FIFTEEN ROPE FERRY ROAD
WATERFORD, CT 06385-2886

PHONE: 860-442-0553
www.waterfordct.org

To: Robert Brule, First Selectman

From: Gary Schneider, Director of Public Works

Date: November 10, 2021

Re: CIP 2023 – 2027

The submittal of the Department's Capital Improvement Program for FY 23 encompasses all of the infrastructure that is assigned to the Department and follows its Long Range Capital Plan.

For Public Works, out of the 18 projects, only 9 have been submitted for funding in FY 23.

This year's requests remain focused on resurfacing our roads. While this component is important, the infrastructure funding requests are moving into the areas of replacements of deteriorated curbing, sidewalks; bridge repairs and traffic signal upgrades.

For Facilities, out of the 10 projects, only 5 have been submitted for funding in FY 23. The focus is migrating the potential environmental risks from the remaining underground tanks.

Cc: Kim Allen, Finance Director

TOWN OF WATERFORD
CAPITAL IMPROVEMENT PLAN
PROJECT CONSOLIDATION FORM-FY 2023-2027

	DEPARTMENT/ AGENCY:	Public Works						
DEPT PRIORITY	PROJECT NAME	FUNDING SOURCE	FISCAL YEAR 2022-2023	FISCAL YEAR 2023-2024	FISCAL YEAR 2024-2025	FISCAL YEAR 2025-2026	FISCAL YEAR 2026-2027	TOTAL
1	Eversource Affected Roads	1	315,951	372,159				688,110
2	Paving Projects	1	325,915					325,915
3	Concrete Curbing	1	219,300					219,300
4	Bridge-Culverts Under 20'	6	150,000					150,000
5	Sidewalk Replacement	6	35,000					35,000
6	Bridge Review	6	35,000					35,000
7	Traffic Signals	6	20,000					20,000
8	Minor Road Reconstruction	6		850,000				850,000
9	Gardiner's Wood Road	6			3,000,000			3,000,000
								0
								0
	TOTALS		**1,101,166**	**1,222,159**	**3,000,000**	**0**	**0**	**5,323,325**

INDEX TO FUNDING SOURCES,

1 CURRENT YEAR CAPITAL IMPROVEMENTS
3 UTILITY BUDGET/SEWER CAPITAL MAINTENANCE FUND
3 TRANSFER TO CAPITAL & NONRECURRING.
4 SHORT AND LONG TERM DEBT FINANCING
5 LoCIP
6 CNR UNDESIGNATED FUND BALANCE
7 FEDERAL/STATE GRANTS
8 OTHER FUNDING

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY Public Works	**CONTACT PERSON** Gary J. Schneider
PROJECT NAME Eversource Affected Roads FY23	**DEPARTMENT PRIORITY** 1

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.
The Town had agreed to allow Eversource to leave the gas main trenches temporarily patched for three years while Eversource attempts to sell gas services and then connect the property owner to the main. Their reasoning was to avoid the cost of opening a newly restored pavement to install their lateral. The Town and Eversource have agreed that for some of the roads instead of Eversource performing what is required by the Ordinance, they will deposit with the Town a sum that will be used in conjunction with town funds to address the entire width of the road. The roads are in a condition that the entire width should be milled and overlaid with asphalt not just half of the road or the trench.
Roads to be addressed in 2022 (FY 23) and 2023 (FY24). (Attachment 1)

2 PROJECT STATUS IF IN PROGRESS

Eversource has released the roads and agreed to deposit with the Town funds for their portion of the road work

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the road condition safe. Minor saving in pot hole patching materials.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

Eversource to deposit with the Town funds to restore the roads in lieu of performing the work themselves.
FY23 $112,011 & FY24 $75,355 (Eversource)

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

See attached expanded narrative and cost estimates

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital		315,951	372,159			
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	**0**	**315,951**	**372,159**	**0**	**0**	**0**

Daniel Matheson

From: Reed, John J <john.reed@eversource.com>
Sent: Thursday, September 30, 2021 10:03 AM
To: Daniel Matheson
Cc: Gary Schneider
Subject: RE: estimated square yards

CAUTION: This email originated from outside of the organization.
Do not click links or open attachments unless you recognize the sender's email address and know the content is safe.

Dan,

Looks good. I want to make sure the 10% incidentals includes the few misc patches in the neighborhood we have (on town roads). Most likely these are stubs on roads potentially getting gas in the future. Robin was one we saw, Edgewood I think..... maybe attach a map to the invoice/agreement.

If thats good, start an invoice !

John

From: Daniel Matheson <dmatheson@waterfordct.org>
Sent: Thursday, September 30, 2021 9:34 AM
To: Reed, John J <john.reed@eversource.com>
Cc: Gary Schneider <gschneider@waterfordct.org>
Subject: estimated square yards

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John, see attached estimate. If you any questions let me know please.
Thanks,
Dan
Daniel Matheson
Assistant Director
Waterford Public Works
860-444-5864

09/27/2021	2021 Roadway Milling/Paving				
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Kingfisher Way (Milling)	42,400	4,711.11	Sq Yd	$4.00	$18,844.44
Woodlawn Ave (Milling)	30,960	3,440.00	Sq Yd	$4.00	$13,760.00
Sandy Hollow Drive (Milling)	49,710	5,523.33	Sq Yd	$4.00	$22,093.33
Brill Ave (Milling)	44,380	4,931.11	Sq Yd	$4.00	$19,724.44
Mackenzie Road (Milling)	52,400	5,822.22	Sq Yd	$4.00	$23,288.89
Kestrel Lane (Milling)	7,310	812.22	Sq Yd	$4.00	$3,248.89
TOTALS		25,240.00	Sq Yd		**$100,960.00**
Paving (2")		25,240.00	X 0.0575	X 2" X $80.00	**$232,208.00**
		~2900 Tons			
Tack Coat	1500 gallons	1500		$5.00	$7,500.00
		Total Milling and Paving			**$340,668.00**
		10% Incidetials and Oil Escallation			$34,066.80
		Total Cost			$374,734.80
Eversource portion of the repairs(1/2 roadway or 1/2 of the cost)					**$187,367.40**

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 3, 2021

Re: CIP: Eversource Affected Roads

The Town had agreed to allow Eversource to leave the gas main trenches temporarily patched for three years while they attempted to sell gas services and connect the property owner to the main. Their reasoning was to avoid the cost of opening a newly restored pavement to install the lateral.

The Town and Eversource have agreed that for some of the roads instead of Eversource performing what is required by the Ordinance, Eversource will deposit with the Town a sum that will be used in conjunction with town funds to address the entire width of the road.

Most of roads are in a condition that the entire width should be milled and overlaid with asphalt not just half of the road or the trench.

Roads to be addressed in 2022 (FY 23) and 2023 (FY24). (Attachment 1)

Background: Review of Chapter 12.04 Street Use Regulations of the Code of Ordinances and the "Town of Waterford Board of Selectmen Policies for Restoring Utility Trench Excavations Pursuant to Chapter 12 Section 10.04.041 of the Waterford Code of Ordinances governs the approach and requirements to restore the roads. (Attachment 2)

In the paragraph, UTILITY DISTRIBUTION AND COLLECTION EXCAVATIONS, it states "following guidelines shall be implemented when any utility distribution and collection excavation is approved within the Town right of way after **following the permanent trench pavement replacement** stated above". The gas mains are a utility distribution system.

One must go to this section first, PERMANENT TRENCH PAVEMENT REPLACEMENT before we apply the section noted above. "This process will include the immediate placement of a comparable depth of bituminous concrete and gravel as per Town of Waterford specifications as determined by the Director of Public Works or his designee. Emphasis must be placed on the backfilling and compaction of the original trench t avoid any settlement. Original pavement edges shall be saw cut to neat, straight lines to a depth necessary to remove all

pavement and tack coated. Pavement joints shall be sealed with an approved asphaltic material filling with a nozzle from the bottom up. Full depth replacement is required for pavement removed during the excavation."

After this has been completed, the remainder of the section for UTILITY DISTRIBUTION AND COLLECTION EXCAVATIONS is followed requiring "milling of 1 ½ of pavement from the center line to the curb and replaced with a bituminous concrete overlay. Lastly, the joints must be sealed."

Attachment 1: Dated November 8, 2021

Eversource has completed its sales for natural gas installations on the following roads:

- Kingfisher Way
- Woodlawn Ave
- Sandy Hollow Drive
- Mackenzie Road
- Kestrel Lane

It would be cost effective if the remainder of the neighbor roads were also completed at the same time. Those roads are:

- Edgewood Ave
- Graham Street
- Miner Ct
- Hamel Ct
- Woodlawn Ct
- Quail Street
- Robin Street
- Lark Street
- Thrust Street.

The long range plan had identified paving these areas in FY 25 and FY 26. Public Works prepared estimates to resurface these roads with Eversource funding ½ of the cost.

The cost for this project is broken down as such:

- *Eversource Roads*: $385,578 (Eversource contributes ½ or $192.879)
- Remainder of Roads: $302,352

Sandy Hollow will require all of the concrete curb to be replaced before paving. Salt has caused the concerts to spall. It must be replaced before resurfacing.

For FY 23: *Eversource $229,535,* Town $86,416

- *Kingfisher*
- Woodlawn Ave
- *Mackenzie*
- *Kestrel*
- Quail
- Robin
- Thrust
- Lark
- *Woodlawn*

For Fy24: *Eversource $156,223*, Town $215,936

- Miner
- Miner CT
- Edgewood
- Graham
- *Sandy Hollow*
- *Brill*
- Hamel

My recommend is that the Department place in its budget request for addressing these roads in FY 23 and FY 24. Sandy Hollow's concrete curbing replacement will be requested for FY23 with the paving funding requested on FY 24. The project is split into two fiscal years. Other paving projects are also being planned and Public Works staff will only be able to manage what is being proposed.

F423

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Kingfisher Way (Milling)	42,400	4,711.11	Sq Yd	$4.00	$18,844.44
TOTALS		4,711.11	Sq Yd		**$18,844.44**
Paving (2")		4,711.11	X 0.0575	X 2" X $80.00	**$43,342.21**
			~550 Tons		
Tack Coat	300 gallons	300		$5.00	$1,500.00
		Total Milling and Paving			**$63,686.66**
		10% Incidetials and Oil Escallation			$6,368.67
		Total Cost			$70,055.32

FY23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Woodlawn Ave (Milling)	30,960	3,440.00	Sq Yd	$4.00	$13,760.00
TOTALS		3,440.00	Sq Yd		**$13,760.00**
Paving (2")		3,440.00	X 0.0575	X 2" X $80.00	**$31,648.00**
			~400 Tons		
Tack Coat	275 gallons	275		$5.00	$1,375.00
		Total Milling and Paving			**$46,783.00**
		10% Incidetials and Oil Escallation			$4,678.30
		Total Cost			$51,461.30

FY 23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Mackenzie Road (Milling)	52,400	5,822.22	Sq Yd	$4.00	$23,288.89
TOTALS		5,822.22	Sq Yd		**$23,288.89**
Paving (2")		5,822.22	X 0.0575	X 2" X $80.00	**$53,564.42**
		~ 675 Tons			
Tack Coat	400 gallons	400		$5.00	$2,000.00
		Total Milling and Paving			**$78,853.31**
		10% Incidetials and Oil Escallation			$7,885.33
		Total Cost			$86,738.64

FY 23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Kestrel Lane (Milling)	7,310	812.22	Sq Yd	$4.00	$3,248.89
TOTALS		812.22	Sq Yd		**$3,248.89**
Paving (2")		812.22	X 0.0575	X 2" X $80.00	**$7,472.42**
		~ 100 Tons			
Tack Coat	70 gallons	70		$5.00	$350.00
		Total Milling and Paving			**$11,071.31**
		10% Incidetials and Oil Escallation			$1,107.13
		Total Cost			$12,178.44

