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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:** November 16, 2022

**Subject:** WVU Jackson's Mill  
Preliminary Application: IJDC No. 2022WS-2233  
Water/Sanitary/Storm Sewer 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.

- 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 give more time to review.
- d.  This project should be referred to the Consolidation Committee.

3. Other remarks:

This application should be tabled until the next Funding committee meeting to give more time to review.



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### MEMORANDUM

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

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

**DATE:** November 10, 2022

**SUBJECT:** WVU Jackson's Mill  
Preliminary Application: IJDC No. 2022WS-2233  
Water/Sanitary/Storm Sewer Project

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### RECOMMENDATION

The IJDC Application and Preliminary Engineering Reports prepared by Potesta & Associates, Inc. for the above referenced project has been reviewed and it is recommended to be tabled to allow time to finish the review.

### PROJECT DESCRIPTION

The West Virginia University Extension Service (WVU) owns and operates the historic Jackson;s Mill campus, located along the West Fork River near County Route 1 in northern Lewis County, West Virginia. The property spans over 200 acres, including an airstrip and the West Virginia Fire Academy; however, this project is located on the approximate 75-acre area to the north of County Route (CR) 10. These facilities consist of 39 various structures including cottages, assembly halls, museums, classrooms, recreational facilities, and storage/maintenance buildings. This project is to address issues in the potable water system, the sanitary sewer collection system and the stormwater system. The potable water system has over 6,000 LF of 6-inch water mains that are owned and operated by West Virginia American Water (WVAW) up to the water meter, over 1,000 LF of ¾ to 1-inch surface lines owned and maintained by WVU, 13 fire hydrants and multiple sprinkler systems. Much of the existing water mains are asbestos-cement (transite) construction.

The proposed project will replace all main lines and service laterals, install fire service lines to structures in need of life sustaining fire protection sprinkler systems, and replace and strategically relocate existing fire hydrants at new locations. The project will include approximately 5,690 LF of 2 to 4-inch water lines, 3,960 LF of 1 to 2-inch service lines, 10 fire

hydrants, 6 metered blow-offs, 24 gate valves, 36 meter boxes with yokes, and various necessary appurtenances.

The sanitary sewer collection system has approximately 6,000 LF of 6 and 8-inch gravity sewer mains, over 1,000 LF of gravity service lines, one small lift pump, 40 manholes and 10 cleanouts. Much of the existing pipe is terra cotta construction. The manholes are predominantly brick. The collection system discharges to an existing pump station that is located on-site and operated by the Weston Sanitary Board (WSB). That pump station was constructed in 2008 and replaced an on-site sewage treatment facility. At the time of the 2008 construction, some additional minor improvements were also made to the lines immediately surrounding the new pump station. Treatment is provided by WSB.

The proposed sanitary sewer project will replace all sanitary mains, laterals, and structures upstream of the two existing manholes leading directly into the WSB pump station. The project will include the replacement of approximately 9,132 LF of 4 to 8-inch gravity sewer mains and laterals, abandonment of 2 manholes in place, remove 35 manholes, remove an existing pump station, installation of 46 manholes and other necessary appurtenances.

The stormwater system consists of very few collection structures, culverts, etc. There are several areas of the site that regularly experience inundation, pooling, flooding and erosion as a result of a lack of stormwater collection/conveyance.

The proposed stormwater system will construct three main trunk lines, associated storm laterals, re-grade and re-pave the southern parking area near the pond to eliminate ponding and flooding in this area. The project will include installation of 2,235 LF of 12 to 24-inch storm sewer lines, 26 drain basins, 5 concrete wingwalls, 440 tons of asphalt for paving, various earthwork, restoration and necessary appurtenances.

The proposed total cost for this project is \$6,714,233 and WVU is seeking a \$1,254,000 WVU Grant, and a \$5,460,233 WDA Economic Enhancement Grant. The proposed average user rate for 3,400 gallons per month was not provided.

## **NEED FOR PROJECT**

The current potable water system is 50+ years old and is experiencing main breaks and service outages regularly during busy weekends and limits the reliability of the facility, both from a domestic water supply and a fire suppression perspective. There are several fire hydrants that do not currently function and this is a major concern regarding the safety of visitors and the protection of property. The fire suppression system does not have sufficient service to provide protection of the many historical structures and safety protection for visitors and staff.

The current sanitary collection system was constructed 65 years ago and is far beyond its useful life. A condition Assessment Report was conducted by Civil & Environmental Consultants July 2021. Significant I&I (72%) is being experienced throughout the entire system as a result of terra cotta lines being broken, separated, blocked, and/or collapsed, as well as outdated and defective structures, resulting in poorly functioning sewer mains and highly elevated O&M costs. Sewer blockages can lead to clogging and backups in the facilities which is a public health concern.

The current stormwater collection/conveyance system is inadequate to avoid continued flooding and erosion. There are several areas of the site that regularly experience inundation, pooling, flooding and erosion as a result of the lack of a stormwater system.

**DEFICIENCIES/COMMENTS**

- Project is for potable water, fire protection, sanitary sewer and storm sewer. Project should be separated into a water/fire protection system project and a sanitary/storm sewer project.
- The potable water portion of the project involves a private company (WVAW) with no description of their contribution to the project. More information is needed.
- The potable water portion of the project includes fire protection with more than just fire hydrants. Clarify if this work is eligible for funding.
- Project costs in application do not match the PERs cost. This discrepancy should be corrected. The application information was used in this memo because the PERs did not include a preferred funding package.
- Project schedule needs to be updated with all information.
- No user rates, MHI information, etc. was provided. More information is needed.
- Provide evidence of available sewage treatment capacity.
- Provide the intermunicipal agreement/resolution of acceptance.
- Provide engineering summary of project to include proposed quantities.
- Provide consulting engineering procurement information.
- A fee variance will be required for design engineering fees.
- The PER will need to be developed into a facility plan that meets CWSRF requirements if CWSRF is used.

