TOWN OF RIVER BEND
REQUEST FOR QUALIFICATIONS FOR
ENGINEERING SERVICES

Posted October 10, 2022

The Town of River Bend has received a grant from the North Carolina Division of Water Infrastructure (DWI) in the amount of $9,108,500 for the construction of Wastewater Treatment Plant (WWTP) Enhancements. The town operates a WWTP with a permit to discharge 330,000 gallons per day into the Trent River and has two treatment units. The WWTP is approximately 50 years old. The project will consist of rehabilitation of both treatment units, installation of tertiary denitrification filters, aerobic digester, yard piping, electrical systems, instrumentation and controls, preliminary pretreatment unit, site work and other related activities. The Town of River Bend Town is soliciting Request For Proposals (RFQ) for engineering services for the project.

This project is being funded through the State of North Carolina with American Rescue Plan Act (ARPA) funding and must meet applicable state and federal laws. The first milestone is the submission of an engineering report, which must be submitted to the funding agency by January 6, 2023 and in accordance with DWI requirements. This is a time sensitive project and it must be completed by December 31, 2026.

Scope of Services:

Engineering services shall include, but are not limited to, standard tasks necessary for the completion of the project in conformance with all applicable funding agency guidelines. These tasks will include, but are not limited to:

1. Environment Review Compliance and Release of Funds and other Funding Conditions
2. Engineering Report Preparation and Environmental Document Preparation
3. Engineering Design
4. Any Required WWTP Permitting Revisions
5. Construction Administration
6. Record Drawing Preparation
7. Administration of Wetlands Mitigation Activities
8. Field Surveying
9. Completion of Bid Documents including specifications and Design Drawings
10. Bidding and Recommendation of Award
11. Completion of all required reports and documentation
12. Preparation of Financial Reimbursements Forms and Pay Requests
13. Construction Observation and Administration
14. Construction Closeout
15. Serve as liaison between town and contractor for initial step in any dispute resolution

Proposal Submission:

This RFQ is intended to provide consultants with an opportunity to demonstrate their ability to perform the required tasks. The content of the response should respond to the information presented in this RFQ. The town will accept electronic submissions. Responses shall not exceed 20 (single spaced, one sided) pages and must contain the following information:

1. Cover
2. Cover Letter
3. Table of Contents
4. Background Information about the firm including the consultant or firm's legal name, address, email, and telephone number and the principal(s) of the firm
5. A description of the background, experience, and qualifications of the project team including identification of the project manager, project engineer, and other key team members
6. Similar projects completed by the firm
7. Other grant funded utility projects completed by the firm
8. Any previous work with the Town of River Bend
9. References (minimum of 5)
10. Resumes of key team members
11. Availability of the firm to begin work and proposed project schedule

Proposal Evaluation Criteria:

Proposals will be evaluated by members of town's management staff. Proposals will be considered on an equal competitive basis. The following criteria will be used in the evaluation process:

	MAX Points
1. General qualifications, competence and reputation of firm or individual consultant.....	15
2. Familiarity with federal and state regulations	15
3. Previous experience with similar projects	15
4. Qualifications of key members	15
5. Proposed project schedule	15
6. Previous experience with grant funded projects	15
7. Previous experience with the Town of River Bend	10

Supplemental Materials- Respondents may review the grant application and Letter of Intent to Fund, which includes a more detailed description of the proposed project including activities, proposed budget, schedule, and other pertinent information by visiting the town's webpage at www.riverbendnc.org and clicking on "Current Bid Opportunities."

The response to RFQ should be submitted no later than October 28, 2022, at 3:00 p.m. to Town Manager, Delane Jackson, Town of River Bend, 45 Shoreline Dr., River Bend, NC 28562 or via email to manager@riverbendnc.org Questions may be directed to Delane Jackson at 252-638-3870 x 3.

Upon completion of the review, the committee will make its recommendation to the Town Council for final consideration and approval. It is anticipated that Council approval will occur on November 10, 2022. The firm that has been recommend by the committee will be notified of their recommendation for award by November 2, 2002 and will be required to submit the proposed engineering services agreement to the Town Manager by 10 a.m. on November 8, 2022.

