

AR0033472

WATER / WASTEWATER ADVISORY COMMITTEE

R 6/2005

WASTEWATER PRE-APPLICATION
COVER PAGE

WWAC ID #: 3322

<p>1. Applicant / Owner: City of Piggott</p> <p>Representative & Title: Gerald Morris, Mayor</p> <p>Address: 194 W. Court</p> <p>City & Zip Code: Piggott, Arkansas 72454</p> <p>County: Clay</p> <p>Phone: (870) 598-3791</p> <p>FAX: (870) 598-3897</p> <p>E-Mail Address: mayor@piggott.net</p>	<p>2. ACEDP Grantee:</p> <p>Representative & Title:</p> <p>Address:</p> <p>City & Zip Code:</p> <p>County:</p> <p>Phone:</p> <p>FAX:</p> <p>E-Mail Address:</p>												
<p>3. Engineering Firm: Civil Engineering Associates, LLC</p> <p>Project Engineer: John S. Selig, P.E.</p> <p>Address: 2114 East Matthews Avenue</p> <p>City & Zip Code: Jonesboro, Arkansas 72401</p> <p>Phone: (870) 972-5316</p> <p>FAX: (870) 932-0432</p> <p>E-Mail Address: jselig@ce-associates.biz</p>	<p>4. Application Type: (Mark all that apply)</p> <p><input type="checkbox"/> LMI Service Hookups</p> <p><input type="checkbox"/> New Collection System or Extension</p> <p><input checked="" type="checkbox"/> Rehab Existing Collection System</p> <p><input type="checkbox"/> New Treatment Plant</p> <p><input type="checkbox"/> Rehab Existing Treatment Plant</p> <p><input type="checkbox"/> Other _____</p>												
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>5. Number of Existing Customers:</td> <td>2500</td> <td>Number of New Customers:</td> <td>0</td> <td>Projected Number of Customers:</td> <td>2500</td> </tr> <tr> <td>6. Arkansas Senate District:</td> <td>11</td> <td>Arkansas House District:</td> <td>79</td> <td>U.S. House District:</td> <td>1</td> </tr> </table>		5. Number of Existing Customers:	2500	Number of New Customers:	0	Projected Number of Customers:	2500	6. Arkansas Senate District:	11	Arkansas House District:	79	U.S. House District:	1
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6. Arkansas Senate District:	11	Arkansas House District:	79	U.S. House District:	1								
<p>7. Provide a brief description of the project: The proposed project will include the installation of new water mains throughout the City. The project will also include the installation of a stand-by generator at the water supply well.</p>													
<p>8. Indicate the Agencies and Dollar Amounts you plan to use for this project:</p> <table style="width:100%;"> <tr> <td style="width:20%;">\$ _____</td> <td>Arkansas Community and Economic Development Program Grant</td> </tr> <tr> <td>\$ _____</td> <td>Arkansas Natural Resources Commission</td> </tr> <tr> <td>\$ _____</td> <td>Community Resource Group</td> </tr> <tr> <td>\$862,825.00 <u>966,365.00</u></td> <td>USDA, Rural Development</td> </tr> <tr> <td>\$ _____</td> <td>Other Funding Source _____</td> </tr> <tr> <td>\$862,825.00 <u>966,365.00</u></td> <td>Total Funds Requested</td> </tr> </table>		\$ _____	Arkansas Community and Economic Development Program Grant	\$ _____	Arkansas Natural Resources Commission	\$ _____	Community Resource Group	\$862,825.00 <u>966,365.00</u>	USDA, Rural Development	\$ _____	Other Funding Source _____	\$862,825.00 <u>966,365.00</u>	Total Funds Requested
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<p>9. I, the undersigned representative of the applicant or grant recipient, certify that the information contained herein and the attached statements, exhibits and reports are true, correct and complete to the best of my knowledge and belief.</p>													
<p>Applicant's Signature: <u>Gerald Morris</u> Date: <u>3-13-09</u></p>													
<p>Application Preparer's Signature: <u>J. S. Selig</u> Date: <u>03/13/09</u></p>													

