

# Issue Analysis Form (rev. July 2013)



**Date:** November 28, 2017  
**Item:** Southpoint Business Park CIP Engineering  
**Lead Department(s):** Economic Development  
**Contact Person(s):** Jeff Stoke, Deputy County Administrator

## Description and Current Status

The County received three responses for engineering solutions for water and sewer at Southpoint Business Park. The interview panel consisted of Jeff Stoke, Dickie Thompson, Robert Wilson (Dinwiddie), Alex Bresko and Joe Simmons. Dewberry engineers have been selected to move forward with the project. The work will be completed in 2018 with both water and sewer projects refined for inclusion in the next Capital Improvement Plan (CIP) process.

## Government Path

Does this require IDA action?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does this require BZA action?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does this require Planning Commission action?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does this require Board of Supervisors action?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Does this require a public hearing?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

**If so, before what date?**

The selection of the engineering consultant's scope of work, appropriation of CIP funds, and reimbursement resolution requires the approval of the Prince George County Board of Supervisors.

## Fiscal Impact Statement

\$78,010 County fiscal impact. Funds would come from the Spring 2018 bond issuance for this CIP item. A reimbursement resolution is required to approve the scope of work.

## County Impact

This project will help identify solutions to water and sewer deficiencies at Southpoint Business Park. Estimated corrective scope of work and estimated construction costs will be created.

## Notes

Board of Supervisors  
County of Prince George, Virginia

Resolution

At a regular meeting of the Board of Supervisors of the County of Prince George held in the Boardroom, Third Floor, County Administration Building, 6602 Courts Drive, Prince George, Virginia this 28<sup>th</sup> day of November, 2017:

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Present:

Vote:

William A. Robertson, Jr., Chairman  
Donald R. Hunter, Vice-Chairman  
Alan R. Carmichael  
Hugh G. Mumford  
T. J. Webb

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A-6

On motion of \_\_\_\_\_, seconded by \_\_\_\_\_, which carried unanimously, the following Resolution was adopted:

**RESOLUTION; AWARD OF CONTRACT AND BUDGET AMENDMENT AND APPROPRIATION (\$78,010 SOUTHPOINT UTILITY ENGINEERING STUDY / PROJECT)**

WHEREAS, On November 14, 2017, an interview panel reviewed scope of work from contracted County engineers to obtain pricing for Southpoint Business Park infrastructure improvements. Three (3) responses were received and evaluated and the recommended firm is Dewberry Engineering with a proposed price of \$78,010; and

WHEREAS, The amount of \$78,010 will be available with the spring 2018 bond issuance for the Southpoint Utility Engineering Study; and

WHEREAS, Staff is requesting authorization for the County Administrator to enter into a contract with Dewberry Engineering in the amount of \$78,010 to move forward with the Southpoint Utility Engineering Study.

NOW, THEREFORE, BE IT RESOLVED That the Board of the Supervisors of the County of Prince George this 28<sup>th</sup> day of November, 2017, hereby authorizes the County Administrator to execute a contract with Dewberry Engineering to complete the Southpoint Utility Engineering Study in the amount of \$78,010; AND BE IT RESOLVED That the Board of Supervisors of the County of Prince George this 28<sup>th</sup> day of November, 2017, does hereby authorize and appropriate the following increase of funds within the 2017-2018 Budget, such line items increased as follows, which monies shall be expended for purposes authorized and approved by the Board of Supervisors of the County of Prince George:

FUND/ORGANIZATION

AMOUNT

**Capital Improvement Fund (0311)**

Revenues:

0311-40-900-8115-341401	Debt Proceeds	\$78,010
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Expenditures:

0311-08-301-3172-43140	CIP – Southpoint Utility Engineering Study Project	\$78,010
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A Copy Teste:

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Percy C. Ashcraft  
County Administrator

Board of Supervisors  
County of Prince George, Virginia

Resolution

At a regular meeting of the Board of Supervisors of the County of Prince George held in the Boardroom, Third Floor, County Administration Building, 6602 Courts Drive, Prince George, Virginia this 28<sup>th</sup> day of November, 2017:

Present:

Vote:

William A. Robertson, Jr., Chairman  
Donald R. Hunter, Vice-Chairman  
Alan R. Carmichael  
Hugh G. Mumford  
T. J. Webb

A-6

On motion of \_\_\_\_\_, seconded by \_\_\_\_\_, which carried unanimously, the following Resolution was adopted:

**RESOLUTION OF OFFICIAL INTENT TO REIMBURSE  
EXPENDITURES WITH PROCEEDS OF BONDS  
OR OTHER INDEBTEDNESS**

**WHEREAS**, the Board of Supervisors (the "Board") of the County of Prince George, Virginia (the "County") has determined to undertake a capital improvement project to complete an engineering study for Southpoint Utility Capital Improvements (the "Purchase");

**WHEREAS**, the Board currently expects that the cost of the Purchase, excluding the costs of the financing thereof, will be approximately \$78,010;

**WHEREAS**, the Board currently expects to incur long-term indebtedness in an amount now estimated at \$78,010 to pay a portion of the costs of the Purchase, which indebtedness may take the form of tax-exempt bonds or other types of debt; the proceeds of such indebtedness may be used either for paying costs of the Purchase directly or for repaying other indebtedness previously incurred for the Purchase or for a combination of such purposes; and

**WHEREAS**, the County may also advance its own funds to pay expenditures relating to the Purchase (collectively, the "Expenditures") prior to receiving reimbursement for such Expenditures from the proceeds of tax-exempt bonds or taxable debt, or both;

**THEREFORE, BE IT RESOLVED**, by the Board of Supervisors of the County as follows:

1. The County intends to utilize the proceeds of tax-exempt bonds or notes (the “Bonds”) or to incur other debt to pay Purchase costs in an amount not currently expected to exceed \$78,010.

2. The County intends that the proceeds of the Bonds be used to pay or reimburse the County for the payment of Expenditures made after the date of this Resolution or made within 60 days prior to the date of this Resolution or Expenditures which are incurred for certain preliminary costs such as architectural, engineering, surveying, soil testing, bond issuance expenses and the like. The County reasonably expects on the date hereof that it will pay or reimburse the Expenditures with the proceeds of the Bonds or other debt.

3. Each Expenditure will be, unless otherwise approved by bond counsel, either (a) of a type properly chargeable to a capital account under general federal income tax principles (determined in each case as of the date of the Expenditure), (b) a cost of issuance with respect to the Bonds, or (c) a nonrecurring item that is not customarily payable from current revenues.

4. The County intends to make a reimbursement allocation, which is a written allocation by the County that evidences the County’s use of proceeds of the Bonds to reimburse an Expenditure, no later than 18 months after the later of the date on which the Expenditure is paid or the Purchase is placed in service or abandoned, but in no event more than three years after the date on which the Expenditure is paid. The County recognizes that exceptions are available for certain “preliminary expenditures,” costs of issuance, and certain de minimis amounts.

5. The Board intends that the adoption of this Resolution confirms the “official intent” of the County within the meaning of Treasury Regulations Section 1.150-2 promulgated under the Internal Revenue Code of 1986, as amended.

6. The County Administrator and other officers of the County are hereby authorized and directed to take such actions, in consultation with the County’s counsel, as may be necessary or desirable to implement the planning and structuring of the Bonds, including but not limited to negotiations with lenders or investment bankers for the Bonds, the selection of bond counsel to supervise the issuance of such Bonds and the engagement of such other professionals as may be necessary or desirable to assist the County in this process, but such officers shall not obligate the County on such Bonds without further approval by the Board.

7. This Resolution shall take effect immediately upon its passage.

A Copy Teste:

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Percy C. Ashcraft  
County Administrator

November 17, 2017

Mr. Jeffrey D. Stoke, CEcD, ICMA-CMC  
Deputy County Administrator  
Prince George County  
P.O. Box 68  
6602 Courts Drive, Third Floor  
Prince George, VA 23875

**RE: Proposal for Professional Engineering Services  
Southpoint Business Park Utilities Evaluation**

Dear Mr. Stoke:

Dewberry Engineers Inc. (Dewberry) is pleased to submit our proposal, per your request, to provide professional engineering services to evaluate the best solution to serve the Southpoint Business Park with water and wastewater service. Dewberry's Project Understanding, Scope of Services, and Fee have been developed based on phone conversations, e-mail correspondence, and our experience working on the Water/Wastewater Master Plan. All work under this proposal will be performed in accordance with the terms and conditions of our Contract for On-Call Engineering Services with Prince George County, executed April 1, 2014.