The Town of River Bend is an Equal Opportunity Employer and invites the submission of proposals from minority and women-owned firms.

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
SHADI ESKAF
Director

NORTH CAROLINA
Environmental Quality

August 24, 2022

Mr. Delane Jackson, Town Manager
Town of River Bend
45 Shoreline Drive
River Bend, NC 28562

Subject: Letter of Intent to Fund
Town of River Bend
Wastewater Treatment Plant Enhancements
Project No.: SRP-W-ARP-0241

Dear Mr. Jackson:

The Division of Water Infrastructure (Division) has reviewed your application, and the State Water Infrastructure Authority has approved your project as eligible to receive a total funding amount of $9,108,500 from the following funding:

American Rescue Plan Act (ARPA) funding from the State Fiscal Recovery Fund established in S.L. 2022-74. Projects funded from the State Fiscal Recovery Fund must meet applicable federal law and guidance for the ARPA funds. The ARPA Project Grant will be one hundred percent of eligible project costs up to a maximum of $9,108,500.

Please note that this intent to fund is contingent on approval of the loan through the Local Government Commission and on meeting **all** of the following milestones:

Milestone*	**Date**
Engineering Report Submittal	December 1, 2022
Engineering Report Approval	May 1, 2023
Bid and Design Package Submittal	November 1, 2023
Bid and Design Package Approval	March 1, 2024
Advertise Project, Receive Bids, Submit Bid Information, and Receive Authority To Award	July 1, 2024
Execute Construction Contract(s)	August 1, 2024

*Failure to meet any milestone may result in the forfeiture of funding for the proposed project.

All costs incurred prior to March 3, 2021 are not eligible for ARPA funds and the Division will make no reimbursements of ARPA funds after December 31, 2026.

The first milestone is the submittal of an Engineering Report on December 1, 2022. The Engineering Report must be developed using the guidance found on our website (https://deq.nc.gov/about/divisions/water-infrastructure/i-have-funding/engineering-reportenvironmental-information). Failure to meet any milestone may result in the forfeiture of funding for the proposed project.

The State Environmental Policy Act exempts projects funded by the State Reserve from state-mandated environmental review. Federal requirements may still apply. [NCGS 113A-12(2)h.]

Upon detailed review of the project during the funding process, it may be determined that portions of your project are not eligible for funding and the total funding amount may be reduced. Additionally, changes in the scope or priority points awarded – based on additional information that becomes apparent during project review – may also result in changes to the total funding amount and loan terms.

Engineering Services Procurement
All projects must comply with North Carolina General Statute 143-64.31, Article 3D Procurement of Architectural, Engineering, and Surveying Services. Projects cannot be exempted from qualification-based selection of these services under N.C.G.S. 143-64.32. Any services provided that were not selected in compliance with federal requirements will be ineligible for reimbursement.

US Treasury Requirements
Projects with an expected total cost of ten million dollars or more must meet US Treasury requirements for prevailing wage rates, project labor agreements, and related requirements. Recipients can either certify meeting the requirements or provide plans and reports as the SLFRF Compliance and Reporting Guidance (treasury.gov) specifies.

Joint Legislative Committee on Local Government Notification Requirements
In accordance with G.S. 120-157.2, local government units with projects that require debt to be issued greater than $1,000,000 **must** submit a letter to Committee Chairs, Committee Assistant, and the Fiscal Research Division of the General Assembly at least 45 days prior to presentation before the Local Government Commission. You are responsible for submitting that letter and providing a copy to the Division.

Extended Term Loan
Projects that qualify for a targeted interest rate and demonstrate in the Engineering Report a weighted average design life for the major components of the project greater than 20 years are eligible for an extended loan term up to the calculated weighted average design life, but not to exceed 30 years. Request an extended term on the Engineering Report Submittal Checklist (https://deq.nc.gov/about/divisions/water-infrastructure/i-have-funding/engineering-reportenvironmental-information) and provide the necessary calculation.

