

**Caroline County
Board of Supervisors Agenda
Executive Summary**

Meeting Date: **June 8, 2021**

Title: **Consent Agenda – Approval of Engineering Task Contract –
Design of Polecat Creek Interceptor**

(Check Mark)

<input checked="" type="checkbox"/> Consent	<input type="checkbox"/> Closed Meeting
<input checked="" type="checkbox"/> Action	<input type="checkbox"/> Public Hearing
<input type="checkbox"/> No Action (Information Only)	<input type="checkbox"/> Ordinance
<input type="checkbox"/> Resolution	<input type="checkbox"/> PowerPoint Presentation

Summary: As the Board is aware, the utility bonds recently sold by the County include \$12,261,000 to fund the construction of a Polecat Creek Interceptor sewer line to convey wastewater from the Ladysmith Service Area directly to the wastewater treatment plant. All wastewater from the Ladysmith Primary Growth Area is currently conveyed in a circuitous route through Carmel Church before discharging into the wastewater treatment plant. This creates a bottleneck that reduces future capacity in the Ladysmith and Carmel Church growth areas. The Polecat Creek Interceptor project will eliminate this problem.

Attached is a proposed task contract with WW Associates, Inc. for the design of the 30”, 25,600 linear feet Polecat Creek Interceptor project. Additional details are contained in the attached memorandum from Director of Public Works/Utilities Joseph Schiebel with accompanying documents from WW Associates, Inc.

Budget Impact: The design task contract with WW Associates Inc. totals \$625,000. The proposed fees are well within what the Virginia division of the United States Department of Agriculture Rural Development considers reasonable for basic engineering services of this magnitude.

Adequate funds were included in the bond sale for the proposed engineering design fees and the required funds are in hand.

Requested Action from Board of Supervisors: Authorize the County Administrator to sign Project Order Number W-2021-1 Task Contract with WW Associates, Inc. for the design of the Polecat Creek Interceptor project

County of Caroline
Joseph C. Schiebel
Director
Public Works/Utilities
PO. Box 424
Bowling Green, Virginia 22427
(804) 633-4390 Main
(804) 633-9558 Fax
E-mail: jschiebel@co.caroline.va.us



MEMORANDUM

To: Charles M. Culley Jr.
County Administrator

From: Joseph C. Schiebel
Director of Public Works/Utilities

Date: June 2, 2021

Caroline County, VA



SUBJECT: Engineering Task Contract – Polecat Creek 30" Interceptor

In the most recent Utility Bond Sale the following projects were included:

\$12,261,000 Polecat Creek Intorceptor
\$ 767,000 South River Pump Station
\$ 1,698,000 12" South River Force Main
\$ 1,798,000 24" Sewer Interseptor
\$ 4,429,000 30" Interconnector

Staff requested a task contract from our design engineer WW Associates, to perform the following services. (see attached task contract for the full scope)

- Design Polecat Creek Interceptor consisting of approximately 25,600 linear feet of 30" gravity sewer
- Route Evaluation Study
- Field Surveying
 - Property research
 - Private property letter and telephone notification for access, if required
 - Property line ties and roadway monumentation ties
 - Topography and utility location

- Preliminary Design:
- Final Design:

Note: This task contract does not include Bidding, Construction Administration, and Construction Inspection will be negotiated following the design phase of this project.

WW Associate provided a cost estimate based on the USDA Rate Schedule while working on the funding for this project that included \$769,434 for the design engineering of this project. (See attached cost estimate)

WW Associates' task contract for this design of the project is \$625,000. Therefore staff recommends that the Board of Supervisors approved the task contract for the Polecat Creek Interceptor for the creation of the gravity sewer main in the amount of \$625,000. Funding for this project has been provided through bond sales.

Note: Task contracts are being worked on for the design of the other projects and will be presented at your August meeting.

