

Loretta,

10/17/2017

I have three projects for
you.

Black Oak, Flippin and

Pleasant Plains

WATER / WASTEWATER ADVISORY COMMITTEE				R 6/2005	
WASTEWATER APPLICATION				WWAC ID #: 3795	
COVER PAGE					
1. Applicant / Owner:	City of Flippin	2. CDBG Grantee:			
Representative & Title:	Jerald Marberry, Mayor	Representative & Title:			
Address:	PO Box 40	Address:			
City & Zip Code:	Flippin, 72634	City & Zip Code:			
County:	Marion	County:			
Phone:	(870) 453-8300	Phone:			
FAX:	(870) 453-5722	FAX:			
E-Mail Address:	mayer@cityofflippin.com	E-Mail Address:			
3. Engineering Firm:	Civil Engineering Associates	4. Application Type: (Mark all that apply) <input type="checkbox"/> LMI Service Hookups <input type="checkbox"/> New Collection System or Extension <input type="checkbox"/> Rehab Existing Collection System <input type="checkbox"/> New Treatment Plant <input checked="" type="checkbox"/> Rehab Existing Treatment Plant <input type="checkbox"/> Other _____			
Project Engineer:	Jeremy Stone				
Address:	PO Box 2604				
City & Zip Code:	Conway, 72033				
Phone:	(501) 504-2455				
FAX:	(501) 504-2457				
E-Mail Address:	tfoster@ce-associates.biz				
5. Number of Existing Customers:	551	Number of New Customers:	0	Projected Number of Customers:	551
6. Arkansas Senate District	17	Arkansas House District	99	U. S. House District	3
7. Provide a brief description of the project: Wastewater Treatment Plant Improvements to include the following; lift station, fine screen, 25' clarifier, digester aeration, sludge drying beds, permanent generator, lab/office building, replacement of sand filter media, and instrumentation					
8. Indicate the Agencies and Dollar Amounts you plan to use for this project:					
\$		Community Development Block Grant Program			
\$		Arkansas Natural Resources Commission			
\$		Community Resource Group			
\$	2,206,500	USDA, Rural Development			
\$		Other Funding Source: _____			
\$	2,206,500	Total Funds Requested			
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.					
Applicant's Signature: <i>X Jerald Marberry</i>		Date: <u>10/13/17</u>			
Application Preparer's Signature: <i>[Signature]</i>		Date: <u>10/13/17</u>			

Application for Federal Assistance SF-424

Version 02

*** 1. Type of Submission:**

- Preapplication
- Application
- Changed/Corrected Application

*** 2. Type of Application:**

- New
- Continuation
- Revision

*** If Revision, select appropriate letter(s):**

*** Other (Specify)**

*** 3. Date Received:**

Completed by Grants.gov upon submission.

4. Applicant Identifier:

5a. Federal Entity Identifier:

*** 5b. Federal Award Identifier:**

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

*** a. Legal Name:**

City of Flippin

*** b. Employer/Taxpayer Identification Number (EIN/TIN):**

*** c. Organizational DUNS:**

71-0335606

d. Address:

*** Street1:**

P.O. Box 40

Street2:

*** City:**

Flippin

County:

Marion

*** State:**

AR

Province:

*** Country:**

USA

*** Zip / Postal Code:**

72634

e. Organizational Unit:

Department Name:

Flippin Wastewater

Division Name:

Wastewater Department

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

Mr.

*** First Name:**

JL

Middle Name:

*** Last Name:**

Wagoner

Suffix:

Title:

Director of Public Works

Organizational Affiliation:

Municipal Utility

*** Telephone Number:**

(870) 453-8300

Fax Number:

(870) 453-5722

*** Email:**

cofmaintenance@hotmail.com

Application for Federal Assistance SF-424

Version 02

9. Type of Applicant 1: Select Applicant Type:

City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

USDA - Rural Development

11. Catalog of Federal Domestic Assistance Number:

10.760

CFDA Title:

Water & Environmental Programs

*** 12. Funding Opportunity Number:**

* Title:

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

City of Flippin, AR

*** 15. Descriptive Title of Applicant's Project:**

Wastewater Treatment Plant Improvements

Attach supporting documents as specified in agency instructions.

[Add Attachments](#) [Delete Attachments](#) [View Attachments](#)

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="\$2,206,500.00"/>
* b. Applicant	<input type="text"/>
* c. State	<input type="text"/>
* d. Local	<input type="text"/>
* e. Other	<input type="text"/>
* f. Program Income	<input type="text"/>
* g. TOTAL	<input type="text" value="\$2,206,500.00"/>

* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

Yes No

21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: *Jerald Marberry* * Date Signed: *10/13/17*

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102



Application for Federal Assistance SF-424

Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

[Empty text input area for Applicant Federal Debt Delinquency Explanation]

INSTRUCTIONS FOR THE SF-424

Public reporting burden for this collection of information is estimated to average 60 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0043), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

This is a standard form (including the continuation sheet) required for use as a cover sheet for submission of preapplications and applications and related information under discretionary programs. Some of the items are required and some are optional at the discretion of the applicant or the Federal agency (agency). Required items are identified with an asterisk on the form and are specified in the instructions below. In addition to the instructions provided below, applicants must consult agency instructions to determine specific requirements.

