

west virginia department of environmental protection

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:	June 25, 2013
Subject:	Durbin Preliminary Application: 2013S-1424 (previously 2011S-1242) Storm/Sanitary Sewer Separation & WWTP Disinfection Replacement

- 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.  $\sqrt{}$  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.  $\sqrt{}$  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 replacing/separating the storm and sanitary sewer lines and replacing the UV disinfection system at the WWTP. There are numerous deficiencies/concerns that must be addressed prior to forwarding this project.

Some of these are listed below.

- Previously requested evaluations were not provided
- Address items from the DEP's 2005 NOV
- Lack of an SSES to further evaluate the problem areas and evaluate other alternative solutions.

Other comments are listed in the review and the sponsor needs to address all of these comments/deficiencies prior to re-filing the application.

Attachments: Technical Comments

### **Engineering Fees**

Estimated construction cost = \$2,034,860

Consultant's design fee =	\$183,140	Consultant's total fee $=$	\$365,330
Design fee percentage =	9.0%	Total fee percentage =	18.0%
Design fee per ASCE curve =	10.0%	Total fee per ASCE =	21.0%

#### **Preliminary Project Ratings:**

1.	Public Health Benefits	10
3.	Compliance with Standards	10
5.	O & M Capabilities	3
6.	Readiness to Proceed	0
8.	Cost Effectiveness	4
10.	Compliance with PSC Orders	0



#### 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

# <u>MEMORANDUM</u>

TO:	Mike Warwick, P.E. DEP/Infrastructure Sewer Technical Review Committee
FROM:	William S. Herold, P.E. OEHS/Environmental Engineering Division
DATE:	May 16, 2013
SUBJECT:	Town of Durbin Preliminary Application <b>Project No.: 2013S-1424</b> Storm/Sanitary Separation & WWTP Disinfection System Replacement Pocahontas 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 replace/separate the storm and sanitary sewer lines and replace the UV disinfection system at the Town of Durbin WWTP with a chlorination/de-chlorination system. The project will consist of the installation of approximately 20 LF of 6" and 14,564 LF of 8" sewer line; 48 manholes; 1,200 LF of 12", 4,550 LF of 18" and 500 LF of 24" storm sewer; repair/replace one (1) 60" box culvert; 30 drop inlets; a chlorination building with chlorination/de-chlorination equipment; a chlorine contact tank and all necessary appurtenances.

The cost per customer is **\$15,711**. Total estimated project cost is **\$2,623,805** (WVDEP CWSRF Loan: **\$523,805** @ 1.0% for 40 years; USDA RUS Loan: **\$500,000** @ 2.25% for 40 years; USDA RUS Grant: **\$600,000**; and WVIJDC District 3 Grant: **\$1,000,000**.)

#### **NEED FOR PROJECT:**

The Preliminary Engineering Report indicates the existing sanitary and storm sewers are in disrepair and are co-mingling storm water and sanitary wastewaters into the sanitary sewers causing extremely high flows due to I&I at the existing Town of Durbin WWTP. The existing UV disinfection system is in disrepair and needs to be replaced.

#### **CONCERNS:**

None.

### PERMITS:

If WVDEP CWSRF funding is used, a permit <u>will not</u> 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:** May 29, 2013

SUBJECT: Town of Durbin IJDC Project No. 2013S-1424

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### **RECOMMENDATION**

The Town of Durbin submitted a Preliminary Engineering Report dated April 2, 2013. The report is essentially the same as one submitted for project 2011S-1242, dated February 11, 2011. The construction costs have been escalated 8% across the board; the Region IV administrative costs have increased 122%. The total construction estimate is \$2,034,860 and total project estimate is \$2,623,805.

The 2011 application anticipated 100% funding from the USDA/RUS in the form of a grant (\$1,787,250) and a loan (\$664,750 – 2.5%, 38 years). This 2013 application anticipates funding from a USDA/RUS \$600,000 grant and \$500,000 loan (2.25%,38 years); from an IJDC \$1,000,000 grant; and from a CWSRF \$523,805 loan (1%, 38 years).