Upon receipt of your letter of intent to fund, please fill out the attached Federal ID & Unique Entity ID (UEI) form, attached and email it to Pam Whitley at pam.whitley@ncdenr.gov.

We are offering a free permit assistance service to address any questions you have about potential permitting requirements, pitfalls, fees, and timelines. If interested, please complete our online form at https://deq.nc.gov/permits-rules/permit-assistance-and-guidance/permit-assistance-request-form and a regional environmental coordinator will contact you. When applying for a permit; attach a copy of this letter to your permit application. We find this helpful to identify ARPA projects to get your permit to you faster to assist with meeting the federal expenditure deadline of December 31, 2026.

If you have any questions, please contact Trupti Desai, PE, by phone at (919) 707-9166 or by email at trupti.desai@ncdenr.gov.

Sincerely,

Jon Risgaard

Jon Risgaard, Chief
State Revolving Fund Section

Clean Water State Revolving Fund
Priority Rating System Narrative
Town of River Bend
WWTP Enhancements

Category 1 – Project Purpose

1.C – Project will rehabilitate or replace infrastructure

The Town of River Bend's Wastewater Treatment Plant was originally constructed as a 35,000 gpd plant in 1978. It was expanded in 1982, 1985 and 1988 to increase treatment capacity. The facility is currently permitted for 0.33 MGD under NPDES Permit Number NC NC0030406. The facility was designed to treat raw wastewater to secondary levels, and includes static screen, grit settling tank, 35,000 gallon surge tank and two concentric ring, activated sludge treatment units. Chlorination and dechlorination feed systems are provided. The biological treatment units are field erected steel-walled tanks on reinforced concrete foundations. Treatment Unit #1 is the older of the two trains is approximately half the size as Treatment Unit #2. Each treatment unit includes peripheral tanks for aeration, chlorine contact and aerobic digestion located around a central clarifier. Secondary treatment standards are achieved primarily as a function of BOD oxidation, assimilation and nitrification to reduce ammonia nitrogen (NH_3-N), and settling/wasting of TSS to meet the current NPDES discharge limit. Centrifugal blowers, air piping and coarse bubble diffusers provide oxygen and mixing to the aeration tanks, digesters and surge tank. Chlorination is accomplished via liquid sodium hypochlorite feed while dechlorination is accomplished via injection of liquid sodium bisulfite at the gravity outfall line.

Setttled sludge is returned from each secondary clarifier to its respective aeration basin via air lifts. In addition, sludge is wasted to each of the integral aerated digesters where it is subsequently pumped to an in-ground rectangular steel tank for further digesting, thickening and lime stabilization. Lewis Farms & Liquid Waste, Inc. of Currie, NC provides contract hauling and disposal of the stabilized sludge to Class B permitted disposal sites.

The proposed project includes treatment modifications and enhancements, but does not increase the treatment capacity. The modifications and enhancements are intended to provide improved effluent quality, as well as increased service life. Where economically viable and justifiable, based on economy of scale, the design for some treatment units was based on a future capacity of 0.685 MGD average daily flow, in order to minimize redundant expenditures in the future.

The existing treatment facility is a suspended growth, complete-mix, single-stage nitrification, activated sludge plant capable of routinely meeting the secondary effluent limits contained in the current NPDES discharge permit. The proposed plant enhancements will produce a tertiary

treatment facility with nutrient removal capability designed to treat primary waste constituents to the lower levels anticipated by future NPDES discharge permit as discussed further herein.

WWTP enhancements include a new headworks, new influent and effluent flow meters and composite samplers, new complete package preliminary screen with grit removal, renovation of the existing surge tank, installation of new surge dosing pumps, renovation to the existing treatment units, continued use of the existing blowers, new alum feed system for phosphorous removal, new filter feed pump station, new methanol feed system and denitrification filters for nitrogen removal, continued use/relocation of the chlorine injection system, new chlorine contact tank and reaeration basin, continued use/relocation of the dechlorination system, connection and continued use of the existing outfall and diffuser, new aerobic digester, new cellular SCADA monitoring system, and proper abandonment of the existing in-ground steel digester tank.

