



west virginia department of environmental protection

Division of Water and Waste Management
601 57th Street SE
Charleston, WV 25304
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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: ^{V/E} Katheryn Emery, P. E.
Sewer Technical Review Committee

Date: June 25, 2013

Subject: Mannington Preliminary Application: 2013S-1447
WWTP Upgrade

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.

Promoting a healthy environment.

- 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 consists of upgrading the existing WWTP and increasing the capacity from .25 MGD to .35 MGD. The PER; however, did not sufficiently substantiate the need for the upgrade.

Attachments: Technical Comments

Engineering Fees

Estimated construction cost = \$3,140,000

Consultant's design fee =	\$188,000	Consultant's total fee =	\$440,000
Design fee percentage =	7.5%	Total fee percentage =	17.6%
Design fee per ASCE curve =	10.0%	Total fee per ASCE =	20.0%

Preliminary Project Ratings:

N/A, since no IJDC funds are being 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

Rocco Fucillo
Cabinet Secretary

MEMORANDUM

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

FROM: William S. Herold, P.E. ^{WSH}
OEHS/Environmental Engineering Division

DATE: May 15, 2013

SUBJECT: City of Mannington
Preliminary Application **Project No.: 2013S-1447**
WWTP Upgrade
Marion County

RECOMMENDATION:

We have reviewed this preliminary application and recommend it be forwarded to the Funding Committee for review.

PROJECT SCOPE:

This preliminary application is to increase the existing City of Mannington 250,000 GPD WWTP to a 350,000 GPD WWTP. The project will consist of the installation of mechanical & manual bar screens; grit removal system; a new oxidation ditch; a new third secondary clarifier; new weirs in existing clarifiers; new sludge storage basin, blowers, DO control system and polymer system; control equipment upgrades; and upgrades of electrical, fencing, lighting, yard piping, etc.

The cost per customer is \$1,256. Total estimated project cost is \$3,140,000 (WVDEP CWSRF Loan: \$3,140,000 @ 1.0% for 40 years.)

NEED FOR PROJECT:

The Preliminary Engineering Report indicates the upgrade is necessary in order to provide increased capacity and to meet discharge requirements mandated by the WVDEP.

CONCERNS:

None.

PERMITS:

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

WSH:lch



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MEMORANDUM

TO: Kathy Emery P.E., Assistant Director, DWWM
FROM: Richard D. Bertolotti, P.E., Engineer 
DATE: June 14, 2013
SUBJECT: Mannington Sanitary Board
IJDC Project No. 2013S-1447

RECOMMENDATION

The Mannington Sanitary Board submitted a Preliminary Engineering Report dated May 10, 2013. The total construction estimate is \$2,500,000 and total project estimate is \$3,140,000.

This 2013 application anticipates funding from a 100% loan (1/2%, 38 years) from the WVDEP SRF.

Several questions posed in our project review need to be addressed. Since the need for expansion is not clearly documented, we cannot recommend this project at this time.

PROJECT DESCRIPTION

The proposed project consists of upgrading the Mannington WWTP from 250,000 to 350,000 gpd. The upgrade will occur on land already owned by the Mannington Sanitary Board. The upgrade is said to be needed "... to meet discharge requirements mandated by the WVDEP and to allow for future extensions." The project includes 1. New bar screen system, 2. New grit removal system, 3. New oxidation ditch, 4. New clarifier, 5. Replacement weirs in existing clarifiers, 6. New sludge storage system, 7. Miscellaneous upgrades to existing plant control equipment and 8. Other upgrades including electrical, fencing, lighting, yard piping, and site stone.

The Mannington Sanitary Board is currently upgrading the UV disinfection and installing an effluent flow meter. These should be operational by September, 2013.

NEED FOR PROJECT

The project is intended to permit additional customers to connect to the system in the future. The current flow rate to the WWTP is reported around 80% of capacity. There are also questions about the ability of the current process to meet the ammonia nitrogen limits for Buffalo Creek.

OPERATION and MAINTENANCE

The PER states that the project will increase O&M costs. Increases were under the categories of salaries/wages, purchased power, chemicals, and materials/supplies.

PERMITS

The City of Mannington operates a wastewater and collection system under NPDES permit No. WV0024953. The permit was issued September 25, 2008 and expires September 24, 2013. Outlet # 001 is for a 0.25 MGD oxidation ditch serving 992 customers and discharging to the Buffalo Creek, tributary to the Monongahela River.

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 December 5, 2012.

