

September 7-8, 2023

Town of Westford Selectboard 1713 VT Route 128 Westford, VT 05494

Stone Project No. 20231007 Subject: Westford Community Wastewater Project Description, Costs, Funding, and Bonding Authority Recommendation

Dear Members of the Selectboard,

Stone Environmental (Stone), in collaboration with Birchline Planning LLC, is pleased to provide a description of the Westford Community Wastewater Project, summary of project cost information and State and Federal project funding secured to date, and recommendations for the bonding authority the Selectboard may include in a *Resolution of Necessity for Capital Construction Project* and *Official Warning, Special Town Meeting of the Town of Westford,* to be held on November 7, 2023.

In order to maintain the Town's Village Wastewater State American Rescue Plan Act (ARPA) grant award, which agreement contains aggressive interim deadlines including for holding a bond vote and for completion of final design and permitting by September 30, 2024, it is a necessity that the Town move forward with the proposed November 7, 2023 Special Town Meeting as further justified below.

Westford Community Wastewater Project Description

Wastewater system improvements within the State Designated Village Center and its adjacent buffer, namely, septic tank effluent pump (STEP) stations with electrical connections, low-pressure service force mains connecting to low pressure force main within roadway rights-of-way, and equalization and dosing station and control building on Brookside Road with in-ground disposal system of 24,300 gallons per day design capacity adjacent to the Maple Shade Town Forest. The project is further described in the engineering plan titled *Westford Community Wastewater Plans – 30% Design, Stone Environmental, Inc (August 2023)*.

Construction and Total Project Cost Estimates

Preliminary Opinions of Probable Cost for collection and treatment system construction (\$1,641,000); control building, equalization tanks, dosing station, and disposal system construction (699,800); construction contingency (\$702,300); non-construction costs (\$823,800); and total project cost (\$3,866,900) are documented in the attached technical memo titled <u>Westford Community Wastewater - Revised Construction</u> <u>and Total Project Cost Estimates (August 15, 2023)</u>. Construction cost contingency was set at 30% due to observed volatility in the construction sector, sustained supply chain and labor issues, and following consultation with and guidance from Vermont DEC Water Investment Division (WID) personnel.

State and Federal Grant Funds Awarded

The Town of Westford has secured project funding via grants from a range of local, State, and Federal sources, totaling approximately \$4,035,300, as summarized in the attached document *Community Wastewater Project - Funding Stack (August 29, 2023)*.

Following completion of the funding stack, the Town Planner, Stone, and Birchline consulted with Vermont DEC – Water Investment Division personnel to determine eligibility and matching requirements amongst the multiple awards. The outcome of this consultation is documented in the attached *Town of Westford, Community Wastewater Disposal System – Project Cost Summary (PCS) spreadsheet, August 30, 2023*. The Town's Community Restoration and Revitalization Program (CRRP) grant is not Federally designated, and thus may be utilized as the 50% match for the Federal Northern Borders Regional Commission, Economic Development Administration (NBRC or NBRC/EDA) grant.

Bonding Authority Recommendation

Of the grant funding awarded, approximately \$4,009,000 is presently eligible. Awarded funding is thus approximately \$142,000 above estimated total project cost, as documented in the attached summary *Westford Community Wastewater Disposal System Project Costs, Funding, and Bond Recommendation, August 31 and September 5, 2023*.

In the 2023 construction season, Stone's engineers are observing sustained volatility in the bidding environment, supply chain issues, and contractor responses to bid requests well in excess of engineers' construction cost opinions. Vermont DEC WID personnel confirmed that these issues remain widespread, with projects funded via the Clean Water State Revolving Fund reporting construction bids for water and wastewater system construction or replacement coming in 50% or more above the engineers' construction cost estimates. We thus recommend planning for a project funding contingency of at least 50% of construction cost and thus that the Selectboard request the voters approve a minimum bond amount of \$326,000 or other bonding authority not to exceed \$400,000.00.

Sincerely,

Imy Macrellia

Amy Macrellis Senior Water Quality Specialist Direct Phone / 802.229.1884 Mobile /802.272.8772 Email /amacrellis@stone-env.com

Peter Lazorchak, PE, LEED AP Senior Water Resources Engineer Mobile / 802.793.0076 Email / plazorchak@stone-env.com

O:\PROJ-23\WRM\20231017 Westford Community Wastewater Design Services\Funding and Financing\Bond vote information\WW_BondAuthorizationRecommendation_2023 09 08.docx

August 15, 2023

Melissa Manka Westford Town Planner 1713 VT Route 128 Westford, VT 05494 802-878-4587 Submitted via e-mail to planner@westfordvt.us

Stone Project No. 20231007 Subject: Westford Community Wastewater - Revised Construction and Total Project Cost Estimates

Dear Melissa,

We are pleased to present revised construction and total project cost estimates for the Westford Community Wastewater Disposal System. Green Mountain Engineering (GME) submitted the Supplemental Preliminary Engineering Report (PER) in March 2022. Upon receiving notice to proceed with preliminary engineering in March 2023, Stone Environmental, Inc. (Stone) advanced topographic and utility survey, bedrock probes, and interior structure inspections. In parallel with design work, we updated construction unit costs and quantities to reflect the proposed design. We also engaged On Point Engineering & Consulting, LLC to provide a third party audit of construction material quantities and unit costs.

Estimated collection and treatment system construction, disposal system construction, and total project costs are summarized below.

