.

On September 24, 2008, violation found at service location, as a result of some problem or act of nature. This is a violation of Arkansas State Plumbing Code No. ###, and deemed a hazard to human health and the local environment.

You are hereby notified of the requirement to list corrective action, so that your service line is fully operational no later than ## days from the date of this report. A City Corporation plumbing inspector must conduct a follow-up inspection at this address to determine compliance with the requirements of this "B" Report.

If you are not the property owner, it is your responsibility to notify the owner of the required repairs. You must notify this office upon completion of required actions so that a follow-up inspection can be scheduled. If you have any questions, call me at 968-2105.

Respectfully,

Ricky, Harry, Jeremy, or Jim
Plumbing Inspector

cc: Kenny Lutz
NOC
Bill Bolin
Inspector

X-dry peak

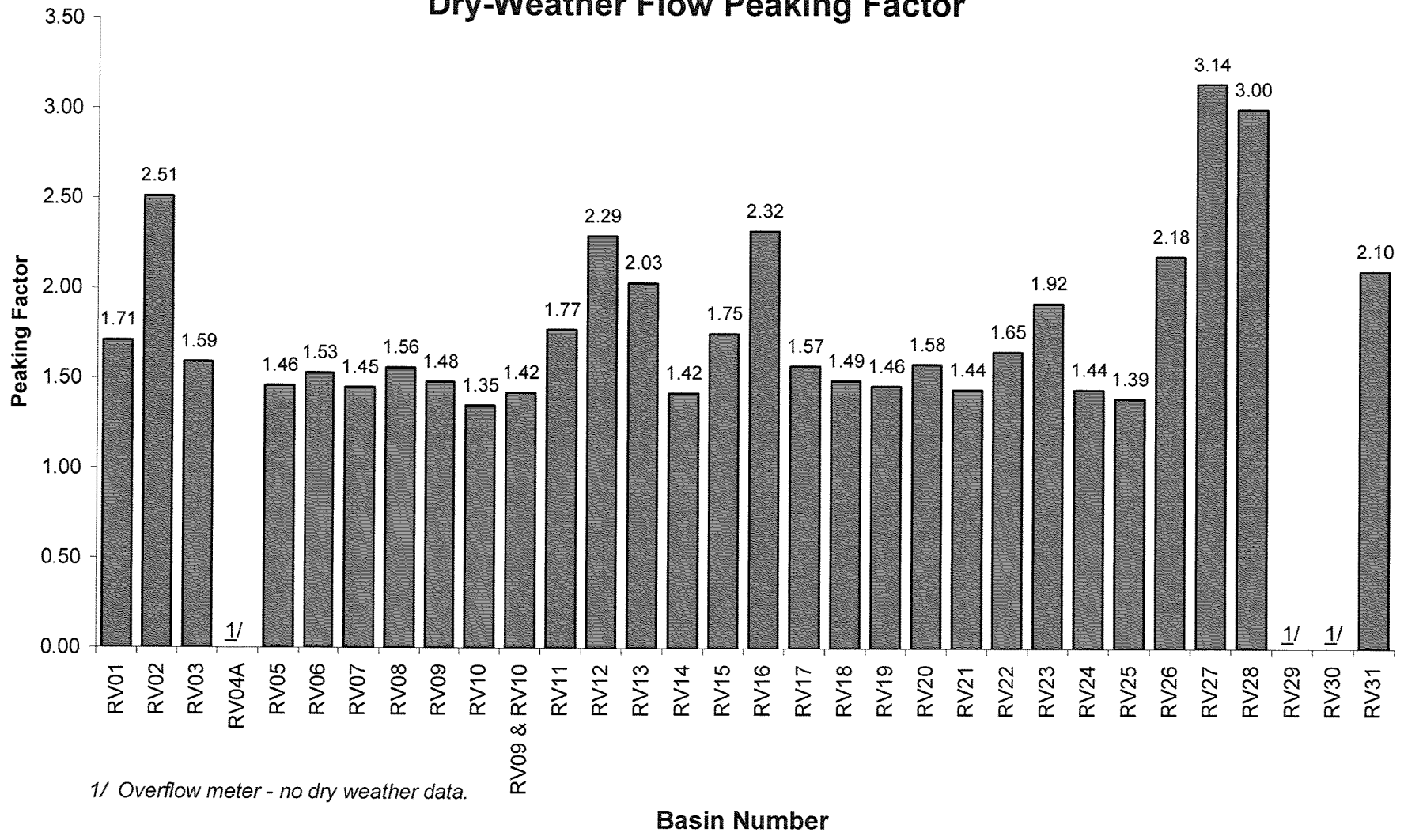
Table 2-D

**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



1/ Overflow meter - no dry weather data.