**APPLICATION FOR
FEDERAL ASSISTANCE**

Version 7/03

1. TYPE OF SUBMISSION: Application		2. DATE SUBMITTED	Applicant Identifier
<input checked="" type="checkbox"/> Construction	<input type="checkbox"/> Pre-application	3. DATE RECEIVED BY STATE	State Application Identifier
<input type="checkbox"/> Non-Construction	<input type="checkbox"/> Construction	4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier
	<input type="checkbox"/> Non-Construction		

5. APPLICANT INFORMATION

Legal Name: City of Piggott	Organizational Unit: Department:
Organizational DUNS: 08-602-3181	Division:
Address: Street: 194 W. Court	Name and telephone number of person to be contacted on matters involving this application (give area code) Prefix: Mr. First Name: John
City: Piggott	Middle Name S.
County: Clay	Last Name Selig
State: Arkansas	Zip Code 72454
Country: USA	Suffix: P.E.
	Email: jselig@ce-associates.biz

6. EMPLOYER IDENTIFICATION NUMBER (EIN):
71-6014263

Phone Number (give area code) (870) 972-5316	Fax Number (give area code) (870) 932-0432
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8. TYPE OF APPLICATION:
 New Continuation Revision
If Revision, enter appropriate letter(s) in box(es)
(See back of form for description of letters.)

7. TYPE OF APPLICANT: (See back of form for Application Types)
C

Other (specify)

9. NAME OF FEDERAL AGENCY:
USDA - Rural Development

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:
10-760

TITLE (Name of Program):
Water/Wastewater Disposal System

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
2009 - Wastewater System Improvements

12. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):
Piggott, Clay County, Arkansas

13. PROPOSED PROJECT
Start Date: 06/09 Ending Date: 12/09

14. CONGRESSIONAL DISTRICTS OF:
a. Applicant First b. Project First

15. ESTIMATED FUNDING:

a. Federal	\$	966,365	862,825
b. Applicant	\$		
c. State	\$		
d. Local	\$		
e. Other	\$		
f. Program Income	\$		
g. TOTAL	\$	966,365	862,825

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
a. Yes. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON
DATE: March 13, 2009
b. No. PROGRAM IS NOT COVERED BY E. O. 12372
 OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
 Yes If "Yes" attach an explanation. No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

a. Authorized Representative

Prefix Honorable	First Name Gerald	Middle Name
Last Name Morris	Suffix	
b. Title Mayor	c. Telephone Number (give area code) (870) 598-3791	
d. Signature of Authorized Representative <i>Gerald Morris</i>	e. Date Signed 3-13-09	

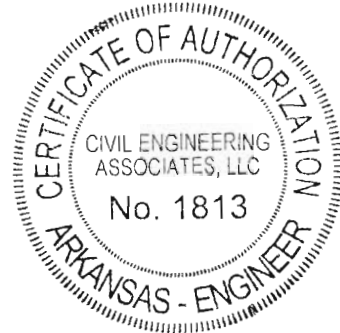


**PRELIMINARY ENGINEERING REPORT
2009 WASTEWATER SYSTEM IMPROVEMENTS
CITY OF PIGGOTT**

March 2009

Prepared For:

The Mayor and
Piggott City Council



Prepared by:

John S. Selig, P.E.

CIVIL ENGINEERING ASSOCIATES, LLC

2114 East Matthews Avenue
Jonesboro, Arkansas 72401
(870) 972-5316
Fax: (870) 932-0432



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1.0 BACKGROUND INFORMATION

The City of Piggott is located in northeast Arkansas in western Clay County and serves the City's residents with typical municipal facilities. Piggott is located along United States Highway 62 as illustrated in **Figure 1, Vicinity Map**. The community is located approximately 30 miles north of Paragould, Arkansas and approximately 30 miles south of Poplar Bluff, Missouri.

The economy of the Piggott area is dependent on the local agricultural activities in the area. The largest employer in the City would be Darling Manufacturing. There is a small retail base within the City, but it does not employ a large number of citizens. Most residents of Piggott either work in agriculture, at the previously listed company, or commute to jobs in Paragould and Jonesboro, Arkansas or Poplar Bluff, Missouri, larger industrial communities in the area.

