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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) 926-0496

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
dep.wv.gov

**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:** Crab Orchard – MacArthur PSD Preliminary Application: 2015S-1562  
Marsh Fork Ph. 1-A, WWTP and collection system ext.

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 the Holley Hills WWTP with a 0.3 MGD SBR WWTP and extend sewer service to approximately 265 customers in the Fairdale and Glen Daniels areas. Due to the concerns listed and the use of outdated financial information, I recommend this application be returned.

Attachments: Technical Comments

**Engineering Fees**

Estimated construction cost = \$13,200,000

Consultant's design fee =	\$309,500	Consultant's total fee =	\$1,359,500
Design fee percentage =	2.3%	Total fee percentage =	10.3%
Design fee per ASCE curve =	6.1%	Total fee per ASCE =	17.0%

**Preliminary Project Ratings:**

N/A, since no IJDC funds are requested.

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



STATE OF WEST VIRGINIA  
DEPARTMENT OF HEALTH AND HUMAN RESOURCES  
BUREAU FOR PUBLIC HEALTH  
OFFICE OF ENVIRONMENTAL HEALTH SERVICES

Earl Ray Tomblin  
Governor

Karen L. Bowling  
Cabinet Secretary

**MEMORANDUM**

**TO:** Mike Warwick, P.E.  
DEP/Infrastructure Sewer Technical Review Committee

**FROM:** William S. Herold, P.E.  
OEHS/Environmental Engineering Division

**DATE:** March 9, 2015

**SUBJECT:** Crab Orchard-MacArthur PSD  
Preliminary Application **Project No.: 2015S-1562**  
Marsh Fork Phase 1-A (Fairdale/Glen Daniel Areas)  
Raleigh County

**RECOMMENDATIONS:**

We have reviewed this preliminary application and recommend it be forwarded to the funding committee. See concern below.

**PROJECT SCOPE:**

This preliminary application is to replace the existing Holley Hills WWTP with a new 300,000 GPD WWTP and to extend sewer service to approximately 265 new customers in the Fairdale and Glen Daniels areas. The project will consist of the installation of approximately 4,200 LF of 12", 3,950 LF of 10", 20,700 LF of 8" and 13,100 LF of 6" sewer line; numerous manholes and cleanouts, 3,500 LF of 8", 1,800 LF of 6", 2,000 LF of 4" and 550 LF of 1.5" force main; six (6) pump stations; and one (1) 300,000 GPD SBR WWTP.

The cost per customer will be \$58,489. The estimated total project cost is \$15,499,500 (CWSRF Wrap Loan: \$15,499,500 @ 0% for 40 years).

**NEED FOR PROJECT:**

The Preliminary Engineering Report indicates the existing Holley Hills WWTP is near or at capacity and could not meet the NPDES effluent discharge requirements if additional loadings were added due to extending the service area to Fairdale and Glen Daniel. The extended sewer service to Fairdale and Glen Daniel will eliminate the Dairy Queen packaged WWTP and will eliminate numerous on-site failing septic tank soil absorption systems.

**CONCERNS:**

The cost per customer of \$58,489 is extremely high.

**PERMITS:**

If CWSRF funding is used, a permit **will not** be required from the West Virginia Bureau for Public Health.

WSH:kl





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**MEMORANDUM**

**TO:** Kathy Emery, P.E., Program Manager, DWWM

**FROM:** Elbert Morton, P.E., DWWM 

**DATE:** March 16, 2015

**SUBJECT:** Crab Orchard-MacArthur PSD – Marsh Fork Wastewater Collection and Treatment Improvement  
Preliminary Application: 2015S-1562

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**RECOMMENDATION**

The IJDC application and preliminary engineering report for the Crab Orchard-MacArthur PSD – Marsh Fork Wastewater Collection and Treatment Improvement have been reviewed. I recommend that it be tabled because of item 1 in the Deficiencies/Comments section of this memo.

**PROJECT DESCRIPTION**

This preliminary application is to replace the existing Holley Hills WWTP with a new 300,000 gallon per day wastewater treatment plant and to extended service to 265 new customers in the Fairdale and Glen Daniel areas. The project will consist of installation of approximately 4,200 LF of 12" sewer line, 3,950 LF of 10" sewer line, 20,700 LF of 8" sewer line and 13,100 LF of 6" sewer line; numerous manhole and cleanout: 3,500 LF of 8", 1,800 LF of 6", 1,800 LF of 6", 2,000 LF of 4" and 550 LF of 1.5" force main; six (6) pump stations, and a new 300,000 gallon per day SBR wastewater treatment plant. The estimated total project cost is \$15,499,500 (CWSRF Loan: \$15,499,500 @ 0.5% for 40 years wrap loan).

**NEED FOR PROJECT**

The Preliminary Engineering Report indicates the existing Holley Hills WWTP is near or at capacity and could not meet the NPDES effluent discharge requirements if additional loading were added due to extended the service to Fairdale and Glen Daniel. The extended sewer service to Fairdale and Glen Daniel will eliminate the Dairy Queen package WWTP and will eliminate numerous failing septic soil absorption systems.

## **OPERATION AND MAINTENANCE**

The Crab Orchard-MacArthur PSD currently provides adequate operation of their wastewater collection and treatment system. The proposed budget appears to be adequate to ensure that the Crab Orchard-MacArthur PSD can continue providing the proper level of operation and maintenance.

## **PERMITS**

The Crab Orchard-MacArthur PSD operates its wastewater collection and treatment system under NPDES Permit No. WV0082309, with an expiration date of June 29, 2019. A modification of this permit will be required as a result of the project.

Construction activities 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 December 5, 2012.

Consideration should be given for future upgrading of the facilities for nutrient removal. Nutrient removal may be required as a result of future federal regulations or future state water quality criteria imposing more stringent criteria for nutrients.

## **DEFICIENCIES/COMMENTS**

1. The size of the proposed plant is currently sized for all the phases designed. The new plant size needs to be re-examined with consideration given to a phased design concept. The proposed plant needs to be sized to match the customers in this phase.
2. An additional public meeting must be held. The additional public meeting information must be submitted to our office.
3. A copy of the current NPDES permit must be included in the report.
4. The report needs to include the original collection system evaluation.
5. Our office should be contacted for any additional requirements prior to the submittal of a facility plan.

### **Engineering Design Fee**

Estimated construction cost = \$13,200,000

Consultant's design fee = \$309,500

Design fee percentage = 2.3%

Design fee per ASCE curve = 6.1%

Total Engineering = \$1,359,500

Total fee percentage = 10.3%

Total fee per ASCE curve = 17%

Public Health Benefits - 10 points

Compliance with Standards - 10 points