Basin Number

X-wet peak

Table 2-E

SUMMARY OF INFILTRATION RATES

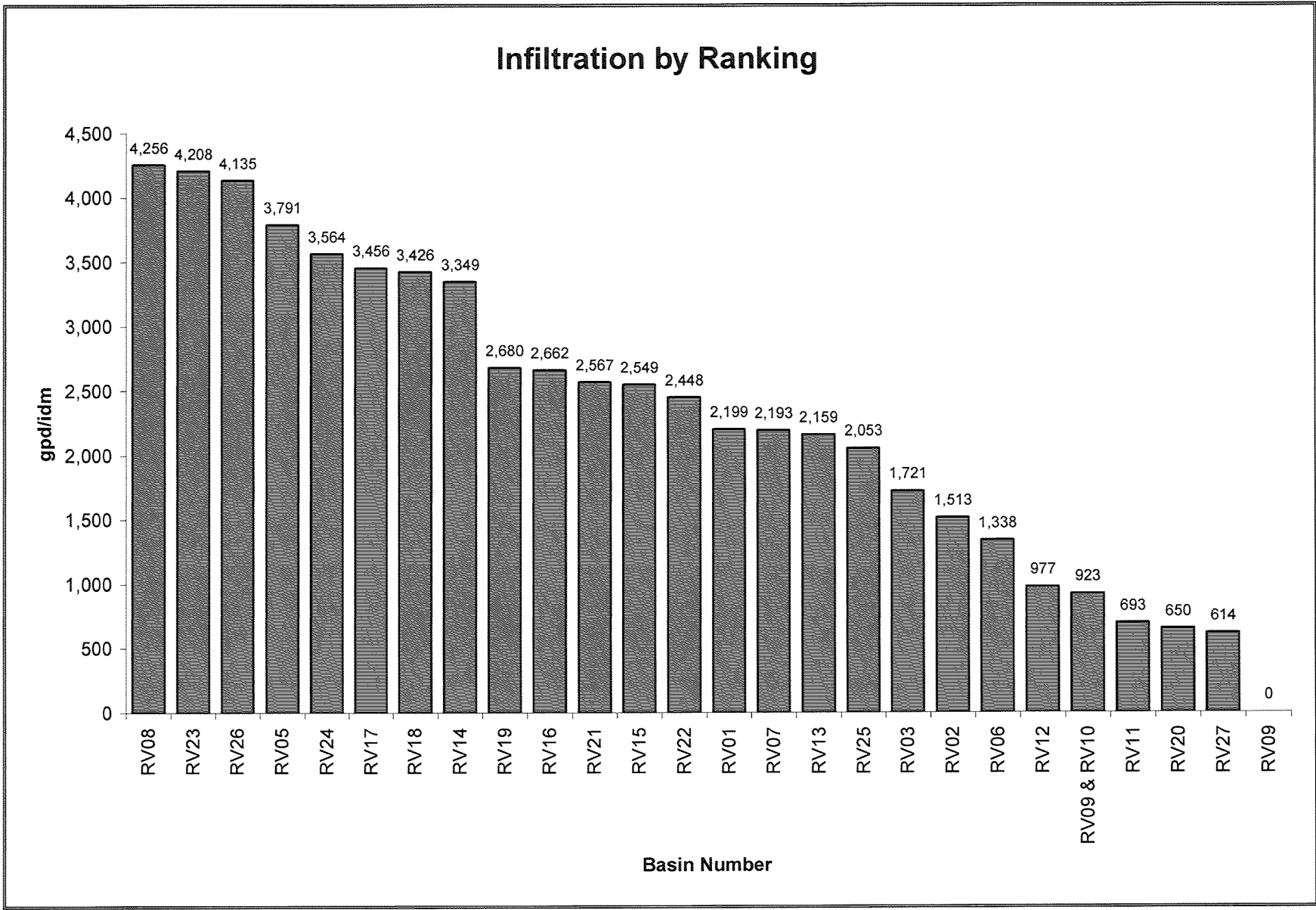
Meter Number	Inch-Diameter-Miles (idm)	Cumulative Peak Monitored infiltration (mgd)	Basin Peak Monitored infiltration (mgd)	Basin Peak Unit Infiltration (gpd/idm)	Basin Peak Unit Infiltration Ranking
RV01	50.03	0.216	0.110	2,199	14
RV02	70.30	0.106	0.106	1,513	19
RV03	68.58	0.296	0.118	1,721	18
RV04A	N/A	0.000	N/A	<u>1/</u>	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	<u>1/</u>	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	<u>1/</u>	N/A
RV30	N/A	0.003	N/A	<u>1/</u>	N/A
RV31	N/A	0.023	0.023	<u>4/</u>	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.