	Feb. 2022 Supplemental PER	August 2023 Preliminary Design
Collection System Construction	\$1,544,300	\$1,641,000
Control Building and Subsurface Drip Disposal Construction	\$541,000	\$699,800
Construction Contingency	\$208,500	\$702,300
Total Construction Cost	\$2,293,800	\$3,043,100
Total Project Cost	\$2,848,200	\$3,866,900

All cost values in this table rounded to nearest \$100.

Construction cost contingencies applied: 10% in Feb. 2022 Supplemental PER, 30% in August 2023 Preliminary Design.

The attached, preliminary Opinions of Probable Cost for the collection and treatment system, drip disposal system, and total project cost follow the format and level of detail provided in the February 2022 Supplemental PER. The following major changes are reflected in the August 2023 cost estimates:

• Bedrock probing completed in June 2023 allowed reduction in the total quantity of removal required. However, unit cost increases for bedrock removal led to a similar construction cost.

- Increased costs for concrete resulted in increased unit cost for septic tank effluent pump (STEP) tanks and control building/equalization tanks. Equalization tank sizes were also increased in consultation with vendors.
- A centralized pump station near the Town Common was removed from the design, and the collection system layout was simplified, following consultation with Orenco Systems and that vendor's completion of hydraulic grade line analysis for the proposed collection system.
- Material and labor costs increased for building and electrical connections at the control building and disposal area pump station.
- Construction cost contingency was increased from 10% to 30% due to observed volatility in the construction sector and following consultation with and guidance from Vermont DEC Water Investment Division personnel.

Though still preliminary in nature, the work undertaken to advance preliminary design has refined many of the substantial unknown factors remaining from GME's preliminary engineering work. We look forward to discussing the revised opinions of probable cost with you, the Planning Commission, Selectboard, and other stakeholders in the coming weeks.

Sincerely,

Umy Macrellia

Amy Macrellis for Peter Lazorchak, PE, LEED AP Senior Water Quality Specialist Direct Phone / 802.229.1884 Mobile /802.272.8772 Email /amacrellis@stone-env.com 0.PR0J-23WRM20231017 Weuford Community Wasewater Design Services/Deliverables/Step 2/Preliminary Design Cost Est 08.15.23/CostUpdateMemo_anm_08.15.23.docx



Opinion of Probable Cost - Collection System 8/15/2023								
Description	Unit	Quantity	Unit Price	Total Amount				
A- Sewers								
A1 - 3" HDPE DR11 LPS	LF	1,300	61.00	79,300.0				
A2 - 4" HDPE DR11 LPS	LF	3,300	63.50	209,550.00				
A3 - 2" HDPE DR11 LPS	LF	4,000	36.00	144,000.00				
A4 - 4" Gravity Sewer Services	LF	900	58.00	52,200.00				
SUBTOTAL				485,050.00				
B- Sewerline Appurtenances	<u> </u>							
31 - Air Release Valve and Enclosure	EA	4	10,287.00	41,148.00				
32 - Clean out assembly	EA	4	1,650.00	6,600.00				
33 - 2" Shut-off	EA	24	385.00	9,240.00				
34 - Sewer Stub	EA	6	600.50	3,603.00				
35 - 3" Isolation Valve	EA	3	1,056.00	3,168.00				
36 - Crossing Sleeve	LF	70	74.00	5,180.00				
B7 - Cleanouts	EA	24	94.50	2,268.00				
38- 1,500 Gallon STEP Tanks	EA	21	12,127.00	254,667.00				
39 - 2,000 Gallon STEP Tanks	EA	3	13,502.00	40,506.00				
B10 - 2,500 Gallon STEP Tanks	EA	1	16,083.00	16,083.00				
311 - 5,000 Gallon STEP Tank	EA	1	39,098.50	39,098.50				
SUBTOTAL		-	,	421,561.50				
C - Earthwork				,				
C1 - Bedrock Removal	CY	1,000	197.00	197,000.00				
C2 - Boulder Excavation	CY	54	31.50	1,701.00				
C3 - Misc. Extra and Below Grade Excavation	CY	34	42.50	1,445.00				
C4 - Excavation & Replace Contaminated Soils	TON	230	192.50	44,275.00				
C5 - Fine Grading / Mulching / Grass Seed	SY	9,225	7.00	64,575.00				
SUBTOTAL		-,		308,996.00				
D - Roadwork				,				
D1 - Permanent Bit. Pavement Repair	SY	700	104.50	73,150.00				
D2 - Permanent Gravel Road & Drive Repair	SY	3,200	27.50	88,000.00				
SUBTOTAL		,		161,150.00				
E - Incidental Work				,				
E1 - Class B Concrete	CY	10	550.00	5,500.00				
E2 - Calcium Chloride	TON	2	880.00	1,760.00				
E3 - Rigid Insulation	LF	9,005	6.50	58,532.50				
E4 - Uniform Traffic Officers	HRS	20	93.00	1,860.00				
E5 - Traffic Control	HRS	700	66.00	46,200.00				
E6 - Silt Fence	LF	406	1.50	609.00				
E7 - Degradable Erosion Control Blankets	SY	160	3.00	480.00				
E8 - Temporary Stone Check Dams	EA	5	115.00	575.00				
E9 - House Replumbs	EA	3	1,650.00	4,950.00				
E10 - Septic Tank Deactivation	EA	26	1,320.00	34,320.00				
SUBTOTAL		-	,	154,786.50				
F - Lump Sum Items				,				
F1 - Tree Removal / Arborist	LS	1	9,900.00	9,900.00				
F2 - Preparation of Site and Miscellaneous Work			. ,	-,5100				
5% of construction)	LS	1	76,577.00	76,577.00				
⁻ 3 - Bonds (1.5% of construction)	LS	1	22,973.00	22,973.00				
⁻ 4 - Contingency (30% of all)	LS	1	492,298.00	492,298.00				
SUBTOTAL				601,748.00				
то	TALS			2,133,292.00				
	JSE			2,134,000.00				