Attached:

- Project Estimate
- Task Contract
- Task Contract Scope
- USDA Rate Schedule

EXHIBIT A
SCOPE OF WORK
POLECAT CREEK INTERCEPTOR PROJECT
May 28, 2021

The project scope is generally summarized as the design of the following elements:

- Polecat Creek Interceptor (25,600 linear feet)

An overall graphic of the project is included with this exhibit for reference.

Scope of Services

1. Route evaluation and selection study shall be provided to determine the most feasible route as approved by Caroline County.

2. Surveying:

Field survey will be provided by ground traverse to allow for location of underground utilities and property pins.

Provide field surveying of features such as property lines, right-of-way lines, streams and creeks, culvert pipes (including invert elevations), bridge abutments, underground utilities (including but not limited to telephone, electric, fiber optic, cable television, water lines, etc.), and other pertinent features necessary for the design of the water line project. Relate these features to GIS monumentation in Caroline County, Virginia which shall provide NAVD 88 vertical datum, and horizontal, vertical grid, North zone, NAD 83 U.S. Survey Feet.

Property ownership information (including current owners' names, tax map numbers, deed book / references and subdivision lot numbers, etc.) and property ties shall be provided for all the property directly adjacent to the project.

Field Survey shall include:

- Property research.
- Private property letter and telephone notification for access, if required.
- Property line ties and roadway monumentation ties.
- Topography and utility location.

3. Preliminary Design:

Using the survey topography and field survey data, a preliminary horizontal alignment of the sewer line, with VDOT coordination, shall be prepared and submitted to Caroline County for approval.

Prepare a preliminary cost estimate based on the approved alignment.

Prepare certified temporary and permanent easement plats, where necessary, for the Caroline County to use in recording easements.

4. Final Design:

Prepare final design including plan, profiles, details, and erosion and sediment control. E&S control plan will be to Caroline County standards and submitted to the County for approval.

Submit plans to Caroline County and VDOT for review and approval.

Revise plans as necessary based on Caroline and VDOT comments.

Prepare final cost estimate based on final design.

Prepare Bidding Documents for up to three construction contracts, as approved by Caroline County. Prepare project construction specifications and coordinate with Caroline County water and sewer standards.

Provide all deliverable documents to Caroline County, including all contract documents and easement plats in electronic format. Provide electronic copies of the final contract documents.

Note: Bidding, Construction Administration, and Construction Inspection will be negotiated following the design phase of this project.

Project:	PROJECT 1 - South River PS Upgrade/Polecat Creek Interceptor
Location:	Caroline County, Virginia
WWA Project No:	7.00
Date:	23-Nov-20
Estimate By:	JAC
Checked By:	HFW
Status:	CONCEPTUAL
Description:	Cost Summary
Page:	1



Item	Units	Quantity						Total Cost
1.75 MGD South River PS Upgrade	LS	1						\$ 767,000
30" Polecat Creek Interceptor	LS	1						\$ 12,261,000
							TOTAL	\$ 13,028,000

Project:	PROJECT 1 - South River PS Upgrade/Polecat Creek Interceptor
Location:	Caroline County, Virginia
WWA Project No:	7.00
Date:	23-Nov-20
Estimate By:	JAC
Checked By:	HFW
Status:	CONCEPTUAL
Description:	1.75 MGD Pump Station Cost Estimate
Page:	2



