

Town of Waterford - Department of Public Works									
CAPITAL IMPROVEMENT PLAN									
PROJECT CONSOLIDATION FORM-FY 2022-2026									
		DEPARTMENT / AGENCY: Public Works							
	FY 22 DEPT PRIORITY	PROJECT NAME	FUNDING SOURCE	FISCAL YEAR 2021-2022	FISCAL YEAR 2022-2023	FISCAL YEAR 2023-2024	FISCAL YEAR 2024-2025	FISCAL YEAR 2025-2026	TOTAL
Bridges/Culverts		Bridges/Culverts Over 20'	1		\$ 27,500				27,500.00
		Bloomingdale Road/Hunts Brook							0.00
		Cross Road/Jordan Brook							0.00
		Chapman/Brandegge Lake							0.00
		Bridges/Culverts Under 20'							0.00
									0.00
Curbs		Concrete Curb Replacement		Funding	Funding	Funding	Funding	Funding	0.00
		Daniels (All) (In Paving Estiamte)			Yes				0.00
		Niantic River -#194 to Rt 1							0.00
		Quarry-Leary-Shore(P)				Yes			0.00
		Goshen-Spinmaker-C Club					Yes		0.00
		Oil Mill(Route 1 to Way Hill Road)						Yes	0.00
		Monroe East fo Clark Lane							0.00
		David/Wild Rose PL&Ave A/Summer/William			Yes				0.00
		Third/Fourth/Middle/High from Daniels				Yes			0.00
		First/Second/Middle/High from Daniels					Yes		0.00
		Perry/Alice/Linda/Oak/Anita/Lee/Division/Betty						Yes	0.00
Sidewalks	4	Sidewalk Replacement		Funding	Funding	Funding	Funding	Funding	0.00
		Norman/Concrete Panels	1	\$ 80,100					80,100.00
		William Street/ Concrete Sidewalk	1	\$ 42,300					42,300.00
		Summer Street/Concrete Sidewalk	1	\$ 33,420					33,420.00
		David Street/Concrete Sidewalk	1	\$ 43,680					43,680.00
		Cross Rd-Melanie to Rt 1/Asphalt	1	\$ 69,800					69,800.00
	3	Rope Ferry Sidewalk Replace	7	\$ 304,000					304,000.00
Roads		Pavement Program		Funding	Funding	Funding	Funding	Funding	0.00
	6	Daniels/Reclaim	1	\$ 451,462					451,462.00
		Niantic River -#194 to Rt 1/Reclaim	1		\$ 319,840				319,840.00
		Quarry-Leary-Shore(P)/Reclaim	1			\$ 332,685			332,685.00
		Goshen-Spinmaker-C Club/Reclaim	1				\$ 396,765		396,765.00
		Oil Mill(P)/Reclaim	1					\$ 487,285	487,285.00
	1	Section A, Area 1(P) Note A	1	\$ 334,473					334,473.00
		Section A, Area 1(P) & Area 2 Note B	1		\$ 239,096				239,096.00
		Section B, Area 8 Note C	1			\$ 192,645			192,645.00

		Section B, Area 6 Note D	1				\$ 161,705		161,705.00
		Section C, Area 1 Note E	1					\$ 493,475	493,475.00
		Gardiner Wood Road	1				\$ 3,000,000		3,000,000.00
2		Eversource Affected Note F	1		\$ 215,813	Yes	Yes	Yes	215,813.00
Miscellaneous									0.00
		MS4 Retro fits and DCIA				Yes			0.00
		Sea Level Rise							0.00
		Traffic Signal Replacement							0.00
		Guild Rail Replacement							0.00
		Retaining Walls							0.00
5		Transfer Station (Scale & Scale House)	1		\$ 106,548				106,548.00
									0.00
									0.00
		TOTALS			\$ 1,681,596.00	\$ 586,436.00	\$ 3,525,330.00	\$ 558,470.00	\$ 980,760.00
Note A		Olive, Vivian Court, Orient, Louise, Monroe and Design Funds for Vivian and Norman to just past Vivian							
Note B		Norman, Summer, David, William, Wild Rose Ave, Wild Rose Place and Avenue A							
Note C		Millstone Road West, Summer Rest, Larson, Hanson, George and Allen							
Note D		Wood, Bishop and Mago Blvd							
Note E		Perry, Linda, Alice, Oak, Betty, Lee, Anita and Division							
Note F		Milton & Dunbar							
		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							