Town of Westford Westford Community Wastewater Disposal System - 24,300 GPD Opinion of Probable Cost - Drip Disposal System 8/15/2023							
DESCRIPTION	Unit	Quantity	Unit Price	Total Amount			
Silt Fence	LF	600	\$2	\$900			
2" HDPE Forcemains, Multi-pipe trench	LF	2,200	\$34	\$73,700			
Temporary Road							
1. Excavation	CY	530	\$20	\$10,335			
2. Filter Fabric	SY	1,585	\$5	\$7,925			
3. Gravel	CY	530	\$47	\$24,910			
Mound sand allowance	CY	200	\$69	\$13,800			
Topsoil, Fine Grade, Seed and Mulch	SY	7,000	\$7	\$49,000			
Oakson Supplies Per Proposal (tubing, header, manifold, pumps etc.)	LS	1	\$198,000	\$198,000			
Start-Up/Testing	LS	1	\$3,000	\$3,000			
Control Building (16' x 16')	EA	1	\$75,000	\$75,000			
Tanks (2) (10,000 Gallons)	L.S.	1	\$112,488	\$112,488			
Excavation / Yard Piping	L.S.	1	\$16,500	\$16,500			
Controls / Wiring / Telemetry	EA	1	\$22,000	\$22,000			
New Electrical Service (new pump station)	EA	1	\$11,000	\$11,000			
Backup Generators & Appurtenances	EA	1	\$16,500	\$16,500			
Preparation of Site and Miscellaneous Work (8%)	LS	1	\$54,569	\$54,569			
Bonds (1.5%)	LS	1	\$10,232	\$10,232			
Contingency (30%)	LS	1	\$209,958	\$209,958			
SUBTOTAL							
USE							
Notes: The estimate is based on PRELIMINARY DESIGN phase estin noted in the estimate are based on survey and GIS scaled unit quanti Environmental. The quantities and unit prices will likely vary based or	ties from scen	ario's develo		•			

8/15/2023						
Description	Total Cost					
Construction						
Wastewater Collection System	\$	2,134,00				
Wastewater Disposal System	\$	910,00				
Construction Subtotal		3,044,00				
STEP I - Preliminary Engineering						
STEP I - Preliminary Engineering Subtotal	\$	39,05				
STEP II - Preliminary and Final Design - GME Step II						
STEP II - Preliminary and Final Design - GME Step II Subtotal	\$	86,76				
STEP II - Preliminary and Final Design Engineering - Stone Step II						
Preliminary Design Standard Engineering Services (Basic and Special)	\$	48,47				
Preliminary Design Non-Standard Services (Basic and Special)	\$	63,04				
Final Design Standard Engineering Services (Basic and Special)	\$	81,68				
Final Design Non-Standard Services (Basic and Special)	\$	40,43				
STEP II - Preliminary and Final Design Subtotal	\$	233,63				
STEP III - Engineering Services						
Standard Engineering Services	\$	200,000				
Non-Standard Engineering Services	\$	70,00				
STEP III - Engineering Services Subtotal	\$	270,00				
Other Costs						
Legal	\$	30,68				
Easement Acquisition/Current Use Penalty	\$	20,00				
Outreach	\$	5,00				
Permit Fees	\$	6,00				
Short term interest	\$	17,76				
Birchline Planning - Step 2	\$	49,50				
Birchline Planning - Step 3	\$	34,50				
Bond Vote - Town expense - printing, tabulator, officials, mailings	\$	10,00				
Single Audit	\$	20,00				
Other Costs Subtotal	•	193,44				
SUBTOTAL	\$	3,866,89				
USE	\$	3,867,00				

Community Wastewater Project - Funding Stack

AWARDED						
		Grant/ Subsidy	Town	Requirements &		
Funding Source	Designation	Award	Match/Liability	Restrictions	Notes	CWS
					for step 1 & 2	Stop 1
					subsidy details: fy19 \$19,525 /	Step 1
CWSRF Loan/Subsidy	Non-Federal	\$269,525	\$19,525	N/A	fy20 \$125,000 / fy22 \$125,000	
				50% match w/ 80% federal		
				funding cap on total project		
				cost / number represents max		
				amount, unlikely we will		Step 2
				spend full award due to fed		
				funding caps / contingent	for step 3 (for control building	
NBRC/EDA	Federal	\$466,194	TBD	upon successful bond vote	& disposal field only)	
				up to 90% of total project cost		
				w/ no fed funding restrictions		Step 3
State ARPA	Federal	¢2 277 126	TBD	 / partially contingent upon successful bond vote 	for step 2 (after subsidy) & 3	
Sidle ARPA	Non-Federal (must	\$2,377,136	עפו		for step 2 (after subsidy) & 5	
	confirm with other			no match required, award		
	programs to use			20% of total project cost or		
CRRP	toward match)	\$757,472	\$0	1m, whichever is less	for step 3	
		<i>•••••••</i>	+•	contingent upon successful		
Local ARPA	Non-Federal	\$150,000	\$0	bond vote	for step 3	
TOTAL		\$4,020,327	TBD			
				-		Step 3
						(Constructi
PENDING						Componer
			-			
		Grant/ Subsidy	Town	Requirements &		Disposal Field &
Funding Source	Designation	Award	Match/Liability	Restrictions	Notes	Control Building
				no match required / grant		
Pollution Control Grant	Non- Federal	\$15,000	\$0	could be more	for step 0 - 3	Collection System
TOTAL		\$15,000	\$0			
TOTAL ANTICIPATED	GRANT/SUBSIDY					
FUNDI	NG	\$4,035,327				
			4			