Item	Units	Quantity	Unit Material Cost	Total Material Costs	Unit Labor Cost	Total Labor Costs	Total Unit Costs	Total Cost
General Conditions	LS	1		\$0	\$20,000	\$20,000	\$20,000	\$ 20,000
Mobilization	LS	1		\$0	\$20,000	\$20,000	\$20,000	\$ 20,000
Site Demolition	LS	1		\$0	\$5,000	\$5,000	\$5,000	\$ 5,000
Backfill/Compaction/Site Grading/Site Restoration	LS	1		\$0	\$9,000	\$9,000	\$9,000	\$ 9,000
Precast Concrete Wetwell with Hatches	EA	1	\$37,000	\$37,000	\$5,000	\$5,000	\$42,000	\$ 42,000
Precast Concrete Valve Vault with Hatches	EA	1	\$10,000	\$10,000	\$2,000	\$2,000	\$12,000	\$ 12,000
Precast Concrete Meter Vault with Hatches and Magnetic Flow Meter	EA	1	\$16,000	\$16,000	\$2,500	\$2,500	\$18,500	\$ 18,500
ESC Control	LS	1	\$1,500	\$1,500	\$500	\$500	\$2,000	\$ 2,000
Temporary Bypass Pumping	Months	2		\$0	\$12,000	\$24,000	\$12,000	\$ 24,000
Concrete Equipment Pads (Generator/Electrical Building)	EA	2	\$2,250	\$4,500	\$750	\$1,500	\$3,000	\$ 6,000
10' x 12' Precast Concrete Electrical Building	EA	1	\$19,000	\$19,000	\$2,000	\$2,000	\$21,000	\$ 21,000
Submersible Wastewater Pump	EA	2	\$45,000	\$90,000	\$0	\$0	\$45,000	\$ 90,000
Variable Frequency Drive	EA	2	\$3,000	\$6,000	\$1,500	\$3,000	\$4,500	\$ 9,000
Miscellaneous Interior Piping, Fittings & Valves	LS	1	\$75,000	\$75,000	\$0	\$0	\$75,000	\$ 75,000
Mechanical Installation	LS	1	\$0	\$0	\$50,000	\$50,000	\$50,000	\$ 50,000
Instrumentation & Controls	LS	1	\$21,400	\$21,400	\$10,000	\$10,000	\$31,400	\$ 31,400
Electrical	LS	1	\$77,625	\$77,625	\$50,000	\$50,000	\$127,625	\$ 127,625
Subtotals:				\$358,025		\$204,500		\$ 562,525
5.3% Sales Tax on Materials (WASTEWATER PROJECTS ARE EXEMPT)								\$ -
							SUBTOTAL	\$ 562,525
							CONSTRUCTION MARKUP @ 15%	\$ 84,379
							ENGINEERING @ 13.5% (PER USDA RATE SCHEDULE)	\$ 87,332
							CONTINGENCY @ 5%	\$ 32,345
							TOTAL AFTER CONSTRUCTION MARKUP (ROUNDED)	\$ 767,000

Project:	PROJECT 1 - South River PS Upgrade/Polecat Creek Interceptor
Location:	Caroline County, Virginia
WWA Project No:	7.00
Date:	23-Nov-20
Estimate By:	JAC
Checked By:	HFW
Status:	CONCEPTUAL
Description:	30" Polecat Creek Interceptor Cost Estimate
Page:	3



Item	Units	Quantity	Unit Material Cost	Total Material Costs	Unit Labor Cost	Total Labor Costs	Total Unit Costs	Total Cost
30" PVC Sanitary Sewer Interceptor (Includes Manhole Structures)	LF	25,400	\$200	\$5,080,000	\$125	\$3,175,000	\$325	\$ 8,255,000
Deck Matting	SF	162,560		\$0	\$3	\$487,680	\$3	\$ 487,680
42" Jacked/Bored Steel Casing Under Route 207	LF	200	\$1,700	\$340,000	\$800	\$160,000	\$2,500	\$ 500,000
Decommission Existing VDOT Pump Station	LS	1		\$0	\$50,000	\$50,000	\$50,000	\$ 50,000
Subtotals:				\$5,420,000		\$3,872,680		\$ 9,292,680
5.3% Sales Tax on Materials (WASTEWATER PROJECTS ARE EXEMPT)								\$ -
							SUBTOTAL	\$ 9,292,680
							CONSTRUCTION MARKUP @ 15%	\$ 1,393,902
							ENGINEERING @ 7.2% (PER USDA RATE SCHEDULE)	\$ 769,434
							CONTINGENCY @ 5%	\$ 534,329
New Easement Acquisition (18 Parcels)	EA	18			\$15,000	\$270,000	\$15,000	\$ 270,000
							TOTAL AFTER CONSTRUCTION MARKUP (ROUNDED)	\$ 12,261,000

This is Virginia Attachment 1 consisting of four pages referred to in and part of the Agreement between Owner and Engineer for Professional Services, 2008 Edition.

