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west virginia department of environmental protection


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Division of Water and Waste Management  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Phone: 304-926-0495 / Fax: 304-926-0496

Austin Caperton, 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:** March 16, 2020

**Subject:** Weirton – Preliminary Application: 2019S-1797  
WWTP Upgrade

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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.
  
- 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 tabled until technical comments have been resolved.
  
- d. \_\_\_ This project should be referred to the Consolidation Committee.

3. Other remarks:

The project proposes to upgrade the existing WWTP and increase the capacity from 4 MGD to 8 MGD. The total project cost is \$22,550,000 and the proposed funding sources are a \$11,500,000 CWSRF loan and a \$11,050,000 WIFIA loan.

Attachments: Technical Comments

**Engineering Fees:**

Estimated construction cost =	\$19,100,000		
Consultant's design fee =	\$1,050,500	Consultant's total fee =	\$2,726,000
Design fee percentage =	5.5%	Total fee percentage =	14.3%
Design fee per ASCE curve =	6.5%	Total fee per ASCE curve =	16.5%

**Preliminary Project Ratings:**

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



STATE OF WEST VIRGINIA  
DEPARTMENT OF HEALTH AND HUMAN RESOURCES  
Bureau for Public Health  
Office of Environmental Health Service

Bill J. Crouch  
Cabinet Secretary

Catherine C. Slemp, 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:** December 2, 2019

**SUBJECT:** Weirton Sanitary Board  
Preliminary Application **Project No.: 2019S-1797**  
WWTP Upgrade/Expansion  
Hancock County

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**RECOMMENDATION:**

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

**PROJECT SCOPE:**

This preliminary application is for the Weirton Sanitary Board to upgrade and expand the existing 4 MGD WWTP to a 12 MGD WWTP. The project includes one (1) new headworks building, four (4) SBR basins and one (1) SBR blower build. There will also be upgrades to the existing equipment, piping, valves, controls and other appurtenances.

The cost per customer is **\$2,573**. Total estimated project cost is **\$25,730,000** (CWSRF Loan: **\$13,130,000 @ 3.00% for 20 years**; and WIFIA Loan: **\$12,600,000 @ 4.00% for 30 years**).

**NEED FOR PROJECT:**

The Preliminary Engineering Report indicates Weirton's WWTP currently experiences an average flow that is above design and permit limits on a regular basis. The capacity must be increased to keep the plant operating in optimal conditions, reduce strain on equipment, and satisfy regulatory requirements. In order to maintain compliance with the NPDES permit, Weirton needs, at minimum, a 50% upgrade to its treatment capacity. This project is also needed to satisfy future demands of the area. The BDC has entered into an agreement with Frontier focused on property redevelopment in the Weirton area that will include additional infrastructure such as roadways, bridges, buildings, and water and sewer lines. Weirton's WWTP capacity must be further increased in order to serve the additional residential, commercial, and industrial customers resulting from this growth.

**CONCERNS:**

None.

**PERMITS:**

A permit **will not be** required from the West Virginia Bureau for Public since DEP CWSRF funding is proposed.





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Austin Caperton, Cabinet Secretary  
dep.wv.gov

**MEMORANDUM**

**TO:** Kathy Emery, P.E., Acting Director, DWWM  
**FROM:** Jason Billups, P.E., DWWM *JB*  
**DATE:** March 5, 2020  
**SUBJECT:** Weirton Sanitary Board  
Preliminary Application: 2019S-1797  
Wastewater Treatment Plant Improvements

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**RECOMMENDATION**

The IJDC Application and Preliminary Engineering report prepared by The Thrasher Group for the above referenced project has been reviewed and is technically feasible.

**PROJECT DESCRIPTION**

The Weirton Sanitary Board (Weirton) owns and operates a wastewater collection system and a WWTP designed for an average daily flow of 4 MGD. Weirton currently serves 9,164 residential and commercial customers.

This project will increase the WWTP capacity from 4 MGD to 8 MGD. The project will include a new headworks building, 2 SBR basins, 2 equalization basins and 1 SBR blower building. Additional upgrades to the existing plant will include equipment replacement in the existing headworks building, grit handling building, primary clarifiers, aeration basins, secondary clarifiers, aerobic digesters, ATAD odor control building, and UV building.

The proposed total cost for this project is \$22,550,000 and Weirton intends to pursue a \$11,500,000 CWSRF Loan (with terms of 3%, 20 years) and an \$11,050,000 WIFIA Loan (with terms of 3%, 35 yrs.).



## NEED FOR PROJECT

The PER indicates that the WWTP average daily flows exceeded 90% for nine consecutive months between October 2018 and June 2019, with five of said months exceeding the permit limit itself. The NPDES permit requires Weirton to submit a plan of action of how they will address these issues. If the plant continues to operate at full capacity, the equipment is likely to experience failure much sooner than its anticipated end of useful life. The capacity must be increased to keep the plant operating in optimal conditions, reduce strain on equipment, and satisfy regulatory requirements.