Past population figures for Piggott are listed below:

<u>YEAR</u>	<u>POPULATION</u>
1960	2,776
1970	3,087
1980	3,762
1990	3,777
2000	3,894

The population information was taken from the Institute for Economic Advancement, Census State Data Center. This information shows a steady increase from the 1960's to the 2000's.

There are approximately 2,500 customers connected to the Piggott water distribution system. The largest industrial/commercial users are Darling Manufacturing. The other commercial users are light commercial, with the remaining connections being residential.

The climate in Piggott is typical of northeast Arkansas with mild winters and humid summers, but the day-to-day weather can vary significantly. The summers are hot and humid (90° and above for an average of 80-days) and the winters relatively mild with a few hard freezes in January and February. Snow is not uncommon but it is usually light and seldom remains on the ground for more than a few days. The average annual rainfall is approximately 45-inches.

The topography of eastern Clay County is generally flat. However, the City of Piggott lies along the eastern edge of Crowley's Ridge; therefore, there are some rolling hills in Piggott. The soil is sandy and relatively permeable (surface water

will penetrate the soil relatively well, unless it is already saturated). Storm water drains well in the hills, but has a tendency to pond in the flatter areas.

2.0 DESCRIPTION OF EXISTING PROBLEMS

2.1 INADEQUATE WASTEWATER SYSTEM

Piggott operates a public wastewater system that serves the residents of the City of Piggott. The City's wastewater is collected and sent to the wastewater treatment facility southeast of town.

Some of the older gravity sewer mains have become restricted and do not allow the proper amount of flow. Also some of the manholes are in need of repairs. Due to the age of the system, inflow and infiltration concerns have arose. The current wastewater system does not have an adequate method of screening out debris and other solid objects from the waste stream. One of the City's lift stations is not operating adequately. In addition, the wastewater treatment facility does not have a permanently emergency backup power source.

3.0 ALTERNATIVES

There were three alternatives reviewed for the required upgrades to the wastewater system work required for the City of Piggott. The three alternatives were to: (1) do nothing; (2) replace the sewer mains by pipe bursting, rehabilitate the needed manholes, inspection of all sewer mains by the use of cameras, install new bar screen at wastewater treatment facility, rehabilitate a lift station, and install a permanently mounted generator set; and, (3) replace the sewer mains by open trench, repair all disturbed roadways, rehabilitate the needed manholes, inspection of all sewer mains by the use of cameras, install new bar screen at wastewater treatment facility, rehabilitate a lift station, and install a permanently mounted generator set.

Alternative No. 1 – Do Nothing. This alternative was not considered to be a viable alternative because it would not improve the situation with the existing collection system. If improvements are not made to the existing collection system, the reliability of the collection system will continue to decline.

Alternative No. 2 – Replacing the old pipes would include the installation by pipe bursting with new HDPE pipe. The new pipes would be replacing the older pipes allowing higher flow rates. The HDPE pipe is installed in one continuous pipe,

leaving no joints that over time can cause leaks. The pipe bursting will allow the installation of the new sewer mains to be completed with the least amount of damage to the surface streets. The rehabilitation of the manholes will consist of re-grouting the interior of the manhole including around the pipe entrances. Investigation of the sewer mains will be accomplished by sending a specialized camera to view and record the inside of the sewer lines. The review of the camera video will show the location in the collection system where water is infiltrating into the system. This information can then be used to develop a plan to repair any deficiencies found. A new bar screen will be installed at the entrance of the wastewater treatment facility to screen out larger objects from entering the facility. New pumps and controls will be installed at the Johnson Addition Lift Station. In addition, a permanently mounted generator set will be installed at the wastewater treatment facility with an automatic transfer switch. This will provide the necessary backup power supply for periods of extended power outages.

The total project cost for Alternative No. 2 has been estimated to be approximately \$966,365.00. The present worth analysis for the three alternatives is shown in **Exhibit B**.

