



west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
Phone: 304-926-0495 / Fax: 304-926-0463

Harold D. Ward, Cabinet Secretary
dep.wv.gov

MEMORANDUM

To: Marie Prezioso, Chair
Funding Committee
Infrastructure and Jobs Development Council

From: Katheryn Emery, P. E.
Sewer Technical Review Committee

Date: April 19, 2023

Subject: City of Salem
IJDC No. 2021S-2042
Wastewater Treatment Plant Upgrade

1. This committee has reviewed the preliminary application and engineering report submitted for the above referenced project in accordance with Chapter 31, Article 15A. It has been determined that the proposed project is:
 - a. Consistent with the intent of the Infrastructure and Jobs Development Act and is the most cost-effective, environmentally sound alternative for solving the wastewater needs in this area.
 - b. Not consistent with the Act and may not be the most cost effective, environmentally sound alternative for solving the wastewater needs in this area.
 - c. Same as (a) above except that certain issues need to be addressed prior to design and construction as the attached comments indicate.
2. Our recommendation is that:
 - a. The Funding Committee needs to review the proposed sources of funding to determine the best mix of grant and/or loan funds in accordance with applicable guidelines.
 - b. The Funding Committee should recommend that the Council approve the proposed project and its funding plan.

Promoting a healthy environment.

- c. The Funding Committee does not need to review the funding assumptions on this project because of deficiencies in the engineering report. The proposed project funding should be returned until technical comments have been resolved.
- d. This project should be referred to the Consolidation Committee.

3. Other remarks:

It is recommended that this application be returned to allow time to address the deficiencies/comments.

Attachments: Technical Comments

Engineering Fees:

Estimated construction cost =	\$ 6,830,000.00
Consultant's design fee =	\$ 490,000.00
Consultant's total fee =	\$ 1,345,000.00
Design fee percentage =	5.7 %
Design fee per ASCE curve =	6.5 %
Total fee percentage =	15.6 %
Total fee per ASCE curve =	17.0 %

Preliminary Project Ratings:

1. Public Health Benefits	10
3. Compliance with Standards	20
5. O & M Capabilities	0
6. Readiness to Proceed	0
8. Cost Effectiveness	0



STATE OF WEST VIRGINIA
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

Bureau for Public Health
Office of Environmental Health Service

Jeffrey H. Coben, MD
Interim Cabinet Secretary

Matthew Q. Christiansen, MD, MPH
Commissioner & State Health Officer

MEMORANDUM

TO: Jason Billups, P.E.
DEP/Infrastructure Sewer Technical Review Committee

FROM: William S. Herold, Jr., P.E., Assistant Manager
I/CD/Environmental Engineering Division

DATE: April 17, 2023

SUBJECT: City of Salem
Preliminary Application **Project No.: 2021S-2042**
WWTP Improvements
Harrison County

RECOMMENDATION:

We have reviewed this preliminary application and recommend it be forwarded to the Funding Committee for review.

PROJECT SCOPE:

This preliminary application is to make improvements at the City of Salem's WWTP. The project will consist of new headworks building and equipment, a new oxidation ditch, rehabilitation of the existing oxidation ditch, two (2) new clarifiers, UV disinfection equipment in a new building, a new anaerobic digester, a new effluent pump station in a new building, new WWTP fencing, and removal of the existing clarifier.

The cost per customer is **\$14,586**. Total estimated project cost is **\$10,400,000** (IJDC District 1 Grant: **\$1,000,000**; WDA Economic Enhancement Grant: **\$3,000,000**; CWSRF Principal Forgiveness: **\$2,000,000**; and Congressionally Directed Grant: **\$4,400,000**).

NEED FOR PROJECT:

The Preliminary Engineering Report indicates the City of Salem's WWTP is experiencing high flows on a frequent basis and has exceeded the average monthly flow allowed by their current NPDES permit parameters multiple times over the past couple of years. The City is under a DEP Consent Order issued in 2015. The proposed improvements are to address these deficiencies.

CONCERNS:

In addition to increasing the WWTP capacity, was there any consideration in separating the sanitary and stormwater systems in order to reduce high levels of I & I?

PERMITS:

A permit **will not be** required from the WV Bureau for Public Health, since CWSRF funding is proposed.