* Estimated Total Project Cost, Dated August 15, 2023: \$3,866,900

As of 8/29/23

CWSRF St	ер Кеу:	Status:
Step 1	<u>Preliminary</u> <u>Engineering &</u> <u>Environmental</u> <u>review</u>	Completed in 2022
Step 2	<u>Final Design &</u> <u>Permitting</u>	In Progress
Step 3	<u>Construction</u>	TBD

3		
ction)	Primary	Potential Match
ents	Funding	Funding
		State ARPA, Local
&		ARPA, CWSRF
ng	NBRC/EDA	Loan/Bond
		CRRP, Local ARPA,
tem	State ARPA	CWSRF Loan/Bond

Town of Westford, Community Wastewater Disposal System - Project Cost Summary (PCS) spreadsheet, August 30, 2023

n of Westford - Westfo	ord Community Wastewater Disposal System		CWSRF Loan# RF1-267-2.1	1								Area for		ermont V			8/30/2				
	8/30/2023				ENR CCI		13425														
	CONS	JLTANT COMPLE	TES Columns B t Complete if usin	hrough K: See I g itemized quantiti		1						SRF	Design and		n Enginee		te				
IRECTIONS TAB				not hide.					100.0%				22.5% C1; 30% C2	50% C2		77.5% C1	20% C2	Gron	Project Reserve (G	98) Eligibility, CW	NSR5 Only
		TOTAL	CWSRF	DWSRF	Other	ę		Clean Prelie	CWSRF Loan In Water Project Preliminary Iminary Eligibility	Prelimelary SRF Subsidy \$ 375,000	PC Grant Proliminary Eligibility	Applied PC Grant	ACCD CRRP Grant	NERC	PCF	Vilage ASPA	Local Share		Energy		En
is SPLITS BID Table ion Costs - Contract #1 - Collect No. 1 - Collection and Treatme	Item Description ction and Treatment System and Contract #2 Alt 5 Control Building and System	Quantity , Dosing, and Drip Dispo	Quantity	Quantity	Quantity	5 Unit Cost	Total Cost	2	0%	\$ 375,000	34X	\$ 15,000	\$ 757,427	\$455,194	0%	\$2,227,126.15	\$ 150,000	Green Infrastructure	Efficiency	Water Efficiency	ογ I
A A1	A Seven A - 2° HDPE D8111PS A2 - 4° HDPE D8111PS	1300	1300			LE 5 610	0 5 79.300.00	5	79200.00 5 .	ş .	5 <u>26.962.00</u>		\$ 17.842.50 \$ 47,148.75	_		5 <u>61457.50</u>	s . s .				5
A3 A4	AL - Y HOF COLLOS AL - Y HOF COLLOS AL - I' Cruchs Sever Services B-Severice Apputetances	3,300 4,000 900	1,300 4.000 900			UF \$ 62.1 UF \$ 26.0 UF \$ 58.0	0 \$ 200,550.00 0 \$ 144.000.00 0 \$ \$2.200.00		209,550.00 \$ - 544.000.00 \$ - \$2,200.00 \$ -		5 48.963.00 5 17.348.00		5 22,400,00 5 11,745,00			\$ 162,401.25 \$ 111,600.00 \$ 40,455.00	4 · ·				5
81 82	81 - Ar Release Value and Enclosure 82 - Clean out assembly 83 - 2' Stut-off	4 4 2	4			EA S 102871 EA S 16501 EA S 2851		5	41148.00 S -		\$ 12,990,32 \$ 2,244,00		5 9,258,20 5 1,485,00			5 21.892.70 5 5.115.00					4
04 05	BA - Sever Sub BA - Sever Sub BS - 2' Instation Value BS - County Serve	4 e 7	2			EA S 600.1 EA S 10560 LF S 74.0	0 \$ 3.603.00	-	240200 5 · · · · · · · · · · · · · · · · · ·		\$ 1225.02 \$ 1077.12 \$ 1361.30		5 810.68 5 712.80 5 1.165.50	=		5 2,792,22 5 2,455,20 5 4,014,50					4
87 08 99	87 - Cleanouts 88 - 1500 Gallon STEP Tarks 89 - 2,000 Gallon STEP Tarks	24 21 3	24 21 2			EA S 94.5 EA S 12.1270 EA S 13.5020	0 S 2368.00		2368.00 S - 254.667.00 S - 40.506.00 S -		\$ 771.12 \$ 86.586.78 \$ 13.772.04		\$ \$10.30 \$ \$7,300.08 \$ 9,113.85	=		\$ 1257.70 \$ 197.366.93 \$ 31.392.15					-
01 011 C	810 - 2.500 Galon STEP Tank 811 - 2.500 Galon STEP Tank C. Exthemel	1	1			EA 5 160831 EA 5 390983	0 5 16.063.00 0 5 20.006.50		16082.00 \$ - 39098.50 \$ -		S 5.468.22 S 13.293.49		S 2.618.68 S 8.797.16	=		5 12464.33 5 30.301.34	s . s .				4
а а	C1 - Bedrock Removal C2 - Boulder Excussion C3 - Mix, Extra and Below Grade Escavation	1,000 54 24	1,000 54 34			CY 5 197.0 CY 5 31.1 CY 5 42.1	0 5 1.701.00		197,000.00 \$ - 1701.00 \$ - 1445.00 \$ - 44,275.00 \$ -		\$ 66,983.00 \$ \$78.34 \$ 491.30		\$ 44,225.00 \$ 362.72 \$ 225.12	-		\$ 152,675.00 \$ 1,318.28 \$ 1,119.88					
64 65 0	C4 - Excavation & Replace Contaminated Solis C5 - Fine Gradine / Mulchine / Grass Seed D-Roadwork	230 9.225	230 9.225		1	TON \$ 192. SY \$ 7.0	0 \$ 64.575.00		44,275.00 S		\$ 15,053.50 \$ 21,955.50 \$		\$ 282.72 \$ 225.12 \$ 9,06188 \$ 14.529.28 \$			\$ 34,212,12 \$ \$2045,63 \$					
01 02 E	01 - Permanent Bit, Pavement Repair 02 - Permanent Gravel Road & Drive Repair E-Incidental Work	700 1200	700 3.200			SY \$ 104.5 SY \$ 27.5	0.00.00.88		72,150.00 \$ - BR.000.00 \$ - \$	· · ·	\$ 34,871.00 \$ 29,920.00 \$		\$ 16,458.75 \$ 19,800.00 \$			\$ 55,691.25 \$ 68,200.00 \$					-