Item	Entry:	Item	Entry:
1.	<p>Type of Submission: (Required): Select one type of submission in accordance with agency instructions.</p> <ul style="list-style-type: none"> • Preapplication • Application • Changed/Corrected Application – If requested by the agency, check if this submission is to change or correct a previously submitted application. Unless requested by the agency, applicants may not use this to submit changes after the closing date. 	10.	<p>Name Of Federal Agency: (Required) Enter the name of the Federal agency from which assistance is being requested with this application.</p>
		11.	<p>Catalog Of Federal Domestic Assistance Number/Title: Enter the Catalog of Federal Domestic Assistance number and title of the program under which assistance is requested, as found in the program announcement, if applicable.</p>
2.	<p>Type of Application: (Required) Select one type of application in accordance with agency instructions.</p> <ul style="list-style-type: none"> • New – An application that is being submitted to an agency for the first time. • Continuation - An extension for an additional funding/budget period for a project with a projected completion date. This can include renewals. • Revision - Any change in the Federal Government's financial obligation or contingent liability from an existing obligation. If a revision, enter the appropriate letter(s). More than one may be selected. If "Other" is selected, please specify in text box provided. A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration E. Other (specify) 	12.	<p>Funding Opportunity Number/Title: (Required) Enter the Funding Opportunity Number and title of the opportunity under which assistance is requested, as found in the program announcement.</p>
		13.	<p>Competition Identification Number/Title: Enter the Competition Identification Number and title of the competition under which assistance is requested, if applicable.</p>
		14.	<p>Areas Affected By Project: List the areas or entities using the categories (e.g., cities, counties, states, etc.) specified in agency instructions. Use the continuation sheet to enter additional areas, if needed.</p>
3.	<p>Date Received: Leave this field blank. This date will be assigned by the Federal agency.</p>	15.	<p>Descriptive Title of Applicant's Project: (Required) Enter a brief descriptive title of the project. If appropriate, attach a map showing project location (e.g., construction or real property projects). For preapplications, attach a summary description of the project.</p>
4.	<p>Applicant Identifier: Enter the entity identifier assigned by the Federal agency, if any, or applicant's control number, if applicable.</p>		
5a.	<p>Federal Entity Identifier: Enter the number assigned to your organization by the Federal Agency, if any.</p>	16.	<p>Congressional Districts Of: (Required) 16a. Enter the applicant's Congressional District, and 16b. Enter all District(s) affected by the program or project. Enter in the format: 2 characters State Abbreviation – 3 characters District Number, e.g., CA-005 for California 5th district, CA-012 for California 12th district, NC-103 for North Carolina's 103rd district.</p> <ul style="list-style-type: none"> • If all congressional districts in a state are affected, enter "all" for the district number, e.g., MD-all for all congressional districts in Maryland. • If nationwide, i.e. all districts within all states are affected, enter US-all. • If the program/project is outside the US, enter 00-000.
5b.	<p>Federal Award Identifier: For new applications leave blank. For a continuation or revision to an existing award, enter the previously assigned Federal award identifier number. If a changed/corrected application, enter the Federal Identifier in accordance with agency instructions.</p>		
6.	<p>Date Received by State: Leave this field blank. This date will be assigned by the State, if applicable.</p>		
7.	<p>State Application Identifier: Leave this field blank. This identifier will be assigned by the State, if applicable.</p>		
8.	<p>Applicant Information: Enter the following in accordance with agency instructions:</p> <p>a. Legal Name: (Required): Enter the legal name of applicant that will undertake the assistance activity. This is the name that the organization has registered with the Central Contractor Registry. Information on registering with CCR may be obtained by visiting the Grants.gov website.</p> <p>b. Employer/Taxpayer Number (EIN/TIN): (Required): Enter the Employer or Taxpayer Identification Number (EIN or TIN) as assigned by the Internal Revenue Service. If your organization is not in the US, enter 44-4444444.</p> <p>c. Organizational DUNS: (Required) Enter the organization's DUNS or DUNS+4 number received from Dun and Bradstreet. Information on obtaining a DUNS number may be obtained by visiting the Grants.gov website.</p> <p>d. Address: Enter the complete address as follows: Street address (Line 1 required), City (Required), County, State (Required, if country is US), Province, Country (Required), Zip/Postal Code (Required, if country is US).</p> <p>e. Organizational Unit: Enter the name of the primary organizational unit (and department or division, if applicable) that will undertake the</p>	17.	<p>Proposed Project Start and End Dates: (Required) Enter the proposed start date and end date of the project.</p>
		18.	<p>Estimated Funding: (Required) Enter the amount requested or to be contributed during the first funding/budget period by each contributor. Value of in-kind contributions should be included on appropriate lines, as applicable. If the action will result in a dollar change to an existing award, indicate only the amount of the change. For decreases, enclose the amounts in parentheses.</p>
		19.	<p>Is Application Subject to Review by State Under Executive Order 12372 Process? Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the</p>