Several questions posed in our March 28, 2011 project review have not been addressed. For these, and other reasons, we recommend these questions be addressed prior to forwarding to the funding committee.

#### **PROJECT DESCRIPTION**

The proposed project consists of the separation of sanitary and storm sewers and the replacement of wastewater disinfection in the Town of Durbin. The sanitary sewers will be nearly completely replaced with the installation of 14,580 linear feet of 6 and 8 inch gravity pipeline, 48 manholes and 167 service connections, The storm sewer replacement includes 6,250 linear feet of 12, 18 and 24 inch pipe, 1 box culvert, 30 drop inlets and 4 tie-ins to existing storm sewers. The existing ultraviolet disinfection system at the wastewater treatment plant will be replaced with a chlorination/dechlorination system.

## Promoting a healthy environment.

# NEED FOR PROJECT

The existing sewers are severely deteriorated. Cross-connections causes several inflow sources to the wastewater stream treated at the wastewater plant. The excess inflow causes flows about 500% of the intended stabilization pond design. Several broken lines allow sewage to leak out of the system to the surface. There are no combined sewer overflows (CSOs) in the system, however information provided from the Town indicated that cross connections between both systems cause raw sewage to discharge along with the stormwater flows.

Additionally, the current ultraviolet disinfection is in disrepair with 24 of 40 bulbs operating. This cuts the overall system efficiency by 40%.

The sewer separation project is necessary to reduce health hazards to the public, improve conditions for aquatic life and discontinue hydraulically overloading the wastewater treatment system.

## **OPERATION and MAINTENANCE**

On-site inspections were performed in 2010 and determined areas of operation requiring correction. An NOV was issued to the Town in 2005 for various items (see below). While these issues were not discussed in the preliminary engineering report (PER), it is uncertain whether the Town provides adequate of operation of its wastewater collection and treatment systems.

The PER states that the project will reduce O&M costs. Cost reductions were cited for two areas – lower pumping costs with reduced inflow to the sanitary system, and less expense for the chlorination/dechlorination system when compared to the ultraviolet disinfection system.

## **PERMITS**

The Town of Durbin operates a wastewater and collection system under NPDES permit No. WV0024571. The permit was issued April 30, 2009 and expires April 29, 2014. Outlet # 001 is for a 125,400 gallon per day 2.5 acre stabilization pond with baffles serving 450 persons and discharging to the East Fork of the Greenbrier River. The Town is required to submit quarterly reports to the WV Department of Environmental Protection for an ongoing Infiltration/Inflow reduction program.

A Notice of Violation (NOV) was issued August 22, 2005 for inadequate UV system maintenance, solids being discharged to the stream, improper baffling of the treatment pond, duckweed on the pond, discharge skimmers improperly installed, holes in the pond liner, and malfunctioning generator, and inadequate record keeping/DMR reporting. Various on-site inspections performed in 2010 (6/23, 9/16, and 11/17) determined solids were still discharging to the stream, duckweed was still on the treatment pond, and an illegal bypass line which should be taken out of service.

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.

Consideration should be given to future facility upgrade for nutrient removal. This may be required as a result of more stringent federal regulations or state water quality criteria.

## **COMMENTS/DEFICIENCIES**

- Projected accountant's rate is \$48.00 which is 2.46% of the MHI (\$23,462).
- A public meeting needs to be advertised and held for the project.
- Unavoidable adverse impacts and mitigating measures need to be discussed in the PER.
- A study of the sewer system (SSES) was not performed to determine if other alternatives to complete replacement of the sewer lines (i.e. pipe lining, pipe bursting, etc) would eliminate the problems. Smoke testing, CCTV of the pipe, dye testing, etc. could provide important information on the system that is not known at this point. No occurrence of sewer backups into streets from the storm sewers was mentioned in the report. Page 5 of the report states "There are no copies of requests for storm channel improvements and/or dredging". Could the problem be remedied by only replacing the sanitary sewer lines, leaving the combined sanitary /storm arrangement to handle storm flows?
- The existing system includes two sewage pump stations. The proposed plan did not evaluate any rehabilitation/upgrade to these stations.
- The existing wastewater stabilization pond appears to be within the 100-year flood plain.
- The PER indicates, incorrectly, there are no known WV Health Department Reports or Orders, DEP Orders, Penalty Orders or Consent Decrees and/or Orders of the PSC."
- Items noted on a 2005 NOV that may not have been addressed; improper baffling of the pond, generator inoperable, discharge skimmers improperly installed and holes in the pond liner. These items need to be addressed in the PER and/or correspondence from the town provided which addresses them.
- Pages 7 and 21 refer to a chlorination system rather than a chlorination/dechlorination system referred to in the rest of the report.
- The PER indicates the chlorination/dechlorination building will be built in the 100-year floodplain. Have alternative locations been considered for this structure?
- Exhibits B through E have not been attached to this PER.