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Quail Street (Milling)	9,912	1,102.00	Sq Yd	$4.00	$4,408.00
TOTALS		1,102.00	Sq Yd		**$4,408.00**
Paving (2")		1,102.00	X 0.0575	X 2" X $80.00	**$10,138.40**
		~ 130 Tons			
Tack Coat	90 gallons	90		$5.00	$450.00
		Total Milling and Paving			**$14,996.40**
		10% Incidetials and Oil Escallation			$1,499.64
		Total Cost			$16,496.04

FY 23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Robin Street (Milling)	17,880	1,986.67	Sq Yd	$4.00	$7,946.67
TOTALS		1,986.67	Sq Yd		**$7,946.67**
Paving (2")		1,987.00	X 0.0575	X 2" X $80.00	**$18,280.40**
		~ 230 Tons			
Tack Coat	150 gallons	150		$5.00	$750.00
		Total Milling and Paving			**$26,977.07**
		10% Incidetials and Oil Escallation			$2,697.71
		Total Cost			$29,674.77

FY 23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Thrush Street (Milling)	12,264	1,362.67	Sq Yd	$4.00	$5,450.67
TOTALS		1,362.67	Sq Yd		**$5,450.67**
Paving (2")		1,363.00	X 0.0575	X 2" X $80.00	**$12,539.60**
		~ 160 Tons			
Tack Coat	110 gallons	110		$5.00	$550.00
		Total Milling and Paving			**$18,540.27**
		10% Incidetials and Oil Escallation			$1,854.03
		Total Cost			$20,394.29

FY 23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Lark Street (Milling)	11,952	1,328.00	Sq Yd	$4.00	$5,312.00
TOTALS		1,328.00	Sq Yd		**$5,312.00**
Paving (2")		1,330.00	X 0.0575	X 2" X $80.00	**$12,236.00**
		~ 155 Tons			
Tack Coat	100 gallons	100		$5.00	$500.00
		Total Milling and Paving			**$18,048.00**
		10% Incidetials and Oil Escallation			$1,804.80
		Total Cost			$19,852.80

FY23

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Woodlawn Ct (Milling)	5,472	608.00	Sq Yd	$4.00	$2,432.00
TOTALS		608.00	Sq Yd		**$2,432.00**
Paving (2")		608.00	X 0.0575	X 2" X $80.00	**$5,593.60**
			~ 75 Tons		
Tack Coat	50 gallons	50		$5.00	$250.00
		Total Milling and Paving			**$8,275.60**
		10% Incidetials and Oil Escallation			$827.56
		Total Cost			$9,103.16

FY24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Miner Ave (Milling)	57,600	6,400.00	Sq Yd	$4.00	$25,600.00
TOTALS		6,400.00	Sq Yd		**$25,600.00**
Paving (2")		6,400.00	X 0.0575	X 2" X $80.00	**$58,880.00**
		~ 740 Tons			
Tack Coat	500 gallons	500		$5.00	$2,500.00
		Total Milling and Paving			**$86,980.00**
		10% Incidetials and Oil Escallation			$8,698.00
		Total Cost			$95,678.00

FY24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Miner Ct (Milling)	9,940	1,104.44	Sq Yd	$4.00	$4,417.78
TOTALS		1,104.44	Sq Yd		**$4,417.78**
Paving (2")		1,105.00	X 0.0575	X 2" X $80.00	**$10,166.00**
		~ 130 Tons			
Tack Coat	90 gallons	90		$5.00	$450.00
		Total Milling and Paving			**$15,033.78**
		10% Incidetials and Oil Escallation			$1,503.38
		Total Cost			$16,537.16

FY 24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Edgewood Ave (Milling)	32,904	3,656.00	Sq Yd	$4.00	$14,624.00
TOTALS		3,656.00	Sq Yd		**$14,624.00**
Paving (2")		3,656.00	X 0.0575	X 2" X $80.00	**$33,635.20**
		~ 420 Tons			
Tack Coat	280 gallons	280		$5.00	$1,400.00
		Total Milling and Paving			**$49,659.20**
		10% Incidetials and Oil Escallation			$4,965.92
		Total Cost			$54,625.12

FY 24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Graham St (Milling)	24,192	2,688.00	Sq Yd	$4.00	$10,752.00
TOTALS		2,688.00	Sq Yd		**$10,752.00**
Paving (2")		2,688.00	X 0.0575	X 2" X $80.00	**$24,729.60**
		~ 320 Tons			
Tack Coat	210 gallons	210		$5.00	$1,050.00
		Total Milling and Paving			**$36,531.60**
		10% Incidetials and Oil Escallation			$3,653.16
		Total Cost			$40,184.76

FY24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Sandy Hollow Drive (Milling)	49,710	5,523.33	Sq Yd	$4.00	$22,093.33
TOTALS		5,523.33	Sq Yd		**$22,093.33**
Paving (2")		5,525.00	X 0.0575	X 2" X $80.00	**$50,830.00**
		~ 640 Tons			
Tack Coat	420 gallons	420		$5.00	$2,100.00
		Total Milling and Paving			**$75,023.33**
		10% Incidetials and Oil Escallation			$7,502.33
		Total Cost			$82,525.67

FY24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Brill Ave (Milling)	44,380	4,931.11	Sq Yd	$4.00	$19,724.44
TOTALS		4,931.11	Sq Yd		**$19,724.44**
Paving (2")		4,932.00	X 0.0575	X 2" X $80.00	**$45,374.40**
		~ 570 Tons			
Tack Coat	380 gallons	380		$5.00	$1,900.00
		Total Milling and Paving			**$66,998.84**
		10% Incidetials and Oil Escallation			$6,699.88
		Total Cost			$73,698.73

F4 24

2021 Roadway Milling/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Hamel Ct (Milling)	5,352	594.67	Sq Yd	$4.00	$2,378.67
TOTALS		594.67	Sq Yd		**$2,378.67**
Paving (2")		595.00	X 0.0575	X 2" X $80.00	**$5,474.00**
			~ 70 Tons		
Tack Coat	50 gallons	50		$5.00	$250.00
		Total Milling and Paving			**$8,102.67**
		10% Incidetials and Oil Escallation			$810.27
		Total Cost			$8,912.93

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY	CONTACT PERSON
Public Works	Gary J. Schneider
PROJECT NAME	**DEPARTMENT PRIORITY**
Paving Projects	2

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.
All roads identified in this project fall under the definition of needing structural improvement or rehabilitation. This is defined as milling the top two inches of old asphalt from the surface and replacing with new asphalt or full depth reclamation, where the asphalt is ground up and mixed with the base to establish a new base and then resurfaced with three to five inches of new asphalt.
• Tiffany Ave, Savi Ave, Cherry St, Willow St, Cedar St, East Brook Dr.

2 PROJECT STATUS IF IN PROGRESS

Department has identified the areas to address using the recently completed Pavement Management 2020 Update (October 2020), prepared by VHB, consulting engineering.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the road condition safe. Minor savings in pot hole patching materials

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

Attached expanded narrative memorandum and cost estimates.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital		325,915				
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	**0**	**325,915**	**0**	**0**	**0**	**0**

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 9, 2021

Re: CIP: Paving Program

The Town needs to balance available funding to save our relatively good collector roads with the need to address years of delayed work in our neighborhoods. This balance needs to address the base rehabilitation (reclaiming the road) roads that account for 57% of the backlog with those roads that required routine, preventative maintenance and structural improvements (milling, patching and crack sealing).

Funding for our road program is programmed from two sources. The operations budget using TAR funding from the State will be used for routine maintenance and minor local repairs such as crack sealing and pothole repairs. Programed for CIP funding are the thin overlay, full width milling and overlay; and reclaiming and overlay.

The areas to be addressed for the next years will be those roads that didn't involve the installation of gas mains. These roads are not only in the Quaker Hill area, but also in the neighborhoods south of Fog Plain, and elsewhere. The Department is still in discussions with Eversource to schedule their permanent repairs.

To guide us, a pavement management update was completed for the entire network. This formal evaluation provided a systematic, consistent approach to the evaluation of the present condition of the road surface. It is used to prioritize the repairs. It is not intended to replace sound engineering judgment, which should dictate specific needs for an individual project.

The Departments previous approach has been to address local roads that carry a good volume of traffic. Classified as major and minor collector streets, most have been addressed over the last 10 years. These 19 roads have been completed or funded. This has worked well, as the Department effort on these roads will now be routine and preventive maintenance, low cost methods that extend the life of the roads.

Our effort will move more into the neighborhoods, where multiple roads will be addressed requiring a variety of paving methods.

Starting with the older neighborhoods is challenging because they have a mix of road widths, multiple types of curbing, asphalt sidewalks that abut the asphalt curbing, driveway aprons constructed of concrete, asphalt and stone, drainage structures and sewer manholes. These items don't lead to the approach that the Department has used for the last several years of using the State bid list. This list works great for when the majority of the work is just the resurfacing. Resurfacing will just one part of what much be accomplish for these neighborhood roads.

All roads identified in this project fall under the definition of needing structural improvement or rehabilitation. This is defined as milling the top two inches of old asphalt from the surface and replacing with new asphalt or full depth reclamation, where the asphalt is ground up and mixed with the base to establish a new base and then resurfaced with three to five inches of new asphalt.

Sub-class N/S & E/W local connectors

- FY 25 Goshen/Spinnaker/Country Club
- FY 26 Quarry Road/Leary Drive/portion of Shore Road (Lindros to Quarry)

Neighborhood Roads

- FY 23 Map Section A, Area 3:
    - Tiffany Ave, Savi Ave, Cherry St, Willow St, Cedar St, East Brook Dr.
- FY 24 Map Section A, Area 2 and Section B, Area 3:
    - David/Wild Rose Place & Avenue/Avenue A/Summer/William
    - Third/Fourth/Middle from Daniels to Fourth/High from Daniels to Fourth
- FY 25 Map Section B, Area 4 and Section G:
    - First/Second/ Middle from Daniels to First/High from Daniels to First
    - Pine Street, Strosberg Road, Hamast Ave, Woodland Rd
- FY 26 Map Section C, Area 1:
    - Perry/Alice/Linda/Oak/Anita/Lee/Division/Betty
- FY 27 Map Section D:
    - Gunshot, Race, Lanyard, Windward. Millstone East

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Tiffany Ave (Reclaiming)	33,168	3,685.33	Sq Yd	$6.00	$22,112.00
Paving (3")		3,685.33	X 0.0575	X 3" X $80	$50,857.60
	Total Milling and Paving				$72,969.60
Reset Manholes		6.00	EA	$800.00	$4,800.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars		30.00	SF	$4.00	$120.00
Topsoil and seed		20.00	Sq Yd	$8.00	$160.00
Pave Aprons		120.00	Sq Yd	$20.00	$2,400.00
			Sub Total		$80,449.60
			Total x 10%		$8,044.96
			Total		$88,494.56

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
East Brook Drive(Reclaiming)	16,000	1,777.78	Sq Yd	$6.00	$10,666.67
Paving (3")		1,777.78	X 0.0575	X 3" X $80	$24,533.33
	Total Milling and Paving				$35,200.00
Reset Manholes		6.00	EA	$800.00	$4,800.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars		15.00	SF	$4.00	$60.00
Topsoil and seed		15.00	Sq Yd	$8.00	$120.00
Pave Aprons		80.00	Sq Yd	$20.00	$1,600.00
			Sub Total		$41,780.00
			Total x 10%		$4,178.00
			Total		$45,958.00