	<p>assistance activity, if applicable.</p> <p>f. Name and contact information of person to be contacted on matters involving this application: Enter the name (First and last name required), organizational affiliation (if affiliated with an organization other than the applicant organization), telephone number (Required), fax number, and email address (Required) of the person to contact on matters related to this application.</p>	<p>State intergovernmental review process. Select the appropriate box. If "a." is selected, enter the date the application was submitted to the State</p>		
		<p>20. Is the Applicant Delinquent on any Federal Debt? (Required) Select the appropriate box. This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit disallowances, loans and taxes.</p> <p>If yes, include an explanation on the continuation sheet.</p>		
<p>9.</p>	<p>Type of Applicant: (Required) Select up to three applicant type(s) in accordance with agency instructions.</p> <table border="0"> <tr> <td data-bbox="201 470 532 1036"> <p>A. State Government B. County Government C. City or Township Government D. Special District Government E. Regional Organization F. U.S. Territory or Possession G. Independent School District H. Public/State Controlled Institution of Higher Education I. Indian/Native American Tribal Government (Federally Recognized) J. Indian/Native American Tribal Government (Other than Federally Recognized) K. Indian/Native American Tribally Designated Organization L. Public/Indian Housing Authority</p> </td> <td data-bbox="532 470 868 1036"> <p>M. Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education) N. Nonprofit without 501C3 IRS Status (Other than Institution of Higher Education) O. Private Institution of Higher Education P. Individual Q. For-Profit Organization (Other than Small Business) R. Small Business S. Hispanic-serving Institution T. Historically Black Colleges and Universities (HBCUs) U. Tribally Controlled Colleges and Universities (TCCUs) V. Alaska Native and Native Hawaiian Serving Institutions W. Non-domestic (non-US) Entity X. Other (specify)</p> </td> </tr> </table>	<p>A. State Government B. County Government C. City or Township Government D. Special District Government E. Regional Organization F. U.S. Territory or Possession G. Independent School District H. Public/State Controlled Institution of Higher Education I. Indian/Native American Tribal Government (Federally Recognized) J. Indian/Native American Tribal Government (Other than Federally Recognized) K. Indian/Native American Tribally Designated Organization L. Public/Indian Housing Authority</p>	<p>M. Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education) N. Nonprofit without 501C3 IRS Status (Other than Institution of Higher Education) O. Private Institution of Higher Education P. Individual Q. For-Profit Organization (Other than Small Business) R. Small Business S. Hispanic-serving Institution T. Historically Black Colleges and Universities (HBCUs) U. Tribally Controlled Colleges and Universities (TCCUs) V. Alaska Native and Native Hawaiian Serving Institutions W. Non-domestic (non-US) Entity X. Other (specify)</p>	<p>21. Authorized Representative: (Required) To be signed and dated by the authorized representative of the applicant organization. Enter the name (First and last name required) title (Required), telephone number (Required), fax number, and email address (Required) of the person authorized to sign for the applicant.</p> <p>A copy of the governing body's authorization for you to sign this application as the official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.)</p>
<p>A. State Government B. County Government C. City or Township Government D. Special District Government E. Regional Organization F. U.S. Territory or Possession G. Independent School District H. Public/State Controlled Institution of Higher Education I. Indian/Native American Tribal Government (Federally Recognized) J. Indian/Native American Tribal Government (Other than Federally Recognized) K. Indian/Native American Tribally Designated Organization L. Public/Indian Housing Authority</p>	<p>M. Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education) N. Nonprofit without 501C3 IRS Status (Other than Institution of Higher Education) O. Private Institution of Higher Education P. Individual Q. For-Profit Organization (Other than Small Business) R. Small Business S. Hispanic-serving Institution T. Historically Black Colleges and Universities (HBCUs) U. Tribally Controlled Colleges and Universities (TCCUs) V. Alaska Native and Native Hawaiian Serving Institutions W. Non-domestic (non-US) Entity X. Other (specify)</p>			

PRELIMINARY ENGINEERING REPORT

FOR

CITY OF FLIPPIN

**WASTEWATER TREATMENT PLANT
IMPROVEMENTS**

September 2017

Prepared By:



P.O. BOX 2604
CONWAY, ARKANSAS
(501) 504-2455
FAX (501) 504-2457

PRELIMINARY ENGINEERING REPORT

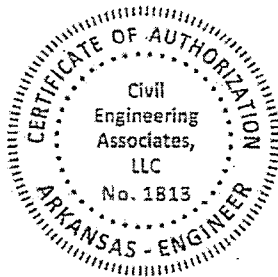
FOR

CITY OF FLIPPIN

WASTEWATER TREATMENT PLANT IMPROVEMENTS

September 2017

Prepared By:



P.O. BOX 2604
CONWAY, ARKANSAS
(501) 504-2455
FAX (501) 504-2457

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4. Alternatives Considered	7
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Exhibit A-Location Map
Exhibit B-Financial Statement
Exhibit C-Flow Diagram

PROJECT PLANNING AREA

A. Location

The project area consists of the property within the City's plant boundaries (Appendix A). The City's collection system travels through a network of gravity mains to the treatment plant located at 222 E. Industrial Park Road. For this report, the work to be performed is located within the 7.4 acres City owned property consisting of the treatment plant.

The topography of the plant site consists of a sloped hillside running from South to North toward Fallen Ash Creek. The site has several buildings, treatment structures, and related items. The majority of the soils, according to the Soil Survey by the Department of Agriculture, is gravelly or cherty silt loam to a depth of 24". The unweathered bedrock varies in depth from 24" to 72" below the surface. The existing plant site has been excavated prior to this project for construction of the current facility. The majority of the material has been transported into the site. The native material remaining is limited to areas where previous construction has not occurred.

The site is located in the City's Industrial Park which houses a mixture of businesses such as the adjacent saw mill, a fishing lure manufacturer, and other smaller individual businesses. The area to the north of the plant consists of a railroad track with forest, pastures, and sparse residential housing.

B. Environmental Resources Present

The project will involve the renovations and construction of improvements at the plant within existing structures, expansion of existing structures, or replacement of existing structures through the construction of new structures in close proximity. Due to the nature of the work to be performed on the existing site, the City will request any environmental review requirements as related to the funding of the project be excluded. All required permitting for federal and state agencies will be secured. All work to be performed are in areas where disturbance has occurred previously or within existing structures. The result indicates the project will not have a long-term impact

on the environment. A small temporary impact on the environment will be seen during construction. The project will have no impact on endangered species. The use of BMPs for erosion control will be required throughout the project. The City operates its own existing treatment plant with adequate land for expansion to meet the demands of the existing and future customers within the City. There will be no new purchase of property.

C. Population Trends

The City is a water and wastewater provider that currently services an area in the north central portion of the state in Marion County. The service area (Appendix A) serves the City limits.

The economy of the area is dependent on cattle farming and boat manufacturing. Some residents commute to jobs in Mountain Home, while many residents work in agricultural related activities. The City has approximately 116 Commercial, 8 Industrial, and 427 Residential customers. The following table provides historical information from UALR's *Institute for Economic Development* on the City populations.

	<u>Flippin</u>
1990	1006
2000	1357
2010	1355

The population projections for Marion County from UALR's *Institute for Economic Development* indicate a steady increase of 1%/year over the next twenty years. This anticipated growth will be mirrored within the proposed service area. The City has several areas within the existing City limits to expand their collection system for residential growth while the existing industrial area has available room for expansion of existing and/or future businesses.