11 12 13	E1 - Class & Concrete E2 - Calcium Chloride E2 - Reid Insulation	10 2 9.005	10 2 9.005		1	CY 5 550.0 TON 5 880.0 LF 5 6.5	0 S 1.760.00	5 5 5	5,500.00 S - 1,760.00 S - 58,532.50 S -		\$ 1,870.00 \$ \$28.40 \$ \$29.901.05		\$ 1,227.50 \$ 296.00 \$ 13,169.81			\$ 4,262.50 \$ 1,364.00 \$ 45,362.69	· · ·				5
64 65 66	24 - Uniferen Tentie Officers 25 - Traffic Cootrol 26 - Sit Ferce 27 - Overschalte Fresion Control Blankets	20 700 405	20 700 436			HRS 5 93.0 HRS 5 66.0 LF 5 1	0 S 186000 0 S 46.200.00 0 S 600.00 0 S 460.00	~ ~ ~	1860.00 \$ - 46200.00 \$ - 609.00 \$ -		5 632.40 5 15.308.00 5 207.06		\$ 418.50 \$ 10.395.00 \$ 137.03 \$ 109.00	Not Eligible		\$ 144150 \$ 25,805.00 \$ 471.98					
67 68 69	EE - Temporary Stone Check Dams EP - House Redumbs	5	160 5 3			5Y 5 11 EA 5 1150 EA 5 16500	0 S 480.00 0 S 575.00 0 S 4.950.00	4	460.00 S - 575.00 S - 4950.00 S -		5 362.20 5 295.50 5 1.682.00		5 129.38 5 1.112.75	Ξ		\$ 172.00 \$ 445.61 \$ 1836.25					5
61 G G1	E22 - Seatic Tank Deactivation G-Lump Sum Items E1 - Tree Removal / Arbonist	26	2			EA S 13201	5 9,900,00	-	24220.00 S		\$ 11.668.80 \$. \$ 3.866.00		\$ 7.722.00 \$. \$ 2.227.50	Ξ		\$ 26598.00 \$. \$ 7.672.50					5
62 63	F2 - Preparation of Site and Miscellaneous Work (Six of construction) F3 - Bonds (1.5% of construction) F4 - Contemposity (200 ad e8)	1	1			15	\$ 76,577.00 \$ 22,971.00	5	76,577.00 \$ - 22,972.00 \$ -	s . s .	\$ 26,035.18 \$ 7,850.82		\$ 17,229.83 \$ \$.168.93	_		\$ 59,347.18 \$ 17,804.08	s . s .				5
IG4 Io. 2 - Drip Disposal System (1	14 - Continence (20% of all The NBRC Project) Sit Parce Vietnos	* 	600			15 1F 5 11		• 5			- and D		\$ 270.00	\$ 450.00			\$ 180.00				5
	2" HDPE Forcemains, Mail-pipe trench Temporary Road 1. Eccanicon 2. Filter Fabric	2200 530	530			CY 5 192	\$. 0 \$ 10,225.00	40 5	· 3 · ·				5 22.110.00 5 5 2,100.50 5 2,2750	5 5,167.50			5 2,067.00				-
	 Second and allowance Toront Eline Code, Second and March 	1585 510 200	1585 530 200			SY 5 54 CY 5 471 CY 5 691 CY 5 70	0 \$ 24,910.00 0 \$ 12,800.00 6 \$ 42,000.00		· s ·				2,277,50 5 7,473,00 5 4,140,00 5 11,000	\$ 2,962,50 \$ 12,455,00 \$ 6,900,00 \$ 24,500,00			\$ 4982.00 \$ 2,760.00				-
	2. Fair Janc 3. Grant Manut und sharence Topolo Fine Carlo, Send and Malch Delaum Standar Ur. Proceedin Matters handler: munifield compa site 1 Delaum Standard (10 H 10) Delaum Standard (10 H 10) Tomic J2 (110 Octo Status) Tomic J2 (110 Octo Status)	1000	1000			SY S 71 IS S 198,0001 IS S 2,0001 EA S 75,0001	0 5 49.000.00 0 5 199.000.00 0 5 2,000.00 0 5 75.000.00	-	· · · ·				\$ 14,700.00 \$ 59,400.00 \$ 900.00 \$ 22,500.00	\$ 24,500.00 \$ 99,000.00 \$ 1,500.00 \$ 27,500.00			\$ 22,600,00 \$ 600,00 \$ 600,00				
	Control Building (16' x 16) Tanka (21' (10:000 Galona) Excavation / Yard Ploing Control / Wring / Telemetry	1	1			EA S 75.0001 LS S 112.4987 LS S 16,5001 EA S 22.0001	0 5 112.488.00 0 5 16,500.00	5					S 22.500.00 S 23.746.40 S 4.950.00 S 6.600.00	\$ \$6,244.00			5 22,497,60 5 3,300,00 5 4,400,00				5
	Lonton / Wong / Hammery New Electrical Service (new pump station) Backus Generators & Acourtenances Preparation of Site and Macelaneous Work (2%)	1	1			EA S 110000 EA S 16,5000 EA S 56,5000	0 5 1100000 0 5 16,500.00						\$ 2,300,00 \$ 4,950,00 \$ 16,370,70	\$ 5500.00 \$ 8250.00 \$ 27394.50			S 2300.00 S 2300.00 S 10,912,84				-
	Bonds (1.5%) Contingency (20%)	1	1			LS S 10,2320 LS S 209,9581		\$	5 31,963.29		\$ 20,867.55		\$ <u>3,069.60</u> \$ 62,987.40	\$ \$116.00 \$ 104,979.00			\$ 2,046,40 \$ 20(038,21				5
1 2 3	(Insert Items and Quantities, if any to Match CO)																				-
r1 r2 r3 r4 r5																	· · ·				-
145																	6 · ·				5
	EPA-PC-200 (*2007-2000) - 515.000	\$ 15.000.00	GME	Stone 5 15.000.00	Other		\$ 15.000.00	5	15000.00 5 -		\$ \$ \$ \$ \$ \$ \$ \$	\$ 15 000 00		-			s . s .				5
nd EID - GME	851-267-1.0 - 529,050 Standard Engineering Services (Basic and Special)		GME 23,748.00	Stone	Other												s . s .				5