COMMENTS/DEFICIENCIES

- Projected accountant's rate is \$44.16 which is 1.98% of the MHI (\$26,806) and a 30% increase in rates.
- Questions of actual extension of service to additional customers remain. There is no discussion in the PER of the status, customer acceptance, schedule or costs of the proposed extensions.
- A public meeting needs to be advertised and held for the project.
- Population growth of both the service area and the school should be documented in the PER. This would justify the need for expansion. (Mannington's population has decreased in each census since 1980 ; 3036>2184>2124>2063).
- While the PER cites problems with the WWTP meeting the wasteload allocation, the data presented indicates otherwise. The Wasteload allocation requires an ammonia nitrogen limit of 1.7 mg/l at a WWTP flow of 0.350 MGD. However, the data shown for 2011 never exceed 1.33 mg/l ammonia nitrogen in the effluent. It appears that the oxidation ditch, with its high mean cell residence time is removing the nitrogen sufficiently. More data is needed to support the deficiencies in nitrogen removal.
- The PER discusses an excess wastewater flow for the months of July and August, 2011. According to the data provided, those months have a low effluent rate, approaching only half the design capacity of the WWTP. More data is required to substantiate the need for hauling water from the plant for treatment offsite. In addition, a 10,000 gpd is assumed without any reason for this volume. While the volume conveniently fits an excess for 33 days of trucking, this volume does not appear correct, given the low flow from the WWTP in July and August of 2011 presented.

- Calculations for O&M expenses include costs for fuel for a disposal truck and for disposal costs of the excess liquid. There is no consideration of labor for the truck driver or truck lease costs. Some costs should be included for the truck capital and renewal/replacement.
- The PER does not indicate if there are known WV Health Department Reports or Orders, DEP Orders, Penalty Orders or Consent Decrees and/or Orders of the PSC.

Estimated construction cost = \$3,140,000

Engineering Design Fee

Consultant's design fee = \$ 188,000
Design fee percentage = 7.52%
Design fee per ASCE curve = 10.0%

Engineering Total Fee

Consultant's total fee = \$ 440,000
Total fee percentage = 17.6 %
Total fee per ASCE curve = 20.0%

Preliminary Project Ratings:

Health rating = 5 points
Compliance rating = 5 points

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

June 10, 2013

Mr. Mike Warwick, P. E.
Office of Water Resources
Department of Environmental Protection
601 57th St.
Charleston, West Virginia 25304

Re: Public Service Commission Staff Review Comments
Application No. 2013S-1447
City of Mannington
Infrastructure Preliminary Application

Dear Mr. Warwick:

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:

- Forward the Application
 Forwarded to the Consolidation Committee
 Return the Application

Please advise if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Ingrid Ferrell".

Ingrid Ferrell
Engineering Division
IFerrell@psc.state.wv.us

Enclosures
IF:vt

**PUBLIC SERVICE COMMISSION STAFF
TECHNICAL REVIEW**

DATE: June 10, 2013

PROJECT SPONSOR: MANNINGTON, CITY OF

PROJECT SUMMARY: Mannington Sanitary Board proposes to upgrade existing WWTP from 250,000 gpd to 350,000 gpd to comply with DEP requirements. Upgrade will also allow for future potential customers.

PROPOSED FUNDING: CWSRF Loan 0%, 40 years, 0.5% Admin Fee \$3,140,000

CURRENT RATES: \$33.84 4,000 Gallons

PROPOSED RATES: \$44.16 4,000 Gallons

Application No. 2013S-1447

RECOMMENDATION: forward to the Funding Committee
 forward to the Consolidation Committee
 return to the Applicant

FINANCIAL: Versie Hill

1. Current rates (\$33.84 for 4,000 gallons) are above the rates attributable to 1.5% (\$33.51) of the Median Household Income (MHI), but below the rates attributable to 1.75% (\$39.09) and 2% (\$44.68) of the MHI. Increasing current rates to 1.75% and 2% of MHI would provide additional revenues of \$59,217 and \$122,182 respectively.
2. Using Scenario 1, preferred funding package consisting of a CWSRF Loan of \$3,140,000 @ 0% for 40 years (paid back over 38 years) + 0.5% administrative fee, proposed rates (\$44.16 for 4,000 gallons) will provide a cash flow surplus of \$17,776 and debt service coverage of 133.11%.
3. Using Scenario 2, Alternate Loan Package of \$3,140,000 (in uncommitted funds) at 5% for 40 years (paid back over 38 years), proposed rates (\$57.85 for 4,000 gallons) will provide a cash flow surplus of \$65,525 and debt service coverage of 141.59%.

4. Notes to Comments:
 - A. Staff's detailed adjustments are listed on Attachment A for Scenario 1 (Preferred Funding Package) and Attachment B for Scenario 2 (Loan Package).
 - B. Staff prepared the attached Cash Flow Analysis utilizing information from the Annual Report for the Fiscal Year Ended June 30, 2012, and the applicant's Rule 42 Exhibit submitted with the application.
 - C. The Debt Service Coverage Factor included in the Cash Flow Analysis included in the application was calculated using both Bonds and Notes Payable. Staff excluded the Notes Payable and recalculated the Coverage Factor.
 - D. Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal & replacement reserve versus the Capital Additions Required Surplus amount listed as the renewal & replacement reserve in the Cash Flow Analysis included in the application.