**PROJECT UNDERSTANDING**

It is our understanding that Prince George County would like to expand their water and wastewater capacity for the Southpoint Business Park to allow for additional industrial growth. The Water and Wastewater Master Plan, completed by Dewberry in January 2016, identified a deficiency in available water and wastewater capacity, which will require significant infrastructure improvements to close this gap and meet future needs.

Three (3) options will be evaluated to provide additional sewer capacity to the Southpoint Business Park.

1. Re-Route Sewer Flows to Hopewell
2. Construct a County-Owned Wastewater Treatment Plant
3. Expand Conveyance and Treatment Capacity to the Petersburg Connection and the SCWWA WWTP

Three (3) options will be evaluated to provide additional water supply to the business park.

1. Continue Receiving Majority of Supply from ARWA with VAM Supplement
2. Receive Majority of Supply from VAM with ARWA Supplement
3. Construct County-Owned Surface Water Treatment Plant

In addition to water supply options, we will also evaluate providing additional storage at the Southpoint Business Park for purposes of additional fire protection. The two (2) options evaluated will be to extend the Food Lion Distribution System to the Central System or the construction of a new 1 million gallon elevated tank.

For top ranking options being considered for implementation, a high level rate analysis will be conducted to estimate revised rates that will necessary to generate adequate revenue for payment of related new debt service and operational cost associated with each option.

## **SCOPE OF SERVICES**

Dewberry proposes to perform the services outlined below to evaluate the options presented in the Project Understanding.

### **Task A: Preliminary Engineering Report – Wastewater**

Evaluate the two (2) wastewater conveyance options to adjacent municipalities identified in the project understanding. This will include the following:

1. Coordinate with the City of Petersburg, SCWWA, and City of Hopewell for wastewater disposal and treatment options.
2. Coordinate with the County for preliminary siting of the wastewater pump stations.
3. Prepare preliminary calculations for preliminary sizing of the facilities for each option.
4. Coordinate with equipment manufacturers for purposes of preparing preliminary layouts and budgetary cost estimates.
5. Develop phasing plan for wastewater conveyance and disposal options.
6. Prepare budgetary construction cost estimates for proposed wastewater conveyance options.
7. Prepare operating and maintenance cost estimates for each option.

Evaluate the construction of a County-owned wastewater treatment plant. This will include the following:

8. Coordinate with the Virginia Department of Environmental Quality (VDEQ) for permitting requirements for different wastewater treatment and effluent disposal options.
9. Prepare sampling plan for Prince George County to implement for purposes of wastewater characterization, which will assist in WWTP sizing.
10. Prepare preliminary treatment plant sizing calculations for purposes of preliminary site size requirements and preparation of budgetary cost estimates.
11. Coordinate with equipment manufacturers for purposes of preparing preliminary layouts and budgetary cost estimates.
12. Prepare schematics and preliminary layouts of proposed wastewater treatment plant and effluent disposal options.



13. Coordinate with Prince George County for preliminary siting of proposed wastewater treatment and effluent disposal facility.
14. Evaluate requirements for developing a reclaimed water system for the Southpoint Business Park.
15. Prepare phasing plan for construction of wastewater treatment plant.
16. Prepare budgetary construction cost estimates for proposed wastewater treatment plant and effluent disposal options. This will include phasing options.
17. Prepare operations and maintenance cost estimates for the operation of the wastewater treatment plant.
18. Prepare Preliminary Engineering Report to include result of the evaluation, comparison of wastewater disposal supply options, budgetary construction cost estimates, and net present worth analysis. The final report will provide a recommendation for the selected option.
19. Attend five (5) meetings during the project duration.

#### **Task B: Preliminary Engineering Report – Water**

Evaluate the two (2) water supply options from adjacent municipalities identified in the project understanding. This will include the following:

1. Coordinate with the ARWA and VAM for water supply options.
2. Coordinate with the County for preliminary siting of the water pump station locations.
3. Prepare preliminary calculations for preliminary sizing of the facilities for each option.
4. Coordinate with equipment manufacturers for purposes of preparing preliminary layouts and budgetary cost estimates.
5. Develop phasing plan for water supply options.
6. Prepare budgetary construction cost estimates for proposed water supply options.
7. Prepare operating and maintenance cost estimates for each option.

Evaluate the construction of a County-owned surface water treatment plant. This will include the following:

8. Coordinate with the Virginia Department of Environmental Quality (VDEQ) for water withdrawal requirements from the James River or Appomattox River. Develop list of analysis and permitting requirements needed for a withdrawal permit.
9. Complete desktop safe yield analysis estimate.
10. Coordinate with the Virginia Department of Health for treatment requirements.