## DEFICIENCIES/COMMENTS

- It should be noted that the 2020 CWSRF rates are in place from the 2020 IUP and the new loan terms will be 2.75% interest and 0.25% admin fee for 20 years.
- A public meeting to discuss the proposed project should be held.
- It should be noted that the any fees associated with the WIFIA are not eligible through the CWSRF program.
- The PER will need to be developed into a facilities plan that meets CWSRF requirements if CWSRF is used.

### Engineering Fees:

Estimated construction cost =	\$ 19,100,000.00
Consultant's design fee =	\$ 1,050,500.00
Consultant's total fee =	\$ 2,726,000.00
Design fee percentage =	5.5%
Design fee per ASCE curve =	6.5%
Total fee percentage =	14.27%
Total fee per ASCE curve =	16.5%

### Preliminary Project Ratings:

Public Health Benefits: 5  
Compliance with Standards: 10





# 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

March 16, 2020

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

Re: Public Service Commission Staff Review Comments  
Application No. 2019S-1797  
Weirton Sanitary Board (Revised)  
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 Technical Staff's comments enclosed herewith, we are recommending the application be:

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

Please advise if you have any questions.

Sincerely,

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

Jonathan M. Fowler, P.E.  
Engineering Division  
[JFowler@psc.state.wv.us](mailto:JFowler@psc.state.wv.us)

Enclosures  
JMF:vt



**PUBLIC SERVICE COMMISSION STAFF  
TECHNICAL REVIEW**

**DATE:** March 16, 2020

**PROJECT SPONSOR:** WEIRTON SANITARY BOARD (Revised)

**PROJECT SUMMARY:** This project proposes to increase the capacity of the existing wastewater treatment plant to accommodate current flows as well as to provide for future growth.

<b>PROPOSED FUNDING:</b>	WIFIA Loan 4% , 35 yrs	\$12,600,000
	CWSRF Loan 2.75% , .25% admin fee, 20 yrs	<u>13,130,000</u>
		\$25,730,000

<b>CURRENT RATES:</b>	\$22.34	3,400 gallons
	\$24.85	4,000 gallons

<b>PROPOSED RATES:</b>	\$38.21	3,400 gallons
	\$42.51	4,000 gallons

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Application No. 2019S-1797 (Revised)

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

**FINANCIAL:** Laura Leport

1. Current rates (\$22.34 for 3,400 gallons) are below the rates attributable to 1.25% (\$41.49), 1.5% (\$49.79), 1.75% (\$58.09), and 2.0% (\$66.39) of the Median Household Income (MHI). Increasing current rates to 1.25%, 1.5%, 1.75%, and 2.0% of the MHI would provide additional revenues of \$2,811,917, \$4,030,054, \$5,248,192, and \$6,466,329 respectively.
2. Using Scenario 1, the preferred funding package consisting of a SRF Loan of \$11,500,000 at 2.75%, .25% Admin. Fee, for 20 years, and a WIFIA Loan of \$11,050,000 at 3.5%, for 35 years, proposed rates (\$35.53 for 3,400 gallons) will provide a cash flow surplus of \$62,874 and debt service coverage of 117.02%.



3. Using the Scenario 2 alternate loan package of \$22,550,000 (in uncommitted funds) at 5% for 40 years (paid back over 38 years), maximum rates (\$33.61 for 3,400 gallons) will provide a cash flow deficit of \$229,563 and debt service coverage of 101.56%. An additional 5.3% (for a total of \$35.39 for 3,400 gallons) increase in proposed rates will be required in order to provide a cash flow surplus of \$28,812 and debt service coverage of 115.15%.

4. 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. Staff prepared the attached Cash Flow Analysis utilizing information from the Annual Report for the Fiscal Year Ended June 30, 2019, and the applicant's Rule 42 Exhibit submitted with the application.
- C. 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 do not include funding for the 1/8 cash working capital reserve. The project sponsor would need to have non-restricted funds available to meet the 1/8 requirement, otherwise, they may need to take steps to fund this reserve. This 1/8 requirement, along with any steps taken to fund this reserve, may be evaluated by the Commission in future filings.
- D. The City 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. Staff notes that the City is a political subdivision of the state and it has at least 4,500 customers and annual gross revenues of \$3 million or more. Therefore, in accordance with Senate Bill 234, effective June 12, 2015, the Commission has no jurisdiction regarding the City's rates pursuant to WV Code 24-2-4b. However, the Commission does have jurisdiction pursuant to WV Code 24-2-1 (b)(6) for the investigation and resolution of disputes involving political subdivisions of the state regarding inter-utility agreements, rates, fees and charges, service areas and contested utility combinations.
- E. It should be noted that the project sponsor is now proposing a pre-project rate increase that would increase rates to \$23.01 (3,400 gallons).



