west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
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MEMORANDUM

To: Jim Ellars, P. E.
Executive Director
Infrastructure and Jobs Development Council

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

Date: March 24, 2015

Subject: Center PSD Preliminary Application: 2013S-1434
WWTP and collection system upgrades

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 denied until technical comments have been resolved.

d. ___ This project should be referred to the Consolidation Committee.

3. Other remarks:

The project proposes to replace of sections of the existing collection system to reduce I/I and provide necessary upgrades to the existing WWTP. The PSC was unable to complete a financial review of the request since the financials are nearly three years out of date and the applicant increased the amount of loan being requested. It is recommended that the application be tabled for no less than 30 days and that the applicant file an updated Rule 42.

Attachments: Technical Comments

Engineering Fees
Estimated construction cost = $2,289,726

Consultant's design fee =	$228,690	Consultant's total fee =	$601,990
Design fee percentage =	10.0%	Total fee percentage =	26.3%
Design fee per ASCE curve =	9.5%	Total fee per ASCE =	20.5%

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

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MEMORANDUM

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

FROM: Richard D. Bertolotti, P.E., DWWM 3-18-15

DATE: March 17, 2015

SUBJECT: Center PSD
IJDC Project No. 2013S-1434 (revised)

RECOMMENDATION

The Center Public Service District (Center PSD) submitted a Preliminary Engineering Report (PER) dated May 2013. Region 1 provided a revised budget dated March 9, 2015. The revised total construction cost is estimated to be $2,289,726 and the total project cost is projected to be $3,728,500.

This 2015 application anticipates funding from:
USDA RUS grant - $1,000,000
USDA RUS loan - $2,171,259 (3%, 40 years)
WV IJDC Loan - $557,241
WV WDA design loan - $436,467

Since the scope of the project was correctly justified and a clear project description was provided by the PER, we can recommend it at this time.

PROJECT DESCRIPTION

The proposed project aims to address current inflow and infiltration problems verified on the collection system and also to correct operational failures related to vacuum beds and mechanical bar screen on the pre-treatment process. The main improvement on the project suggests replacement of 6,063 feet of the existing sewer collection line. The project also includes replacement of the existing vacuum beds, pre-treatment screening mechanism and evaluation of costs and advantages of a new non-potable water (NPW) system source.

Currently, the Center PSD wastewater treatment plant (WWTP) has a design flow of 0.4 million gallons per day (MGD) and a peak flow of 1.28 MGD. The project flows are 0.366 MGD and 1.014 MGD, respectfully, allowing a possible expansion of 150 more households in the area.

NEED FOR PROJECT

The system has been experiencing overflowing of manholes and sewage backups into homes due to the high rates of inflow and infiltration during high intensity rainfall events. Complaints have been reported to the Public Service Commission, indicating backups in residential and commercial buildings in more than one location. As PER discusses, analysis between the years of 2009 and 2010 show an average inflow and infiltration percentage of 64%. Moreover, inspections and smoke testing conducted in 2007 confirmed that the existing system is in need of rehabilitation with just 14% of the total manholes classified as being in good condition, while 48% were categorized as fair and 38% as poor.

Problems with the existing mechanical equipment associated with the vacuum system has been verified and if no action is taken to address the problem, it can stop operating in the future, so replacement is crucial at this moment.

On the pre-treatment, the motor and control panel for mechanical screens are prone to flooding during high flow rates. When the motor is not disconnected prior to the water rise, the motor becomes flooded; this requires an upgrade.

OPERATION and MAINTENANCE

The PER states that the project will not increase O&M costs on the existing system, instead, these costs will be reduced, specially by the installation of a new NPW system that is going to reduce annual cost from $4,221.00 to $596.47. The cost will be reduced because less water will be purchased from the Town of Pineville.

PERMITS

The Center PSD operates a wastewater treatment and collection system under NPDES permit No. WV0027138. The PER cites a permit that was issued on April 19, 2000 and expires on April 18, 2005. Outlet # 001 is for a 0.4 MGD sequential batch reactor serving 2,940 customers in the Center Public Service District, including the Town of Pineville, and environs, discharging the treated wastewater to the Guyandotte River at Mile Point 141.5. While the PER does not identify the newest permit; there is a permit renewal which will expire in 2015.

Any construction activities for this project with a disturbed area of one (1) acre or greater are required to register for the NPDES Storm Water Construction General Permit No. WV0115924, which became effective on January 4, 2013.

COMMENTS/DEFICIENCIES

- Projected accountant's rate is $57.18 which is 2.2% of the MHI ($31,008) and a 27% increase in rates.
- As the PER discusses, despite the possible future expansion of customers, the project will remain under the limits of the existing permitted flow capacity of the wastewater treatment plant and the sludge disposal site will not change. Therefore, a waste-load allocation will not be necessary.

- Future population changes will not affect the design of the proposed collection system.
- Should the project pursue CWSRF funds, a public meeting still has to be advertised (legal ad) and held for the project.
- The PER does not include funding sources. It cites several methods, and suggests Region I should explore the best method of funding the project. A subsequent 3/9/15 letter from Region 1 Planning & Development Council requested funding as described above.
- Since the Engineering total fee percentage exceeds the ASCE curve, a variance should be requested

Estimated construction cost =	$2,289,726

Engineering Design Fee

Consultant's design fee =	$228,690
Design fee percentage =	10.0%
Design fee per ASCE curve =	9.5%

Engineering Total Fee

Consultant's total fee =	$601,990
Total fee percentage =	26.30%
Total fee per ASCE curve =	20.5%

Preliminary Project Ratings:

Health rating = 10 points
Compliance rating = 15 points