11. Evaluate water quality and treatment data from nearby water treatment plants for purposes of preliminary determination of the type of treatment required.
12. Prepare preliminary treatment plant sizing calculations for purposes of preliminary site size requirements and preparation of budgetary cost estimates.
13. Coordinate with equipment manufacturers for purposes of preparing preliminary layouts and budgetary cost estimates.
14. Prepare schematics and preliminary layouts of proposed water treatment plant.
15. Coordinate with Prince George County for develop preliminary site locations for the water treatment plant and raw water intake.
16. Prepare phasing plan for construction of water treatment plant and raw water intake.
17. Evaluate finished water conveyance options from the proposed water treatment plant sites to the Southpoint Business Park.
18. Prepare budgetary construction cost estimates for proposed water treatment plant and raw water intake. This will include phasing options.
19. Prepare operations and maintenance cost estimates for the operation of the water treatment plant.
20. Prepare Preliminary Engineering Report to include result of the evaluation, comparison of water supply options, budgetary construction cost estimates, and net present worth analysis. The final report will provide a recommendation for the selected option.
21. Attend five (5) meetings during the project duration, in addition to the five (5) meetings for Task A.

#### **Task C: Rate Analysis – Water and Sewer**

For top ranking options being considered for implementation, a high level rate analysis will be conducted to estimate revised rates that will necessary to generate adequate revenue for payment of related new debt service and operational cost associated with each option.

1. To perform these rate analyses, a rate model will be developed using existing user information, current rate structure(s).
2. Calibrate the model using existing revenue.
3. Work with the County to establish desired rate proportioning (i.e. flat, descending, acceptable minimum user rates etc.), short lived assets, desired reserves and levels of acceptable risk associated with forecasting of new users.
4. Utilize capital improvements recommended for implementation to develop debt service estimates, and additional associated operational cost.

5. Utilizing the calibrated model, derive new water and sewer rates for each feasible near-term build-out option.
6. Provide an abbreviated comparative rate summary comparing new rates to rates of adjacent localities and published statewide rates for similar localities.
7. Attend two (2) review/coordination meetings.

### **SCHEDULE**

Dewberry can begin work on this project immediately upon receiving a Notice to Proceed. The following is the proposed schedule:

Notice to Proceed:	December 4, 2017
Submit Draft PER:	June 29, 2018
Review Meeting by:	July 13, 2018
Submit Final PER:	August 3, 2018

### **FEE**

Dewberry's lump sum fee for these services is as follows:

Task A: PER – Wastewater: .....	\$30,305.00
Task B: PER – Water: .....	\$32,905.00
Task C: Rate Analysis – Water and Sewer: .....	\$14,800.00
<b>Total: .....</b>	<b>\$78,010.00</b>

A copy of our man-hour breakout estimate is attached.

### **CLARIFICATIONS OR REQUIREMENTS**

1. Design and construction administration services are not included as part of this scope.
2. Bench scale studies or pilot studies are not included as part of this scope as it is anticipated that this would be completed at a later date if needed.
3. WER or translator studies are not included.
4. The collection of and payment for analysis of all required water and wastewater samples will be provided and paid for by Prince George County and is not included in this scope of work.
5. Topographical and boundary surveys are not included as part of this scope as it is anticipated that this will be provided during the design phase.
6. Field environmental surveys and permitting is not included in this scope as it is anticipated that this will be provided during the design phase.

Mr. Jeffrey D. Stoke, CEcD, ICMA-CMC  
Proposal for Professional Engineering Services  
Southpoint Business Park Utilities Evaluation  
November 17, 2017

7. Geotechnical engineering or field services are not included as it is assumed that this will be provided during the design phase.
8. The preparation of permit applications or obtaining permits is not included as part of this scope as it is assumed this will be completed once the selected wastewater disposal and water supply options are selected.
9. County will provide water and sewer user information necessary for development of the rate model.

We look forward to the opportunity to serve Prince George County on this project. If you have any questions, or require additional information, please feel free to contact us.