Construction plans (CD File: A-Construction Plans.pdf) and specifications (CD File: B-Specifications.pdf) for the project were completed in 2015. All required permits and an Authorization to Construct (CD File: C-Permits.pdf, D-NPDES ATC.pdf) were obtained at that time.

The project has not been constructed due to lack of funding. However, with sufficient funding, the plans and specifications can be made current with minimal effort, and all required permits and Authorization to Construct can be obtained in a reasonably short period of time.

1.C.1 – Treatment units, pumps and/or pump stations to be rehabilitated or replaced are greater than 20 years old.

As noted in Item 1.C above, the existing treatment units and pumps are between 34 – 44 years old. The 1988 WWTP Expansion Plans (CD File: E-Proposed 1988 WWTP Expansion) are provided on the enclosed CD. The Project Budget included in the Application distinguishes the construction cost for components that exceed 20 years of age from those that do not. The following table summarizes costs for construction items that replace existing components that exceed 20 years of age.

Construction Costs	> 20 yrs	< 20 yrs
Contract I – Clearing & Intermediate Site Grading:		
1. Mobilization	$0	$5,000
2. Clearing & Grubbing w/ Offsite Disposal	$0	$12,000
3. Removal of Aggregate, Debris, Spoil Piles	$0	$11,250
4. Muck out Ditches w/ Offsite Disposal	$0	$12,500
5. Undercut Excavation w/ Offsite Disposal	$0	$8,000
6. Offsite Select Borrow Material	$0	$20,000
7. Offsite Borrow & Backfill for WWTP Structures	$0	$80,000

8. Unclassified Excavation w/ Onsite Disposal	$0	$4,800
9. Erosion Control	$0	$12,000
10. Seeding and Mulching	$0	$2,200
Contract II – WWTP Enhancements		
11. Mobilization	$130,500	$93,500
12. Demolition	$18,000	$0
13. Sitework	$0	$60,000
14. Yard Piping	$0	$370,000
15. Influent Flow Meter & Vault	$0	$27,000
16. Preliminary Treatment Unit	$390,000	$0
17. Equalization Basin Renovations	$140,000	$0
18. Treatment Unit #1 Rehabilitation	$1,040,000	$0
19. Treatment Unit #2 Rehabilitation	$1,025,000	$0
20. Alum Feed System	$0	$107,000
21. Filter Feed Pump Station	$0	$195,000
22. Methanol Feed System	$0	$45,000
23. Tertiary Denitrification Filters	$0	$1,730,000
24. Methanol Sample System	$0	$12,000
25. Chlorine Feed System Modification	$27,000	$0
26. Chlorine Contact Tank/Reaeration Basin	$190,000	$0
27. De-chlorination Feed System Modifications	$2,000	$0
28. Non-potable Water System	$0	$40,000
29. Aerobic Digester	$750,000	$0
30. Dual Positive Displacement Blowers/Piping	$103,000	$0
31. Instrumentation and Controls	$75,000	$0
32. Electrical Systems	$478,700	$343,300
33. Water/Wastewater Sampling Lab Building/Site	$80,000	$0
Contingency (10% of construction costs):	$444,750	$319,000
Construction Subtotals:	**$4,893,950**	**$3,509,550**
% of Total Construction:	**58.24%**	**%41.76**
Total Construction Cost:	**$8,403,500**	

Category 2 – Project Benefits

2.D – Project addresses promulgated but not yet effective regulations

The Town of River Bend's WWTP serves 966 of the Town's homes and businesses. The remaining 514 units are served by individual onsite septic tanks and nitrification fields. Those units coupled with buildable vacant lots could effectively double the number of homes and businesses served with public sewer service in the future.

Many of the existing unsewered homes were built prior to the requirement for a nitrification field repair area. The Town has encouraged the unsewered portion of the community to voluntarily agree to connect to the public sewer system. At present, the unserved community has not agreed to public service since their onsite systems are not experiencing widespread failures, and there is resistance to the increased cost for public service.