	Preliminary Engineering Report Environmental Information Document, Hearings and Meetings Data Review and Collection		5 21748.00 5 3,684.20	s -	5 . 6	3	\$ 23,746,00 \$ 3,684,20	\$	23.746.00 \$ 23.746.00 2,684.20 \$ 2,684.20 \$.	\$ 23,748,00 \$ 3,684,20 \$.	5 8,034.22 5 1,252.63						· · ·				5
	Soll Borines Project Development Meetings (20)(20) Initial Bond Vote Austrance	1	\$ 6.716.00		e	3	5 6.716.00	5	5	\$ \$ 6716.00	\$ 2,282.44										5
	Non-Standard Services (Basic and Special) Worlands Delineation	1	GME 1 300.00	Stone	Other	4	\$ 1,300,00	5	5 . 1 200.00 5 1 200.00	\$ 5 1300.00	\$ 442.00						a . a .				\$
	Land Surveyor ROW. Easement, and Plat Hydrogeology Historica/Archaeological	1	5 3.601.80		5		\$ 3.601.80	5	\$. \$. 2.601.80 \$ 2.601.80	\$ \$ \$ 2,601.80	\$ 1224.61						· · ·				
	Leakage, inflow and infitration Studies Pliot Testing				0 8 8			12222	3 5 5 -												5
	Building Material Testing (Asbestos, Lead, PCBs, etc) Bool Vote Assistance Following Failed Vote Pre-accessed Items from SIGDC card 2.42.01.4				0 8 8				3 5 - 5 -							Not Elgible					
ninary and Final Design - GME St	Environmental Impact Study Related Work RSI-267-2.0 - \$174,954 - Entered as included on PCS dated 11/11/2621 for GME S Standard Engineering Services (Please see Directions)	tep 2. Modified by Stone 9/1/2	022 based on funds expended	through March 2022	Other	110			ŝ .								s . s .				5
	Preliminary Design, Plans and Specifications Preliminary Design, Plans and Specifications Plant Design, Plans and Specifications Design Plans and Specifications			June	bulli h	VTE 5 77.569.1	s . 0 s .		s - s -								· · ·				5
	Construction Cost Estimate (PCS Template) Construction Cost Estimate (PCS Template) Basis of Final Design Non Standard Engineering Services						1 1 1										s . s .				5
	Ann standard crameeting services GMS Preliminary Design, Plans and Specifications Birchline Plannine, LLC Crosse Facingmental	-	\$ 77.999.00			VTE 5 77.989.0 NTE 5 28.512.0 NTE 5 48.926.0	0 \$ 15.325.00	5	20.750.48 \$ 20.750.48 15.225.00 \$ 15.225.00	5 20,750,48 5 15,325,00	S 20.455.16 S 5.210.50			Not Eigible							4
	Kartgen Suburface Exploration District of Consultant	1				NTE S 9.807.0 NTE S 5.000.0 NTE S 4.000.0	2 2 0		s . s .	4 · ·	s . s .						s . s .				5
	GME markup on subconsultants All Subcontractors should be listed Separately	1				NTE \$ 7224	6 S		\$ · \$ ·	ş .	š .						· · ·				
ninary and Final Design - Stone 5	9 851-207-3.1 - Updated 12/16/2022 from Step 2 ISA as of 11/34/2022. Adjusted a Preliminary Design Standard Engineering Services (Basic and Special) Environmental Information Document, Hearings and Meetings	nounts for VTrans coordinatio	n, band vote support following GME	failed vote, mechanical and el Stone		3	5 1.040.00	5	8640.00 5 8.640.00	5 8,640.00	\$ 2,937,60					ş .	s .				5
	Data Review and Collection Soil Borines GIS and Surveying Services				6 6 10	5 5	5 12.164.00 5 2.348.00 5 17.187.00	5 5 5	12164.00 5 12164.00 3.348.00 5 3.348.00 17187.00 5 17187.00	5 12 164.00 5 3 348.00 5 17 187.00	5 4 125 76 5 1 128 22 5 5 542 58					s	4 ·				
	Project Development Meetings (20,140/30) Preliminary Design Non-Standard Services (Basic and Special) Additional Data Collection, GIS and Surveying Services	1			2	3	\$ 7.128.00 \$ 24.687.50	5	7.138.00 \$ 7.138.00 . 5 	\$ 7.128.00 \$ \$ 24.687.50	\$ 2.426.92 \$. \$ 8.292.75					s - s -					5
	Hydrogeology & Water Quality System for Indirect Discharge System Historica (Aschaeological Wetlands	-			5 5 5	976 976 976	\$ 15,439,80 \$ 10,689,48 \$ 882,00	-	15.439.80 \$ 15.439.80 10,689.48 \$ 10,689.48 882.00 \$ 882.00	5 15,430,80 5 10,689,48 5 882.00	5 524953 5 2,63442 5 299,88					s					
	Widife and Habitat investigations Contamination investigations Subsurface investigations subcontractor				2	21V 21V 21V	\$ \$008.00 \$ 1.364.00 \$ 4.957.20	4	5028.00 5 5028.00 1364.00 5 1364.00 4.957.20 5 4.957.20	\$ 5.028.00 \$ 1.364.00 \$ 4.957.20	5 1 209 52 5 462 76 5 1 685 45					s . s .					
	Final Design Standard Engineering Services (Basic and Special) Initial Bond Vote Assistance Final Design, Plans and Specifications	1			e e	3	\$ 4.608.00 \$ 40.451.00	4 4 4	4.608.00 5 4.608.00 40.451.00 5 40.451.00	5 4608.00 5 40.451.00	5 1566.72 5 12.751.34					s - s -					