D. Community Engagement

The community has discussed the proposed need for improvements at city meetings. The City's staff have been engaged with ADEQ to determine the required improvements to both the collection system and plant. The City lacks the necessary funds for construction of any repairs to the plant. The City will have the collection system reviewed through a combination of smoke testing and television of mains. Those repairs are in a separate report which will be completed in 2018. The plant improvements are based on a twenty year planning period.

EXISTING FACILITIES

A. LOCATION MAP

A location map is provided in Exhibit A

B. HISTORY

The existing plant was constructed in 1986. The original plant was converted to sludge disposal as part of the new facility. The flow diagram for the plant is provided in Appendix C. The plant has an influent lift station, grit chamber, manual bar screen, oxidation ditch, two (2) upflow solids contact clarifiers, four (4) sand filters, UV system, flow measurement, and post aeration. An earthen equalization basin which can be utilized during rain events is located by the sand filters. The City uses an aerated digester followed by sludge drying beds for sludge treatment prior to landfilling the residue.

The collection system consists of a mixture of clay, concrete, and PVC mains with sizes up to 12" in diameter. The main trunk line from the City travels along Ash Fallen Creek. The manholes are a mixture of fiberglass, brick, and concrete.

C. CONDITION OF EXISTING SYSTEM

The wastewater treatment plant is maintained and operated according to ADEQ requirements. The plant experiences large fluctuations in flow during rainfall events with treatment units overloading during these events due to a lack of capacity in the equalization basin or individual units. The sand filters maintain any surges and overflows from the clarifiers and the oxidation ditch. All improvements will have an effect on the

current energy consumption of the wastewater plant. The City maintains the equipment on an as needed basis.

The City repairs the collection system where holes, breaks, or collapses are found. The manholes have had no work done as related to maintenance since being installed. The City has not done an inventory or provided a current status of the manholes.

D. FINANCIAL STATUS OF EXISTING FACILITIES

The City is currently having the last three years of audits for the wastewater department completed. The year to date budget is provided in Appendix B. The City is not delinquent on any debt.

NEED FOR PROJECT

A. HEALTH, SANITATION, AND SECURITY

The City's treatment unit cannot handle the current wet weather flows. The units are undersized for biological and hydraulic flows. The sand filters become overloaded, which limits the treatment capacity of the facility. The sand filters limit illegal discharges into the nearby creek. The existing lift station cannot handle the capacity of the existing line which leads to overflows in the sewer main leading to the plant.

B. AGING INFRASTRUCTURE

The existing lift station pump impellers need to be rebuilt at this time. The existing lift station is composed of a metal container, which at 25 feet deep is an issue for any maintenance. The welds and joints have deteriorated over the years, while City personnel try to maintain the seams with epoxy. This maintenance has been ongoing. The station floods during power outages, and if the sump pump fails. The controls and other electrical wiring have been in raw sewage for extended periods.

The oxidation ditch has rotors which move the wastewater in the ditch. These units are maintained as required. The units are functioning. The clarifiers have steel frames, arms, shafts, and walkways which require routine painting. This maintenance has not occurred. Both units have to be run continuously in order to effectively treat the

wastewater (i.e., neither can be taken out of service long enough for the maintenance to occur).

The sand filters lack over two foot of sand in each filter. The City has not replaced the media from the removal of the sludge which accumulates in the bed. The current digester aeration system is not functional. The City replaced the UV disinfection system approximately four years ago.

C. REASONABLE GROWTH

Based on the information on the projected growth, the City will have an increase in current customer base within the City. The proposed expansion will meet the proposed growth that is projected to consist of residential and light commercial structures. The system improvements are based on standards provided by the Arkansas Department of Health and Arkansas Department of Environmental Quality. The current customer connections within the City and proposed additional customers in the expansion will be used for the total projection in the planning period.

ALTERNATIVES CONSIDERED

There are three alternatives for the project - (1) New Treatment Plant (Sequencing Batch Reactor); (2) Expansion of Existing Treatment Plant; and (3) No action taken.

For the first alternative, the following information is provided:

A. Description: The project consists of:

The replacement of the existing plant with a 250,000-gallon per day SBR facility. The existing sand filters and UV system would remain. The existing digester and sludge drying beds would be upgraded with a new aeration system and roof.

B. Design Criteria: The project was reviewed using both Ten State Standards and Arkansas Department of Health (ADH) Rules and Regulations.

C. Map: There is a vicinity map for the system shown in Exhibit A.

D. Environmental Impact: There are no impacts concerning flood plains, wetlands, other important land resources, endangered species, historical and/ or archaeological properties associated with this alternative. All waste generated by this project will be disposed of in a landfill.

Cost Estimate:

Item No.	Description	Est. Qty.	Unit	Unit Price	Est. Cost
1	700 GPM Duplex Lift Station	1	LS	\$145,000.00	\$145,000.00
2	Fine Screen	1	LS	\$85,000.00	\$85,000.00
3	0.25 MG SBR Treatment Unit	1	LS	\$1,250,000.00	\$1,250,000.00
4	Digester Aeration System	1	LS	\$56,000.00	\$56,000.00
5	Covered Roof for Sludge Drying Beds	1	LS	\$28,800.00	\$28,800.00
6	Yard Piping	1	LS	\$95,000.00	\$95,000.00
7	Site Electrical	1	LS	\$68,000.00	\$68,000.00
8	Office/Lab Building	1	LS	\$75,000.00	\$75,000.00
9	300 kW Generator	1	LS	\$88,000.00	\$88,000.00
10	Site Work w/ Roadway	1	LS	\$115,000.00	\$115,000.00
11	Instrumentation and Controls with New Influent & Effluent Meters	1	LS	\$85,000.00	\$85,000.00
12	Equalization Basin Enlargement (4000 yds)	1	LS	\$120,000.00	\$120,000.00
13	Replacement of Sand Filter Media (1600 yds)	1	LS	\$130,000.00	\$130,000.00
14	Testing	1	LS	\$6,500.00	\$6,500.00
Subtotal					\$2,347,300.00

E. Land Requirements: City owns the property.

F. Potential Construction Problems: The depth of bedrock could require blasting for yard piping, lift station, and SBR structure. The location of surrounding buildings will be an issue.