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Savi Ave (Reclaiming)	38,952	4,328.00	Sq Yd	$6.00	$25,968.00
Paving (3")		4,328.00	X 0.0575	X 3" X $80	$59,726.40
	Total Milling and Paving				$85,694.40
Reset Manholes		8.00	EA	$800.00	$6,400.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars		30.00	SF	$4.00	$120.00
Topsoil and seed		30.00	Sq Yd	$8.00	$240.00
Pave Aprons		230.00	Sq Yd	$20.00	$4,600.00
			Sub Total		$97,054.40
			Total x 10%		$9,705.44
			Total		$106,759.84

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Cedar St (Reclaiming)	11,904	1,322.67	Sq Yd	$6.00	$7,936.00
Paving (3")		1,322.67	X 0.0575	X 3" X $80	$18,252.80
	Total Milling and Paving				$26,188.80
Reset Manholes		5.00	EA	$800.00	$4,000.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars		15.00	SF	$4.00	$60.00
Topsoil and seed		15.00	Sq Yd	$8.00	$120.00
Pave Aprons		50.00	Sq Yd	$20.00	$1,000.00
			Sub Total		$31,368.80
			Total x 10%		$3,136.88
			Total		$34,505.68

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Cherry St (Reclaiming)	8,064	896.00	Sq Yd	$6.00	$5,376.00
Paving (3")		896.00	X 0.0575	X 3" X $80	$12,364.80
	Total Milling and Paving				$17,740.80
Reset Manholes		3.00	EA	$800.00	$2,400.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars			SF	$4.00	$0.00
Topsoil and seed		15.00	Sq Yd	$8.00	$120.00
Pave Aprons		50.00	Sq Yd	$20.00	$1,000.00
			Sub Total		$21,260.80
			Total x 10%		$2,126.08
			Total		$23,386.88

2021 Roadway Reclaiming/Paving					
Road	**Square Feet**	**Square Yards**	**Unit**	**Unit Price**	**Total**
Willow St (Reclaiming)	9,480	1,053.33	Sq Yd	$6.00	$6,320.00
Paving (3")		1,053.33	X 0.0575	X 3" X $80	$14,536.00
	Total Milling and Paving				$20,856.00
Reset Manholes		3.00	EA	$800.00	$2,400.00
Epoxy Painted Yellow Lines			LF	$0.30	$0.00
Stop Bars			SF	$4.00	$0.00
Topsoil and seed		15.00	Sq Yd	$8.00	$120.00
Pave Aprons		50.00	Sq Yd	$20.00	$1,000.00
			Sub Total		$24,376.00
			Total x 10%		$2,437.60
			Total		$26,813.60

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY Public Works	**CONTACT PERSON** Gary J. Schneider
PROJECT NAME Concrete Curbs	**DEPARTMENT PRIORITY** 3

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

Deteriorated sections of concrete curbing on Sandy Hollow and Shore Roads must be addressed before the road can be scheduled to be resurfaced. The concrete curbing has spalled to a point with the steel rebar is being exposed and is becoming a hazard to tires or the walking public. Patching the spalled concrete is not cost effective as the water and salt has already reached the untreated steel and the spalling will continue until all affected sections have been removed. The deteriorated sections would be removed and precast concrete sections would be reinstalled. Modern concrete mixes are formulated stand up to salt (chlorides) intrusion.

2 PROJECT STATUS IF IN PROGRESS

Department has identified areas of curbing needs to be addressed before the roads are resurfaced.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

Paving of the roads will be held off until the curbing condition is addressed.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the condition safe.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

See attached expanded narrative and memo dated 5/5/21 - Goshen Area Concrete Curbing

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital		219,300				
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	219,300	0	0	0	0

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 2, 2021

Re: CIP: Concrete Curbs

This project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.

Our existing roadside curbing is either asphalt or concrete. Asphalt curbing is addressed when the road is resurfaced. Deteriorated sections are removed in mass just before the new surface is placed and then the curbs are reinstalled. Deteriorated sections of concrete curbing must be addressed before the road is scheduled to be resurfaced. You don't want to pave a road and then cut out the section of the new pavement in the gutter to remove the old curb and install the new.

The concrete curbing is several areas has spalled to a point with the steel rebar is being exposed and is becoming a hazard to tires or the walking public. Patching the spalled concrete is not cost effective as the water and salt has already reached the untreated steel and the spalling will continue until all affected sections have been removed.

The deteriorated sections would be removed and precast concrete sections would be reinstalled. Modern concrete mixes are formulated stand up to salt (chlorides) intrusion.

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: Robert Brule, First Selectman

From: Gary J Schneider

Date: May 5, 2021

Re: Goshen Area Concrete Curbing Issues

Two sections of concrete curbs on Shore Road between Goshen Road and Quarry Road and between Dock Road and Palmer Road are showing signs of serious deterioration. The concrete is spalling to the point where there are sections of the concrete curb that is at the same level as the road leaving a drop from the asphalt sidewalk. Other curbs in the area will need to be addressed in the future.

The Department is constantly removing the exposed rebar and sweeping up the chunks of concrete in an attempt to make the area safe. That still leaves an uneven surface.

The two sections of curbing in the area in the worse shape total 2,300 feet in length. The curbing has deteriorated to the point where permanent repairs are not an option. These sections of curbs are beyond a simple curb replacement. Years of resurfacing has brought has increased the height of the road resulting in less of a curb reveal. This area is experiencing flooding from the street and thought must be given to increasing the curb reveal which will require raising the sidewalk. The increased curb reveal is an attempt to channel the road water into the existing basins instead of through driveways in backyards. This will help but not eliminate the flooding from the street onto private property.

Based on the cost estimates used for the Rope Ferry Sidewalk Replacement, just for concrete curbing removal and precast replacement is approximately $43/lf for the 2,300 lf or $99,000. A total project cost is $150,000 to $200,000 and is beyond the scope of work that the Department can perform. Thus, design funds will need to be programed to prepare a bid plan and specification.

My current Capital Improvement Program has identified seeking funding for this area to address the concrete curbing issues in the years FY23-24 and FY 24-25. Due to the condition of these curbs, I will advance the work one year with the plan reflecting funding in FY22-23 and FY 23-24.

Until then, the Department will monitor the areas, remove any deteriorated concrete, patch with asphalt any hole and remove any rebar that is exposed.

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY
Public Works

CONTACT PERSON
Gary J. Schneider

PROJECT NAME
Bridges/Culverts Under 20'

DEPARTMENT PRIORITY
4

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

From the rains that were the result of the remains of Ida, two bridges over Hunt's Brook were impacted. The bridge over the brook at Bloomingdale Road was overtopped causing some erosion of bank near the abutments. Downstream of the above location, where brook flows under Old Norwich Town Road, the brook overtopped the road. Inspection of the bridge (bridge #15004) found some scour that needs to be corrected. Also identified was a major safety issue. On the downstream side, only a chain link fence is keeping vehicles from a 15 foot drop into the brook, on the upstream side, unsecured small concrete blocks were placed at the edge of the road. Both don't meet any sort of acceptable safety structures for crossings.
Funds are being requested to design and repair the culvert due to scour and for proper guard rail installation at the Old Norwich Road crossing.

2 PROJECT STATUS IF IN PROGRESS

Inspection reports from the State. No department resources expended to date on this project.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

No impact to the Departments budget

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

All projects will be reviewed to determine if they are eligible for State or Federal Bridge grants.

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

See attached expanded narrative, LEI inspection report dated Sept 3, 2021 and LEI proposal dated Oct 15, 2021

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance		150,000				
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	**0**	**150,000**	**0**	**0**	**0**	**0**

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 2, 2021

Re: CIP: Bridges/Culverts Under 20'

The Town has 13 bridges/culverts that the State of Connecticut field screened in 2018. They are not on the National Bridge Inventory as the span is 20 feet or less, but they still carry traffic over our water courses. As with our larger bridges, serious problems such as load restrictions and closures can be prevented by programming renovation work.

The goal is to address the issues on the bridges/culverts before the need for immediate repair or rehabilitation is urgent or in the worst case, the necessary to closure the road until corrective action is taken.

When these structures are renovated, the Department will analyze not only the structure, but items such as width of road at the crossing making them safe for vehicles using the structure and adding protection to the water course that flows through them. Such measures may include compliant guide rail system, bank stabilization in the case of overtopping and alignment of the watercourse to the road.

From the rains that were the result of the remains of Ida, two bridges over Hunt's Brook were impacted. The bridge over the brook at Bloomingdale Road was overtopped causing some erosion of bank near the abutments. Downstream of the above location is where brook flows under Old Norwich Town Road. Here the brook overtopped the road but not at the brook crossing. Inspection of the bridge (bridge #15004) found some scour that needs to be corrected. Also identified was a major safety issue. On the downstream side, only a chain link fence is keeping vehicles from a 15 foot drop into the brook, on the upstream side, unsecured small concrete blocks were placed at the edge of the road. Both don't meet any sort of acceptable safety structures for crossings.

Funds are being requested to design and repair the culvert due to scour and for proper guard rail installation at the Old Norwich Road crossing.

These projects would be consistent with Town of Waterford Hazard Mitigation Plan December 2017 and MS4 General Permit.

The remaining bridge/culvert locations will be addressed in future years. Funding would retain the services of a qualified bridge engineering firm to fully inspect the structures and specify the required repairs with construction funding requested in the following years.

Lenard Engineering, Inc.

2210 Main Street
P.O. Box 1088
Glastonbury, CT 06033
Tel: 860 659-3100
Fax: 860 659-3103

134B Conantville Road
P.O. Box 580
Storrs, CT 06268
Tel: 860 429-5400
Fax: 860 429-1367

140 Willow Street
Suite 8
Winsted, CT 06098
Tel: 860 379-6669
Fax: 860 738-1272

15 Midstate Drive
Suite 206
Auburn, MA 01501
Tel: 508 721-7600
Fax: 508 721-7610

www.lenard-eng.com

Civil, Environmental and Hydrogeological Consultants

September 3, 2021

Mr. Robert J. Brule, First Selectman
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Re: Emergency Inspection of the Old Norwich Road and the Bloomingdale Road Bridges over Hunts Brook, Waterford, CT

Dear Mr. Brule:

As requested by the Town's Department of Public Works, Lenard Engineering, Inc. (LEI) conducted emergency inspections of the referenced structures today. Both bridges were closed following the flooding event caused by tropical storm Ida this Wednesday, and the Department wanted verification from us if the roads could be re-opened, and if yes, on what conditions.

The following is a summary of our observations, engineering opinion, and recommendations on the short-term actions.

Old Norwich Road over the Hunts Brook

The stone arch culvert and stone wingwalls did not suffer any visible damage by the flood. Due to the high flow and strong current in the brook, we could only inspect the stone structure from a distance, but no irregularities (dislocation, settlement, loss of stone, etc.) were visible. It is likely the structure is founded on rock.

The road surface and accessories (pavement, curbs, sidewalk, railing, fencing, etc.) appear intact, with no obvious signs of cracking, settlement or movement at the time of inspection. We cannot completely rule out, however, some erosion of earth material from behind the stone structure through the voids of the stones, due to the sudden increase and decrease of the water level. This soil erosion, if it occurred, may not compromise the stone structure itself, but might cause some cracking and settlement of the road pavement over time.

In our opinion the road be re-opened on the following conditions:

- DPW personnel inspect the structure and the roadway on the daily basis for the next two weeks for any sign of settlement or cracking of the structure or roadway. Daily photographs should be taken from the same viewpoints so that conditions on consecutive days can be compared.

- After the streamflow volume and velocity in the brook subside sufficiently, a more thorough inspection of the culvert and the wingwalls should be conducted for potential scour damage at the base.