	Project Development Meetings (20/40/30) Permit Application Support Construction Cost Estimate (PCS Template)	1			6	5 5 5	\$ 1,821.00 \$ 32.027.00 \$ 2,776.00	4 4 4	182100 5 182100 3202700 5 32.027.00 2.776.00 5 2.776.00	\$ 1,921,00 \$ 32,027,00 \$ 2,7%,00	5 609.14 5 20.889.18 5 543.84					s - s -					-
	Final Design Non-Standard Engineering Services (Bask and Special) Bond Vete Assistance Following Failed Vete CWSRF Final Design and Construction Phase Joan Austrance CWSRF Final Design Phase Topic Australiant	1				NTE	5 4.608.00 5 2.304.00	5	4 608 00 S 4 608 00 2 204 00 S 2 204 00	\$ 4.600.00 \$ 2.304.00	5 1 566 72 5 783 36					s . s .	· · ·				5
	Funding Stack Support (NBPA, ARPA, other) Community Engineering and Planning Commission support Assistance for Easement Development Electrical Design Engineering subcontactor	1			8	114 115 116	\$ 3,456,00 \$ 10,384,00 \$ 3,478,00 \$ 8,100,00	-	2456.00 \$ 2456.00 10384.00 \$ 10384.00 2478.00 \$ 2478.00 8 100.00 \$ 8 100.00	2.456.00 5 10.3M.00 5 2.478.00	5 1 175 04 5 3 530 56 5 1 182 52					s . s .	· · ·				
and an Familian	Mechanical Design Engineering subcontractor	1	GME	Sone	Other	VIE	\$ 8,100.00 \$ 8.100.00	5	8,100.00 S 8,100.00	s 8,100.00	\$ 2,754.00					\$					5
eering Services	Include Loan III Standard Engineering Services (Please see Directions) Bid Phase Services		UME	Joone		NTE	5 15.000.00 N	an s	. s .	ş .	s .					\$ 15,000,00	s . s .				5
	Construction Contract Management Resident Project Representative Construction Administration					NTE NTE	\$ \$2,000.00 N \$ 75,000.00 N \$ \$2,000.00 N	115 S	· s ·					Not Eligible		3 50,000.00 5 75,000.00 5 50,000.00	***				-
	Contract Administration Non Standard Engineering Services Materials betting for quality control, during construction					m14	\$ 10,000.00 N	115	- <u>-</u>	s .	•					> 10,000.00	ан . с				5
	Post Construction: Wellsthrough Record Drugs					NTE	S 10.000.00 N S 20,000.00 N							Not Eligible		S 10.000.00 S 20,000.00					-
	OBM Manual Closeout Documentation Federal Cross Cutters (required field)					NT	5 15,000.00 N 5 15,000.00 N	CTE 5	· · · ·	\$.	***					5 15,000.00 5 15,000.00	a . a .				5
s - Updated on 12/16/2022.	Legal - Bond Vote, Ordinance, Easement, Etc. Assistance Easement Acquisition / Current Use Penalty		GME	Stone	Other		5 20,000.00 5 20,000.00	5 5	\$ \$ 2,000.00	\$ 680.00	s . s .		\$ 3,000.00	\$ 10,000.00		\$ 15,000.00 \$ 20,000.00	* *				5
	Outreach - Events, Mailings, Pinting, Webshe, etc. Costs Permit Fees Short term interest						\$ 5,000.00 \$ 6,000.00 \$ 17,760.00	9 9 9	- s -						-	\$ 5,000.00 \$ 6,000.00 \$ 17,360.00					4
	Birchine Planning - Step 2 Birchine Planning - Step 2 Bond Vote - Town expense - printing tabulator, officials, mailings				5 5	vić vite vite	\$ 49,500.00 \$ 34,500.00 \$ 10,000.00 \$		· · · ·							3 49,500.00 5 34,500.00 5 10,000.00					-
1Cost 2Cost	Inger Auss						\$ 20,000.00 \$ 2,133,292.00 \$ 909,817.00	-								, 22,002.00					5
STIMATED CONSTR	UCTION COST T COST						\$ 3,043,109.00 \$ 3,881,001.23	5	2,133,292.00 \$ 31,963.39 2,507,744.23 \$ 393,415.42	s . s 360,132.23	5003,500 50	\$. \$ 15,000.00	\$ 752,935.80 \$ 755,935.80	\$ 454,908.50 \$	[5 1,653,301.30 5 2,301,061.30	\$ 150,000.01 \$ 150,000.01	s -	s .	\$.	5
late							**/**/20**		/**/20** **/**/20**		**/**/20**						**/**/20**				
or FUNDING CAPACIT ing Bond Capacity	IY						\$400,000.00 \$414,320.00			\$ 14,867.77	\$ 15,000.00 Check Availability	I	\$ 1,491.20	\$ 1,285.50	ş -	\$ 236,074.85	\$ (0.01)	1	ERUs		Γ
	Total Construction Cost is :	1.67%	1											, ,						RF User Rate	e Calcu
ligibility Total									\$33,283.39 \$393,415.62					\$ 464,908.50 C	heck Total NBRC I fatch is short by th				Additional New 1	6M annual	
ant Award	ibility										\$ 15,000.00	+							User Rate	INUMI	//es
	instituty .										>448,500.59	1							мн	-	Ŧ
assumptions.																					
ning PC Grant Elig assumptions. ree(s) of data for asset life. 8+PMT[0.02_5A45167_5M5162]/5251	LGF IS NEW for VI2. Used to be \$15565 de based on the project type of large cluster system for decentralized wastewater. emined.															GPR Nonative:			Affordability		1