Estimated construction cost = \$2,034,860

## **Engineering Design Fee**

Consultant's design fee =	\$ 183,140	(NOTE: PER fee in design)
Design fee percentage =	9.0%	S /
Design fee per ASCE curve =	10.0%	

## **Engineering Total Fee**

Consultant's total fee =	\$	365,330
Total fee percentage =	18.	0%
Total fee per ASCE curve =	21.	0%

## **Preliminary Project Ratings:**

Health rating = 10 points Compliance rating = 10 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 57<sup>th</sup> St. Charleston, West Virginia 25304

> Re: Public Service Commission Staff Review Comments Application No. 2013S-1424 Town of Durbin 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:

X Forward the Application

\_\_\_\_ Forwarded to the Consolidation Committee

\_\_\_\_ Return the Application

Please advise if you have any questions.

Sincerely,

Argid Tenell

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

Enclosures IF:vt

## PUBLIC SERVICE COMMISSION STAFF TECHNICAL REVIEW

DATE:	June 10, 2013					
<b>PROJECT SPONSOR:</b>	TOWN OF D	TOWN OF DURBIN				
<b>PROJECT SUMMARY:</b>	Sewage treatment plant upgrade, replacement of disinfection system, replacement of sanitary and storm sewer mains to reduce CSO.					
<b>PROPOSED FUNDING:</b>	RUS Loan RUS Grant IJDC District CWSRF Loa Total	2.25%, 40 yrs. t 3 Grant n 1%, 40 yrs.	\$ 500,000 600,000 1,000,000 <u>523,805</u> \$2,623,000			
CURRENT RATES: PROPOSED RATES:	\$32.30 \$48.00	4,000 gallons 4,000 gallons				
		Applicatio	<u>n No. 2013S-1424</u>			
<b>RECOMMENDATION:</b>	X forward to the Funding Committee. forward to the Consolidation Committee. return to the Applicant.					

## FINANCIAL: Jim Boggess

- Current rates (\$32.30 for 4,000 gallons) are above the rates attributable to 1.5% (\$29.33), but below the rates attributable to 1.75% (\$34.22), and 2.0% (\$39.10) of the Median Household Income (MHI). Increasing the rates to 1.75%, and 2.0% of the MHI would provide additional revenues of \$3,082 and \$10,945.
- 2. Using Scenario 1, the preferred funding package consisting of a RUS loan of \$500,000 at 2.25% for 40 yrs., a RUS grant of \$600,000, an IJDC District 3 Grant of \$1,000,000, and a CWSRF loan of \$523,805 at 1% for 40 yrs. (paid back over 38 yrs.), the proposed target rate (\$48.00 for 4,000 gallons) would provide a cash flow deficit of \$293 and debt service coverage of 114.57%. An additional .5% (for a total of \$48.24 for 4,000 gallons) increase in proposed rates will be required in order to provide a cash flow surplus of \$97 and debt service coverage of 115.57%.
- 3. Using the Scenario 2 alternate loan of \$2,623,805 at 5% for 40 years, (paid back over 38 years), proposed maximum rates (\$129.00 for 4,000 gallons) would

provide a cash flow deficit of \$3,872 and debt service coverage of 110.85%. An additional 3.1% increase in proposed maximum rates (for a total of \$133.00 for 4,000 gallons) would be required in order to provide a cash flow surplus of \$2,466 and debt service coverage of 115.03%.