**ENGINEERING:** Jonathan M. Fowler, P.E.

1. Staff notes that the Utility is a political subdivision of the state and it has at least 4,500 customers and annual gross revenues of \$3 million or more. Therefore, in accordance with Senate Bill 234, effective June 12, 2015, the Commission no longer has jurisdiction for Certification of this project.
2. Scope: The Weirton Sanitary Board is proposing to expand the capacity of its wastewater treatment plant from 4 MGD to 8 MGD. The proposed design will allow for considerable operational flexibility and allow the WWTP to meet both current flows as well as increased future flows.

Customer Density: N/A (No new customers.)

Cost per Customer: \$2,461 (taken from the total project cost estimate of \$22,550,000 spread over 9,164 customers). This is reasonable in light of the longevity of the proposed facilities.

3. Project Feasibility: The project is technically feasible. The project will provide an upgrade in treatment capacity which is needed to meet current demand and will also allow for increased flows in the future. (See, WV DEP Comments)
4. Need: The stated need for the project relates to both existing flows as well as providing for a stepwise increase in capacity in order to meet future demands of the area. The use of SBR technology coupled with the multiple-basin design approach will allow for flow increases while maintaining operability and reasonable efficiency.
5. Project Alternatives: Alternatives for expanding the WWTP included 1) an additional extended aeration treatment process next to the existing WWTP; 1A) an SBR treatment process next to the existing WWTP; 2) a new MBR plant at a separate location; 2A) a new SBR plant at a separate location. The most feasible alternative was determined to be 1A) an SBR treatment process next to the existing WWTP. Staff takes no exception to the alternative development and selection process.
6. Consolidation: The City is a regional provider of sewage treatment services and the instant project offers no apparent, further consolidation opportunities.
7. Inconsistencies: No fatal issues were noted.
8. Operation and Maintenance (O & M) Expenses: O & M expenses are expected to increase by \$356,438 as a result of the project.





9. Engineering Agreement: The application includes information to determine compliance with West Virginia Code §§5G-1-1, et seq. Total technical services (engineering) costs for the project are \$2,426,000 (exclusive of Special Services) which is equal to 12.7% of the construction cost of \$19,100,000 (including contingency) per the revised PER.

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



WEIRTON SANITARY BOARD  
 CASH FLOW ANALYSIS  
 YEAR ENDED: June 30, 2019  
 APPLICATION NO: 2019S-1797  
 March 16, 2020

**PREFERRED FUNDING PACKAGE  
 SCENARIO 1**

	Rule 42 Going Level Per Application Pre-Project	Rule 42 Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
<b>AVAILABLE CASH</b>				
Operating Revenues	3,411,590	5,265,911	-	5,265,911
Other Operating Revenue	73,003	73,003	-	73,003
SB 234 Annual Working Cash Collections			-	
Interest Income & Other Misc.	16,678	16,678	-	16,678
<b>Total Cash Available</b>	<b>3,501,271</b>	<b>5,355,592</b>	<b>-</b>	<b>5,355,592</b>
<b>OPERATING DEDUCTIONS</b>				
Operating Expenses	2,646,455	3,017,163	625 (1)	3,017,788
Taxes	81,580	88,812	-	88,812
<b>Total Cash Requirements Before Debt Service</b>	<b>2,728,035</b>	<b>3,105,975</b>	<b>625</b>	<b>3,106,600</b>
Cash Available for Debt Service (A)	773,236	2,249,617	(625)	2,248,992
<b>DEBT SERVICE REQUIREMENTS</b>				
Principal & Interest (B)	614,168	1,910,381	11,494 (2)	1,921,875
Other Debt	-	-	-	-
Reserve Account @ 10%	-	129,621	1,150 (3)	130,771
Renewal & Replacement Fund (2.5%)	87,532	133,890	(417) (4)	133,473
<b>Total Debt Service Requirement</b>	<b>701,700</b>	<b>2,173,892</b>	<b>12,226</b>	<b>2,186,118</b>
SB 234 Cash Working Capital	-	-	-	-
<b>Remaining Cash</b>	<b>71,536</b>	<b>75,725</b>	<b>(12,851)</b>	<b>62,874</b>
Percent Coverage (A) / (B)	125.90%	117.76%		117.02%
Average rate for 3,400 gallons	\$ 22.34	\$ 35.53	\$ -	\$ 35.53
Average rate for 4,000 gallons	\$ 24.85	\$ 39.53	\$ -	\$ 39.53