Westford Community Wastewater Disposal System Project Costs, Funding, and Bond Recommendation

Submitted by Amy Macrellis, Stone Env. and J.B. Hinds, Birchline Planning, August 31, 2023

Westford Community Wastewater Disposal System Project Costs, Funding, and Bond Recommendation as Percents of Construction Cost

Submitted by J.B. Jinds, Birchline Planning and Amy Macrellis, Stone Env. per Planning Commission request, Sept. 5, 2023

Project Costs (rounded to nearest \$100)		Total	Calculation Key
Construction Cost (30% Opinion, August 15, 2023)	\$	2,340,800.00	Α
Contingency (30% of Construction Cost)	\$	702,300.00	A x 30% = B
Non-Construction Costs	\$	823,900.00	С
Total Project Cost incl. 30% Construction Contingency	\$	3,867,000.00	A+B+C=D
Design and Construction Project Funding Sources			
NBRC Grant (Federal)*	\$	454,909.00	
CWSRF Subsidy 1	\$	19,525.00	
CWSRF Subsidy 2 + 3	\$	250,000.00	
Local ARPA Funding	\$	150,000.00	
ARPA Grant	\$	2,377,136.00	
CRRP Grant	\$	757,427.00	
Total Funding Awards	\$	4,008,997.00	Е
Project Funding Contingencies - Min. 50% of Construction Co	ost Recomm	ended	
50% of Construction Cost	\$	1,170,400.00	A x 50% = F
Awarded Funding Above Total Project Costs	\$	141,997.00	E - D = G
Construction Cost Contingency	\$	702,300.00	В
	\$	326,103.00	

	% of	Construction
Project Costs and Funding	Total	Cost Calculation Key
Total Project Cost	\$3,867,000	D
Construction Cost	\$2,340,800	А
30% of Construction Cost	\$702,240	30.0% B
50% of Construction Cost	\$1,170,400	50.0% A x 50% = I
Awarded Funding Above Total Project Costs	\$141,997	6.1% G
Total Funding Awards	\$4,008,997	E

Summary of Bond Recommendations as % of Construction Cost

		Bond Amount as %	Total
		Construction Cost	Construction
	Bond Amount	(A)	Contingency (%)
Minimum recommended bond authority (H)	\$326,103	13.9%	50.0%
\$350,000 bond authority	\$350,000	15.0%	51.0%
\$400,000 bond authority	\$400,000	17.1%	53.2%