Y-SSO Response Plan - City Corp

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 2016

**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
Active	1062	W B St & N Phoenix
Active	1200	1105 Resimont
Active	1315	3rd & Vancouver
Active	1323	2220 W 2nd Pl
Active	1333	4th & Waco
Active	1334	W 4th & Arlington
Investigate	1341	1310 Ridgewood Dr
Investigate	1465	ATU
Active	1466	1300 Glenwood-ATU
Active	1486	404 N El Paso Ave
Investigate	1567	200 N Arkansa Ave
Active	1628	407 N Arkansas, City Mall
Pending	1704	E L st & Parker Rd
Pending	1705	1025 Parker Rd
Pending	1706	1022 Parker
Active	1724	E N ST & N Greenwich
Active	1725	E G & N Greenwich
Active	1750	901 N Detroit Ave
Investigate	1823	603 N Arkansas, City Mall
Investigate	1825	407 N Arkansas, City Mall
Active	1990	311 W B St
Investigate	2023	Cedar and N. Commerce
Active	2024	2807 N Arkansas
Investigate	2028	Birch and Commerce
Active	2033	W Birch & I-40
Active	2035	Honda of Rsvl, Lakefront Dr
Active	2036	220 Lakefront Dr
Active	2043	ATU Softball Field
Active	2048	ATU Pasture
Active	2050	ATU Pasture
Active	2815	Arkansas Tech
Active	2816	Arkansas Tech
Active	2817	N Glenwood
Investigate	3027	2502 W 2nd St.
Active	3043	N Hunter Ridge Ln
Investigate	3052	102 N Fairbanks
Investigate	3075	3801 W Main
Investigate	3094	215 S. Portland
Active	3191	John Trusty Lane
Investigate	3193	John Trusty Lane
Active	3273	Hilltop & Marina Rd
Active	4009	2005 E Main St
Active	4019	1611 E. Main St.
Investigate	4020	E Main & N Sydney
Active	4021	1819 E Main St
Active	4078	1002 E I St
Active	4117	210 HWY 324
Pending	4127	515 S Ithaca
Pending	4213	88 Joyce Lane
Pending	4214	Flying J Truck Stop
Active	5032	E. 11th and Boston
Investigate	5054	1416 S Boston Ave
Active	5121	10th and Glenwood
Active	5123	929 S El Paso

Active	6029	1105 S Oswego Ave
Active	6399	1519 S Knoxville Ave
Active	6478	404 Jimmy Lile Rd
Active	8048	404 Jimmy Lile Rd
Investigate	Old Post	Old Post Lift Station

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 Construction 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 Construction Coordinator 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 Construction Coordinator 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 crew reports this with a filed tablet the application creates the form below.

TABLE 2. SSO RESPONSE TRACKING PROTOCOL

<p style="text-align: center;"><i>SSO RESPONSE TRACKING</i></p> <ol style="list-style-type: none">1. Rainfall event2. Construction Superintendent checks local precipitation data3. >1” in 24 hours triggers SSO response.4. Construction Superintendent sends crew to Historical Recorded SSO’s (Table 1)5. Crew will fill form on tablet.6. The form is automatically generated by application and monitored by Construction Coordinator.7. Engineering will provide DMR Report to General Manager for signature and submit it to ADEQ.8. Engineering will provide DMR 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 uses tablet to complete the application Form. All information is recorded on the tablet application form. The Response crew will notify the Construction Coordinator when the SSO has stopped overflowing.

D. Customer Satisfaction

When a SSO is reported by a citizen, the Construction Coordinator or Engineering Department 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 Construction Coordinator at which time all relevant information is collected, as outlined in Section IV-A. CONSTRUCTION COORDINATOR 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 CONSTRUCTION COORDINATOR.

