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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: 304-926-0463

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:** February 15, 2023

**Subject:** Town of Sophia Sanitary Board  
Preliminary Application: IJDC No. 2016S-1658 (reference 2015S-1561)  
Wastewater Treatment Plant Project

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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.

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 should be tabled to allow the Engineer to address the deficiencies/comments.
- d.  This project should be referred to the Consolidation Committee.

3. Other remarks:

This application should be tabled to the March Funding and Technical meeting to allow the Engineer to address the deficiencies/comments.

The engineering fee waiver requirement for this project cannot be determined. The published curves do not extend to a project greater than \$10,000,000. Visually both the total fee and design fee values appear to be close if the curve were to be extended. However, the actual curve value cannot be determined so a variance is not required.

Attachments: Technical Comments

**Engineering Fees:**

Estimated construction cost =	\$13,530,000
Consultant's design fee =	\$ 940,000
Consultant's total fee =	\$ 2,000,000
Design fee percentage =	6.9 %
Design fee per ASCE curve =	unknown
Total fee percentage =	14.8 %
Total fee per ASCE curve =	unknown

**Preliminary Project Ratings:**

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



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**MEMORANDUM**

**TO:** Kathy Emery, P.E., Director, DWWM

**FROM:** Daniel S. Bailey, E.I., CFM, DWWM

**DATE:** February 10, 2023

**SUBJECT:** Town of Sophia Sanitary Board  
Preliminary Application: IJDC No. 2016S-1658 (reference 2015S-1561)  
Wastewater Treatment Plant Project

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**RECOMMENDATION**

The IJDC application and Preliminary Engineering Report (PER) Amendment prepared by The Thrasher Group for the above referenced project has been reviewed and it is recommended to be tabled to the March Funding and Technical meeting. This has been discussed with the project's engineer, and they agreed that tabling the project would allow the deficiencies/comments listed below to be addressed.

**PROJECT DESCRIPTION**

The Town of Sophia (Town) and the Sophia Sanitary Board own and operate a wastewater collection and treatment system that serves 849 customers in Raleigh County, WV. The collection system consists of approximately 55,500 LF of gravity sanitary sewer and force main lines and a 0.35 MGD wastewater treatment plant (WWTP). The wastewater treatment plant discharges to Soak Creek, a tributary of Piney Creek of the New River of the Kanawha River.

The proposed project construction consists of a new 0.60 MGD WWTP and upgrading the Sophia collection system to route sewer to the new WWTP. This project is not projected to provide service to any new customers. This phase will allow for the capacity to provide future service to the communities of Coal City and Princewick as well as the current customers (Phase 2).

The proposed total cost for this project is \$16,000,000 and the Town intends to pursue an \$11,000,000 Economic Enhancement Grant (HB 566), \$2,000,000 in CWSRF Debt Forgiveness, \$2,000,000 in CWSRF Loan (1% for 40 years), and a \$1,000,000 IJDC Grant. The current residential rate for 3,400 gallons is \$46.79 (2.0% MHI) with a proposed increase to \$53.80 per the Rule 42 documentation. (2020 Census data for the Town of Sophia).

## **NEED FOR PROJECT**

The Town's existing WWTP is nearly 30 years old and is in critical condition. The existing tankage, screening system, and grit system all appear to be failing. The SBR system is outdated, and the aeration blowers are not performing optimally. The Town's system is currently experiencing 60.93% I&I, which causes excess stress on the WWTP equipment. Additionally, a majority of the WWTP is located in the 100-year flood zone. The existing WWTP is designed to treat an average daily flow of 0.35 MGD. On average, the WWTP is treating 280,000 GPD, as gathered from DMRs from January 2020 through August 2022. The maximum flow which passed through the WWTP in any one day since January 2020 exceeded 1 MGD. In addition to the issues previously mentioned, the WWTP faces operational, safety, and security issues as it is bisected by an existing county highway and sits within the 100-yr floodplain. The existing location and property allow little room for expansion due to a railroad to the north and a steep hillside to the south.

## **DEFICIENCIES/COMMENTS**

- This project application was originally submitted and reviewed under 2015S-1561. Due to a change in scope and funding at the time, a new application (2016S-1658) was submitted and reviewed by the Technical Committee and found technically feasible. This application and associated PER is now amended with a modified scope and updated cost/schedule.
- An updated Wasteload Allocation will need to be approved prior to this project moving forward. (The last allocation was approved in 2015)
- The current service area has reported a high I&I rate. It is recommended that the proposed project complete an I&I study prior to moving forward with project design. The original submission included an I&I study to determine cause(s) and recommend solutions. The proposed plant capacity should be modified to reflect the results of the study and any implemented solutions.
- Crab Orchard MacArthur PSD maintains responsibility to provide sanitary service to the areas surrounding Coal City and Princewick. The Town will need to provide updated documentation verifying their legal jurisdiction to extend sewer service to these areas. Further, an alternative of sending flow to Crab Orchard needs to be included in the report.
- The engineering fee waiver requirement for this project cannot be determined. The published curves do not extend to a project greater than \$10,000,000. Visually both the total fee and design fee values appear to be close if the curve were to be extended. However, the actual curve value cannot be determined so a variance is not required.
- While the requested funding asks for a 40-year loan at 1%, the project only appears to be eligible for a 30-year loan at 1%.

- The PER will need to be developed into a facilities plan that meets CWSRF requirements if CWSRF is approved for funding.
- Additional floodplain and climate impacts will be necessary beyond the 100-year (1%) risk assessment. An analysis complying with EOs 14030 and 13690 will need to be added to the planning process, if the project is determined to be an equivalency project.
- Most, if not all, of the environmental correspondence will need to be updated should this project proceed utilizing recommended funding.

Engineering Fees:

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Consultant's total fee =	\$ 2,000,000
Design fee percentage =	6.9 %
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Preliminary Project Ratings:

Public Health Benefits:	5
Compliance with Standards:	5