Bloomingdale Road over Hunts Brook

The triple 36" RCP culvert has reinforced concrete headwalls and wingwalls, which showed no visible damage due to flooding that overtopped the road. According to the record photographs shared with LEI during the storm, and other evidence in the field, water velocities during the overtopping were lower over the structure, and the headwalls and wingwalls indicated no visible scour damage. More damage occurred to the road embankment next to the northeast corner of the structure, where the flow velocity was the highest. The resulting embankment erosion undermined the road curb even exposing the back wall of the catch basin at that location. We did not see evidence of further erosion of the road embankment beyond the line of the back of the catch basin, however we cannot completely excluded that possibility.

In our opinion the road be re-opened on the following conditions:

- Until the embankment is repaired, approximately 5 to 6 feet of the width of the roadway should be closed for the traffic on the easterly (downstream) side. Closing 5 or 6 feet of the roadway width would still allow for two 11 feet wide traffic lanes over the structure.
- Adequate traffic control devices should be installed, as determined by Town of Waterford Police department

- The embankment should be repaired by the following way:

  - Place 3-3.5 feet size boulders along the line of the toe of the embankment for firm support of the earth.
  - Reconstruct the embankment by placing compacted processed aggregate or granular fill in the scour hole and to the finished grade line. In areas where processed aggregate can not be easily placed and / or compacted, use flowable fill.

- Sawcut and remove sections of pavement and sidewalk where base has been eroded, and place new bituminous roadway pavement and sidewalks on top of the newly compacted gravel.
- Cover the entire repair area with large riprap over a geotextile layer, and
- Re-set the traffic rail posts in the reconstructed embankment,

- Re-open the road to full width.

We trust that this information will be useful for the Town Department of Public Works in conducting the necessary repairs. We will follow-up with Public Works on our recommendations for the long-term, permanent repair actions later.

Please do not hesitate to contact for additional assistance, if needed.

Sincerely,

James E. Ericson, P.E.
Vice President

Paul Magyar, P.E.
Chief Structural Engineer

Cc: Dan Matheson, Public Works
Gary Schneider, Public Works
K. Allen, Town of Waterford

Lenard Engineering, Inc.

2210 Main Street
P.O. Box 1088
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Tel: 860 659-3100
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1348 Conantville Road
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15 Midstate Drive
Suite 206
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Civil, Environmental and Hydrogeological Consultants

October 15, 2021

Mr. Gary Schneider
Director of Public Works
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

RE: ***Proposal for Professional Services, Prepare Design Plans for Guard Rail Improvements at Old Norwich Road Bridge over Hunts Brook, Waterford, CT***

Dear Mr. Schneider:

As requested, Lenard Engineering, Inc. (LEI) is pleased to submit this proposal for the Towns review and acceptance.

SCOPE OF SERVICES

1) Wetland Delineation – As the work will take place within the upland review area for wetlands and watercourses, LEI will retain a certified soil scientist to delinate the limits of wetlands adjacent to Hunts Brook, within 75' of Old Norwich Road, both upstream and downstream.

2) Conduct Field Survey and Base Mapping - LEI will conduct up to one day of field survey, to locate the roadway, existing railing and fencing components, marked utilities, wetland flags and other physical items that could impact the design and construction.

   LEI will prepare a base map at an appropriate scale, utilizing NAD 83 elevation datum.

3) Prepare Design Plans and Technical Specifications - LEI will prepare design plans for replacement of the existing guard rails on the north side of the road with a DOT traffic rated guard rail barrier system.

   On the south side of the road, LEI will evaluate options to upgrade the existing galvanized posts and chain link fencing with a DOT traffic rated system. If feasible, LEI will design a replacement system for the south side of the road.

   LEI will prepare a set of technical specifications which reference DOT Form 818 standards.

4) Construction Cost Estimate – LEI will conduct quantity takeoffs and prepare a construction cost estimate, using bid prices from recent projects, as well as DOT unit prices.

5) Review Meeting and Final Revisions

LEI will attend one review meeting, either virtually or in-person, to review the plans, specs and cost estimate, and solicit your comments and ideas. We will make one set of revisions to all documents, and provide the Town with both PDF and paper copies of the final plans, specifications and cost estimate, for your use in bidding and constructing the project.

PROPOSED FEES

We propose to complete work as specified above for a lump sum fee of $ 10,500, broken down as follows:

Task 1 – Wetland Delineation	$ 1,000
Task 2- Survey and Base Mapping	$ 3,000
Task 3- Preliminary Design Plans, Specifications	$ 4,500
Task 4- Cost Estimate	$ 500
Task 5- Review Meeting, Final Revisions	$ 1,500
TOTAL FEE	$ 10,500

We hope the Town finds our proposal acceptable, and we look forward to continuing to serve Waterford on this project. If you or others at the Town have any questions or comments, I am at your service.

Respectfully submitted,
Lenard Engineering, Inc.

Jim Ericson

James E. Ericson, PE
Vice President

ACCEPTED BY: _____

DATE: _____

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY	CONTACT PERSON
Public Works	Gary J. Schneider
PROJECT NAME	**DEPARTMENT PRIORITY**
Sidewalk Replacement	5

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This Capital project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them. Although the entire length of Niantic River Road has sidewalks, this project starts at the intersection of Old Niantic River Road and ends at the intersection of West Street. The project is to construct a concrete 60" wide sidewalk. It will require the purchase of land or the granting of permanent easements from the abutting property owners. This would require the services of a civil engineering firm to design the project. Funding requested is for initial engineering services.

2 PROJECT STATUS IF IN PROGRESS

None

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

The concrete sidewalks should be replaced before the area roads are resurfaced to prevent damage to a newly resurfaced road.

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the condition safe.

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

See attached expanded narrative.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance		35,000				
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	35,000	0	0	0	0

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 2, 2021

Re: CIP: Sidewalk Replacement

This Capital project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.

With many sidewalks around the Town in need of repair and replacement, this project will request funding for multiple years to repair sidewalks, improve walkability, and increase pedestrian safety throughout our community. The Town has an extensive network of sidewalks not only in neighborhoods, but connecting neighborhoods with each other and other town parks, local businesses and community services. Sidewalks also provide a visual character of community, equal to what a good road provides. By providing a safe walkway, we will be encouraging people to use this healthy and environmentally sustainable mode of travel and more attractive place to live and work.

This project will provide funds to replace sections of concrete and asphalt sidewalks that are not salvageable, eliminating trip hazards and missing portions of the walks.

Also included in this project will be the replacement or installation of ADA ramps, address utility poles impacts to the sidewalks and properly locate crosswalks where required. Sidewalks will be replaced with like material, concrete for concrete, asphalt for asphalt.

It is recommended that this multi-year project be a mix of local neighborhood sidewalks and connecting sidewalks. Once this areas have been addressed, the project will move to the sidewalks on State Roads. As the Department moves into replacing sidewalks, the plan will comply current ADA guidelines.

Niantic River Road Sidewalk:
Although the entire length of Niantic River Road has sidewalks, this project starts at the intersection of Old Niantic River Road and ends at the intersection of West Street.

1. Niantic River Road has concrete curbs and thus sets a hard edge location for the sidewalk.
2. Generally, the road has no shoulders, thus the travel lane extends to the concrete curb.
3. ADA guideline of a minimum of 36" clear and a max of 60" width for sidewalk.
4. If only 36" width of clear space is provided, the guideline requires a 60" x 60" "pad" every 200 feet.
5. Moving the pole line is not viable because of issues of aerial trespass, guying of poles, and possible need of span poles to guy some of the poles that then may require additional permanent easements.

Briefly the issue is;

- The entire length of the sidewalk is less than 60" wide and most, if not all of the ADA ramps don't meet code.
- The length of the sidewalk (Old Niantic River Road to RT 156) is approximately 6,900 feet.
- Of the 39 pole locations in this area, 21 poles are placed outside of the asphalt sidewalk and the current walk provides the 36" minimum width. They are 14 locations that would require minor new work and 4 locations (pole numbers 6317, 6322, 6324 and 6344) that have what appears to have private fixed improvements within the Right of Way or right on the property line. In any case, they would need to be moved. It is not known if additional right of way will need to be acquired in order to achieve the 36" clear space for these locations.
- The 4 locations would require the services of a professional land surveyor to identify in the field the property line at the 4 locations. Funding for survey, purchase, design and construction would be required.
- A project to construct a concrete 60" wide sidewalk would require the purchase of land or the granting of permanent easements from the abutting property owners. This would require the services of a civil engineering firm to design the project.

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY	CONTACT PERSON
Public Works	Gary J. Schneider
PROJECT NAME	**DEPARTMENT PRIORITY**
Bridge Review	6

1 **DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)**

From the rains that were the result of the remains of Ida, two bridges over Hunt's Brook were impacted. The bridge over the brook at Bloomingdale Road (bridge # 06139) was overtopped causing the closure of the road, some erosion of bank near the abutment and some minor asphalt road surface was lost. An analysis of the bridge in 2014 found that the brook will overtop the bridge in a 27 year storm. Over topping of the bridge will shut the road down, a major concern for emergency services. Funds are requested for initial engineering work to increase the capacity of the bridge.

2 **PROJECT STATUS IF IN PROGRESS**

Inspection reports

3 **LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST**

None

4 **DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)**

No impact to the Department's budget

5 **GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)**

All projects will be reviewed to determine if they are eligible for State or Federal Bridge grants.

6 **ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)**

See attached expanded narrative, State Structural Summary Report April 4, 2020, excerpt from Kleinfelder report dated Nov 18, 2014, inspection report, LEI dated Sept 3, 2021.

7 **COST/FUNDING SOURCE**

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance		35,000				
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	**0**	**35,000**	**0**	**0**	**0**	**0**

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 2, 2021

Re: CIP: National Bridge Inventory

There are 7 bridges on the National Bridge Inventory (spans over 20") that the State DOT inspections every 2 years. The last inspection results were published in April of 2020. The rating scale used by the State has found 4 rated good and 3 rated fair.

Of these seven bridges, 5 are on primary local roads that move traffic throughout the town.

The rating system consists of these levels;

- Excellent - No noticeable deficiencies or deterioration
- Very Good – No problems requiring attention
- GOOD Condition - some minor problems
- Satisfactory – Structural elements show some minor deterioration nonstructural cracking; potential exists for major maintenance.
- FAIR - all primary structural elements are sound, but may have minor section loss, structural cracking, spalling or scour; potential exists for minor rehabilitation.
- POOR - advanced section loss, deterioration, spalling or scour
- SERIOUS - loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present. Rehabilitation or repair required immediately
- CRITICAL - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present, or scour may have removed substructure support. Need for immediate repair or rehabilitation is urgent; unless closely monitored it may be necessary to close the bridge until corrective action is taken.
- IMMINENT" FAILURE - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put back in light service.
- FAILED - out of service - beyond corrective

Serious bridge problems such as load restrictions and closures can be prevented by programming renovation work. The goal is to address the issues on the bridges before they are downgraded to poor or worse conditions.

Not included on this list are two bridges that are on the city line between New London and Waterford on Highland Avenue (fair) and Glenwood Avenue (Good) over Alewife Cove. In most cases involving bridges that span a municipal

boundary, an inter-local agreement would be entered into to assign a lead community and assign costs.

Funding would retain the services of a qualified bridge engineering firm to fully inspect the structures and specify the required repairs with construction funding requested in the following years. The bridge engineering firm would take the findings from of the State inspection reports, and prepare a preliminary design and cost estimates for future year funding. All projects will be reviewed to determine if they are eligible for State or Federal Bridge grants.

Funds are requested for initial engineering work to increase the capacity at the Bloomingdale crossing.

From the rains that were the result of the remains of Ida, two bridges over Hunt's Brook were impacted. The bridge over the brook at Bloomingdale Road (bridge # 06139) was overtopped causing the closure of the road, some erosion of bank near the abutment and some minor asphalt road surface was lost. An analysis of the bridge in 2014 found that the brook will overtop the bridge in a 27 year storm. Over topping of the bridge will shut the road down, a major concern for emergency services.