G. Sustainability Considerations:

(a) Water and Energy Efficiency: There will be more energy use due to the number and size of pumps to be installed.

(b) Green Infrastructure: Not Applicable

Construction

Construction of improvements		<u>\$2,347,300.00</u>
	TOTAL	\$2,347,300.00

Non Construction

Contingencies @ 5%		\$ 117,365.00
Engineering and Inspection		<u>\$ 325,822.00</u>
	TOTAL	\$2,790,487.00

For the second alternative, the following information is provided:

A) Description: The project consists of:

- 1) New 700 GPM Lift Station
- 2) New Fine Screen w/bagging unit
- 3) New Oxidation Ditch Rotors and Assemblies
- 4) New Two (2) 25' Dia. Clarifiers
- 5) New Digester Aeration System
- 6) New Covered Roof for Sludge Drying Beds
- 7) New 300 kW Generator
- 8) New Office/Lab/Storage Building
- 9) Yard Piping
- 10) Replacement of Material for Sand Filters
- 11) New Instrumentation, Controls, and Meters

B) Design Criteria: The project was reviewed using both Ten State Standards and Arkansas Department of Health and Human Services (ADH) Rules and Regulations.

C) **Map:** There is a vicinity map for the system shown in Exhibit A.

D) **Environmental Impact:** There are no impacts concerning flood plains, wetlands, other important land resources, endangered species, historical and/ or archaeological properties associated with this alternative. All waste generated by this project will be disposed of in a landfill.

E) **Land Requirements:** The City owns the property.

F) **Potential Construction Problems:** The depth of bedrock could require blasting for yard piping, lift station, and clarifier structures. The location of surrounding buildings will be an issue.

G) **Sustainability Considerations:**

(a) Water and Energy Efficiency: not applicable

(b) Green Infrastructure: not applicable

H) **Cost Estimate**

Cost Estimate:

Item No.	Description	Est. Qty.	Unit	Unit Price	Est. Cost
1	700 GPM Duplex Lift Station	1	LS	\$145,000.00	\$145,000.00
2	Fine Screen	1	LS	\$85,000.00	\$85,000.00
3	25' Dia. Clarifier	2	EA	\$350,000.00	\$700,000.00
4	Brush Aerators for Oxidation Ditch	1	LS	\$100,000.00	\$100,000.00
4	Digester Aeration System	1	LS	\$56,000.00	\$56,000.00
5	Covered Roof for Sludge Drying Beds	1	LS	\$28,800.00	\$28,800.00
6	Yard Piping	1	LS	\$95,000.00	\$95,000.00
7	Site Electrical	1	LS	\$80,000.00	\$80,000.00
8	300 kW Generator	1	LS	\$88,000.00	\$88,000.00
9	Site Work w/ Roadway	1	LS	\$85,000.00	\$85,000.00
10	Office and Lab Building	1	LS	\$75,000.00	\$75,000.00
11	Instrumentation and Controls with Influent and Effluent Flow Meters	1	LS	\$85,000.00	\$85,000.00
12	Equalization Basin Enlargement (4000 yds)	1	LS	\$120,000.00	\$120,000.00
13	Replacement of Sand Filter Media (1600 yds)	1	LS	\$130,000.00	\$130,000.00
14	Testing	1	LS	\$6,500.00	\$6,500.00
Subtotal					\$1,822,800.00

Construction

	TOTAL	\$ 1,822,800.00
<u>Non Construction</u>		
Contingencies @ 5%		\$ 91,140.00
Engineering and Inspection		\$ 255,192.00
	TOTAL	\$ 2,169,132.00

For the third alternative, the following information is provided:

- A. **Description:** The plant will have no expansion or new equipment.
- B. **Design Criteria:** No action required.
- C. **Map:** There is a layout of the system shown in Exhibit A.
- D. **Environmental Impact:** There are no impacts concerning flood plains, wetlands, other important land resources, endangered species, historical and/ or archaeological properties associated with this alternative.
- E. **Land Requirements:** The City owns property for this alternative or none is required.
- F. **Potential Construction Problems:** There are no construction issues with this alternative.
- G. **Sustainability Considerations:**
 - (a) Water and Energy Efficiency: No additional energy will be used.
 - (b) Green Infrastructure: Not Applicable
- H. **Cost Estimate:** No capital costs were required for this project.

SELECTION OF ALTERNATIVE

The alternatives were reviewed based on present worth, environment issues, and community impact. Alternative One provides the City with the proposed items including

reasonable growth. Alternative Two provides the City will the required improvements through the planning period. Alternative Three does not meet the environmental, safety concerns, or requirements of the state and federal agencies.

The annual operation and maintenance for Alternative 1 and 2 for this report will not be different. It is anticipated the amount of manpower, equipment, and related items associated with Alternative 1 and 2 are similar. The current budget does not separate the water and sewer department. The current budget (Appendix B) was reviewed and separated by City staff to determine a wastewater budget.

The present worth of Alternative No. 1, No. 2, and No. 3 are:

Alternative No. 1 - \$2,790,487 + \$1,872,375-\$1,551,472	=	\$ 3,091,389.00
Alternative No. 2 - \$2,169,132 + \$1,872,375-\$1,258,096	=	\$ 2,783,411.00
Alternative No. 3 - \$0 + \$1,872,375-\$0	=	\$ 1,872,375.00

Present Worth is based on a 1.6% interest rate for a twenty year period using an annual operation and maintenance cost for each alternative.

PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

A. Preliminary Project Design

1) Wastewater

Treatment: The Alternative 2 was chosen.

2) Project Schedule

The timetable for the improvements based on submittal to Rural Development for a funding options is as follows:

October 2017 Submission to WWAC

February 2018	Receive Approval from Funding Agency
May 2018	Finish Design and Submit Plans to ADH and ADEQ for Approval
August 2018	Obtain approval for Project and Advertise for Bids
September 2018	Receive Bids
November 2018	Construction Starts
August 2019	Construction Completed

3) Permit Requirements

The Arkansas Department of Health and the Arkansas Department of Environmental Quality will be required to approve the project.

4) Total Project Cost Estimate (Engineer's Opinion of Probable Cost)

Project Cost Estimate

Construction of improvements	\$ 1,822,800.00
Engineering	182,280.00
Inspection	72,912.00
Legal (Paid by City)	17,350.00
Interest (Paid by City)	20,000.00
Contingencies @ 5%	\$ 91,140.00

TOTAL \$2,206,482.00

The construction period for this project is 210 days. The City will pay for legal and other associated cost from the wastewater fund. This cost is not expected to exceed \$37,350.00.

5) Annual Operating Budget

Wastewater Income

There are no new customers being added with this project. The current income per month for the City based on information provided to CEA from these rates is \$12,228.00. The projected revenue stream would be

\$23,000.00.

The existing rate structure is based on the following items : First 1,000 gallons is \$10.00. The remaining rate is \$1.25/1000 gallons.

The City has a total of 551 sewer customers. The City has an ongoing rate study being performed by Arkansas Rural Water Association to develop new rates. These new rates will conform to the required increase for the plant improvements.

Operations and Maintenance Costs

The cost associated with the project will increase the rate from their current status. The current budget numbers for the wastewater system is \$110,136. The City will have additional anticipated cost of \$250/month for additional electrical usage at the plant with the proposed expansion.

Debt Repayment

The City has several options for financing of the proposed water improvements. The City is eligible for loan funds from USDA-RD. The Arkansas Natural Resource Commission provides low interest loans for these types of projects. The remainder of the funding agencies involve banks and bond companies. The interest rate for the different agencies are provided:

	<u>Interest Rate</u>	<u>Grant</u>
USDA-RD	3.0-4.5%	0%
ANRC	3.25-5.0%	0%
BANKS	4.5-6.0%	0%
BOND COMPANIES	3.25-5.0%	0%

Reserves

Debt Service Reserve

The City does not have a debt service account at this time. The City would establish one per funding requirements to cover the additional loan payments.

Short-Lived Asset Reserve

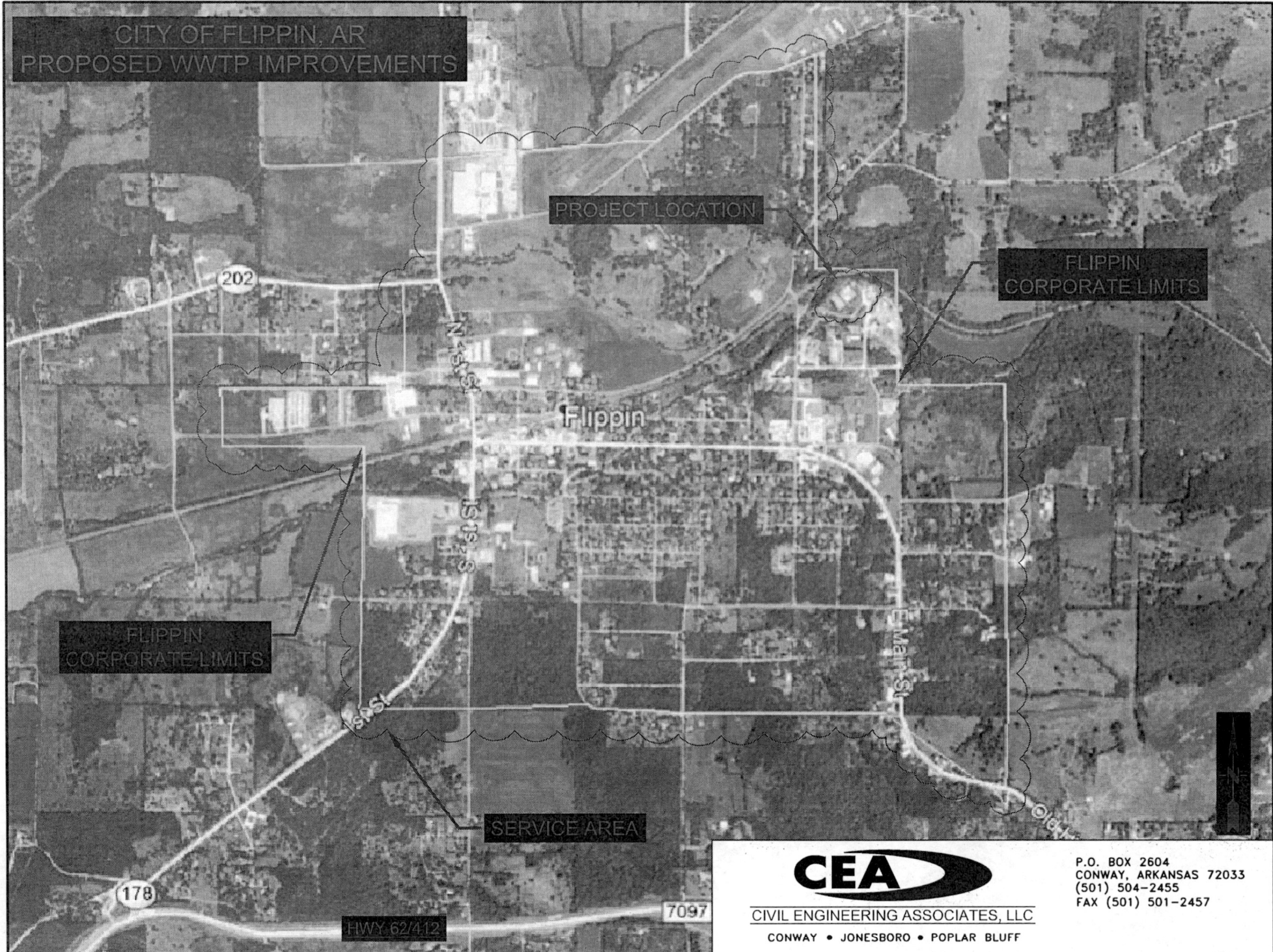
This project has no short-lived assets.