Alternative No. 3 – Replacing the old pipes would include the installation by open trench of new PVC pipe. The new pipes would be replacing the older pipes allowing higher flow rates. The open trench method of replacing the sewer main will require the surface roads to be excavated the entire length of the pipe replacement. Therefore the road will be re-surfaced upon installation of the sewer main. The rehabilitation of the manholes will consist of re-grouting the interior of the manhole including around the pipe entrances. Investigation of the sewer mains will be accomplished by sending a specialized camera to view and record the inside of the sewer lines. The review of the camera video will show the location in the collection system where water is infiltrating into the system. A new bar screen will be installed at the entrance of the wastewater treatment facility to screen out larger objects from entering the facility. New pumps and controls will be installed at the Johnson Addition Lift Station. In addition, a permanently mounted generator set will be installed at the wastewater treatment facility with an automatic transfer switch. This will provide the necessary backup power supply for periods of extended power outages.

The total project cost for Alternative No. 3 has been estimated to be approximately \$984,625.00. The present worth analysis for the three alternatives is shown in **Exhibit B**.

It is recommended that Alternative No. 2 be selected. Alternative No. 2 has the lower capital cost.

4.0 ESTIMATED CAPITAL COSTS AND FUNDING

4.1 CAPITAL COSTS

The estimated capital costs associated with the proposed improvements are included in **Exhibit A**. It is difficult to accurately estimate the total project costs without knowing the method of funding, the funding agencies to be involved, and the date that the project will be constructed. The estimated costs provided are based on construction occurring before the end of 2009.

The actual construction costs will be determined by competitive bidding after construction plans and specifications have been prepared. The basic engineering fee would pay for all costs normally associated with the design of the project (*performing field work; preparing bidding and contract documents; preparing detailed construction plans and technical specifications; working with any review and funding agencies; guidance through the bid letting and contract award stage; and general assistance to the City of Piggott on matters associated with the project*).

Because of the nature of the work, it is recommended that construction inspection be performed by the same firm that provides the basic engineering. The construction inspection fee would pay for the professional and technical assistance needed during construction.

4.2 FUNDING SOURCES

The proposed project will be extremely costly for the limited funds and customer base of the City of Piggott. Piggott will need financial assistance, preferably in the form of a grant, to construct the necessary improvements. Piggott is seeking financial assistance from the USDA – Rural Development, or from any other funding agency that might be able to offer funding assistance for the project.

5.0 ESTIMATED OPERATING AND MAINTENANCE

5.1 OPERATION AND MAINTENANCE COSTS

There will be no additional revenue needed to operate and maintain the system once the improvements are made. However, additional revenue will be required to repay any amount of loan that is obtained to partially fund the project. The needed revenue can be obtained by increasing the monthly fees charged to the customers.

Estimated operating, maintenance, and bond payment costs for the proposed improvements assuming a 45% grant are:

Reserve Fund	2,666.00
Debt Service (Bond Payments)	<u>\$26,660.00</u>
ANNUAL O&M COSTS	\$29,326.00
MONTHLY O&M COSTS	\$2,443.84

The debt service assumes a loan of \$531,500.00 at 4.0% interest for 40-years. Using an average customer base of 2,500, the monthly debt service allocation for each customer connected to the wastewater collection system to cover the repayment of the loan would be \$0.98.

A copy of the Piggott's current sewer rate schedule is included in **Exhibit C**. The following changes in the sewer rates are suggested to fund the project:

Minimum Monthly Charge	\$5.81
Plus Charge per 1,000 gallons	\$1.72

Based on an average water consumption of 4,000-gallons per month per connection, these changes should increase the earnings for the sewer department by approximately \$2,450.00 per month, enough to cover the monthly debt service costs for the improvements.

Every effort has been made to reflect actual and anticipated prices and interest rates in the development of the operating costs, however, it should be noted that these are only estimated costs. Actual costs will vary depending upon the funding sources and types, as well as the economic conditions at the time the project is let for construction bids.

5.2 OPERATION AND MAINTENANCE OF PROPOSED IMPROVEMENTS

As presently required, a state licensed operator will operate and maintain the wastewater collection system. Therefore, no additional observation time will be required as a result of this project.