Lenard Engineering, Inc.

2210 Main Street
P.O. Box 1086
Glastonbury, CT 06033
Tel: 860 659-3100
Fax: 860 659-3103

134B Conantville Road
P.O. Box 580
Storrs, CT 06268
Tel: 860 429-5400
Fax: 860 429-1367

140 Willow Street
Suite 8
Winsted, CT 06098
Tel: 860 379-0669
Fax: 860 738-1272

15 Midstate Drive
Suite 206
Auburn, MA 01501
Tel: 508 721-7600
Fax: 508 721-7610

www.lenard-eng.com

Civil, Environmental and Hydrogeological Consultants

September 3, 2021

Mr. Robert J. Brule, First Selectman
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Re: Emergency Inspection of the Old Norwich Road and the Bloomingdale Road Bridges over Hunts Brook, Waterford, CT

Dear Mr. Brule:

As requested by the Town's Department of Public Works, Lenard Engineering, Inc. (LEI) conducted emergency inspections of the referenced structures today. Both bridges were closed following the flooding event caused by tropical storm Ida this Wednesday, and the Department wanted verification from us if the roads could be re-opened, and if yes, on what conditions.

The following is a summary of our observations, engineering opinion, and recommendations on the short-term actions.

Old Norwich Road over the Hunts Brook

The stone arch culvert and stone wingwalls did not suffer any visible damage by the flood. Due to the high flow and strong current in the brook, we could only inspect the stone structure from a distance, but no irregularities (dislocation, settlement, loss of stone, etc.) were visible. It is likely the structure is founded on rock.

The road surface and accessories (pavement, curbs, sidewalk, railing, fencing, etc.) appear intact, with no obvious signs of cracking, settlement or movement at the time of inspection. We cannot completely rule out, however, some erosion of earth material from behind the stone structure through the voids of the stones, due to the sudden increase and decrease of the water level. This soil erosion, if it occurred, may not compromise the stone structure itself, but might cause some cracking and settlement of the road pavement over time.

In our opinion the road be re-opened on the following conditions:

- DPW personnel inspect the structure and the roadway on the daily basis for the next two weeks for any sign of settlement or cracking of the structure or roadway. Daily photographs should be taken from the same viewpoints so that conditions on consecutive days can be compared.

- After the streamflow volume and velocity in the brook subside sufficiently, a more thorough inspection of the culvert and the wingwalls should be conducted for potential scour damage at the base.

Bloomingdale Road over Hunts Brook

The triple 36" RCP culvert has reinforced concrete headwalls and wingwalls, which showed no visible damage due to flooding that overtopped the road. According to the record photographs shared with LEI during the storm, and other evidence in the field, water velocities during the overtopping were lower over the structure, and the headwalls and wingwalls indicated no visible scour damage. More damage occurred to the road embankment next to the northeast corner of the structure, where the flow velocity was the highest. The resulting embankment erosion undermined the road curb even exposing the back wall of the catch basin at that location. We did not see evidence of further erosion of the road embankment beyond the line of the back of the catch basin, however we cannot completely excluded that possibility.

In our opinion the road be re-opened on the following conditions:

- Until the embankment is repaired, approximately 5 to 6 feet of the width of the roadway should be closed for the traffic on the easterly (downstream) side. Closing 5 or 6 feet of the roadway width would still allow for two 11 feet wide traffic lanes over the structure.
- Adequate traffic control devices should be installed, as determined by Town of Waterford Police department

- The embankment should be repaired by the following way:

  - Place 3-3.5 feet size boulders along the line of the toe of the embankment for firm support of the earth.
  - Reconstruct the embankment by placing compacted processed aggregate or granular fill in the scour hole and to the finished grade line. In areas where processed aggregate can not be easily placed and / or compacted, use flowable fill.

- Sawcut and remove sections of pavement and sidewalk where base has been eroded, and place new bituminous roadway pavement and sidewalks on top of the newly compacted gravel.
- Cover the entire repair area with large riprap over a geotextile layer, and
- Re-set the traffic rail posts in the reconstructed embankment,

- Re-open the road to full width.

We trust that this information will be useful for the Town Department of Public Works in conducting the necessary repairs. We will follow-up with Public Works on our recommendations for the long-term, permanent repair actions later.

Please do not hesitate to contact for additional assistance, if needed.

Sincerely,

James E. Ericson, P.E.
Vice President

Paul Magyar, P.E.
Chief Structural Engineer

Cc: Dan Matheson, Public Works
Gary Schneider, Public Works
K. Allen, Town of Waterford

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

July 6, 2020

The Honorable Robert J. Brule
First Selectman
Town of Waterford
15 Rope Ferry Road
Waterford, Connecticut 06385

Dear First Selectman Brule:

Subject: Bridge Inspection Reports for Local Structures
Town of Waterford

The Department of Transportation (Department) has completed its biennial bridge inspection activities in the town of Waterford (Town), which maintains 7 bridges in the National Bridge Inventory. The full inspection reports are available via the Department's ProjectWise database. Please contact Ms. Julie Annino by e-mail at Julie.Annino@ct.gov for log-in information. All structures are rated Fair or better.

It is the Department's belief that serious bridge problems can be prevented or minimized by timely corrective action. The individual inspection reports should be reviewed for other deficiencies that require repair during routine maintenance activities. The Department's process of inventory and inspection in no way relieves the Town of its responsibility for bridge maintenance in accordance with Section 13a-99 of the Connecticut General Statutes.

If you have any questions concerning the structures or if a hard copy of an inspection report is required, please contact Mr. William Freeman, Jr. of the Department's Bridge Safety and Evaluation section by e-mail at William.Freeman@ct.gov.

Very truly yours,

Bartholomew Sweeney, P.E.

Bartholomew P. Sweeney, P.E.
Division Chief of Bridges
Bureau of Engineering and Construction

Enclosures

cc: Mr. Ted Aldieri, FHWA
Mr. James Butler, Southeast Connecticut Council of Governments
Mr. Gary Schneider, Director of Public Works

1. **Bridge No. 04075, Jordan Cove Road over Jordan Cove**
   Type: Simple Span Prestressed Double Tee-Beam with Concrete Deck
   Condition: Good
   Comments: Superstructure replacement Project No.152–154 was completed April 5, 2018

2. **Bridge No. 05518, Old Mill Road over Hunts Brook**
   Type: Single Span Multiple Steel Girders with Concrete Deck
   Condition: Good
   Comments: This comment has not changed since the last inspection cycle. Consideration should be given to installing an Asphaltic Plug Joint at Abutment No. 1.

3. **Bridge No. 05841, Waterford Parkway South over Jordan Brook**
   Type: Two Span Continuous Cast-In-Place Reinforced Concrete Box Culvert
   Condition: Good
   Comments: Consideration should be given to up grading guide railing to meet current standards.

4. **Bridge No. 06058, Unger Road over Hunts Brook**
   Type: Three Simple Spans Precast Reinforced Concrete Box Culvert
   Condition: Good
   Comments: These comments have not changed since the last inspection cycle. There are numerous metal beam rail disconnected posts - eastbound trailing end and bridge rail (over structure) both sides. Also, consideration should be given to clearing the debris out of the inlets of all three cells.

5. **Bridge No. 06139, Bloomingdale Road over Hunts Brook**
   Type: Three Simple Spans Precast Reinforced Concrete Round Pipe Culvert
   Condition: Fair
   Comments: The inlet cutoff wall is exposed and undermined, measuring a minimum, 22 feet long by 22 inches high and over 30 inches deep. A repair is required as soon as possible to avoid further undermining of the pipes.

   These comments have not changed in the last two inspection cycles. The reinforced concrete round pipes are in fair condition. The concrete pipes exhibit transverse, vertical and longitudinal hairline cracks with and without efflorescence. Also, several random areas of small and large surface spalls with exposed rebar. Numerous areas of light to medium scale with random areas of severe scale and hollow areas located at, above and below waterline; this condition exists for the full length of the pipes. The channel and channel protection are in fair condition. Also, there is minor metal beam rail damage and erosion that should be repaired.

6. **Bridge No. 06140, Cross Road over Jordan Brook**
Type: Two Simple Spans Precast Reinforced Concrete Box Culvert
Condition: Fair
Comments: These comments have not changed since the last inspection cycle. On the northwest approach, the southbound traffic-leading end guide rail, has a 20 feet long section of collision damage with the rail and posts deflected 1foot out of plane, two (2) bent posts, and one (1) disconnected and should be repaired. Southbound traffic wheel path has a small pothole.

Also, both cells have full width hairline cracks in the soffits adjacent to the joints, no joint filler material with soil infiltration through 50% of joints and water leakage through all joints. All the above should be addressed before they excel beyond regular maintenance.

7. **Bridge No. 06989, Chapman Ave over Brandegee Lake**
Type: Twin Cell Reinforced Concrete Culvert
Condition: Fair
Comments: These comments have not changed since the last inspection cycle. A Bridge Load Rating has been requested from the Department's Load Rating Unit. Please submit any structure plan information, construction plans, or shop drawings the town has in order to assist in accurately load rating the structure. The south and north 2 cable guide rail system has bent posts and loose cables on the structure and the approach. The south rail has a split wooden post on the west approach. There are spalls and hollow concrete in cell 1 at the joints on sections 5 and 7 Consideration should be given to upgrading guild rail system to meet current standards. Also, the right bituminous sidewalk has cracks and upheaval that may cause a hazard to pedestrian traffic, this should be repaired.

Prepared by: _____ Digitally signed by William Freeman, Jr. Date: 2020.07.01 11:00:10-04'00' **Date** _____
William Freeman, Jr.
Transportation Engineer 3

Reviewed by: Stephen Keedy _____ Digitally signed by Stephen Keedy Date: 2020.07.06 08:19:17-04'00' **Date** _____
Stephen Keedy P.E.
Transportation Supervising Engineer

KLEINFELDER
Bright People. Right Solutions.

MEMORANDUM

TO: Daniel Steward, First Selectman, Town of Waterford, CT

FROM: Neil Kulikauskas, P.E.
Hannah Bloomquist

DRAFT

DATE: November 18, 2014

SUBJECT: Bloomingdale Road Culvert Investigation & Analysis

---

1. Background

The Bloomingdale Road culvert over Hunts Brook (Structure No. 06139) was constructed in 1970, and consists of three 72-inch reinforced concrete pipes ranging from 40-feet to 45-feet in length. Local flooding and overtopping of Bloomingdale Road at the culvert crossing has been observed in the past during large and high-intensity rainfall events.

The purpose of our work was to analyze the hydrology and hydraulics of the existing culvert; compare results with other published data; determine the adequacy of the existing culvert; and evaluate potential system alternatives, if necessary. This memorandum summarizes our investigative methodology, results, and recommendations.

2. Existing Conditions

The watershed to the Bloomindale Road culvert crossing is approximately 10.5 square miles in size, and is comprised largely of wooded land with minimal residential and commercial development. Hunts Brook is the prominent watercourse in the watershed. It is a natural watercourse originating in the northern portions of the watershed in Montville as Deep Hollow Brook and its tributaries. The stream is naturally winding but generally runs in a southeast direction, discharging to Smith Cove in the Quaker Hill section of Waterford. Hunts Brook flows through two significant impoundments prior to the Bloomindale Road crossing: Cuheca Lake and Millers Pond.

In the vicinity of the Bloomingdale Road culvert, Hunts Brook continually varies in width from 40-feet to 100-feet wide (from bank to bank), with a slope of approximately 0.4%. Approximately 70 feet upstream of the culvert, the stream has a 35° bend east toward the culvert. Just after the bend there exists a beaver dam that spans across much of the stream width. The stream then constricts to approximately 20 feet wide at the culvert crossing.

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Bright People. Right Solutions.