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MEMORANDUM

TO: Katheryn Emery, P.E., Director, DWWM

FROM: Corey McComas, DWWM

DATE: March 31, 2023

SUBJECT: City of Salem
IJDC No. 2021S-2042
Wastewater Treatment Plant Upgrade

RECOMMENDATION

The IJDC Application and Preliminary Engineering Report prepared by E.L. Robinson for the above referenced project has been reviewed and is not technically feasible.

PROJECT DESCRIPTION

The City of Salem currently owns a wastewater treatment and collection system and currently serves 713 customers in Harrison County, WV.

The proposed project will upgrade and modify the City's wastewater treatment plant (WWTP). Upgrades will include installation of new items/processes, including an oxidation ditch, two clarifiers, headworks, ultraviolet disinfection, anaerobic digester, and effluent pump station. Modifications will include improvements to the existing oxidation ditch and removal of the existing clarifier.

The proposed total cost for this project is \$10,400,000 and the City intends to pursue a \$4,400,000 Congressionally Directed Spending grant, \$2,000,000 in CWSRF Principal Forgiveness, a \$1,000,000 IJDC Grant, and a \$3,000,000 WDA Economic Enhancement Grant.

The proposed monthly rate for 3,400 gallons is \$68.58 (2.05 % MHI).

NEED FOR PROJECT

Currently, the City's WWTP is experiencing high flows on a frequent basis and has exceeded the average monthly flow allowed by the current permit parameters multiple times over the past couple of years. Consent Order No. 8235 was issued concerning these violations. In addition, the WWTP's current operating components are needed to be updated to maintain efficient treatment of the wastewater and accurate records of the process.

This project should meet the new permit parameters placed on the upgraded WWTP and the effluent produced by the WWTP should minimize the pollution going into Salem Fork Creek. This will have a positive impact on the stream quality which in return has a positive impact on the environment and public health.

DEFICIENCIES/COMMENTS

- The report states that the project will include a new WLA and this will be acquired. No WLA is provided in PER. This is required to be obtained before submission of the IJDC Application.
- There is no mention of I&I details in the body of the report. Appendix D states the I&I is 80%. Show how this was determined. Discuss what actions are going to be taken to reduce I&I. Include allowable I&I calculation and add to design flow.
- No projected design flow provided, only projection of customer flow, which is less than the existing design flow. As indicated presently, the projected design flow does not justify increase in capacity and also does not reflect existing flow. If the design flow is going to include I&I amounts, then the allowable and excess amounts must be discussed & included into the new design flow.
- Anaerobic Digester not proposed for Alternative #2. Please explain.
- Each process added must have Alternatives proposed.
- Consolidation options must be discussed and nearest utility and connection point must be provided as a part of the discussion.
- The report states that an Environmental Review will be performed. There is no info in Appendix K, even though the report states that the environmental contact info is there. No environmental impacts are discussed.
- 15% Construction Contingency should be included.
- The existing and proposed O&M are identical. Please review.
- The Project Schedule in the report should be updated.
- Wrap scenario should be looked at on the existing debt.
- The report states that no lands or ROWs are needed, but the Combined Application says that land is likely needed to be purchased.
- The report must include the LTCP/POCA information.
- If CWSRF funding is utilized, the PER will need to be developed into a Facilities Plan that will meet CWSRF requirements.

Engineering Fees:

Estimated construction cost =	\$ 6,830,000.00
Consultant's design fee =	\$ 490,000.00
Consultant's total fee =	\$ 1,345,000.00
Design fee percentage =	5.7 %

Design fee per ASCE curve =	6.5 %
Total fee percentage =	15.6 %
Total fee per ASCE curve =	17.0 %

Preliminary Project Ratings:

Public Health Benefits:	10
Compliance with Standards:	20

Public Service Commission of West Virginia

201 Brooks Street, P.O. Box 812
Charleston, West Virginia 25323



Phone: (304) 340-0300
Fax: (304) 340-0325

April 13, 2023

Ms. Kathy Emery, P. E.
Office of Water Resources
Department of Environmental Protection
601 57th St.
Charleston, West Virginia 25304

Re: Public Service Commission Staff Review Comments
Application No. 2021S-2042
City of Salem - Sewer
Infrastructure Preliminary Application

Dear Ms. Emery:

As requested, the Technical Staff of the Public Service Commission of West Virginia has completed its review of the above-referenced Infrastructure application. In light of the District's current financial condition, we are recommending the application be:

- forwarded to the Funding Committee
 forwarded to the Consolidation Committee
 return to the Applicant

Please advise if you have any questions.

