Gmail

Josh Arneson <jarneson@richmondvt.gov>

2021 Water PER

Steven L. Palmer <spalmer@gmeinc.biz> Thu, Aug 12, 2021 at 2:59 PM
To: Josh Arneson <jarneson@richmondvt.gov>
Cc: Kendall Chamberlin <kchamberlin@richmondvt.gov>, Alan Huizenga <ahuizenga@gmeinc.biz>

Good afternoon Josh. We realize you have a water/sewer commission meeting coming up on Monday. As you know, we have been working with Kendall over the past month or so to define a scope of work for the remaining water replacement projects. We have included a Figure showing each segment of water line where replacement is proposed. We have also included a more detailed spreadsheet defining each segment.

The PER will require a new Hydraulic Analysis (computer model) of your current water system. A hydraulic analysis was originally done in 2009 but there have been so many upgrades and changes to your system since that time (including a new reservoir) that it needs to be completely re-done at this point. We need an accurate model to be able to size future water lines to ensure that you can among other things meet NFPA fire flows (which in turn reduces residents' insurance rates) as well as factor in future potential growth (the West Main Street extension comes to mind). The model is a large part of the cost associated with a PER of this nature.

Several things to consider. First, the State of Vermont DWSRF program considers this type of work "Preliminary Engineering" or upfront project planning if you will. We have had a number of email discussions with them about your specific situation as a PER had previously been done in 2009 and paid for using DWSRF funding. The crux of this from their perspective is that the if the town uses DWSRF funding for this project AND you complete a full hydraulic analysis of the system as part of the PER, the planning portion is eligible for 100% reimbursement by the State up to $100,000. That is pretty significant! Secondly, the State normally reimburses costs for these projects based on a standard engineering fee curve. The Standard fee curve is based on a percentage of the estimated construction costs. The State typically reimburses the municipality up to that amount. We have a assembled a rough opinion of probable construction costs based on an average of the current bids for the Bridge Street waterline (see attached). Based on the State's Engineering Fee Curve, this would equate to approximately $77,000 in engineering fees. We are working on a draft engineering proposal/agreement for your review as well. This document will provide more detail on these costs but short of something unforeseen at this point, we are confident that our proposal costs will be less than those estimated using the State's standard engineering fee curve. We're very familiar with your water system at this point which should speed things along.

Lastly, with passage of the Federal infrastructure bill seeming more and more likely, there is a very real possibility that tens of millions of additional dollars will being sent to Vermont for these types of projects. The trick to taking advantage of the money of course is to be prepared with "shovel ready projects" when that happens. This comes down to having a completed and approved PER. We are currently working on and will get you a draft proposal/agreement for review. Knowing that you have a water/sewer commission meeting coming up shortly however, we thought you might want to use this information to provide an introduction and some preliminary information about what is coming down the pike. Always best to give folks a high-level view in advance. Kendall is in the best position to answer questions about why certain segments were chosen over others.

Please let us know if you have any questions. Stay tuned on the draft engineering agreement.

Thank you

Steve & Alan

Green Mountain Engineering

Steven L. Palmer, P.E.

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2 attachments

Richmond Remaining Water Projects 7-9-21.pdf
139K

Waterline Replacement Map.pdf
211K

Town of Richmond, Vermont
Water Distribution System Planning Estimates
Green Mountain Engineering