5. Conclusions and Recommendations

Our investigations and analysis has been completed using documented assumptions and available resources, including topography mapping, aerial photography, and culvert reports and plans. Based on this, we have developed the following conclusions and recommendations:

1) While there are several approved methodologies (including past studies) for determining design flows to the culvert, the TR-55 analysis performed herein is considered to be most accurate and should be used for future analysis and recommendations.

2) The existing culvert is designed to safely carry the 18-year storm, with 1.0 foot of freeboard; and the 27-year storm without overtopping the roadway.

3) The design frequency requirements for municipally-owned structures can typically vary from 10-year to 500-year discharges. The required level of design depends on the level of risk (loss of life, loss of property, etc.) associated with the failure of the crossing and change in floodwaters upstream and downstream.

4) The existing culvert would not meet the CTDOT requirements for state-owned structures. (There is no state requirement for level of design on local roads.)

5) For the 100-year storm, the width of flow overtopping the roadway (approximately 210 feet) is consistent with the approximate FEMA floodplain width both upstream and downstream of the culvert.

6) The capacity of the crossing could be increased by adding pipes or replacing with a box or bridge structure.

7) The level and extent of changes in flood elevations upstream or downstream created by increasing the capacity of the culvert is not known. Additional hydraulic analysis would be required in order to determine the level and extent of changes in flood elevations along Hunts Brook as a result of various proposed alternative improvements.

KLEINFELDER 500 Enterprise Drive, Suite 4B, Rocky Hill, CT 06067 p | 860.563.7775 f | 860.563.6744

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Fax: 860 738-1272

15 Midstate Drive
Suite 205
Auburn, MA 01501
Tel: 508 721-7600
Fax: 508 721-7610

www.lenard-eng.com

Lenard Engineering, Inc.

Civil, Environmental and Hydrogeological Consultants

October 12, 2021

Mr. Dan Matheson
Town of Waterford
Department of Public Works
15 Rope Ferry Road
Waterford, CT 06385

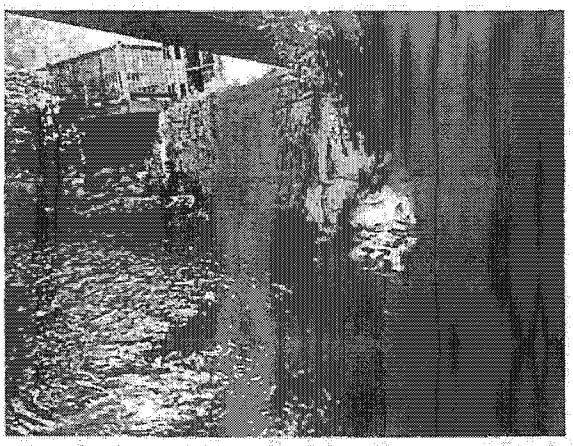
*Re: Follow-up inspection of the **Old Norwich Road** and the **Old Bloomingdale Road** Bridges over the **Hunts Brook, Waterford, CT***

Dear Dan:

As requested, Lenard Engineering, Inc. (LEI) conducted a follow-up inspection of the Old Norwich Road stone culvert, to evaluate potential damage due to scour. Following Hurricane Ida, the flow in Hunts Brook has subsided sufficiently, and we could conduct follow-up inspections of the referenced structures on October 7, 2021. The following is a summary of our observations and recommended short-term actions.

Old Norwich Road over the Hunts Brook

We conducted an in-channel probing of the stone substructure for scour holes under the abutments and wingwalls. The only area where we found minor undermining was at the base of the northwest wingwall, under the northerly end of the utility bridge, in the approximate length of 5 feet, and in the approximate depth of 6 inches (see Picture 1).

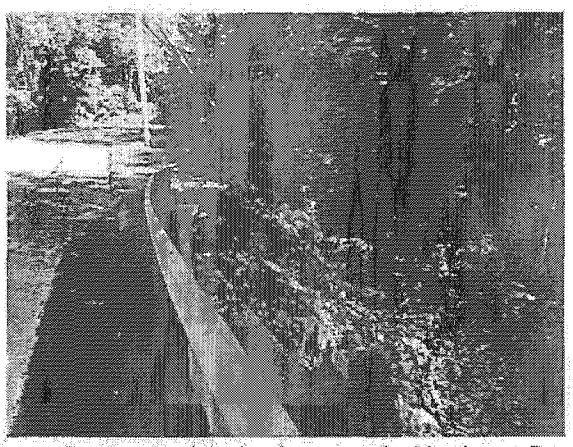


Picture 1 – Northwest Wingwall of the Old Norwich Road Bridge

We could not determine if this scour was caused by hurricane Ida on September 1, 2021 or by an earlier storm event. This minor scour damage does not compromise the structure and does not require any action at this point, but should be re-checked at least annually, and/or after significant storm events. The rest of the stone substructure is safely supported in the channel bottom, likely on rock or rocky soil. The channel invert between the abutments is lined with bituminous concrete, which evidently provides adequate protection against undermining. We detected no settlement or disintegration of the stone substructure anywhere else.

Old Bloomingdale Road over the Hunts Brook

We re-inspected the embankment at the northeast corner of the bridge that was washed out when overtopping of the road happened on September 2, 2021, during hurricane Ida (see Picture 2).



Picture 2 – Repaired Embankment at the Northeast Corner

The embankment repairs recommended in our inspection memorandum of 9/3/21 were generally followed, with the exception of 1) large supporting boulders were not visible at the toe of the reconstructed embankment, and 2) large riprap was not placed as a top course over the repair are, with maximum stone sizes of 6 – 8 inches placed instead. We requested that large riprap be used over the embankment slope, along with larger supporting boulders at the base.

Although the embankment is stabilized at present, we believe it may have similar erosion problems during roadway overtopping during flooding. We recommend these two items be corrected to minimize the chance of washout during a future flood.

Please contact either of us if you or others at the Town have any questions or comments.

Sincerely,
Lenard Engineering, Inc.

James E. Ericson, P.E.
Principal Engineer

Paul Magyar, P.E.
Chief Structural Engineer

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY	CONTACT PERSON
Public Works	Gary J. Schneider
PROJECT NAME	**DEPARTMENT PRIORITY**
Traffic Signals	7

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

The Town is responsible for traffic signals installed at the intersections of Town roads; in some locations that control traffic from a private driveway onto a town road, town driveway onto a State road or installed at the Town's request. All other locations are the responsibility of the State DOT.
Currently, the Town has four locations where traffic signals are town owned. Those are Parkway South with Cross Road, Parkway North with Cross Road, the flashing beacon at the Municipal Complex and Route 85 and Millstone Road with Route 1.
This would study the Cross Road intersections.

2 PROJECT STATUS IF IN PROGRESS

None

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

None

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

Attached expanded narrative memorandum and VHB cost estimate to perform traffic study.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance		20,000				
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	**0**	**20,000**	**0**	**0**	**0**	**0**

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 3, 2021

Re: CIP: Traffic Signals

The Town is responsible for traffic signals installed at the intersections of Town roads; in some locations that control traffic from a private driveway onto a town road, town driveway onto a State road or installed at the Town's request. All other locations are the responsibility of the State DOT.

Currently, the Town has four locations where traffic signals are Town owned. Those are Parkway South with Cross Road, Parkway North with Cross Road, the flashing beacon at the Municipal Complex and Route 85 and Millstone Road/Seaview Terrace with Route 1.

The traffic signals at the intersection of Cross Road and Parkway North and South should be studied to improve on the Loss of Service (LOS) ratings as these intersections serve one of the Town's commercial and industrial zones.

Funds would be for a traffic engineer to review each of the intersections with Cross Road and prepare a report of the condition of existing equipment, recommended replacement schedule, and cost estimates for these critical signals.

Phone 860.807.4300
Fax 860.372.4570
www.vhb.com
Engineers | Scientists | Planners | Designers

100 Great Meadow Road
Suite 200
Wethersfield, CT 06109

Client Authorization

☒ New Contract — Date August 18, 2021

☐ Amendment No. — Project No. 85049.21

Project Name: Cross Road Area Traffic Review, Waterford, CT

To: Abby Y. Piersall, AICP
Planning Director
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

E-mail: dmatheson@waterfordct.org

Phone No: (860) 444-5864

	Cost Estimate	
	Amendment	Contract Total
Labor		$14,900
Expenses		$incl
TOTAL		**$14,900**

☒ Lump Sum ☐ Time & Expenses

☐ Cost + Fixed Fee ☐ Labor Multiplier

Estimated Date of Completion: **September 30, 2021**

Scope of Services:

Please refer to Attachment A for Scope of Services description.

Prepared By: **Charles J. Baker** Department Approval:

Please execute this Client Authorization for VHB to proceed with the above scope of services at the stated estimated costs. No services will be provided until it is signed and returned to VHB.

☐ Subject to attached terms & conditions.

☒ Subject to terms & conditions in our original agreement dated December 7, 2018.

Vanasse Hangen Brustlin, Inc. Authorization

By _____

Print _____

Title _____

Date _____

Client Authorization (Please sign original and return)

By _____

Print _____

Title _____

Date _____

Attachment A

The Town has requested a traffic study of intersections in the Cross Road area that are expected to be impacted in the future with pending development plans as well as longer term potential developments in the area. This area is considered to include Waterford Parkways and Cross Road roadways and major intersections. In addition, the Town desires a review of the potential expanded access to Interstate 95 northbound expressway utilizing the existing weigh station access from the parkway north.

The traffic study efforts will include the following intersections:

1. Cross Road at Parkway North
2. Cross Road at Parkway South
3. Cross Road at Route 85
4. Parkways at Interstate 95 ramps
5. Parkway South at Weight Station access
6. Weigh Station on ramp to Interstate 95 Northbound (merge)

Upon further review of the parkways and roadway access to potential development in there, an extension of Parkway North, easterly to the Crystal Mall/Home Depot intersection will be investigated for layout and general traffic pattern changes.

The intent of the traffic study efforts will be to develop a plan of potential improvements to the roadway network to accommodate planned and future development in the Cross Road and Parkways area.

Task 1.0 Traffic Evaluation
VHB will utilize available traffic data from Cross Road project and development project traffic studies to understand the traffic conditions during the weekday peak hours. This will include obtaining available traffic studies from the Town, Office of Traffic Administration (OSTA) and CTDOT Bureau of Planning (Interstate 95 ramp traffic volumes).

VHB will conduct traffic counts at four locations to confirm the traffic data received and pandemic condition level traffic. This will include a combination of peak hour turning movement traffic volumes at three intersections and one 24 hour traffic count on one roadway.

VHB will develop an existing condition traffic model for the peak hours for the study intersections and summarize the operations.

VHB will obtain from the Town the potential development areas and land uses to develop trip generation for the parcels. These development traffic volumes will be distributed to the study intersections based upon existing traffic conditions.

VHB will then develop future condition traffic models for the study intersections and summarize the results with a description of the resulting impact of the development traffic. Recommendations or strategies for mitigating the impacts will be provided.

Task 2.0 Interstate 95 Northbound Access Review
The Town has requested a review of potential access to Interstate 95 northbound through the existing gated connection between the weigh station and Parkway South. VHB will review the possibility of providing a roadway connection to allow for as a minimum, large truck access to the highway from the parkway.

This review will include a geometric concept layout sketch to affirm the feasibility of connecting Parkway South to the on ramp. The sketch will be based upon CTDOT Highway Design standards and depicted on Town GIS aerial mapping.

The review will also include an assessment of the operation of the connection such as should it be for trucks only, how to regulate the access as well as other vehicles.

Finally, the review will include a summary of the Federal Highway Administration (FHWA) Interstate interchange spacing requirements.

Task 3.0 Parkway North Connector
Parkway South dead ends to the east of Cross Road in a cul de sac. Between the cul de sac and Crystal Mall/Home Depot driveway intersection, there is undevelopment large parcels and approximately 2000 feet of roadway that would be required to extend Parkway North.