EXHIBIT A

Estimated Quantities and Costs

**CITY OF PIGGOTT
2009 - WASTEWATER SYSTEM IMPROVEMENTS
CONSTRUCTION COST ESTIMATE
ALTERNATIVE #2
MARCH 2009**

ITEM NO.	DESCRIPTION	QTY	UNIT	COST/UNIT	COST
1	Pipebursting 6" Sewer Main	7,500	L.F.	\$45.00	\$337,500.00
2	Manhole Rehabilitation	20	EA.	\$1,500.00	\$30,000.00
3	Camera Work on Sewer Main	18,700	L.F.	\$2.25	\$42,075.00
4	Service Re-Connections	82	EA.	\$700.00	\$57,400.00
5	New Bar Screen	1	EA.	\$155,000.00	\$155,000.00
6	Lift Station Rehabilitation	1	EA.	\$80,000.00	\$80,000.00
7	170kW Generator Set w/Automatic Transfer Switch	1	LS	\$85,000.00	\$85,000.00
8	Project Sign	1	EA.	\$500.00	\$500.00
9	Trench Safety	1	LS	\$1,000.00	\$1,000.00
TOTAL CONSTRUCTION COST					\$788,475.00
CONSTRUCTION CONTINGENCIES (10%)					\$78,850.00
PRELIMINARY ENGINEERING FEE					\$7,880.00
BASIC ENGINEERING FEE					\$53,220.00
LEGAL					\$8,370.00
INSPECTION					\$29,570.00
TOTAL PROJECT COST					\$966,365.00

NOTES: THIS QUANTITIES ESTIMATE IS BASED ON A PRELIMINARY, NOT FINAL, DESIGN OF THE PROJECT. THE FINAL QUANTITIES MAY VARY BASED ON MORE DETAILED INFORMATION DEVELOPED DURING THE FINAL DESIGN PHASE.

THIS PRELIMINARY COST ESTIMATE IS BASED ON RECENT BIDS RECEIVED ON SIMILAR PROJECTS. ACTUAL COSTS MAY VARY DEPENDING ON CONTRACTOR'S METHODS, SOURCES OF PROJECT FUNDING, MODIFICATIONS TO THE PROJECT BY REVIEW AGENCIES OR CLIENT AFTER DATE OF ESTIMATE, MARKET CONDITIONS, TIME OF YEAR OF THE BID LETTING, AND AGE OF ESTIMATE.

EXHIBIT B

Present Worth Analysis

2009 - WASTEWATER SYSTEM IMPROVEMENTS
CITY OF PIGGOTT, ARKANSAS
PRESENT WORTH EVALUATION
MARCH 2009

	Alternative #1	Alternative #2	Alternative #3
Capital cost	\$0	\$966,365.00	\$984,625.00
Annual O&M Expenses			
Annual Energy Cost	Hp 8	Hp 8	Hp 8
Total annual cost	\$0	\$2,428	\$2,428
Present value	\$0	\$21,335	\$21,335
Capital cost	\$0	\$966,365	\$984,625
Total present worth	\$0	\$987,700	\$1,005,960