Response Crew determines if SSO has occurred and attempts to resolve problem. Response Crew uses their tablets to complete the application electronically. They then take 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.

On all public overflows, Response Crew begins cleanup and disinfection of the affected area. The Construction Supervisor will verify cleanup is completed, take photographs and remove warning signs.

All private overflow calls are directed directly to the field crews. The customer is then directed to contact their individual insurance carrier for coverage and is encouraged to work with insurance company to complete cleanup. Because of the nature of a private overflow, City Corporation recommends the use of a professional restoration service to complete the cleanup. City Corporation employees are not allowed to work inside private/commercial addresses.

Official Notification of SSO after working 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 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 uses tablet application and a report is generated electronically to the administrative staff.

On all public overflows, 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. Site visit is to be performed the first work day after the overflow occurrence.

All private overflow calls are directed to the field crews. The customer is then directed to contact personal insurance for coverage and restorations service for cleanup. City Corporation employees are not allowed to work inside private/commercial addresses.

Internal Notification of possible SSO

All City Corporation personnel are directed to immediately report any potential overflow 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 our Response Crews to investigate possible recurring SSO sites to verify if an overflow has occurred. These crews will be furnished a list of possible SSO sites (see appendix E), which has been determined as being locations that have potential to overflow. After crews have completed a check of the entire list, they will begin clean-up at each site. Appendix 21 is a map showing the recorded overflow locations.

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

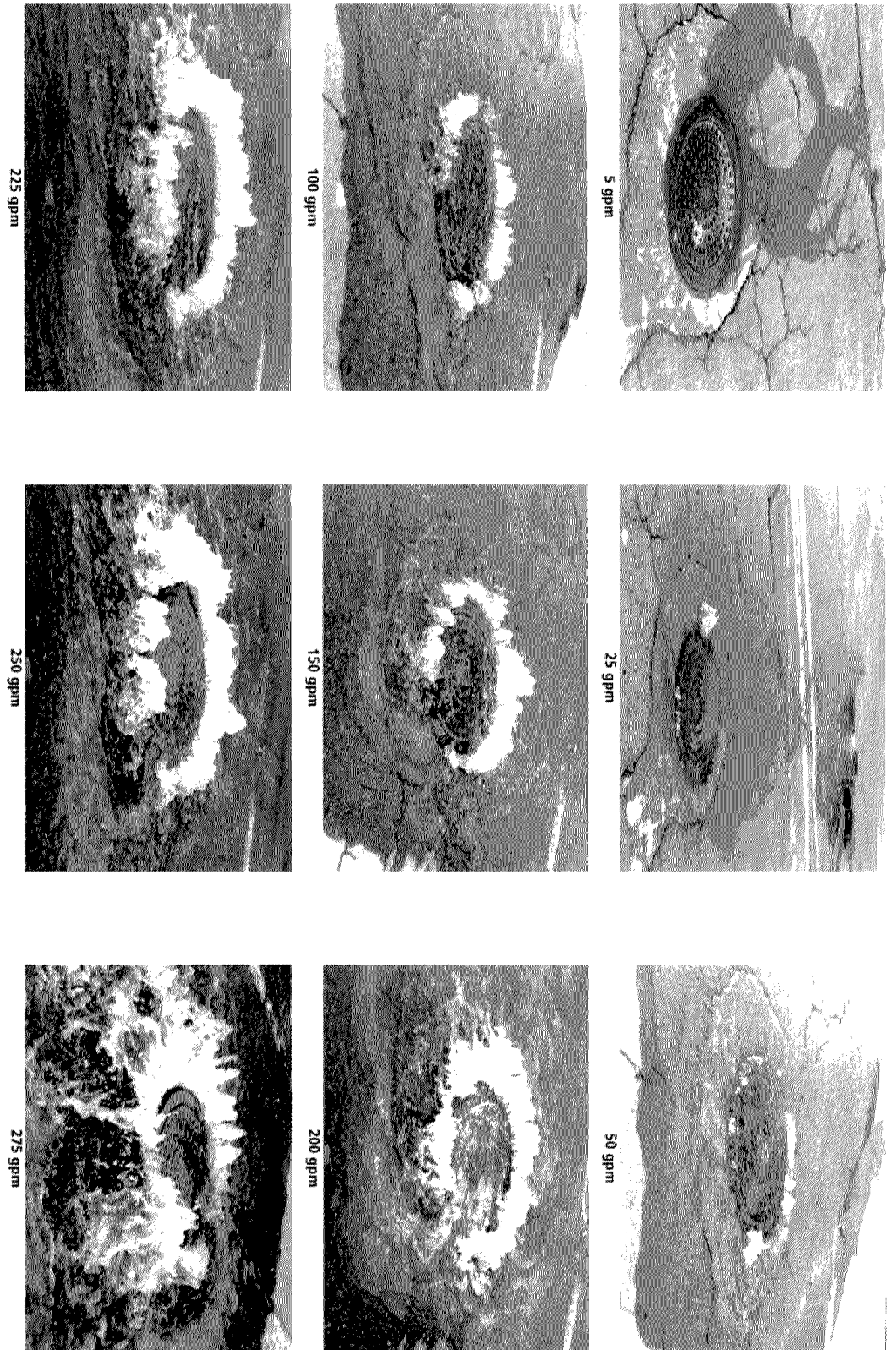
This rate covers the moderate discharge experienced in the lower reaches of the collection system, usually along the larger collector or outfall type sewer mains (typically 10” and larger mains) and in some capacity related SSOs. The visual indicator would be a noticeable flow from around the manhole 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