While this was not requested specifically by the Town in prior discussions, it has become apparent to VHB that having a connector can relieve pressures on Cross Road with future development while enhancing access for the Crystal Mall and Home Depot. If agreeable by the Town, VHB will review the feasibility of this extension with a geometric sketch layout of the roadway, connection to the Crystal Mall/Home Depot intersection and potential list of issues involved such as grading, environmental resources and traffic pattern changes likely expected.

The layout will be depicted on the Towns GIS aerial mapping.

Task 4.0 Memorandum
A memorandum will be prepared summarizing the above tasks with narrative descriptions, tables for summarizing results and graphics for the above Tasks.

COMPENSATION

VHB will perform the Scope of Services contained in this Agreement on a lump sum basis. The lump sum fee for this Scope of Services is **$14,900**.

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY Public Works	**CONTACT PERSON** Gary J. Schneider
PROJECT NAME Minor Road Reconstruction	**DEPARTMENT PRIORITY** 8

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.
The minor reconstruction for Vivian Street and a portion of Norman Street would involve the removal of the asphalt sidewalk, driveway aprons and road, regrading and compaction, resurfacing of the road, installation of asphalt curbs, driveway aprons, resetting of manholes and catch basins. FY24 would fund Vivian and a portion of Norman Roads.

2 PROJECT STATUS IF IN PROGRESS

None

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the road condition safe. Minor savings in pot hole patching materials

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

Attached expanded narrative memorandum. Probable Cost Estimate, Lenard Engineering November 3, 2021.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance			850,000			
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	850,000	0	0	0

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 9, 2021

Re: CIP: Minor Road Reconstruction

A minor reconstruction could involve the removal of some rock, tree removal, guard rail installation, the widening of the road in various locations to meet a 24 foot minimum width and the re-grading of side slopes before resurfacing can take place. It could also involve off street parking pads, sidewalks that abut the curbing and driveway aprons that are integral to the walks.

Vivian Street and a portion of Norman Street are unique to the Town in that:

- Asphalt sidewalks are next to the asphalt curbing
- Small residential lots resulting in a large amount of driveway aprons to address
- Off street parking areas that are not driveways, but abut the sidewalks

To resurface these two roads, the entire right of way must be addressed. Asphalt sidewalks, curbing and roads would be reclaimed and regraded to provide proper drainage. Driveway aprons need to be matched to existing driveways and utility manholes adjusted. It follows "once in, all done" policy.

A section of Vauxhall Street (approximately 3,200 ft) from the Montville Town line south to the transmission lines was never reconstructed. It currently is a narrow road with numerous rock formations next to the travel lanes. It is anticipated that there is ledge under the existing pavement that would need to be removed before resurfacing can take place. Drainage systems are mostly open ditches along the sides of the road.

These projects require consultant engineering support to prepare a bid package.

Lenard Engineering, Inc.
2210 Main Street
Glastonbury, CT 06033-6088

OPINION OF PROBABLE COST
Norman St. and Vivian St.
Roadway and Sidewalk Improvments
Waterford, CT

Estimate 11/3/21
LEI Job No. 21-366
Prepared By: JED

Total		Estimated Quantity and Unit Measure	Estimated Unit Price	Extended Price
	Item			
	Mobilization and Project Closeout	1 LS	$70,000.00	$70,000.00
	Catch Basin Protection	1 LS	$10,000.00	$10,000.00
	Maintenance & Protection of Traffic	1 LS	$35,000.00	$35,000.00
	Trafficperson	500 HR	$37.00	$18,500.00
	Removal of Bituminous Concrete Curbing	4690 LF	$4.40	$20,636.00
	Removal of Bituminous Concrete Sidewalk	825 SY	$32.20	$26,565.00
	Paving HMA S0.375	1180 TONS	$140.00	$165,200.00
	Paving HMA S0.5	1180 TONS	$120.00	$141,600.00
	Full Depth Road Reclamation	8100 SY	$4.50	$36,450.00
	Bituminous Sidewalk	1300 SY	$60.00	$78,000.00
	Bituminous Concrete Driveway	4310 SF	$18.60	$80,166.00
	Concrete Sidewalk Ramp	850 SF	$22.80	$19,380.00
	Detectable Warning Pad	10 EA.	$247.00	$2,470.00
	Saw Cutting	1300 LF	$5.40	$7,020.00
	Bituminous Concrete Curbing	4470 LF	$7.40	$33,078.00
	Demolition - Catch Basin	2 EA.	$750.00	$1,500.00
	Install Type "C" Catch Basin	2 EA.	$3,400.00	$6,800.00
	Adjust CB Top	9 EA.	$500.00	$4,500.00
	Replace CB top w/MH Top	1 EA.	$1,000.00	$1,000.00
	Grass Surface Restoration	1500 SY	$9.00	$13,500.00
	Sub-Total - Items 1-40			**$771,365.00**
	Rock-in-Trench Excavation, if encountered	CY	$200.00	$0.00
	Remove unsuitable soil, replace with gravel fill (if encountered)	CY	$25.00	$0.00
	Estimated Construction Cost			**$771,365.00**
	10% Contingency			**$77,137.00**
	Estimated Construction Cost w/Contingency			**$848,502.00**

Say $850,000.00

TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM
2022-2023 FISCAL YEAR REQUEST

DEPARTMENT/AGENCY
Public Works

CONTACT PERSON
Gary J. Schneider

PROJECT NAME
Gardiner's Wood Road

DEPARTMENT PRIORITY
9

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)

This project supports surface transportation projects which encompass roads, street accessories, sidewalks, and bridges. The objective is to provide safe, attractive, and efficient public transportation ways and infrastructure systems that support them.
Gardiners Wood Road presents a flooding issue during heavy rains and/or storm surges. These conditions cause the roadway to be under water and impassable, stranding residents in a coastal area.
This project would reconstruct the entire road.

2 PROJECT STATUS IF IN PROGRESS

The preliminary design has been completed, along with legal descriptions for easements required for the road and drainage work. These documents have been provided to the property owner for review. Once the easements have been granted, funding will be requested for final design and construction.

3 LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST

None

4 DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable)

Minor impact. Current practice is just to make the road condition safe. Minor savings in pot hole patching materials

5 GRANT FUNDING/OTHER FUNDING, if applicable (detailed explanation of grant/other funding, including the amount, source of funding, status, town match, if any. Attach award letter if available)

None

6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)

Attached expanded narrative memorandum, plans and cost estimates.

7 COST/FUNDING SOURCE

	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2023	FY2024	FY2025	FY2026	FY2027
1	Current Year Capital						
2	Utility Budget/Sewer Cap Maint Fund						
3	Transfer to CNR						
4	Short/Long-term Bonds						
5	LoCIP (detail in section 5 above)						
6	CNR Undesignated Fund Balance				3,000,000		
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	3,000,000	0	0

MEMORANDUM: TOWN OF WATERFORD
DEPARTMENT OF PUBLIC WORKS

To: File

From: Gary J Schneider

Date: November 3, 2021

Re: CIP: Gardiners Wood Road

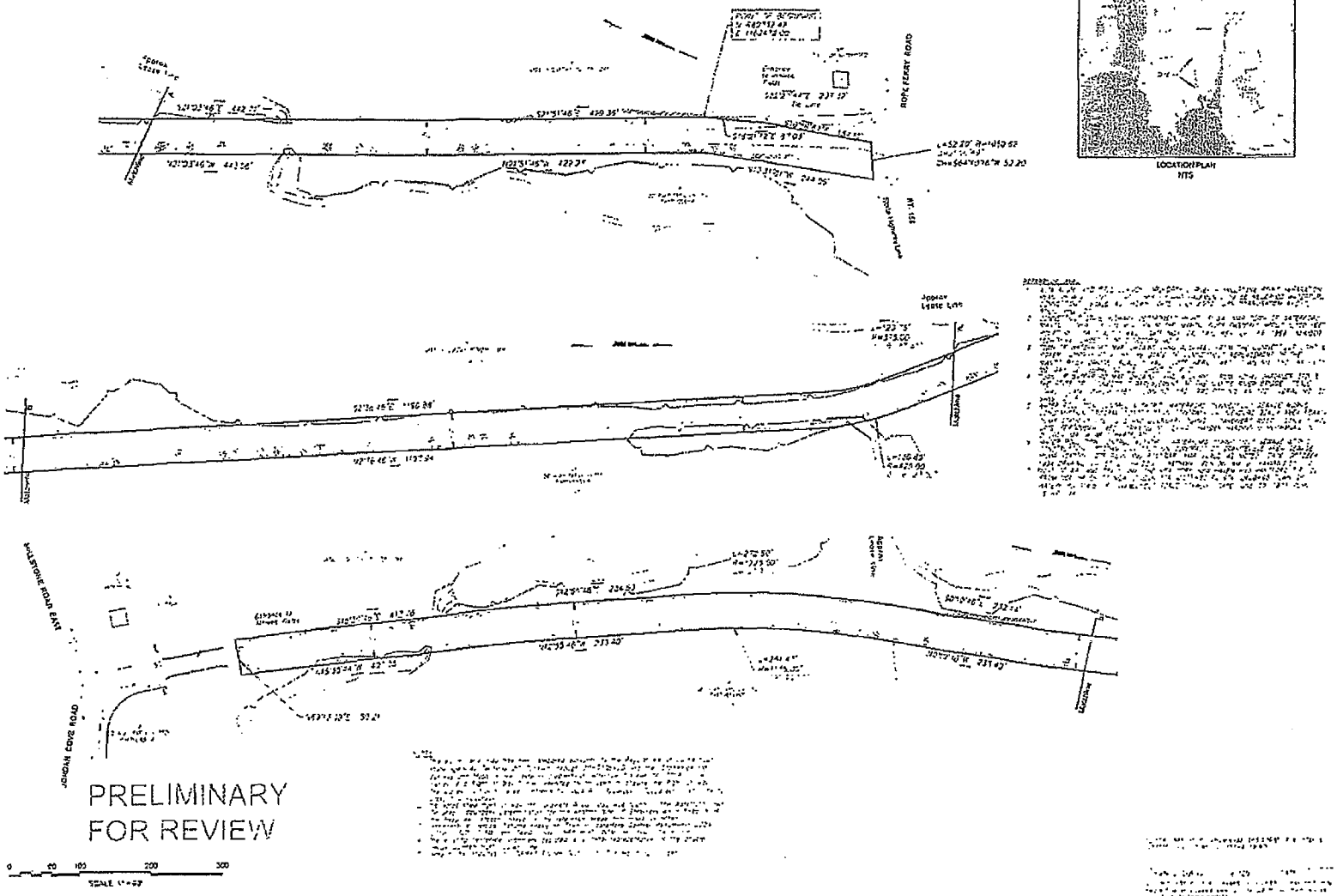
In 2017 Waterford engaged the services of Kleinfeler Northeast, Inc. to complete a Climate Change Risk Vulnerability, Risk Assessment and Adaptation Study. Section F, Adaptation Strategies – Roadways, identified 6 (four town, 2 state) areas on the "network of evacuation and emergency access routes that should be strengthened to improve the Town's resilience to flooding". Gardiners Wood Road was one of the 4 town roads. This road also identified in the 2017 Hazard Mitigation Plan Update Annex for the Town of Waterford by Milone & MacBroom, Inc. as an area to address.

Gardiners Wood Road presents a flooding issue during heavy rains and/or storm surges. These conditions cause the roadway to be under water and impassable, stranding residents in a coastal area.

There are two adaption strategies, one that addresses the flooding related to heavy precipitation (100 year flooding scenario) and the other to address coastal flooding (100 year coastal flood scenario).