Sincerely,

A handwritten signature in red ink, appearing to read "Jonathan M. Fowler".

Jonathan M. Fowler, P.E.
Engineering Division

JMF:vb

**PUBLIC SERVICE COMMISSION STAFF
TECHNICAL REVIEW**

DATE: April 12, 2023

PROJECT SPONSOR: CITY OF SALEM (SEWER)

PROJECT SUMMARY: The proposed project provides for significant upgrades the City of Salem Wastewater Treatment Plant.

PROPOSED FUNDING: CWSRF Principal Forgiveness	\$ 2,000,000
IJDC District 1 Grant	\$ 1,000,000
WDA Economic Enhancement Grant	\$ 3,000,000
Congressionally Directed Grant	<u>\$ 4,400,000</u>
Total	<u>\$10,400,000</u>

CURRENT RATES: \$68.58 3,400 gallons
\$79.12 4,000 gallons

PROPOSED RATES: \$72.81 3,400 gallons
\$83.99 4,000 gallons

Application No. 2021S-2042

RECOMMENDATION: forward to the Funding Committee.
 forward to the Consolidation Committee.
 return to the Applicant.

FINANCIAL: Stephen Edens

1. Current rates (\$68.58 for 3,400 gallons) are above the rates attributable to 1.25% (\$41.79), 1.5% (\$50.14), 1.75% (\$58.50) and 2.0% (\$66.86) of the Median Household Income.

2. Using Scenario 1, the preferred funding package consisting of an CWSRF Principal Forgiveness of \$2,000,000, a \$1,000,000 IJDC District 1 Grant, a WDA Economic Enhancement Grant of \$3,000,000, and a \$4,400,000 Congressionally Directed Grant, proposed rates (\$72.81 for 3,400 gallons) will provide a cash flow surplus of \$12,429 and debt service coverage of 133.99%.
3. Using the Scenario 2 alternate loan package of \$10,400,000 (in uncommitted funds) at 5% for 40 years (paid back over 38 years), proposed rates (\$126.74 for 3,400 gallons) will provide a cash flow deficit of \$9,488 and debt service coverage of 117.03%. An additional .6% (for a total of \$127.50 for 3,400 gallons) increase in proposed rates would be required to provide a cash flow surplus of \$262 and debt service coverage of 118.14%.

NOTES TO COMMENTS:

- A. Staff's detailed adjustments are listed on Attachment A for Scenario 1 (Preferred Funding Package), and Attachment B for Scenario 2 (Loan Package).
- B. The Going Level and Proforma adjustments included in the Applicant's Cash Flow Analyses for Scenarios 1 and 2 were used in Staff's Cash Flow Analyses, except as noted on Attachments A and B.
- C. Staff prepared the attached Cash Flow Analysis utilizing information from the Annual Report for the Fiscal Year Ended June 30, 2022, and the applicant's Rule 42 Exhibit submitted with the application.
- D. Staff used the MHI for the City of Salem of \$40,114 from the 2020 U.S. Census versus the MHI of \$35,438 that was listed in the application.
- E. Staff has been in contact with the project sponsor's accountant regarding concerns/typos associated with the bill analysis provided. Staff also noted a typo on the proforma tariff which lists the flat fee of \$18.86 per 1,000 gallons used above the minimum (\$46.71) of 2,000 gallons. The bill analysis and rate comparison reflect the rate of \$18.64 per 1,000 gallons

used above the minimum (\$46.71) of 2,000 gallons, which is correct based on the proposed rate of \$72.81 (3,400 gallons).

- F. Senate Bill 234, effective June 12, 2015, required water and sewer utilities that are political subdivisions of the state to maintain a cash working capital reserve in an amount of no less than one-eighth (1/8) of actual annual operation and maintenance expenses. It should be noted that the cash flows provided by the project sponsor include funding for the 1/8 cash working capital reserve. Staff accepted that amount in its analyses. However, this amount may be reviewed by the Commission in future filings in accordance with Public Service Commission General Order 183.11.
- G. Senate Bill 234 (2015) required, pursuant to WV Code 24-2-4b (b), that municipally operated utilities shall consider a reasonable plant-in-service depreciation expense for rates and charges. The project sponsor should take this into consideration when preparing its Rule 42. Municipals that do not provide for a reasonable depreciation expense risk delays in Certificate of Convenience and Necessity filings if rates are determined to not be sufficient.
- H. The City of Salem should carefully evaluate its revenue requirements before passing a rate ordinance in order to ensure that rates are sufficient to provide a reasonable surplus and meet coverage requirements. Calculations to support the revenue projections should also be provided.