In the future, it may become necessary for the unsewered community to connect to the public sewer system and WWTP. Regardless, improvements to the WWTP are required to provide continued future service due to the age and condition of the WWTP facilities. Flow projections suggest that a future capacity increase may be warranted to handle the needs of the unsewered community and buildout. The anticipated future capacity is 0.685 MGD.

Based on the requirements of the Neuse Nutrient Strategy's Wastewater Discharge Requirements (CD File: F-Neuse Nutrient Discharge Requirements.pdf) and the Town's current NPDES Permit (CD File: G-NPDES Permit), the Town is allotted a maximum Total Nitrogen (TN) mass loading of 7,482 lb/yr. In addition, the Town will be required to meet a Total Phosphorous (TP) concentration of 1.0 mg/L. At present capacity, the Town is only required to monitor and report their TN effluent load and TP concentration, and the WWTP is routinely in compliance with permit limitations. However, the Town elected while designing the 2015 WWTP Enhancements Project to improve its treatment capability by incorporating process modifications and equipment that will be required to meet the speculative effluent limits including reduced BOD and TSS concentrations, maximum TN mass loading and required TP concentration when a future capacity increase is required.

The major process and equipment changes incorporated into the proposed project include:

- Installation of a new influent flow meter and vault,
- Decommission the existing Static Screen and Grit Settling Tank,
- Installation of a new Preliminary Treatment Unit consisting of mechanical screening, dewatering, conveying, washing, grit removal and grease removal,
- Refurbish existing Surge Tank to include manual screen, air diffusers and surge dosing pumps, piping and controls,
- Refurbish and revamp existing Treatment Unit #1 to include 101,100 gallon Aeration tank, new diffusers, new sludge metering boxes, 33,700 gallon integral Digester, new diffusers, new supernatant withdrawal, new sludge transfer pump, 20,500 gallon Clarifier with new alum feed, refurbished internal mechanical components, piping and controls,
- Refurbish and revamp existing Treatment Unit #2 to include 221,700 gallon Aeration tank, new diffusers, new sludge metering boxes, 30,900 gallon integral Digester, new diffusers, new supernatant withdrawal, new sludge transfer pump, 68,900 gallon Clarifier with new alum feed, refurbished internal mechanical components, piping and controls,
- Decommission the existing chlorine contact tank,

- Installation of new Filter Feed Pump Station,
- Installation of new Methanol Feed System with feed pumps, inline meter, methanol injector and methanol drum storage containment area,
- Installation of new Effluent Denitrification Filter consisting of 4 filter cells, media , internals for gravity filtration and backwash, 5,100 gallon Mudwell with Mudwell pumps, 6,00 gallon Clearwell with Backwash Pumps, Nitrate Sample Pump and Nitrate Analyzer, Backwash Scour Blowers and controls,
- Installation of new Alum Storage/Transfer System consisting of alum solution tanks, metering pumps, piping and controls,
- Installation of new Chlorine Injection System consisting of chlorine injector and vault with piping and controls,
- Installation of new Chlorine Contact Chamber consisting of dual 1,967 cf serpentine channels, 314 cf dechlorination chamber with dichlorination diffuser,
- Installation of new Reaeration Basin consisting of 1,232 cf chamber, new diffusers, submersible Non-Potable Water Pump System, effluent flow meter and weir,
- Decommission existing buried steel Digester,
- Installation of new 220,300 gallon Aerobic Digester with diffusers, telescoping decant system, side drain, piping and controls, and new 900 CFM blower.

2.I – Project improves treated water quality by adding or upgrading a unit process

The River Bend WWTP Enhancement Project includes numerous treated water quality improvements by adding or upgrading unit processes. Please refer to discussion in Item 2.D above for the specific treatment unit upgrades. The current effluent limits versus the expected design performance parameters are summarized in the table below. Refer to the Design Memorandum and Design Calculations (CD File: H-Design Calculations).