Design funding was authorized to address the heavy precipitation strategy recommended by the study and the scope was expanded to reconstruct the entire road due to the pavement condition. The preliminary design has been completed, along with legal descriptions for easements required for the road and drainage work. These documents have been provided to the property owner for their review. Once the easements have been granted, funding will be requested for final design and construction,

GARDINERS WOOD ROAD



TAKING PLAN

PREPARED FOR

TOWN OF WATERFORD

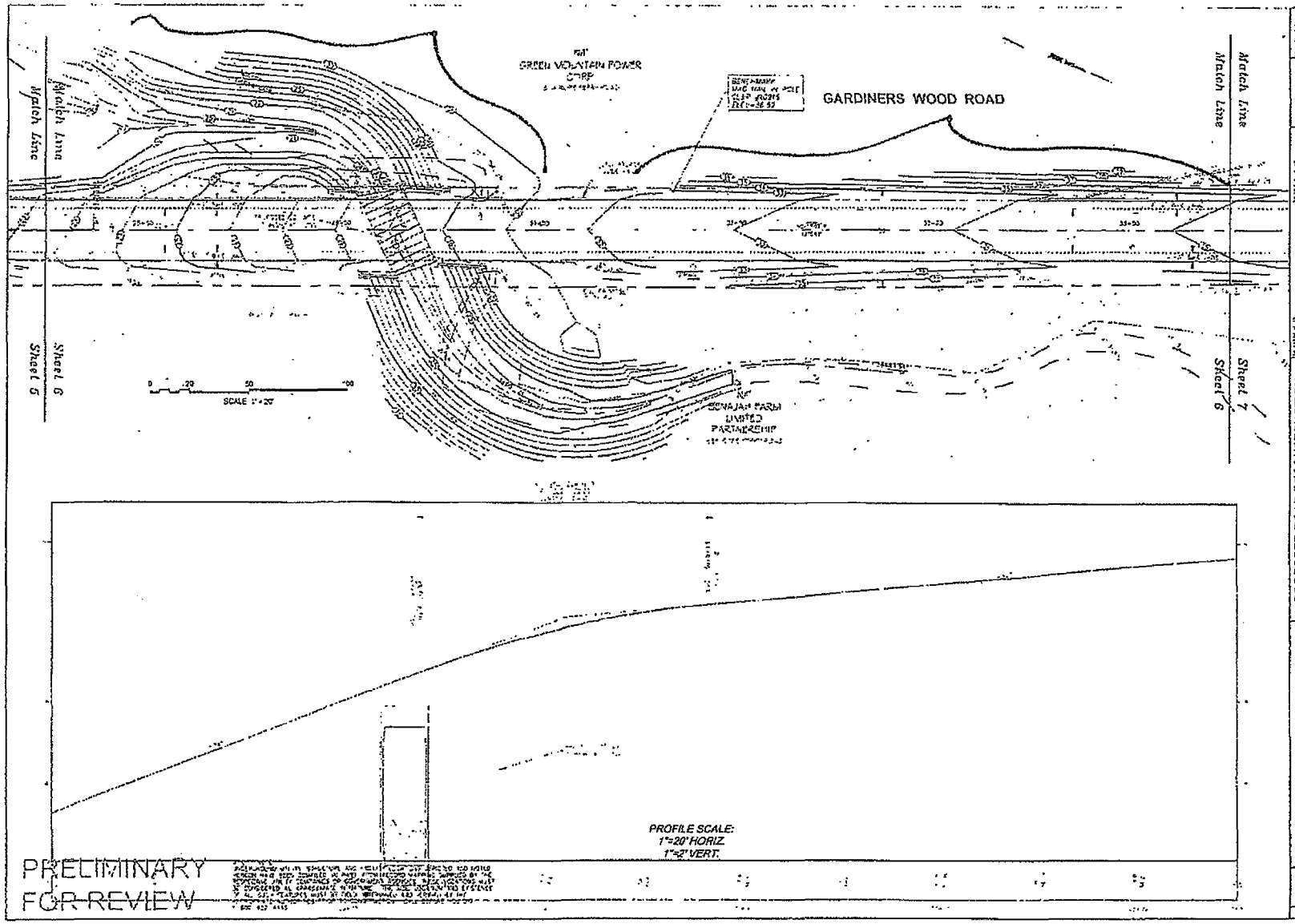
GARDINERS WOOD ROAD

WATERFORD CONNECTICUT

Leonard Engineering, Inc

Civil Environmental Transportation Consultants

1



PROPOSED ROAD RECONSTRUCTION

TOWN OF WATERFORD

GARDINERS WOOD ROAD

WATERFORD, CONNECTICUT

Leonard Engineering, Inc

6 of 7

Gary Schneider

From: Jim Ericson <ericson@lenard-eng.com>
Sent: Wednesday, June 17, 2020 9:15 AM
To: Gary Schneider
Cc: Daniel Matheson
Subject: FW: Gardiner Woods Road

Gary and Dan- See my last email of November 15,2019 for the estimated project cost at that time.

Based on a 24' wide road, we had a preliminary construction cost estimate of $ 2.5 million, but suggested we add 20 % due to the widening we have been discussing for a bike friendly road.
That would bring the cost to approximately $ 3,000,000. Feel free to put whatever buffer you would like to this number.

Please contact me with any questions or comments

Jim Ericson, PE
Vice President
Lenard Engineering, Inc.
2210 Main Street
P.O. Box 1088
Glastonbury, CT 06033
Direct Dial (860) 266-4460
Tel: (860) 659-3100
Fax: (860) 659-3103

From: Jim Ericson
Sent: Friday, November 15, 2019 1:07 PM
To: dmatheson@waterfordct.org
Cc: James DeSellier
Subject: Gardiner Woods Road

Hi Dan- We did some very preliminary cost estimates when the road was 24' wide, and the cost was $ 2.5 million.
You may want to add 20 % to it for the road widening, and any design changes that have taken place.

Once we get feedback from Town staff and the abutter, and move to final design, we can generate exact quantities and give you a more precise estimate.

I hope this helps.

Jim Ericson, PE
Vice President
Lenard Engineering, Inc.

HAZARD MITIGATION PLAN UPDATE
ANNEX FOR THE TOWN OF WATERFORD

Southeastern Connecticut Council of Governments
Multi-Jurisdictional Hazard Mitigation Plan Update

DECEMBER 2017
ADOPTED

MMI #3570-09

Prepared for:

TOWN OF WATERFORD
15 Rope Ferry Road
Waterford, Connecticut 06385
(860) 442-0553
www.waterfordct.org

Prepared by:

MILONE & MACBROOM, INC.
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773
www.miloneandmacbroom.com

11.0 MITIGATION STRATEGIES AND ACTIONS

11.1 Status of Mitigation Strategies and Actions

The previous edition of the SCCOG Multi-Jurisdictional HMP and Town of Waterford annex listed a suite of hazard mitigation actions applicable both locally and region-wide. These actions, along with commentary regarding the status of each, are listed in the tables in this section. Additionally, new actions were developed in the process of developing this HMP update. These are listed at the end of each hazard section below.

11.1.1 Actions Applicable to All Hazards

Action	Status	Notes
Regional Coordination		
Continue to promote inter-jurisdictional coordination efforts for emergency response	*Capability*	*This is reclassified as a capability and can be removed from this list of actions.*
Continue to promote local and regional planning exercises that increase readiness to respond to disasters	*Capability*	*This is reclassified as a capability and can be removed from this list of actions.*
Continue to evaluate communication capabilities and pursue upgrades to communication and ensure redundant equipment is available	*Capability*	*This is reclassified as a capability and can be removed from this list of actions.*
Continue to promote regional transportation planning through SCCOG	*Capability*	*This is a regional capability.*
Work with the SCCOG to perform a regional study of the vulnerability of critical facilities to natural hazard damage	*Complete*	*This action is the responsibility of, and was performed by, SCCOG in 2017. The Quaker Hill Fire Station was included in the study due to its positions in riverine and coastal flood zones. Recommendations from the study are incorporated into this HMP.*
Work with the SCCOG to develop regional evacuation scenarios that build upon the Millstone evacuation plan	*Complete*	*Carried out evacuation exercise. SCCOG is assessing exercise results to determine whether evacuation plan is practically feasible*
Local Emergency Response & Public Information		
Acquire and install evacuation signs in coastal flood hazard areas	*Carry Forward*	*Not yet complete due to lack of funding.*
Continue to make evacuation routes in the Gardiners Wood Road area more resilient through elevation, culvert upgrades, etc.	*Carry Forward*	*Funding has been allocated in the Capital Improvement Plan*
Encourage the State to perform improvements to reduce the frequency of flooding at Route 156 (Jordan Brook) and at Route 156 / Route 213	*Delisted*	*This falls within the Jurisdiction of the State.*
Consider installing an emergency egress between Laurel Crest Drive and Miner Lane.	*Carry Forward*	*Waterford believes that constructing a new road for egress is unlikely. They want to continue to review this possibility and evaluate other evacuation options. A modified action is suggested below the table.*
Continue to review and update the Town EOP at least once annually	*Capability / Carry Forward*	*Staff also want to ensure relevant personnel know where the EOP is kept, and are able to access it. A modified action is suggested below the table.*

Action	Status	Notes
Upgrade stormwater collection and discharge systems to keep up with rising sea level	*Carry Forward*	*Part of Coastal Resilience efforts in town have included assessments of the effects of sea level rise. The need to upgrade stormwater infrastructure has been noted in TNC reports and meetings, and was recognized by the Town in the 2012 edition of this HMP annex. Coastal resilience related projects have helped secure public buy-in into stormwater infrastructure improvements, and prioritize locations in need of upgrades.*
Maintain existing hard structures along the coast in good condition	*Capability*	*This is reclassified as a capability and can be removed from this list of actions.*
Replace culverts along Gardiners Wood Road and elevate sections of the road	*Carry Forward*	*Money has been allocated in the Capital Improvement Plan*
Encourage CT DOT to replace a culvert and/or elevate Route 156 at Gardiners Wood Road	*Delisted*	*State Jurisdiction*
Encourage CT DOT to replace culverts and/or elevate Route 213 as needed	*Delisted*	*State Jurisdiction*
Replace culvert and/or elevate a section of Braman Road	*Carry Forward*	*This has not yet been completed due to lack of funding*
Replace culverts and/or elevate sections of Oil Mill Road at Oil Mill Brook	*Complete*	*Completed in 2017*
Replace culvert and/or elevate sections of Niles Hill Road at Fenger Brook	*Carry Forward*	*This has not yet been completed due to lack of funding*
Encourage CT DOT to replace the culvert and/or elevate a section of the Boston Post Road at Jordan Brook	*Complete*	*Under Construction. State Jurisdiction.*
Raise and improve hydraulics of the secondary access to Millstone Station	*Carry Forward*	*Project is on hold until ownership questions are resolved.*
Replace the Jordan Cove Road bridge	*Complete*	*Completed in 2017*

New actions developed during this HMP update include:

- Send out an annual flood-hazard mailer to homeowners.
- In accordance with the recommendations of the historic and cultural resources resiliency planning effort in 2016-2017:
  - Determine if any at-risk structures that are not yet eligible for historic designation will be eligible in the future. This may take the form of a historic resources survey.

11.1.3 Actions Applicable to Wind Damage from Hurricanes, Tropical Storms, Summer Storms, Tornados, and Winter Storms

Action	Status	Notes
Prevention		
Work with SCCOG to implement a regional Marina Management Plan for wind damage, and encourage local clubs to develop plans	*Delisted*	*If SCCOG pursues this action, Town will assist. For now, remove from action items.*
Consider working with CL&P (now Eversource) to obtain funding to place utilities underground	*Delisted*	*Required in new developments.* *Not pursuing in old development - it is not cost effective, and is less expensive to manage trees and power lines..*
Property Protection		