Engineering Fees:

Estimated construction cost =	\$ 5,515,233.00
Consultant's design fee =	\$ 478,000.00
Consultant's total fee =	\$ 884,000.00
Design fee percentage =	8.7 %
Design fee per ASCE curve =	7.5 %
Total fee percentage =	16.0 %
Total fee per ASCE curve =	18.0 %

Preliminary Project Ratings:

Public Health Benefits:	5
Compliance with Standards:	5

# 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



November 15, 2022

Meredith J. Vance  
Office of Environmental Health Services  
350 Capitol Street, Room 313  
Charleston, West Virginia 25301-3713

Re: Public Service Commission Staff Review Comments  
Application No. 2022WS-2260  
West Virginia University – Jackson's Mill Campus  
Infrastructure Preliminary Application

Dear Ms. Vance:

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,

Jonathan M. Fowler, P.E.  
Engineering Division

JMF:vb

**PUBLIC SERVICE COMMISSION STAFF  
TECHNICAL REVIEW**

**DATE:** November 14, 2022

**PROJECT SPONSOR:** WEST VIRGINIA UNIVERSITY - JACKSON'S MILL  
CAMPUS

**PROJECT SUMMARY:** Project is a complete replacement of a problematic water supply, sewer collection, and storm water system on the campus of the WVU-Jacksons Mill facility.

<b>PROPOSED FUNDING:</b> WVU Grant	\$1,254,000
WV Economic Enhancement Grant	<u>\$5,460,233</u>
Total	\$6,714,233

**CURRENT/PROPOSED  
RATES:** N/A

Application No. 2022WS-2260

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

**FINANCIAL:** Kaitlyn J. Shamblin

1. This entity is not a regulated utility so there is no financial analysis provided. Proposed funding is all grant.
2. Staff notes the preliminary engineering report for the water operations states the West Virginia-American Water Company (WVAWC) owns the distribution system that provides water to the campus.
3. Staff notes the preliminary engineering report for the sewer operations states the collection system drains to an existing pump station located on-site and operated by the Weston Sanitary Board.

**ENGINEERING:** Mansour Mashayekhi

1. This project will not require a Certificate of Convenience and Necessity from the PSC as the sponsor is not a regulated utility.
2. **Scope:** West Virginia University (WVU) Extension Service owns and operates the historic Jackson's Mill campus, located along the West Fork River near County Route 1 in northern Lewis County. These facilities consist of 39 various structures including cottages, assembly halls, museums, classrooms, recreational facilities, and storage/maintenance buildings. WVU, proposed upcoming additions/renovations that will include: Renovation of Jackson Lodge, including addition of 8 to 10 new guest rooms, addition of a new Welcome Center, and addition of a new Picnic Shelter with restrooms. It is also recommended that the entire water distribution system be replaced, as follows: Replace all main lines (Contract A – Part 1) and service laterals (Contract A –Part 2), install fire service lines to structures in need of "life sustaining - fire protection" sprinkler systems (Contract A – Part 2) (10 buildings), replace and strategically relocate existing hydrants at new locations (up to 14 hydrants total), and cut/plug abandon existing water lines in place. The estimated budget of the project is \$6,714,233. The proposed funding includes the following: A West Virginia University Grant of \$1,254,000 and a WDA Economic Enhancement Grant of \$5,560,233.
3. **Need for Project:** WVU has noted that main breaks and service outages within the facility occur regularly during busy weekends and limit the reliability of the facility, both from a domestic water supply and a fire suppression perspective. Much of the existing system was constructed over 50 years ago. Several of the fire hydrants are non-functional, and the facility regularly experiences line breakages and service interruptions due to main breaks. sprinkler systems are adequate for life safety and not sufficient for full property protection, except in the Dining Hall.
4. **Customer Density:** Customer density will remain the same.
5. **Cost per Customer:** These facilities are property of the WVU and not a regulated utility thus, cost per customer is not a meaningful metric.

6. **Project Feasibility:** This project appears to be technically feasible and poses little technical risk.
7. **Project Alternatives:** Two Alternatives were considered: Alternative A (complete replacement of mains (Contract A – Part 1) and service laterals with additional fire service lines (Contract A – Part 2), and Alternative B (Only the fire service lines be installed and existing service mains be left in service to be upgraded by WVAW at a later date). Alternative A was selected.
8. **Permits Required:** The following permits and regulatory considerations may be required for this project: Department of Health and Human Resources (Construction permit), WVDEP (Construction Stormwater Permit), County Floodplain Permit, SHPO Consultation, and USFWS Consultation.
9. **Consolidation:** There are no consolidation issues with the selected alternative.
10. **Inconsistencies:** None was noticed for this project.
11. **Operation and Maintenance (O&M) Expenses:** It is estimated that annual O&M costs for the water distribution system would not be impacted by this project, as operation and maintenance of mains is the responsibility of WVAW.
12. **Engineering Agreement:** The applicant has provided documentation relative to compliance with West Virginia Code §5G-1-1, *et seq.* Based on the filing, the total design fees for engineering services are \$478,000 at the construction cost of \$5,515,233. This is approximately 8.67% of the construction cost as shown on the application.