



west virginia department of environmental protection

Division of Water and Waste Management
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Harold D. Ward, Cabinet Secretary
dep.wv.gov

MEMORANDUM

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

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

DATE: April 16, 2021

SUBJECT: Town of West Union
Critical Needs Application
Doe Run Gravity Sewer Replacement

RECOMMENDATION

The IJDC critical needs application prepared by Civil & Environmental Consultants, Inc., for the above referenced project has been reviewed and is technically feasible.

PROJECT DESCRIPTION

The Town of West Union (Town) is a sewer service provider in Doddridge County, West Virginia. The Town owns and operates a public wastewater system (WV0020109) consisting of a collection system and a wastewater treatment plant. Currently, the Town provides sanitary sewer service to 507 customers within the Town of West Union, Doddridge, Smithburg, Fairview Addition, the North Central Regional Jail and the surrounding areas.

The proposed scope of work is to include the design, permitting, construction and inspection of the proposed Doe Run sanitary sewer replacement. The proposed work is to include remove & replace of seven (7) concrete manholes and 1,100 LF of existing 8-in Ductile Iron piping with 10-in HDPE DR-11 piping. With this sewer line replacement project the seven (7) existing customers will be reconnected utilizing 35 LF 4" PVC SDR-35 laterals. During the construction of the replacements the line is expected to need to be bypassed pumped by the approved contractor.

The proposed total cost for this project is \$372,000 and the Town is seeking a \$372,000 Critical Needs Grant from IJDC. There is no proposed change in monthly rates.

NEED FOR PROJECT

The existing gravity sewer that needs to be addressed with this project is made up of 8-in ductile iron installed in 2001 and provides sanitary sewer service to the regional jail. While the existing sanitary sewer lines under normal operations would have a longer expected life the existing lines can no longer be serviced or be maintained due to hydrogen sulfide damage resulting in severe corrosion and excessive grease and trash build up. When the line was initially installed the upstream force main and pump station conveying the sanitary sewer flow from the regional jail was oversized, leading to not having a proper turnover rate and allowing the sanitary sewer to become septic prior to reaching the section of line located on Doe Run. With the pump station operating in nearly septic conditions for years prior to the flow meeting design rate has caused irreversible damage to the Doe Run gravity sewer pipe. The damage is also being compounded by excess trash and grease coming from the regional jail reaching the sanitary sewer system, while some is removed at the pump station the remaining trash is able to pass through creating build up in the lines that are limiting the flow and service ability of the Doe Run Sanitary Sewer.

This project will replace damaged sewer pipe and manholes which will eliminate restricted sanitary sewer flows and maintenance issues. The change in pipe material from ductile iron to HDPE will eliminate corrosion issues in the lines. An increase in flows from the regional jail have increased the turnover rates which reduces the likelihood of the sewage going septic.

The engineer is working with the Town and the regional jail to develop a screening system to help reduce the trash that is being discharged from the regional jail in a separate project.

DEFICIENCIES/COMMENTS

- None

Engineering Fees:

Estimated construction cost =	\$ 291,600.00
Consultant's design fee =	\$ 25,000.00
Consultant's total fee =	\$ 70,000.00
Design fee percentage =	8.6%
Design fee per ASCE curve =	15.5%
Total fee percentage =	24.0%
Total fee per ASCE curve =	25.5%

Preliminary Project Ratings:

Public Health Benefits:	5
Compliance with Standards:	5