Parameter	Current Limit (Monthly Avg.)	Design (Monthly Avg.)
Permitted Flow (MGD)	0.33	0.33
BOD_5 (mg/l)	30.0	5.0
TSS (mg/l)	30.0	5.0
NH3-N (mg/l)	6.7	0.3
Total Residual Chlorine (ug/l)	13	13
Enterococci (No./100 ml)	35	35
Dissolved Oxygen (mg/l)	>5.0	>5.0
Temperature	Monitor	Monitor
pH	6.8 – 8.5	6.8 – 8.5
TKN (mg/l)	Monitor	2.5
$NO_2 + NO_3$ (mg/l)	Monitor	1.0
Total Nitrogen (mg/l)	Monitor[1]	3.5
Total Nitrogen Load (lb/yr)	Monitor[1]	3,516

Total Phosphorous (mg/l)	Monitor	1.0
Total Mercury	Monitor	Monitor

1. In addition to the effluent limits listed above the NPDES Permit assigns the River Bend WWTP a base Total Nitrogen allocation of 7,482 lb/yr with a transport factor of 100%. At 0.33 MGD capacity this equates to an average daily concentration of 7.45 mg/L.

2.N.1 – Project relocates infrastructure from inside 100-year floodplain to outside 500-year floodplain

The River Bend Water/Wastewater Laboratory is located at Latitude 35°4'20.08"N, Longitude 77°8'48.60"W beside the pond just off of Linksiders Road. The Laboratory Building is located along the edge of the 100-year floodplain as indicated on the attached Flood Insurance Rate Map (CD File: I-Flood Insurance Rate Map.jpg).

The project proposes to construct a new building to house a new Water/Wastewater Laboratory at Latitude 35°4'15.62"N, Longitude 77°9'26.51"W near the northwest termination of Plantation Drive across the street from the 300,000 gallon elevated water storage tank. The proposed location is well outside of the 500-year floodplain.

2.N.7 – Project provides redundancy/resiliency for critical treatment system functions including backup electrical power source

This project provides rehabilitation and enhancement of the existing River Bend WWTP without expanding capacity. The design includes the following redundant/resilient treatment and transmission measures (CD Files: A-Construction Plans.pdf and B-Specifications.pdf:

- The Filter Feed Pump Station includes redundant submersible pumps and variable frequency drives (VFDs) to ensure that clarified effluent can be continuously transmitted to the Effluent Denitrification Filters in the event that a single pump was to fail. The redundant pump and VFD will allow the WWTP to operate at full capacity with a single pump and/or VFD out of service without increasing WWTP capacity.
- The Effluent Denitrification Filters include four filter cells that allow any three filters to operate at full capacity with any single filter out of service. The redundant fourth filter cell will enable the plant to operate at full capacity with any single filter out of service while not increasing plant capacity. The Denite Filters also include redundant backwash pumps, redundant blowers, redundant mudwell pumps, and redundant motor starters for each. The redundant backwash pumps, blowers and associated motor starters allow the filters to be backwashed if a single pump, blower or starter are out of service without increasing WWTP capacity. Similarly, the redundant mudwell pumps and associated motor starters allow the dirty backwash water to be returned to the head of the plant for further treatment/removal. The redundant mudwell pumps and starters do not increase plant capacity.

- The Methanol Feed System includes dual chemical feed pumps to ensure a continuous supply of methanol to augment and enhance nitrogen removal via the Denite Filters beyond that which can be achieved via the activated sludge process. The redundant methanol feed pump will allow the WWTP to operate at full capacity with a single pump out of service while not increasing WWTP capacity.
- The Alum Feed System includes dual chemical feed pumps to ensure a continuous supply of alum to augment and enhance phosphorous removal in the Clarifiers beyond that which can be achieved via the activated sludge process. The redundant alum feed pump will allow the plant to operate at full capacity with a single pump out of services without increasing the plant capacity.
- The Chlorine Contact Chamber includes dual serpentine channels to allow continuous flow through a single channel in the event that repairs or maintenance is required on the other chamber. The redundant channel will allow the WWTP to continue operations if a channel is out of service while not increasing the plant capacity.
- The Aerobic Digester provides additional and redundant tankage for sludge digestion and thickening to that provided by the existing digesters (2 small digesters internal to Treatment Units #1 and #2 and 1 larger buried steel digester tank). The Aerobic Digester will allow the plant to provide continuous waste solids handling operations when the buried steel digester tank is decommissioned. The Aerobic Digester does not increase the WWTP treatment capacity. The Aerobic Digester also include dual positive displacement blowers and VFDs to supply air for digestion, mixing and thickening. The blowers and associated VFDs allow continuous operation of the Aerobic Digester in the event that the alternate blower or VFD is out of service. The blowers/VFDs allow the WWTP to operate at full capacity with a single blower/VFD out of service while not increasing WWTP capacity.