Z-24 Hour SSO Report

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).

- | | |
|--|---|
| <input type="checkbox"/> Manhole Overflow _____ | <input type="checkbox"/> I & I - Rainfall _____ |
| <input type="checkbox"/> Lift Station Overflow _____ | <input type="checkbox"/> Roots _____ |
| <input type="checkbox"/> Main Line Overflow _____ | <input type="checkbox"/> Grease _____ |
| <input type="checkbox"/> Service Line Overflow _____ | <input type="checkbox"/> Debris _____ |
| <input type="checkbox"/> Other: Describe _____ | <input type="checkbox"/> Equipment Failure _____ |
| | <input type="checkbox"/> Construction _____ |
| | <input type="checkbox"/> Vandalism _____ |
| | <input type="checkbox"/> Power Failure _____ |
| | <input type="checkbox"/> Line Failure/Break _____ |
| | <input type="checkbox"/> Other - Describe _____ |

Volume: _____ *(Give an estimate in gallons)*

Action Taken - Check all that apply

(Short term and long-term action, including clean-up and any plans to remediate I & I)

- | | |
|--|---|
| <input type="checkbox"/> Machine rodded | <input type="checkbox"/> Disinfected and Deodorized |
| <input type="checkbox"/> Jet-Vac | <input type="checkbox"/> Hydro Cleaned |
| <input type="checkbox"/> Hand rodded | <input type="checkbox"/> Spread Lime on Affected Area |
| <input type="checkbox"/> Used Generator To Power Pumps/Equipment | <input type="checkbox"/> Public Notification |
| <input type="checkbox"/> Other - Describe: _____ | |

Environmental Damage:

- | | |
|--|--|
| <input type="checkbox"/> OEHC - Observed or Evidence of Human Contact | <input type="checkbox"/> NEAH - No Evidence of Adverse Health/Environmental Impact |
| <input type="checkbox"/> OEEI - Observed or Evidence of Environmental Impact | <input type="checkbox"/> EFK - Evidence of Fish Kill |

Reported By

Title

Telephone Number

Z-SSO Monthly Report

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

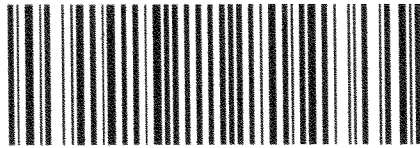
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.”

CWB Engineers, Inc.
1903 Highway 25B
Heber Springs, AR 72543

7015 1520 0002 0017 1361

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT
OF THE RETURN ADDRESS, FOLD AT DOTTED LINE

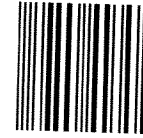
CERTIFIED MAIL



7015 1520 0002 0017 1361



1000



72118

U.S. POSTAGE
PAID
HEBER SPRINGS, AR
72543
MAR 22 16
AMOUNT
\$4.65
R2305E125198-05

CERTIFIED MAIL

Alan Anderson
Water Enforcement Branch
ADEQ
5301 Northshore Drive
NLR, AR 72118-5317