Sincerely,  
**Dewberry Engineers Inc.**



Danylo A. Villhauer, P.E.  
Associate

Attachment: Work Breakdown Structure and Fee Estimate

Q:\PROPOSAL\2017\Prince George County\Southpoint Business Park Utilities Solution\2017.11.17 - Southpointe Utilities Solution Scope and Fee Proposal - Updated.docx

**Prince George County  
Southpointe Business Park Utilities Evaluation  
Work Breakdown Structure and Cost Estimate**

		Project Manager (Engineer VIII)	Project Engineer (Engineer V)	Project Engineer (Engineer II)	Other Direct Costs	Totals
	<b>Task/Subtask</b>	\$ 170.00	\$ 125.00	\$ 90.00		
<b>Task A - Wastewater PER</b>						
1	Coordinate with Adjacent Municipalities	4				4
2	Coordinate with County for Pump Station Siting	1	4			5
3	Preliminary Preliminary Calculations for Sizing Pumping Facilities	1	4			5
4	Coordinate with Equipment Manufacturers	1	4			5
5	Develop Phasing Plan	4	8	4		16
6	Prepare Budget Cost Estimates	2	4	4		10
7	Prepare O&M Cost Estimates	2	8			10
8	Coordinate with DEQ	2				2
9	Prepare Sampling Plan	1	2			3
10	Prepare Preliminary Treatment Sizing Calculations	2	8			10
11	Coordinate with Equipment Manufacturers	2	8			10
12	Prepare WWTP schematics	2	8	16		26
13	Coordinate with County for WWTP Siting	2	4			6
14	Evaluate Reclaimed Water System Requirements	4	12	4		20
15	Develop Phasing Plan	1	4			5
16	Prepare Budget Cost Estimates	2	8			10
17	Prepare O&M Cost Estimates	1	4			5
18	Prepare Preliminary Engineering Report	8	40	8		56
19	Attend five (5) meetings	15	9			24
	<b>Subtotal Hours</b>	57	139	36	N/A	232
	<b>Subtotal Cost</b>	\$ 9,690.00	\$ 17,375.00	\$ 3,240.00	\$ -	\$ 30,305.00
<b>Task B - Water PER</b>						
1	Coordinate with Adjacent Municipalities	4				4
2	Coordinate with County for Pump Station Siting	1	4			5
3	Preliminary Preliminary Calculations for Sizing Pumping Facilities	1	4			5
4	Coordinate with Equipment Manufacturers	1	4			5
5	Develop Phasing Plan	4	8	4		16
6	Prepare Budget Cost Estimates	2	4	4		10
7	Prepare O&M Cost Estimates	2	8			10
8	Coordinate with DEQ for water withdrawal requirements	2	4			6
9	Complete Desktop Safe Yield Analysis	2	8			10
10	Coordinate with VDH for treatment requirements	1	2			3
11	Evaluate Water Quality Data from Nearby WTPs	4	6			10
12	Prepare Preliminary Treatment Sizing Calculations	4	8			12
13	Coordinate with Equipment Manufacturers	2	8			10
14	Prepare WTP schematics	2	8	16		26
15	Coordinate with County for WTP Siting	1	4			5
16	Develop Phasing Plan	1	4			5
17	Evaluate Finished Water Conveyance Options	2	8	4		14
18	Prepare Budget Cost Estimates	2	8			10
19	Prepare O&M Cost Estimates	1	4			5
20	Prepare Preliminary Engineering Report	8	40	8		56
21	Attend five (5) meetings	15	9			24
	<b>Subtotal Hours</b>	62	153	36	N/A	251
	<b>Subtotal Cost</b>	\$ 10,540.00	\$ 19,125.00	\$ 3,240.00	\$ -	\$ 32,905.00
<b>Task C - Rate Analysis - Water and Sewer</b>						
1	Develop baseline rate model	6	24	6		36
2	Callibrate baseline model	2	4			6
3	levels of acceptable risk associated with forecasting of new users.	4	16			20
4	Develop debt service estimates, and summary of operational cost	2	6			8
5	Derive new water and sewer rates for each feasible near-term build-out option.	6	12			18
6	Comparative rate analysis	2	8			10
6	Attend two (2) review/coordination meetings	6	6			12
	<b>Subtotal Hours</b>	28	76	6	N/A	110
	<b>Subtotal Cost</b>	\$ 4,760.00	\$ 9,500.00	\$ 540.00	\$ -	\$ 14,800.00

<b>Total Labor Costs Tasks A-C</b>	
<b>Task A Subtotal</b>	\$ 30,305.00
<b>Task B Subtotal</b>	\$ 32,905.00
<b>Task C Subtotal</b>	\$ 14,800.00
<b>Total for Lump Sum Price Proposal</b>	\$ 78,010.00