## 4. FINANCIAL 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. The Sponsor included a Maximum Rate Cash Flow Analysis with the application, using a proposed maximum rate of \$129.00 for 4,000 gallons. Staff used this data as its basis Scenario 2 analysis.
- C. The Going Level and Proforma adjustments included in the Applicant's Cash Flow Analyses for Scenarios1 and 2 were used in Staff's Cash Flow Analyses.
- D. Staff notes the Sponsor's target rates (\$48.00 for 4,000 gallons) are higher than 1.75% of the MHI. Based upon current polices for CWSRF loans, this rate would qualify for a loan of 0% interest, .5% administrative fee, for 40 years. If the preferred funding package is adjusted for this change, proposed target rates (\$48.00 for 4,000 gallons) would provide a cash flow surplus of \$1,459 and debt service coverage of 120.08%.

## ENGINEERING: Ingrid Ferrell

- 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 <u>West Virginia Code</u> 24-2-11 (c) and (e).
- 2. The Town of Durbin is proposing to replace the disinfection system at the WWTP from UV light to chlorination/de-chlorination. It also proposes to replace the sanitary and storm sewer systems. The collection system is a separate sanitary and storm sewer system. However, there are cross connections and much of the storm water is sent to the treatment plant and sanitary sewage seeps into the ground and makes its way into ditches.

Customer Density: N/A, no new customers.

Cost per Customer: based upon the preliminary project cost estimate (\$2,623,805) and the number of customers (167) the cost is approximately \$15,711 per customer. The cost per customer is slightly high but that is due to the small number of customers.

3. Project Alternatives:

The alternatives are limited. Staff has no issues with the project scope.

4. Project Feasibility:

The proposed project appears to be technically feasible and is necessary since the disinfection at the plant is in disrepair and the replacement of the sanitary and storm sewers are a health concern and will save Durbin money in the long run.

5. Consolidation:

There are no consolidation issues with this project.

6. Inconsistencies:

No significant inconsistencies were found.

7. Operation and Maintenance (O&M) Expenses:

The O&M expenses are estimated to decrease by \$4,087 due to the project. The PER includes calculations for the O & M expenses for the project and they appear to be reasonable. Staff will provide a more detailed review of O&M costs during our processing of any CN application resulting from this application.

8. Engineering Agreement:

The application includes information that is needed to show compliance with <u>West</u> <u>Virginia Code</u> §5G-1-1, <u>et seq</u>.

The proposed design fees total approximately 4.95% of the construction cost.

9. We recommend that this application be forwarded to the Funding Committee.

# **Preliminary Project Ranking:**

- O & M Capabilities: Performance Measures = 1 pt. Asset Management Plan = 1 pt. Environmental Management = 1 pt. Readiness To Proceed: = 0 pts. Cost effectiveness: = 4 pts. Compliance with PSC Orders: = 0 pts 5.
- 6.
- 8.
- 10.

#### PREFERRED FUNDING PACKAGE SCENARIO 1

#### TOWN OF DURBIN CASH FLOW ANALYSIS YEAR ENDED: June 30, 2012 APPLICATION NO: 2013S-1424 June 10, 2013

June 10, 2013	Rule 42	Rule 42			
	Per Application	Per Application	Staff		Per Staff
	Before Project	with Project	Adjustments		Analysis
	1	2	3	Medinina i fipilargan di go	4
	\$	\$	\$		\$
AVAILABLE CASH					
Operating Revenues	51,965	76,727	400	(1)	77,127
Other Operating Revenue	-	-	-		-
Interest Income & Other Misc.	15	15	-		15
Total Cash Available	51,980	76,742	400		77,142
OPERATING DEDUCTIONS					
Operating Expenses	38,107	34,020	-		34,020
Taxes	1,111	1,111	-		1,111
Total Cash Requirements Before					******
Debt Service	39,218	35,131	-		35,131
Cash Available for Debt Service (A)	12,762	41,611	400		42,011
DEBT SERVICE REQUIREMENTS					
Principal & Interest (B)	-	36,162	189	(2)	36,351
Reserve Account @ 10%	-	3,616	19	(3)	3,635
Renewal & Replacement Fund (2.5%)	1,300	1,919	9	(4)	1,928
Total Debt Service Requirement	1,300	41,697	217		41,914
Remaining Cash	11,462	(86)	183		97
Percent Coverage (A) / (B)	)	115.07%	<u> Anno 1995 - Anno 1997 - A</u>		115.57%
Average rate for 4,000 gallons	\$ 32.30	\$ 48.00	\$ 0.24		\$ 48.24