This **Virginia Attachment 1** amends and supplements Exhibit C of the **Agreement between OWNER and ENGINEER for Professional Services** for utilization with Rural Development funded projects in Virginia.

Below is a fee percentage table which may be used to determine Basic Engineering fees considered reasonable for Rural Development projects. The Study and Report phase as outlined in paragraph A.1.01 is not included in the fees as outlined below. The fees as outlined below are for those performed or furnished under paragraphs A.1.02 through A.1.06. For water and sewer treatment facilities, add one percent to the Table I fee.

FEEES CONSIDERED REASONABLE FOR BASIC ENGINEERING

<u>CONSTRUCTION COST * \$</u>	<u>TABLE I % BASIC ENG. FEE</u>	<u>TABLE II % BASIC ENG. FEE</u>
less than 100,000	----- TO BE NEGOTIATED -----	
100,000	15.0	14.0
200,000	14.8	13.0
300,000	14.6	12.0
400,000	14.4	11.0
500,000	14.2	10.0
600,000	14.0	9.8
700,000	13.0	9.6
800,000	12.0	9.4
900,000	11.0	9.2
1,000,000	10.0	9.0
2,000,000	9.8	8.8
3,000,000	9.6	8.6
4,000,000	9.4	8.4
5,000,000	9.2	8.2
10,000,000	8.2	7.2 ←
20,000,000	8.0	7.0

CONSTRUCTION ITEMS

<u>TABLE I</u>	<u>TABLE II</u>
Water and sewer treatment facilities (add one percent)	Water distribution lines 16" and larger in diameter and appurtenances
Booster Stations	Sanitary sewerlines greater than 24" in diameter and appurtenances
Water distribution lines, under 16" in diameter and appurtenances	Water storage facilities (including rehabilitation)
Sanitary sewer lines under 24" in diameter and appurtenances	Storm sewers and drains
Renovation and rehabilitation	Roads and streets
Lift Stations	Industrial buildings, warehouses, etc.
	Grading except when incidental to the project

*Estimated construction cost

**PROJECT ORDER NUMBER W-2021-1 PURSUANT TO
ENGINEERING TERM CONTRACT**

Date: May 31, 2021

Owner: Caroline County

Owner's Project Manager: Joseph C. Schiebel

Engineer: WW Associates, Inc.

Engineer's Project Manager/Coordinator: Herbert F. White III, P.E.

Project Title: Polecat Creek Interceptor

This Project Order Number W-2021-1 is issued pursuant to the Engineering Term Contract for Professional Services dated May 25, 2021.

SCOPE OF WORK: Project No. 1 - Polecat Creek Interceptor (30"- 25,600 linear feet)

CONTRACT AMOUNT:

We propose to provide these engineering services in accordance with the following lump sum fee schedule:

<u>Task</u>	<u>Lump Sum Fee</u>
Design Services	\$ 625,000

In witness whereof the undersigned have executed this contract on the dates set forth below of their respective signatures.

WW Associates, Inc
ENGINEER

Caroline County
OWNER

By: *Herbert F. White III* 5.31.21
(Signature in ink) (Date)

By: _____
(Signature in ink) (Date)

Name: Herbert F. White III, P.E.

Name: _____

Title: President

Title: _____

SUMMARY OF PROJECT WORK ORDERS

No.	Description	Amount
<u>Work Order No.s:</u>		
1.	Polecat Creek Interceptor	\$ 625,000

5/31/21

Polecat Interceptor 25,600 LF

ECL 10,686,582

USDA
RATE .072
 769,434

Const R
Admin - 75,000
 694,434

10% discount - 69,443
 624,991

⤴ 625,000