ENGINEERING: Mansour Mashayekhi

1. This project will require a Certificate of Convenience and Necessity from the PSC. The project sponsor should reference this application number on the PSC's Form No. 4 when its application is filed at the Commission given the requirement of West Virginia Code §24-2-11 (c) and (e) et seq.
2. Description: Mannington Sanitary Board proposes to upgrade existing WWTP from 250,000 GPD to 350,000 GPD to comply with DEP requirements. The upgrade would allow for future extensions into Sunshine, Rachel, and Route 250 areas of Marion County. Total construction cost is estimated to be \$3,140,000, and it is proposed to be funded with a \$3,140,000 WVDEP SRF loan ½ percent for 38 years.
3. Need for Project: The discharge requirements for the WWTP will be more stringent as required by the WVDEP. The upgrade is needed to meet the new discharge requirements and future extensions into the areas of Sunshine, Rachel, and Route 250 of Marion County.
4. Customer Density: This is an upgrade project and customer density will remain the same.

Cost per Customer: Based upon the estimated project cost (\$3,140,000) and existing customers (2,500) the cost of upgrade is about \$1,256 per customer; this amount appears to be reasonable in comparison to similar projects. It is also proposed that approximately 230 new customers will be added sometime in the future. Therefore, the project cost should even be lower (\$1,150).

Project Feasibility: This project appears to be technically feasible and poses little technical risk.

5. **Project Alternatives:** Two (2) alternatives were considered for this project. Alternative 2 was to build a brand new wastewater treatment plant. Due to high costs it was rejected. The Alternative 1 was selected to upgrade the existing system to meet DEP effluent discharge requirements and allow for the future extensions. The proposed upgrade will consist of a new mechanical bar screen, grit removal system, a new third secondary clarifier, new sludge storage basin, and a new oxidation ditch.
6. **Consolidation:** There are no consolidation issues with the selected alternative.
7. **Inconsistencies:** Staff reviewed the documents and could find no inconsistencies regarding this project.
8. **Operation and Maintenance Expenses:** The Mannington Sanitary Board will be responsible for operation and maintenance costs and for charging customers rates equivalent to the City's PSC approved tariff. A more refined analysis of O&M costs changes will be made during Staff's review of any Certificate filing. Staff would anticipate the O&M costs to increase by approximately \$20,000 (11%) as a result of this project.
9. **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 are \$188,000 and construction cost of \$2,500,000. This is approximately 7.5% of the construction cost as shown on the application and is on target with 7.5%, the range of fees suggested per ASCE Manual 45.
10. Staff recommends this application be sent to the Funding Committee.

Preliminary Project Ranking:

5. **O & M Capabilities:**
 - Performance Measures = 1 pt.
 - Asset Management Plan = 0 pts.
 - Environmental Management = 0 pts.

6. Readiness To Proceed: = 0 pts.
8. Cost effectiveness: = 5 pts.
10. Compliance with PSC Orders: = 0 pts.

MANNINGTON, CITY OF
 CASH FLOW ANALYSIS
 YEAR ENDED: June 30, 2012
 APPLICATION NO: 2013S-1447
 June 10, 2013

**PREFERRED FUNDING PACKAGE
 SCENARIO 1**

	Rule 42 Going Level Per Application Before Project	Rule 42 Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
<u>AVAILABLE CASH</u>				
Operating Revenues	381,543	497,900	-	497,900
Other Operating Revenue	10,146	13,240	-	13,240
Interest Income & Other Miscell.	1,285	1,285	-	1,285
Total Cash Available	392,974	512,425	-	512,425
<u>OPERATING DEDUCTIONS</u>				
Operating Expenses	179,316	207,218	401 (1)	207,619
Taxes	6,024	6,576	-	6,576
Total Cash Requirements Before Debt Service	185,340	213,794	401	214,195
Cash Available for Debt Service (A)	207,634	298,631	(401)	298,230
<u>DEBT SERVICE REQUIREMENTS</u>				
Principal & Interest (B)	141,408	224,040	-	224,040
Other Debt - Notes Payable	33,991	33,991	-	33,991
Reserve Account @ 10%	1,382	9,748	(103) (2)	9,645
Renewal & Replacement Fund (2.5%)	19,761	19,761	(6,982) (3)	12,779
Total Debt Service Requirement	196,542	287,540	(7,085)	280,454
Remaining Cash	11,092	11,091	6,684	17,776
Percent Coverage (A) / (B)	146.83%	133.29%		133.11%
Average rate for 4,000 gallons	\$ 33.84	\$ 44.16	\$ -	\$ 44.16