#### Staff Adjustments

	Adjustment Description		\$	Increase <decrease></decrease>
(1)	Operating Revenues	Per Staff Analysis Per Application with Project	77 <b>,12</b> 7 7 <b>6,72</b> 7	400
	Adjusted revenues to provide a positive cash flow surplus and debt service coverage	e of at least 115%.		
(2)	Principal & Interest	Per Staff Analysis Per Application with Project	36,351 36,162	189
	The difference in P&I is Staff's amortization of the \$523,805 CWSRF loan for for	ty years (paid back over 38 years) at 1% interest.		
(3)	Reserve Account @ 10%	Per Staff Analysis Per Application with Project	3,635 3,616	19
	Staff assumed a 10% reserve on the new debt.			
(4)	Renewal & Replacement Fund (2.5% of revenues)	Per Staff Analysis Per Application with Project	1,9 <b>2</b> 8 1,919	9

Adjusted to reflect 2.5% of Proforma operating revenues.

#### TOWN OF DURBIN CASH FLOW ANALYSIS YEAR ENDED: June 30, 2012 APPLICATION NO: 2013S-1424 June 10, 2013

June 10, 2013	Rule 42 Going Level Per Application Before Project	Rule 42 Proforma Per Application with Project 2 \$	Staff Adjustments 3 \$		Per Staff Analysis 4 \$
AVALADIE CASH					
Operating Revenues	51.965	210 574	3 464	(1)	214.038
Other Operating Revenue	-	-	-	(-)	
Interest Income & Other Misc.	15	15	-		15
Total Cash Available	51,980	210,589	3,464		214,053
OPER ATTNIC DEDI ICTIONS					
Operating Expenses	38 107	34 020	2.02		34.020
Taxes	1,111	1,111	-		1,111
lotal Cash Requirements Before	20.010	25 121			25 121
Debt Service	39,218	35,131	-		35,131
Cash Available for Debt Service (A)	12,762	175,458	3,464		178,922
DEBT SERVICE PEOLIPEMENTS					
Principal & Interest (B)	-	151,823	3,727	(2)	155,550
Reserve Account @ 10%	_	15 182	373	(3)	15 555
Renewal & Replacement Fund (2.5%)	1,300	5,265	86	(4)	5.351
Total Debt Service Requirement	1,300	172,270	4,186		176,456
Remaining Cash	11,462	3,188	(722)		2,466
Percent Coverage (A) / (B)		115.57%			115.03%
Average rate for 4,000 gallons	\$ 32.30	\$ 129.00	\$ 4.00		\$ 133.00

Attachment B LOAN PACKAGE SCENARIO 2

#### Staff Adjustments

	Starr Aujustments		s	Increase <decrease></decrease>
(1)	Operating Revenues	Per Staff Analysis Per Application with Project	214,038 210,574	3,464
	Adjusted to achieve a positive cash flow and a 115% debt coverage.			
(2)	Principal & Interest	Per Staff Analysis Per Application with Project	155 <b>,550</b> 151, <b>823</b>	3,727
	The difference in P&I is Staff's calculation of a loan of \$2,623,805 for 40 years (paid over 38 years) at 5% interest.			
(3)	Reserve Account @ 10%	Per Staff Analysis Per Application with Project	15,555 15,182	373
	Staff assumed a 10% reserve on the new debt.			
(4)	Renewal & Replacement Fund (2.5%)	Per Staff Analysis Per Application with Project	5,351 5,265	86

Staff used 2.5% of the projected operating revenues as the basis for the renewal & replacement fund.