Staff Adjustments

<u>Adjustment Description</u>		\$	Increase <Decrease>
(1) <b>Operating Expenses</b>	<b>Per Staff Analysis</b>	<b>3,017,788</b>	<b>625</b>
	<b>Per Application with Project</b>	<b>3,017,163</b>	
Staff's calculation adjusts the administrative fee.			
(2) <b>Principal &amp; Interest</b>	<b>Per Staff Analysis</b>	<b>1,921,875</b>	<b>11,494</b>
	<b>Per Application with Project</b>	<b>1,910,381</b>	
The difference in P&I is related to Staff's calculation of a SRF Loan of \$11,500,000 for 20 years at 2.75%, .25% Admin. Fee and a WIFIA Loan of \$11,050,000 at 3.5% for 35 years.			
(3) <b>Reserve Account @ 10%</b>	<b>Per Staff Analysis</b>	<b>130,771</b>	<b>1,150</b>
	<b>Per Application with Project</b>	<b>129,621</b>	
Staff assumed a 10% reserve on the new debt.			
(4) <b>Renewal &amp; Replacement Fund (2.5%)</b>	<b>Per Staff Analysis</b>	<b>133,473</b>	<b>(417)</b>
	<b>Per Application with Project</b>	<b>133,890</b>	
Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal & replacement fund.			



WEIRTON SANITARY BOARD  
 CASH FLOW ANALYSIS  
 YEAR ENDED: June 30, 2019  
 APPLICATION NO: 2019S-1797  
 March 16, 2020

LOAN PACKAGE  
 SCENARIO 2

	Rule 42 Going Level Per Application Pre-Project	Rule 42 Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
<b>AVAILABLE CASH</b>				
Operating Revenues	3,411,590	4,982,162	265,000	(1) 5,247,162
Other Operating Revenue	73,003	73,003	-	73,003
SB 234 Annual Working Cash Collections				
Interest Income & Other Misc.	16,678	16,678	-	16,678
<b>Total Cash Available</b>	<b>3,501,271</b>	<b>5,071,843</b>	<b>265,000</b>	<b>5,336,843</b>
<b>OPERATING DEDUCTIONS</b>				
Operating Expenses	2,646,455	3,017,163	(14,555)	(2) 3,002,608
Taxes	81,580	87,705	-	87,705
<b>Total Cash Requirements Before Debt Service</b>	<b>2,728,035</b>	<b>3,104,868</b>	<b>(14,555)</b>	<b>3,090,313</b>
Cash Available for Debt Service (A)	773,236	1,966,975	279,555	2,246,530
<b>DEBT SERVICE REQUIREMENTS</b>				
Principal & Interest (B)	614,168	1,662,448	288,579	(3) 1,951,027
Other Debt	-	-	-	-
Reserve Account @ 10%	-	104,828	28,858	(4) 133,686
Renewal & Replacement Fund (2.5%)	87,532	126,796	6,208	(5) 133,004
<b>Total Debt Service Requirement</b>	<b>701,700</b>	<b>1,894,072</b>	<b>323,645</b>	<b>2,217,717</b>
SB 234 Cash Working Capital	-	-	-	-
<b>Remaining Cash</b>	<b>71,536</b>	<b>72,903</b>	<b>(44,090)</b>	<b>28,812</b>
Percent Coverage (A) / (B)	125.90%	118.32%		115.15%
Average rate for 3,400 gallons	\$ 22.34	\$ 33.61	\$ 1.78	\$ 35.39
Average rate for 4,000 gallons	\$ 24.85	\$ 37.38	** \$ 1.98	\$ 39.36

\*\*estimated





Staff Adjustments

<u>Adjustment Description</u>		\$	Increase <Decrease>
(1) <b>Operating Revenues</b>	<b>Per Staff Analysis</b>	5,247,162	265,000
	<b>Per Application with Project</b>	4,982,162	
Staff projected an additional \$265,000 in revenues would be needed to achieve 115% debt coverage and a positive cash balance.			
(2) <b>Operating Expenses</b>	<b>Per Staff Analysis</b>	3,002,608	(14,555)
	<b>Per Application with Project</b>	3,017,163	
Staff's calculation removes the administrative fee.			
(3) <b>Principal &amp; Interest</b>	<b>Per Staff Analysis</b>	1,951,027	288,579
	<b>Per Application with Project</b>	1,662,448	
The difference in P&I is related to Staff's calculation of a Loan of \$22,550,000 for 40 years at 5% int. paid back over 38 years.			
(4) <b>Reserve Account @ 10%</b>	<b>Per Staff Analysis</b>	133,686	28,858
	<b>Per Application with Project</b>	104,828	
Staff assumed a 10% reserve on the new debt.			
(5) <b>Renewal &amp; Replacement Fund (2.5%)</b>	<b>Per Staff Analysis</b>	133,004	6,208
	<b>Per Application with Project</b>	126,796	
Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal & replacement fund.			