ENGINEERING: Mansour Mashayekhi

1. This project may not will require a Certificate of Convenience and Necessity from the PSC. The project sponsor should consult with Commission Staff pursuant to General Order 246 for such determination. If a Certificate is required, the utility should reference this application number on the PSC's Form No. 4 when its application is filed at the Commission given the requirement of West Virginia Code §24-2-11 (c) and (e) et seq.
2. **Scope:** The proposed project involves the construction and installation of headworks building and equipment, oxidation ditch and components, two (2) clarifiers, UV disinfection unit and building, anaerobic digester, effluent

pump station and building, additional WWTP fencing, and related appurtenances. The total project is estimated to cost \$10,400,000 with the following proposed funding: a CWSRF Debt Forgiveness amount of \$2,000,000, an IJDC District-1 Grant of \$1,000,000, a WDA Economic Enhancement of \$3,000,000 and a congressionally directed grant of \$4,400,000.

3. **Need for Project:** Currently, the Salem wastewater treatment plant is experiencing high flows on frequent basis and has exceeded the average monthly flow allowed by the current permit parameters multiple times over the past several years. In addition, the plants current operating components are needed replaced and updated to maintain efficient treatment of the wastewater and accurate control of the process.
4. **Customer Density:** This project is an improvement task and customer density will remain unchanged.
5. **Cost per Customer:** Based upon the estimated project cost of \$10,400,000 and having approximately 713 existing customers, cost-per-customer is approximately \$14,586. However, it appears that this project is fully grant funded; therefore, current customers bear no capital project related expenses.
6. **Project Feasibility:** This project appears to be technically feasible and poses little technical risk.
7. **Project Alternatives:** 1) **Alternative-1** (DO NOTHING: This alternative does not address any of the current problems and future concerns), **Alternative-2** (addresses current concerns by providing a completely new wastewater treatment plant), while **Alternative-3** (proposes to upgrade existing infrastructure in the current utilized WWTP). Both of these solutions were determined to be adequate directions of action toward the current problems and potential future concerns. Alternative-2 and Alternative-3 both provide sustainable solutions that will allow the current and future personnel to operate and maintain permit requirements. **Alternative-3** was determined to be the recommended alternative.
8. **Consolidation:** There are no consolidation issues with the selected alternative.

9. **Inconsistencies:** None was noticed for this project.
10. **Project Permits:** The following permits are anticipated to be required for this project: West Virginia Department of Health and Human Resources, West Virginia Public Service Commission, West Virginia Department of Highways, West Virginia Department of Environmental Protection, and United States Army Corps of Engineers. Letters also will be sent to the following agencies: US Fish and Wildlife Service, Region Six Planning and Development Council, WV Division of Culture and History, Army Corps of Engineers, Pittsburgh District, WV Division of Natural Resources, and WV DEP – Division of Air Quality.
11. **Operation and Maintenance (O&M) Expenses:** The project's O&M expenses are expected to increase by approximately \$70,377 to an annual total O&M expense of \$510,571.
12. **Engineering Agreement:** The applicant has provided documentation relative to compliance with West Virginia Code §5G-1-1, et seq. Based on the filing, the total design fees for engineering services are **\$490,000** at the construction cost of **\$8,630,000**. This is approximately 5.68 % of the construction costs as shown on the application.

Preliminary Project Ranking		
O & M Capabilities		
Performance Measures:	1	Pt.
Asset Management:	1	Pt.
Environmental Management:	1	Pt.
Readiness to Proceed:	0	Pt.
Cost Effectiveness:	1	Pt.
Compliance with PSC Orders:	0	Pt.