Staff Adjustments

<u>Adjustment Description</u>		\$	Increase <Decrease>
(1) Operating Expenses	Per Staff Analysis	207,619	401
	Per Application with Project	207,218	
<p>Difference is related to Staff's calculation of the 0.5% administrative fee associated with the CWSRF loan of \$3,140,000 @ 0% for 40 years (paid back over 38 years) and the administrative fee calculation that was included in the Rule 42.</p>			
(2) Reserve Account @ 10%	Per Staff Analysis	9,645	(103)
	Per Application with Project	9,748	
<p>Staff assumed a 10% reserve on the new debt.</p>			
(3) Renewal & Replacement Fund (2.5%)	Per Staff Analysis	12,779	(6,982)
	Per Application with Project	19,761	
<p>Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal and replacement fund versus the Capital Additions Required Surplus amount listed as the renewal & replacement reserve in the Cash Flow Analysis included in the application.</p>			

MANNINGTON, CITY OF
 CASH FLOW ANALYSIS
 YEAR ENDED: June 30, 2012
 APPLICATION NO: 2013S-1447
 June 10, 2013

**LOAN PACKAGE
 SCENARIO 2**

	Rule 42 Going Level Per Application Before Project	Rule 42 Proforma Per Application with Project	Staff Adjustments	Per Staff Analysis
	1	2	3	4
	\$	\$	\$	\$
<u>AVAILABLE CASH</u>				
Operating Revenues	381,543	602,352	49,902 (1)	652,254
Other Operating Revenue	10,146	16,017	-	16,017
Interest Income & Other Miscell.	1,285	1,285	-	1,285
Total Cash Available	<u>392,974</u>	<u>619,654</u>	<u>49,902</u>	<u>669,556</u>
<u>OPERATING DEDUCTIONS</u>				
Operating Expenses	179,316	199,316	-	199,316
Taxes	6,024	6,459	-	6,459
Total Cash Requirements Before Debt Service	<u>185,340</u>	<u>205,775</u>	<u>-</u>	<u>205,775</u>
Cash Available for Debt Service (A)	<u>207,634</u>	<u>413,879</u>	<u>49,902</u>	<u>463,781</u>
<u>DEBT SERVICE REQUIREMENTS</u>				
Principal & Interest (B)	141,408	323,099	4,461 (2)	327,560
Other Debt - Notes Payable	33,991	33,991	-	33,991
Reserve Account @ 10%	1,382	19,654	343 (3)	19,997
Renewal & Replacement Fund (2.5%)	19,761	19,761	(3,054) (4)	16,707
Total Debt Service Requirement	<u>196,542</u>	<u>396,505</u>	<u>1,750</u>	<u>398,255</u>
Remaining Cash	<u>11,092</u>	<u>17,374</u>	<u>48,152</u>	<u>65,525</u>
Percent Coverage (A) / (B)	<u>146.83%</u>	<u>128.10%</u>		<u>141.59%</u>
Average rate for 4,000 gallons	\$ 33.84	\$ 57.85	\$ -	\$ 57.85

**MANNINGTON, CITY OF
CASH FLOW ANALYSIS
YEAR ENDED: June 30, 2012
APPLICATION NO: 2013S-1447**

**Attachment B
LOAN PACKAGE
SCENARIO 2**

Staff Adjustments

<u>Adjustment Description</u>		\$	Increase <Decrease>
(1) Operating Revenues	Per Staff Analysis	652,254	49,902
	Per Application with Project	602,352	
<p>Difference is related to Staff's calculation of the projected increase in revenues from current rates of \$33.84 for 4,000 gallons to proposed rates of \$57.85 for 4,000 gallons versus the projected increase included in the Max Rate Cash Flow.</p>			
(2) Principal & Interest	Per Staff Analysis	361,551	4,461
	Per Application with Project	357,090	
<p>Difference is related to Staff's calculation of the principal & interest (P&I) of a typical loan of \$3,140,000 @ 5% for 40 years (paid back over 38 years) versus the P&I included in the Cash Flow for the the same loan.</p>			
(3) Reserve Account @ 10%	Per Staff Analysis	19,997	343
	Per Application with Project	19,654	
<p>Staff assumed a 10% reserve on the new debt.</p>			
(4) Renewal & Replacement Fund (2.5%)	Per Staff Analysis	16,707	(3,054)
	Per Application with Project	19,761	
<p>Staff used 2.5% of the projection of "Operating & Other Revenues" as the basis of the renewal and replacement fund versus the Capital Additions Required Surplus amount listed as the renewal & replacement reserve in the Cash Flow Analysis included in the application.</p>			