



November 16, 2021

Mr. Paul Mantello
Town Manager
Town of Boonsboro
21 North Main Street
Boonsboro, Maryland 21713

Re: Task Order Proposal to Provide Engineering Services for a Study of Keedysville Booster Station

Dear Mr. Mantello:

Whitman, Requardt and Associates, LLP (WRA) is pleased to present our proposal to the Town of Boonsboro for completing a review of the Keedysville water booster station and associated high pressures in the vicinity of the discharge main along Shepherdstown Pike/Route 34.

Similar to the Water System Master Plan and Reservoir PER projects, Andy Cooper will provide proactive project management to the Town of Boonsboro while engineering oversight will be provided by Allyson Merola, P.E., who was instrumental in the development of the water system model and completion of the 2019 Water Master Plan. In addition, David Chung, P.E. (mechanical engineer) will oversee the booster station review.

The following information is enclosed regarding the above referenced project.

1. Background and Scope of Services
2. Schedule and Deliverables
3. Compensation
4. Manhour Estimate and Cost Breakdown

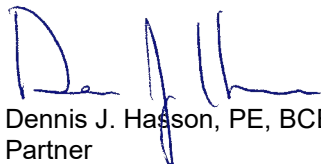
WRA proposes to provide services as described in the attached Scope of Services. The estimated fee for this work is **\$34,242.00**.

If this proposal is acceptable, please sign and date in the space provided on Page 4.

Thank you for the opportunity to present our Proposal. We look forward to working with you on this project.

Very truly yours,

Whitman, Requardt and Associates, LLP



Dennis J. Hasson, PE, BCEE
Partner

Enclosures

cc: File
Andy Cooper, P.E.
David Chung, P.E.

1. BACKGROUND AND SCOPE OF SERVICES

BACKGROUND

In accordance with the Town of Boonsboro's (the Town's) request, we are pleased to offer our proposal to perform engineering services for review of the Keedysville booster station and the associated high pressures found in the Town's distribution system along the booster station discharge main. WRA will review booster station operations and make suggestions for modifications to help with excessive pressures in certain areas of the system.

The Town's existing water system consists of potable water supply from Keedysville via the booster station, as well as wells and a spring source within the Town, and a 1.5 MG finished water reservoir to the east which provides emergency and equalization storage for the Town. The Keedysville Booster Station provides up to 40% of the Town's daily water demand, which is pumped into the system from the west at the lowest elevations in the system. Due to the low elevations, and the pressure required to serve the Town and fill the reservoir, pressures in the western portion of the distribution system (specifically Crestview) are typically 130 psi, and peak at or above 160 psi.

Upon authorization from the Town, WRA will proceed as described below.

1. Scope of Services:

For this project, WRA will review available plans and reports for the Keedysville Booster Station and associated distribution mains and utilize the system hydraulic model to investigate options for mitigation of the high pressures. A summary is as follows:

- A. **Project Management** – WRA will assign a project manager to this project who will maintain contact with the Town on a regular basis. WRA will submit monthly invoices and will maintain a project schedule and furnish updated schedules on an as-needed basis for the duration of the project.
- B. **Project Initiation Meeting** – A project initiation/ kickoff meeting will be conducted with the Town to discuss the goals and objectives of the project. This meeting will be utilized to discuss materials needed for the study and confirm WRA's understanding of system operations. Schedules, progress reports and other project-related issues will be discussed. We have assumed this meeting will be virtual.
- C. **Data Gathering/Data Review** – WRA will provide a request to the Town for pertinent reports and background information, mapping, engineering studies, as-built drawings, survey information, etc. related to the project, in either printed or electronic form. Most of these documents have already been received.
- D. **Develop/Evaluate Alternatives** – WRA will identify and evaluate up to three (3) alternatives for reducing the pressure from the Keedysville Booster Station. This evaluation will consist of the following tasks:
 1. Conduct a review of the existing booster station pumps, suction conditions and discharge conditions.
 2. Investigation of alternatives for reducing the pressure. This may include Variable Frequency Drives (VFDs) for controlling the speed of the booster pumps, Pressure Reducing Valves (PRVs), additional system pressure monitoring devices, and/or establishment of pressure zones.
 3. Limited Hydraulic Investigations - perform up to 5 model runs to determine the effects of changes to system operations.
 4. Using the research above, identify alternatives for booster station pressure mitigation.
 5. Prepare preliminary cost estimate for each alternative developed. Develop ranking system for cost, and public impacts for comparison of the alternatives.
- E. **Preliminary Technical Memorandum** – A summary of relevant Booster Station information will be compiled into a technical memorandum, defining the key elements of the effort and the basis for



determining the recommended alternative. A matrix will also be included, which will compare and rank the alternatives. A detailed cost estimate for the recommended alternative will be included.

- F. **Submit Draft Memorandum to the Town of Boonsboro** - Submit an electronic (PDF) copy of the Draft Technical Memorandum to the Town for review. Attend a meeting with the Town to discuss comments on the Draft Memo.
- G. **Revise Memorandum** – WRA will revise the draft memorandum, based on the review comments received from the Town. Submit two (2) hard copies of the Final Technical Memorandum and an electronic pdf to the Town. Present the final Memorandum results to the Town at an evening meeting, if requested.