2.R – Primary purpose of the project is to achieve at least 20% reduction in energy use

By far, the most energy consuming asset for the River Bend WWTP is operation of the centrifugal blowers that provide air to the two aeration basins within the circular concentric ring treatment units to provide BOD oxidation and nitrification of wastewater to secondary standards. Air is supplied to the diffusers by one of three existing centrifugal blowers. Two of the blowers are rated at 40 HP with one rated at 50 HP. Currently, the Town operates any one of the blowers at full constant speed continuously 24 hours/day and 7 days/week in order to supply the required air. As a result, the Dissolved Oxygen (DO) concentration in the aeration basins vary from 1.5 mg/l – 4.0 mg/l although the desired target concentration is 2.0 mg/l.

The Town proposes to install Variable Frequency Drives (VFDs) on each blower, Dissolved Oxygen Sensors in each aeration basin, and Control Logic to monitor and automatically regulate the blower speed in order to maintain the target DO concentration and reduce the power consumption.

This improvement is estimated to result in a 27.25% reduction in energy usage. Calculations reflecting the expected energy reduction are included as CD File: J - Energy Reduction Estimate.

In addition to the above, VFDs are also being provided for the proposed Filter Feed pumps. Tertiary Denitrification Filter Backwash Pumps, and Aerobic Digester blowers to provide superior process control and additional energy savings.

Category 3 – System Management

3.A.2 – Applicant has a current Capital Improvement Plan (CIP) that spans at least 10-years and proposed project

The Town of River Bend's 10-year Capital Improvements Plan is enclosed on the attached CD (CD File: K–10 Year CIP.pdf). The CIP was adopted on April 21, 2022 and spans ten years from the date of adoption. Cost estimates are included for projects scheduled in the first five years including the proposed project. A resolution is attached (CD File: L-CIP Resolution.pdf) which documents the adoption of the current CIP in its entirety.

3.B – System Operating Ratio is greater than or equal to 1.00 based on current audit, or is less than 1.00 and unit cost is greater than 2.5%

Operating Ratio:	Sewer Fund Only
Total Operating Revenues	$618,512
Total Operating Expenditures	$456,622
Debt Principal	$108,895
Interest	$19,624
Capital Outlay	$17,532

$$Operating\ Ratio \approx \frac{Operating\ Revenues}{(Total\ Expenses + Debt\ Principal + Interest + Capital\ Outlay)}$$

$$Operating\ Ratio \approx \frac{\$618,512}{(\$456,622 + \$108,895 + \$19,624 + \$17,532)}$$

$$Operating\ Ratio \approx 1.03$$

Category 4 – Affordability

4.A.3 – Less than 1,000 residential connections

The total number of residential sewer connections is 954. Refer to the Billing Report (CD File: M-Sewer Billing Report).

4.B.2 – Greater than $107

Current Monthly Combined Utility Rates at 5,000 Usage (CD File: N-Rate Schedule):

Class 1 and 2 – Residential Rates	Water	Sewer
Residential Customer Base Charge per month	$15.24	$24.18
Usage per 1,000 gallons	$4.22	$9.30

Combined Utility Rate at 5,000 gallons/customer = [$15.24 + (5 x $4.22) + $24.18 + (5 x $9.30)]
= $107.02/month

4.C.1 – 3 out of 5 LGU indicators worse than state benchmark

The Town of River Bend has 3 out of 5 LGU indicators that are worse than the state benchmark. Refer to Grant Eligibility and Affordability Calculator (CD File: O-Affordability Calculator).