CONCLUSION AND RECOMENDATIONS

The City will be able to provide service to existing customers within the City limits based on Alternative #2 through the twenty year planning period.

EXHIBIT A

**CITY OF FLIPPIN, AR
PROPOSED WWTP IMPROVEMENTS**



PROJECT LOCATION

**FLIPPIN
CORPORATE LIMITS**

**FLIPPIN
CORPORATE LIMITS**

SERVICE AREA

CEA
CIVIL ENGINEERING ASSOCIATES, LLC
CONWAY • JONESBORO • POPLAR BLUFF

P.O. BOX 2604
CONWAY, ARKANSAS 72033
(501) 504-2455
FAX (501) 501-2457

CITY OF FLIPPIN, AR
PROPOSED WWTP IMPROVEMENTS

PROJECT LOCATION

FLIPPIN WWTP



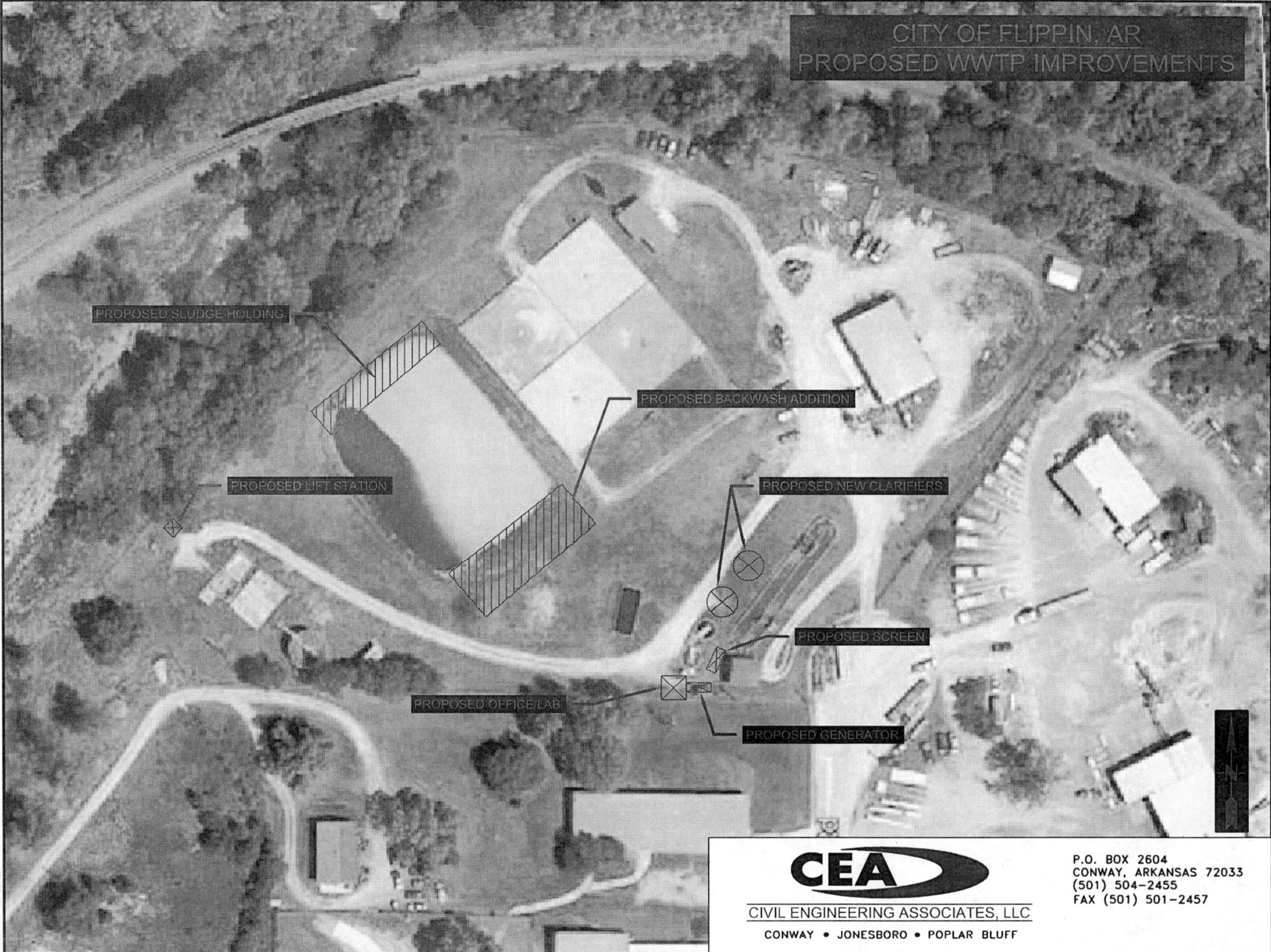
CIVIL ENGINEERING ASSOCIATES, LLC

CONWAY • JONESBORO • POPLAR BLUFF

P.O. BOX 2604
CONWAY, ARKANSAS 72033
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CITY OF FLIPPIN, AR
PROPOSED WWTP IMPROVEMENTS