CITY OF SALEM - SEWER
 CASH FLOW ANALYSIS
 YEAR ENDED: June 30, 2022
 APPLICATION NO: 2021S-2042
 April 12, 2023

PREFERRED FUNDING PACKAGE
 SCENARIO 1

	Rule 42 Going Level Per Application Before Project	Rule 42 Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
AVAILABLE CASH				
Operating Revenues	776,962	829,909	-	829,909
Other Operating Revenue	14,340	15,378	-	15,378
SB 234 Annual Working Cash Collections	55,637	63,445	-	63,445
Interest Income & Other Misc.	424	424	-	424
Total Cash Available	847,363	909,156	-	909,156
OPERATING DEDUCTIONS				
Operating Expenses	437,472	507,849	-	507,849
Taxes	18,920	18,920	-	18,920
Total Cash Requirements Before Debt Service	456,392	526,769	-	526,769
Cash Available for Debt Service (A)	390,971	382,387	-	382,387
DEBT SERVICE REQUIREMENTS				
Principal & Interest (B)	285,381	285,381	-	285,381
Other Debt	-	-	-	-
Reserve Account @ 10%	-	-	-	-
Renewal & Replacement Fund (2.5%)	32,806	32,806	(11,674) (1)	21,132
Total Debt Service Requirement	318,187	318,187	(11,674)	306,513
SB 234 Cash Working Capital	55,637	63,445	-	63,445
Remaining Cash	17,147	755	11,674	12,429
Percent Coverage (A) / (B)	137.00%	133.99%		133.99%
Average rate for 3,400 gallons	\$ 68.58	\$ 72.81	\$ -	\$ 72.81
Average rate for 4,000 gallons	\$ 79.12	\$ 83.99	\$ -	\$ 83.99

Staff Adjustments

(1) Renewal & Replacement Fund (2.5%)	Per Staff Analysis	21,132	(11,674)
	Per Application with Project	32,806	

Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal & replacement fund.

CITY OF SALEM - SEWER
 CASH FLOW ANALYSIS
 YEAR ENDED: June 30, 2022
 APPLICATION NO: 2021S-2042
 April 12, 2023

**LOAN PACKAGE
 SCENARIO 2**

	Max Rate Going Level Per Application Before Project	Max Rate Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
<u>AVAILABLE CASH</u>				
Operating Revenues	776,962	1,491,721	10,000 (1)	1,501,721
Other Operating Revenue	14,340	26,689	-	26,689
SB 234 Annual Working Cash Collections	55,637	63,445	-	63,445
Interest Income & Other Misc.	424	424	-	424
Total Cash Available	847,363	1,582,279	10,000	1,592,279
<u>OPERATING DEDUCTIONS</u>				
Operating Expenses	437,472	507,849	-	507,849
Taxes	18,920	18,920	-	18,920
Total Cash Requirements Before Debt Service	456,392	526,769	-	526,769
Cash Available for Debt Service (A)	390,971	1,055,510	10,000	1,065,510
<u>DEBT SERVICE REQUIREMENTS</u>				
Principal & Interest (B)	285,381	897,261	4,676 (2)	901,937
Other Debt			-	-
Reserve Account @ 10%		61,188	468 (3)	61,656
Renewal & Replacement Fund (2.5%)	32,806	32,806	5,404 (4)	38,210
Total Debt Service Requirement	318,187	991,255	10,548	1,001,803
SB 234 Cash Working Capital	55,637	63,445	-	63,445
Remaining Cash	17,147	810	(548)	262
Percent Coverage (A) / (B)	137.00%	117.64%		118.14%
Average rate for 3,400 gallons	\$ 68.58	\$ 126.74	\$ 0.76	\$ 127.50
Average rate for 4,000 gallons	\$ 79.12	\$ 146.22	\$ 0.88	\$ 147.10

Staff Adjustments

<u>Adjustment Description</u>			\$	Increase <Decrease>
(1)	Operating Revenues	Per Staff Analysis	1,501,721	10,000
		Per Application with Project	1,491,721	
Staff projected that an additional \$10,000 in revenues would be needed to achieve 115% debt coverage and a positive cash balance.				
(2)	Principal & Interest	Per Staff Analysis	901,937	4,676
		Per Application with Project	897,261	
The difference in P&I is related to Staff's calculation of a loan of \$10,400,000 for 40 years (paid back over 38 years) at 5%.				
(3)	Reserve Account @ 10%	Per Staff Analysis	61,656	468
		Per Application with Project	61,188	
Staff assumed a 10% reserve on the new debt.				
(4)	Renewal & Replacement Fund (2.5%)	Per Staff Analysis	38,210	5,404
		Per Application with Project	32,806	
Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal & replacement fund.				