ITEMS FURNISHED BY THE TOWN OF BOONSBORO AT NO COST TO THE ENGINEER

- A. Attendance at and participation in project meetings and presentations
- B. Review of all memoranda and reports
- C. As-built drawings, previous reports and studies, system operations information (and other data listed in Section 1.C Data Gathering) as required
- D. Current Town GIS information

2. SCHEDULE AND DELIVERABLES

Assuming a November 30, 2021 Notice to Proceed, this proposal assumes that the Technical Memorandum will be completed in February of 2022.

Milestone	Duration
1 Data Request	1 week after Notice to Proceed
2 Draft Memo	8 weeks after Notice to Proceed
3 Final Memo	2 weeks after comments received on Draft Memo

3. COMPENSATION

We will perform the Scope of Services on a time and material basis. The estimated cost for the Scope of Services is included below. This fee will not be exceeded without your authorization, and will be performed under the terms of the water services agreement Addendum executed by WRA and the Town on September 27, 2021.

Invoices will be rendered every four weeks for the actual services performed during the previous four-week period and are due within 30 days of receipt.

Scope Item	Cost
A. Project Management	\$1,447
B. Project Initiation Meeting	\$1,346
C. Data Gathering / Data Review	\$795
D. Develop / Evaluate Alternatives	\$13,759
E. Preliminary Engineering Report	\$7,993
F. Submit Draft PER	\$4,900
G. Finalize PER	\$4,002
Total	\$34,242



4. MANHOOR ESTIMATE AND COST BREAKDOWN

A detailed Manhour Estimate and Cost Breakdown by task is included as Attachment A.

Approval:

Signature

Date



PROJECT NAME: TOWN OF BOONSBORO - KEEDYSVILLE BOOSTER STATION PRESSURE STUDY													REVISION		0.00			
MANHOUR ESTIMATE AND PROPOSAL													DATE		11/15/2021			
CLIENT: Town of Boonsboro, MD													BY		A. Cooper			
TASK	PROJECT DESCRIPTION: Town of Boonsboro - Technical Memorandum investigating high pressures from the Keedysville Booster Station.	QA/QC	Project Manager - Civil Assoc.	Senior Project Eng. - Civil	Design Eng. - Civil	Mech Assoc. / VP	Mechanical Eng.	Design Eng. - Mech.	SCADA Assoc. / Proj. Engr.	SCADA Designer	SCADA Engineer	WRA TOTAL HOURS	WRA TOTAL PAYROLL	WRA EXPENSES	Subcontractor hours	Subcontractor Payroll	Subcontractor Expenses	Line Item Totals
		Use Labor Cost Rates for year: 2021												T, R, E			T, R, E	(See Legend)
		\$80	\$78	\$62	\$35	\$80	\$55	\$35	\$80	\$50	\$40			S, or L (See Legend)			S, or L	(See Legend)
A.	Project Management		6	2								8	\$1,447	- \$		\$	- \$	\$1,447
B.	Project Initiation Meeting		2	2		2	2					8	\$1,346	- \$		\$	- \$	\$1,346
C.	Data Gathering / Data Review			2	2		2					6	\$745	R \$50		\$	- \$	\$795
D.	Develop / Evaluate Alternatives											0	\$0	- \$		\$	- \$	\$0
1	Review Ex. Booster Station			2		2	8	4				16	\$2,117	- \$		\$	- \$	\$2,117
2	Identify Alternatives		2	4		2	4	4	2			18	\$2,655	- \$		\$	- \$	\$2,655
3	Perform Hydraulic Modeling		2	6	12							20	\$2,321	- \$		\$	- \$	\$2,321
4	Develop Alternatives	2	2	8	4	2	8	4	2			32	\$4,536	- \$		\$	- \$	\$4,536
5	Rank Alternatives		2	2	2	2	4	4				16	\$2,130	- \$		\$	- \$	\$2,130
E.	Preliminary Technical Memorandum	2	6	8	12	4	12	12	4			60	\$7,993	- \$		\$	- \$	\$7,993
F.	Submit Draft Memo	1	4	4	8	2	8	8	2			37	\$4,800	T \$100		\$	- \$	\$4,900
G.	Finalize Memo	1	2	8	8	2	4	4				29	\$3,752	T, R \$250		\$	- \$	\$4,002
SUBTOTALS =		6	28	48	48	18	52	40	10	0	0	250	\$33,842	\$400	Subcontractor Total		\$0	\$34,242
SUB-TOTAL DOLLARS =		\$1,176	\$5,334	\$7,291	\$4,116	\$3,528	\$7,007	\$3,430	\$1,960	\$0	\$0	\$33,842			Profit on Sub		0.0%	
			124	Civil	\$16,741	110	Mech	\$13,965	10	SCADA	\$1,960			WRA Total		\$34,242		
														TOTAL		\$34,242		

	2021	QA/QC	Project Manager - Civil Assoc.	Senior Project Eng. - Civil	Design Eng. - Civil	Mech Assoc. / VP	Mechanical Eng.	Design Eng. - Mech.	SCADA Assoc. / Proj. Engr.	SCADA Designer	SCADA Engineer
Bare Labor Cost rates for year		\$80.00	\$77.75	\$62.00	\$35.00	\$80.00	\$55.00	\$35.00	\$80.00	\$50.00	\$40.00
County IDQ Contract Rates - LOADED LABOR AT A FACTOR OF:	2.45	\$196.00	\$190.49	\$151.90	\$85.75	\$196.00	\$134.75	\$85.75	\$196.00	\$122.50	\$98.00

WR&A EXPENSES

T = Travel
R = Reproduction
E = Equipment Rental

