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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

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

**MEMORANDUM**

**To:** Wayne Morgan, P. E.  
Executive Secretary  
Infrastructure and Jobs Development Council

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

**Date:** December 28, 2021

**Subject:** West Union Preliminary Application: 2021S – 2045  
WWTP & Collection System Upgrades

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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 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 application. 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:

I recommend this application be tabled for 60 days to allow the Town time to respond to requests for information from the DEP.

Attachments: Technical Comments



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Harold Ward, Cabinet Secretary  
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**MEMORANDUM**

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

**FROM:** Paul Daniels, P.E., Engineer, DWWM

**DATE:** December 8, 2021

**SUBJECT:** Town of West Union  
Preliminary Application: 2021S-2045  
Wastewater Treatment Plant and System Upgrades

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**RECOMMENDATION**

The IJDC Application and Preliminary Engineering Report prepared by Civil & Environmental Consultants, Inc., for the above referenced project has been reviewed and is not technically feasible. It is recommended that this project be returned to allow the deficiencies/comments listed below to be addressed.

**PROJECT DESCRIPTION**

The Town of West Union is located in Doddridge County, West Virginia. The Town owns and operates a wastewater collection system and a wastewater treatment plant (WWTP). The Town's collection system consists of 9.62 miles of gravity collection mains, 7.73 miles of force mains, ten (10) pump stations and two (2) combined sewer overflows (CSOs). The existing WWTP is a 200,000 gpd conventional extended aeration plant built in 1998. The Town currently provides sewer service to 514 customers within the Town and the North Central Regional Jail Facility (Regional Jail).

The proposed project will address the additional 80,000 GPD capacity requested by the Regional Jail, and the aging and undersized existing WWTP. The proposed project includes the construction of a new 750,000 GPD sequential batch reactor (SBR) WWTP, demolition of the

existing WWTP, installation of 22,000 LF of 6” force main, 100 LF of gravity sewer line, one (1) new sewer lift station and three (3) sewer manholes.

The proposed total cost for this project is \$16,680,000 and the Town is seeking a \$10,740,000 Grant from US EDA, \$1,000,000 Grant from WVIJDC, \$3,000,000 Loan (0.25%, 40 yrs.) from the CWSRF, \$1,000,000 Principal Forgiveness Loan from the CWSRF, \$165,000 Grant from Town of West Union (ARP), \$500,000 Grant from Doddridge County (ARP), \$335,000 Grant from Doddridge County Commission.

The proposed average user rate for 3,400 gallons per month is \$54.13 (2.12% MHI).

## **NEED FOR PROJECT**

The existing 200,000 GPD WWTP has been in service since 1998 with no upgrades or improvement projects. Currently the WWTP struggles to meet the current WVDEP NPDES permit discharge requirements and has an average flow rate of 297,633 GPD as reported in the 2020 PSC Annual Report. The WWTP has been experiencing increasing O&M costs due to normal wear and tear for 20-year-old mechanical equipment. The Town received Notice of Violation #W21-17-012-JME dated August 31, 2021, which included exceedances of discharge limitations and average monthly design flows. The Regional Jail requested an additional need of 80,000 GPD wastewater flow. The existing Regional Jail sewer lift station and force main is undersized for the additional flow.

This project will replace the aging existing 200,000 GPD WWTP with a new 750,000 GPD WWTP which should address the compliance issues with discharge limits and flows. Increasing the size of the Regional Jail sewer lift station and force main will meet the future capacity needs to serve the Regional Jail.

## **DEFICIENCIES/COMMENTS**

- A new waste load allocation was not provided in PER which is required to be technically feasible.
- Provide alternative analyses for the project other than do nothing. The structures of existing plant are only 20-years old and may be useful in a viable alternative.
- Provide alternative analyses for the project other than do nothing. The structures of existing plant are only 20-years old and may be useful in a viable alternative.
- Provide an evaluation of removing the existing CSO's as a part of this project.
- Provide a separation of existing residential and commercial customers and associated EDUs.
- Provide proposed residential and commercial customers and associated EDUs.
- Provide average and peak flow projections for the Regional Jail sewer lift station and the WWTP.
- I&I for the collection system is 42.25% according to the 2020 PSC Annual Report.
- Provide an evaluation of consolidation.
- Provide flood elevations and impacts.
- Provide description of sludge disposal.

- Proposed user rates and project % MHI were not included in PER. Proposed user rates were in the Application. The % MHI was calculated using the Town of West Union incomes.
- Provide a timeframe for Regional Jail need for additional flow. Consider a phased project.
- An engineering design fee and total fee variance will be required.
- The PER will need to be developed into a facilities plan that meets CWSRF requirements if CWSRF is used.

Engineering Fees:

Estimated construction cost =	\$ 13,240,000.00
Consultant's design fee =	\$ 815,000.00
Consultant's total fee =	\$ 2,400,000.00
Design fee percentage =	6.2%
Design fee per ASCE curve =	6.0%
Total fee percentage =	18.1%
Total fee per ASCE curve =	16.0%

Preliminary Project Ratings:

Public Health Benefits:	10
Compliance with Standards:	20