CIVIL ENGINEERING ASSOCIATES, LLC

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EXHIBIT B

water

WATER
INCOME

WATER USER FEES	\$788,247
SANITATION INCOME	\$78,000
STATE TAX	\$45,736
WATER DEPOSITS	\$18,000
LATE CHARGES	\$14,500
RECONNECT CHARGES	\$9,600
COUNTY TAX	\$7,400
WATER TESTING FEES	\$4,950
WATER TIE ON	\$12,500
CITY TAX	\$3,125
RETURNED CHECK	\$260
MULTI SPRINKLERSS	\$300
PLUMBING PERMITS	\$1,000
INTERSET INCOME	\$350
MISC CASH ADJ	\$300
RETURNED CHECK FEE	\$250
SPRINKLER SYSTEM	\$150
WASTE WATER TIRE ON	\$700
WATER DEPOSIT REFUNDS	-\$5,800
BACK FLOW TESTING	\$100
LATE PENALTIES	\$14,700
WATER INSTALLMENT	\$150

TOTAL INCOME \$994,518

EXPENSES

WATER PURCHASE	\$295,000
WAGES/SALARIES	\$120,000
GARBAGE CONTRACT	\$78,000
EXCISE TAX	\$60,000
APERS EXPENSE	\$17,400
HEALTH INSURANCE	\$34,962
WATER OPERATING SUPPLIES	\$25,000
PAYROLL TAXES	\$9,180
INTEREST EXPENSE	\$1,000
FUEL	\$11,000
UTILITIES	\$8,685
DUES/LICENSES	\$10,000
EQUIPMENT	\$5,000
POSTAGE	\$5,000
VEHICLE R/M	\$3,000
UNIFORMS	\$4,500
LIFE INSURANCE	\$1,363
INSURANCE	\$5,000
EDUCATION/CONFERENCE	\$1,000
NON VEHICLE R/M	\$500
BANK CHARGES	\$500
EQUIPMENT R/M	\$2,000
ADVERTISING	\$500
COMPUTER SUPPORT	\$600
LEGAL/ACCOUNTING	\$6,000
TESTING FEES	\$4,950

TOTAL EXPENSES \$710,140

NET INCOME(LOSS) \$284,378

sewer

SEWER
INCOME

USER FEES \$146,746

TOTAL INCOME \$146,746

EXPENSES

HEALTH INSURANCE \$4,344

LIFE INSURANCE \$337

UTILITIES \$12,900

DUES/LICENSES \$600

EQUIPMENT \$1,000

EQUIPMENT R/M \$750

SUPPLIES \$1,500

TRAINING/TRAVEL \$275

INSURANCE \$600

SLUDGE REMOVAL \$13,750

LEGAL/ACCOUNTING \$300

WAGES & SALARIES \$59,000

PAYROLL TAXES \$8,600

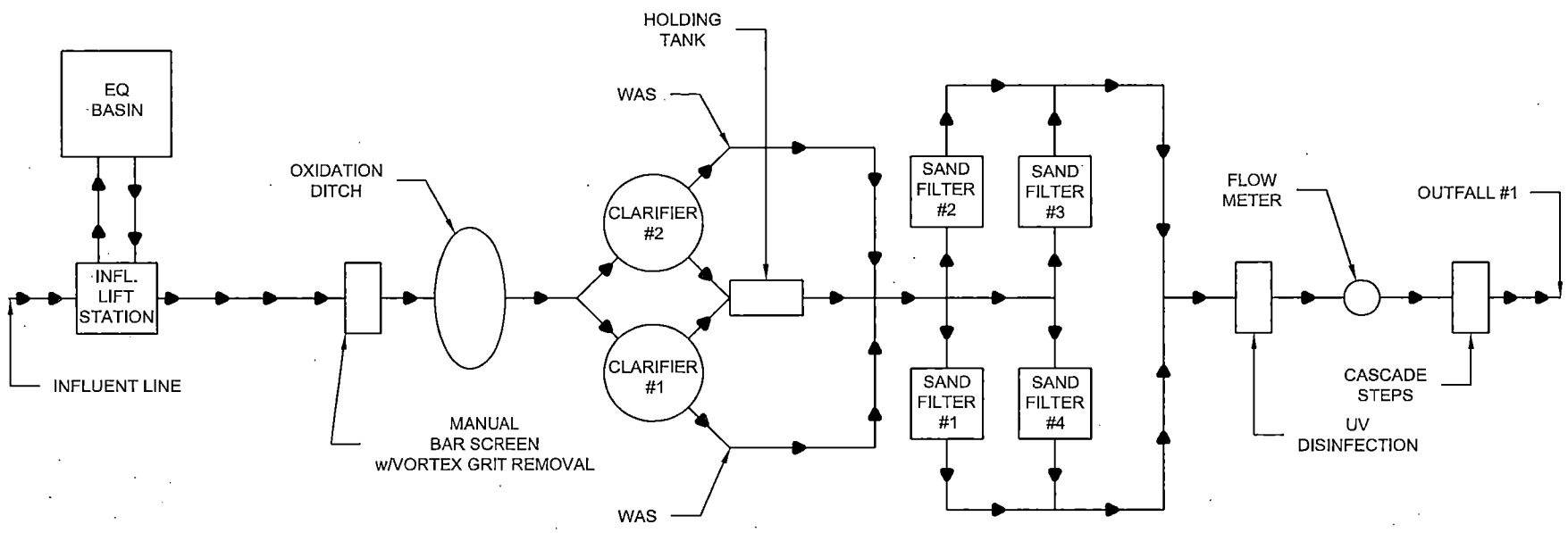
APERS EXPENSE \$4,500

DMR REPORTS \$1,680

TOTAL EXPENSES \$110,136

NET INCOME(LOSS) \$36,610

EXHIBIT C



CIVIL ENGINEERING ASSOCIATES, LLC

CONWAY • JONESBORO • POPLAR BLUFF

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Loretta Reiber
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North Little Rock, AR 72118-5317