Revised 8/10/2021

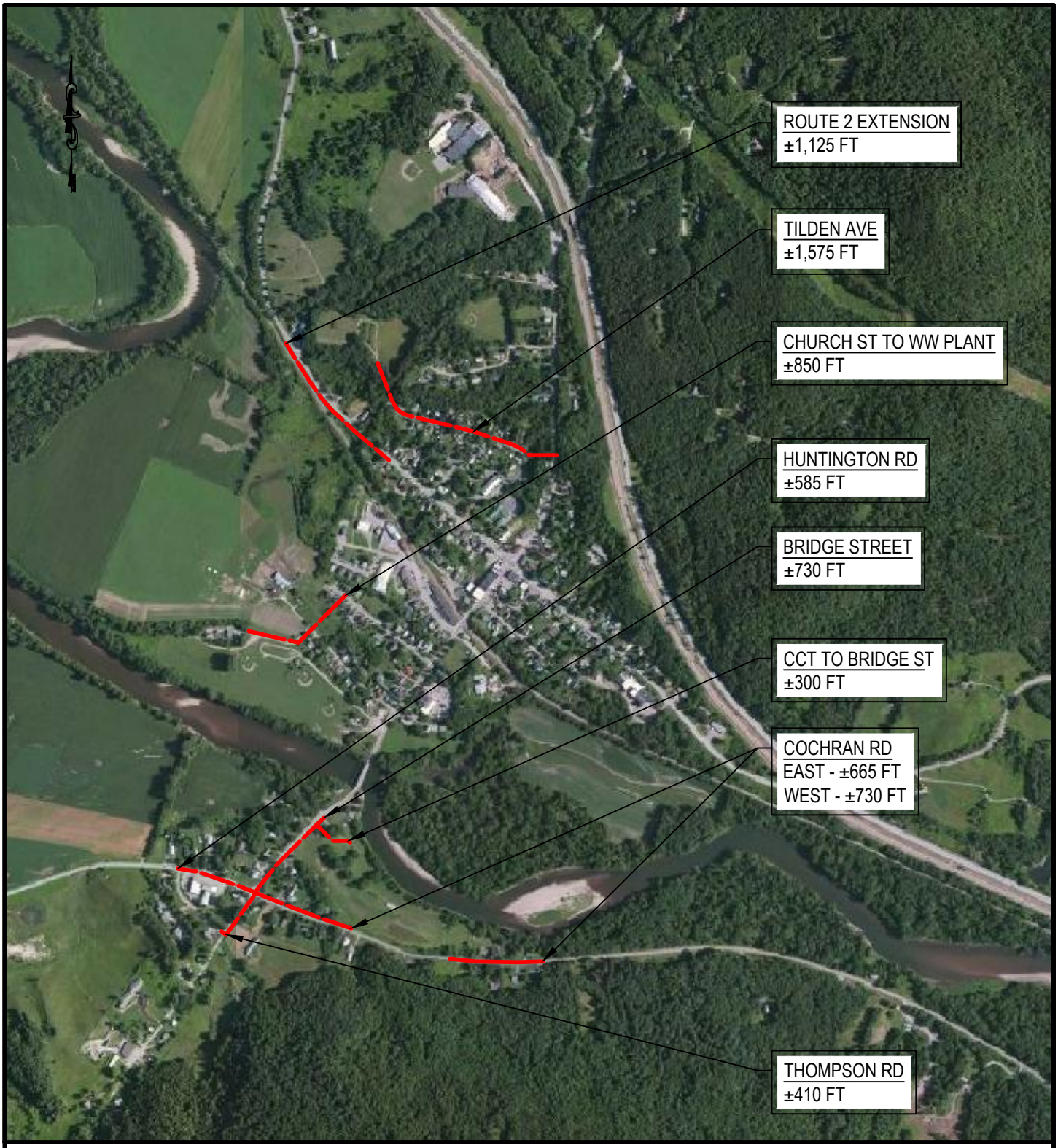
Town Priority	Description	Length (ft)	Approximate Age	Current Pipe Material	Current Pipe Diameter (Inches)	Anticipated Future Pipe Diameter (inches)	Construction		Preliminary Engineering		Reason for Replacement
							Opinion of Total Standard Const. Cost (2021 Dollars)	Anticipated Special Technical Services (Archeology)	State of VT Engineering Curve Estimate GME	Special Technical Services (Archeology)	
1	Bridge St. (Bressor Drive to Cochran Rd)	730	1975	AC/CI	8	12	$248,200.00	N/A	N/A		AC, Age, failures, Pipe Material
2	CCT Connection (Bridge to CCT Loop)	300	1969	CI	8	12	$102,000.00	$20,000.00	N/A		Age, Change of access ROW
3	Cochran Road (East)	665	1990	AC/CI/2" PVC	8 to 2"	8	$212,800.00	N/A	N/A		AC, Age, Fire Flows
4	Cochran Road (west)	730	1975	AC/CI	8	8	$233,600.00	N/A	N/A		AC, Age, Failures, Pipe Material
5	Huntington Road (From Cochran Rd west past Stone Corral)	585	1975	AC	8	8	$187,200.00	N/A	N/A		AC, Age, Pipe Material
6	West End of Church Street to WW Plant	850	1972	CI	8	8	$272,000.00	N/A	N/A		Age, Pipe Material, Failures
7	Tildon Ave (Jericho Road to end)	1,575	1950	CI	8	8	$504,000.00	N/A	N/A		Age, material, failures, fire flow
8	Route 2 (# 282 West Main St. to # 434 West Main St.)	1,125	1992	PVC	2	12	$382,500.00	N/A	N/A		Replace Exist. Overland Feeder (age)
9	Thompson Road (From Cochran Road south approx. 410')	410	1975	AC	8	8	$131,200.00	N/A	N/A		AC, Age
	Total =						**$2,273,500.00**	**$20,000.00**	**$72,411.32**	**$5,000.00**	

Total Estimated Preliminary Engineering Costs Using VT Standard Engineering Fee Curve (2021 $) = $77,411.32

Notes

1. Cost Assumptions are based on 2021 dollars using costs from recent similar projects. These costs are based on standard construction practices and do not factor in special construction items where necessary such as contamination, ledge, wetlands, stream crossings, etc. endangered species, archeology etc. except where specifically called out.
2. Preliminary Engineering Costs are based on the State of Vermont's Standard Engineering Fee Curve for Large Projects as follows: Preliminary Engineering Costs For Large projects >$780,000) = 0.15(0.6788*C(.9206))

Average Total Construction Cost 12" Watermain = $340.00
Averge total Construction Cost 8" Watermain = $320.00



GRAPHIC SCALE

1000 0 500 1000

WATERLINE REPLACEMENT

1438 SOUTH BROWNELL ROAD
WILLISTON, VERMONT 05495
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GREEN MOUNTAIN ENGINEERING

CIVIL
WATER
WASTEWATER

DRAWING TITLE: WATERLINE REPLACEMENT MAP

PROJECT: 2021 PER TOWN OF RICHMOND DISTRIBUTION SYSTEM IMPROVEMENTS

CLIENT: TOWN OF RICHMOND, VERMONT

DESIGNED	SLP
DRAWN	BPC
CHECKED	AH
PLOT DATE	8/4/21
SCALE	1" = 1000'
DATE	AUGUST 2021

PROJECT NO. XX-XXX

FIGURE NO. 1