energy based on \$.08 / kw-hr
Interest at 3%

EXHIBIT C

Current Sewer Rates for the City of Piggott

Municipal Light, Water & Sewer
Water & Sewer Rates

Water Rates - Inside City limits

2009

Minimum Monthly Charge \$ 4.29

Plus Charge per 1,000 gals \$ 1.77

Water Rates - Outside City limits

Minimum Monthly Charge \$ 7.51

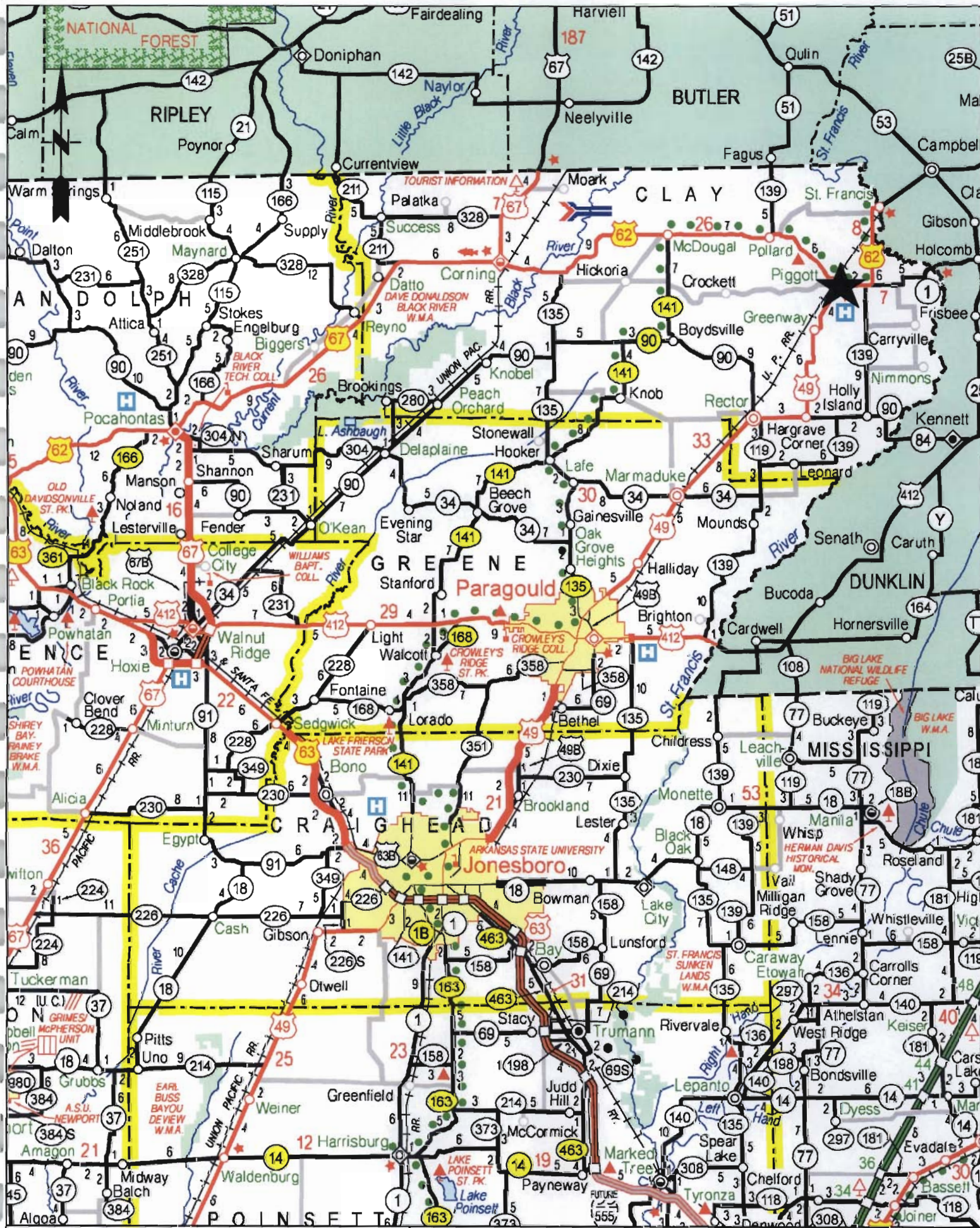
Plus Charge per 1,000 gals \$ 3.11

Sewer Rates:

Minimum Monthly Charge \$ 4.83

Plus Unit Charge per 1,000 gals \$ 1.72

FIGURES



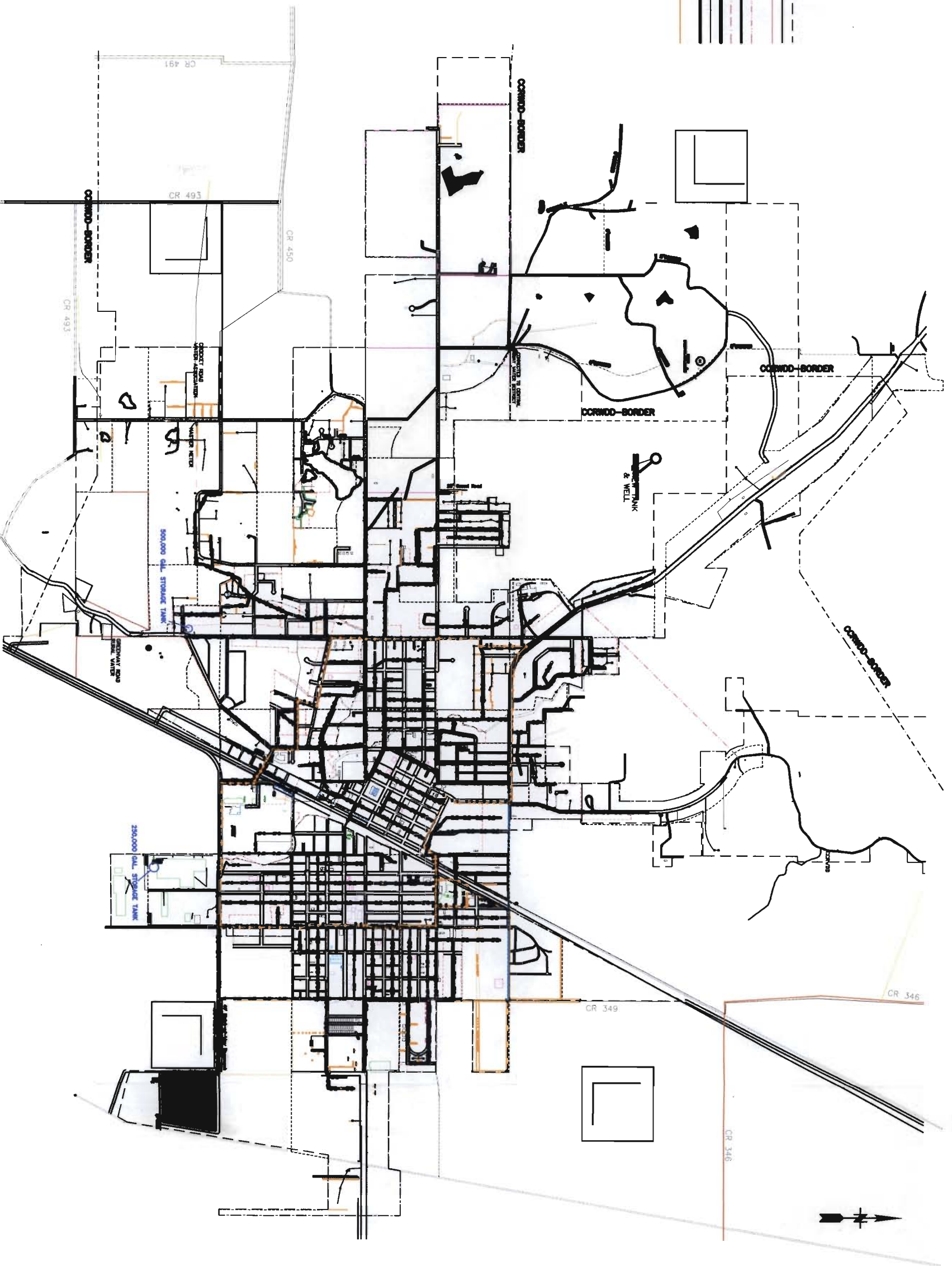
CIEA
 CIVIL ENGINEERING ASSOCIATES, LLC

2114 EAST MATTHEWS AVENUE
 JONESBORO, ARKANSAS 72401
 (870) 972-6316
 FAX (870) 932-0432

**FIGURE - 1
 VICINITY MAP**

Scale	Job No.
N.T.S.	XX-XX-XX
Date	Sheet
MARCH 2009	1 OF 1

- LEGEND**
- 16 INCH EXISTING MAIN
 - 12 INCH EXISTING MAIN
 - 8 INCH EXISTING MAIN
 - 6 INCH PROPOSED MAIN
 - 6 INCH EXISTING MAIN
 - 4 INCH EXISTING MAIN
 - 3 INCH EXISTING MAIN
 - 2 INCH EXISTING MAIN
 - 1 1/4 INCH EXISTING MAIN



Date	Revision	By

CEA
 CIVIL ENGINEERING ASSOCIATES, LLC
 JONESBORO • HOT SPRINGS • TEXARKANA • POPLAR BLUFF

2114 EAST MATTHEWS AVENUE
 JONESBORO, ARKANSAS 72401
 (870) 972-6316
 FAX (870) 932-0432

FIGURE 2
EXISTING WASTEWATER
SYSTEM

Scale	Job
N.T.S.	Sheet
Date	1 OF 1
MARCH 2009	