[illegible]

[illegible]

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 13, 2020
Re: CIP 2022 – 2026

The Department's Capital Improvement Program submittal for FY 22 now encompasses all of the infrastructure that is assigned to the Department. Facilities projects are being submitted under a separate letter. Previous year's program submittals focused just on the resurfacing of roads. While this component is important, the infrastructure items not being addressed were replacement of deteriorated curbing, replacement of concrete and asphalt sidewalks, drainage improvements, bridge repairs, traffic signal replacement, repairs to retaining walls and several projects that address roads that are the Town's emergency evacuation routes.

These projects support 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 effort focused on FY 22 compiling solid numbers for those projects. For the outlying years, some projects had enough data to project what funding should be programmed. Other projects placed in the Program without identifying a cost or year will be further developed to ensure that they fit into the Town's overall focus, have good estimates, narratives and be ready for the FY 23 Capital Improvement Program submittal by the Department.

Cc: Kim Allen, Finance Director

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME Bridges Over 20'	DEPARTMENT PRIORITY

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)																																																																						
	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. 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. Funds would be used to hire a bridge engineering firm to take the finding from of the State inspection reports, and prepare a preliminary design and cost estimates for future year funding.																																																																						
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 and State Structural Summary Report April 4, 2020.																																																																						
7	COST/FUNDING SOURCE																																																																						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">FUNDING SOURCE</th> <th style="width: 15%;">APPROVED FUNDING TO DATE</th> <th style="width: 10%;">FY2022</th> <th style="width: 10%;">FY2023</th> <th style="width: 10%;">FY2024</th> <th style="width: 10%;">FY2025</th> <th style="width: 10%;">FY2026</th> </tr> </thead> <tbody> <tr> <td>1 Current Year Capital</td> <td></td> <td></td> <td style="text-align: center;">27,500</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 Utility Budget/Sewer Cap Maint Fund</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 Transfer to CNR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4 Short/Long-term Bonds</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5 LoCIP (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6 CNR Undesignated Fund Balance</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7 Federal/State Grants (detail in section 5)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8 Other Funding (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTALS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">27,500</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026	1 Current Year Capital			27,500				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	0	27,500	0	0	0
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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.

Digitally signed by Bartholomew Sweeney, P.E.
DN: cn=Bartholomew Sweeney, P.E.,
c=US, o=Connecticut Department of Transportation,
ou=Department of Transportation,
ou=Division of Engineering & Construction, ou=State of Connecticut,
email=Bartholomew.Sweeney@ct.gov

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

Town of Waterford
Structure Summary Report
April 4, 2020
Page 1 of 2

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.

Town of Waterford
Structure Summary Report
April 4, 2020
Page 2 of 2

6. **Bridge No. 06140, Cross Road over Jordan Brook**
Type: Two Simple Spans Precast Reinforced Concrete Box Culvert
Condition: Fair

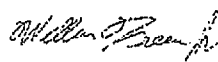
Comments: These comments have not changed since the last inspection cycle. On the northwest approach, the southbound traffic-leading end guide rail, has a 20 feet long section of collision damage with the rail and posts deflected 1 foot out of plane, two (2) bent posts, and one (1) disconnected and should 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 Brandegge 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'

William Freeman, Jr.
Transportation Engineer 3

Date _____

Reviewed by: _____

Stephen Keedy

Digitally signed by Stephen
Keedy
Date: 2020.07.06
09:19:17-04'00'

Stephen Keedy P.E.
Transportation Supervising Engineer

Date _____



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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

Phone:



December 15, 2014

The Honorable Daryl J. Finizio
Mayor
City of New London
181 State Street
New London, Connecticut 06320

Dear Mayor Finizio:

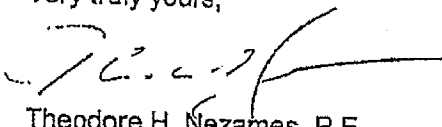
Subject: Bridge Inspection Reports for Local Structures
City of New London

The Department of Transportation (Department) has completed its biennial bridge inspection activities in the City of New London (City), which maintains three bridges in the National Bridge Inventory. The structure summary report and copies of the inspection reports are enclosed. 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. Please review the reports for all deficiencies which are considered routine maintenance that should be corrected. The State process of inventory and inspection in no way relieves the City of its responsibility for bridge maintenance in accordance with Section 13a-99 of the Connecticut General Statutes.

If you have any questions, please contact Mr. David R. Tassavor, of Bridge Safety and Evaluation, at (860) 594-3170.

Very truly yours,


Theodore H. Nezames, P.E.
Manager of Bridges
Bureau of Engineering and Construction

Enclosures

cc: Mr. Ted Aldieri, FHWA
Mr. James Butler, Southeastern Connecticut Council of Governments
Mr. Tim Hanser, New London Department of Public Works
The Honorable Daniel Steward, First Selectman, Town of Waterford

City of New London
Structure Summary Report
September 16, 2014
Page 1 of 2

1. **Bridge No. 03654, Highland Avenue over Alewife Cove**
Type: Two Simple Spans Prestressed Reinforced Concrete Slab
Condition: Fair

Comments: The bituminous concrete overlay exhibits transverse, longitudinal and map cracks; the crack width is up to approximately $\frac{3}{4}$ inch. The overlay is delaminated {hollow sounding when struck with a hammer} for a width of approximately 20 inches. This condition is for the full length of the structure located at the north and south curbline. The expansion joints located at the abutments have transverse cracks open up to approximately 2 inches for the full width of the roadway. The concrete approach sidewalks have settled up to approximately 1 inch. This condition is a tripping hazard for pedestrian traffic.

The bituminous concrete approach pavement exhibits areas of depressions up to approximately 6 feet long by 4 feet wide by 5 inches deep. The cracks in the approach pavement are open up to approximately 2 inches.

This structure is on the city line between New London and Waterford, a copy of the inspection report and the Department's letter will be sent to the Town of Waterford.

2. **Bridge No. 04311, Glenwood Avenue over Alewife Cove**
Type: Simple Span Multiple Steel Girders with Concrete Deck
Condition: Good

Comments: The bituminous concrete overlay exhibits transverse, longitudinal and map cracks up to approximately $\frac{3}{4}$ inch wide. The overlay is delaminated {hollow sounding when struck with a hammer} for a width of approximately 18 inches for the full length of the structure located at the north and south curbline. The expansion joints located at the abutments have transverse cracks open up to approximately 4 inches for the full width of the roadway. The expansion joints exhibit cracking, spalling and patched areas.

The bituminous concrete approach pavement exhibits settlement up to 1 $\frac{1}{2}$ inches located at the abutments for the full width of the roadway. The cracks in the approach pavement are open up to approximately 1 inch.

This structure is on the city line between New London and Waterford, a copy of the inspection report and the Department's letter will be sent to the Town of Waterford.

3. **Bridge No. 06145, Howard Street over Brook**
Type: Two Simple Spans Precast Concrete Box Culvert
Condition: Fair

Comments: This structure is a two cell concrete box culvert. One cell of the box culvert has been intentionally blocked with concrete cinder blocks. An underwater consultant firm performed a complete inspection of the accessible cell. A means of access to the blocked culvert cell should be created to allow for future inspections.

City of New London
Structure Summary Report
September 16, 2014
Page 1 of 2

Prepared by: David R. Tassavor Date: 12/11/14
David R. Tassavor

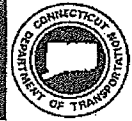
Reviewed by: Theodore D. Lapierre, P.E. Date: 12/11/14
Theodore D. Lapierre, P.E.

Project National Bridges (Bridges over 20')

Item #	Item	Unit Measures	Quantity	Estimated Unit Price	Extended
1	Mobilization (Permits, Bonds, Insurance)	-S		1,000.00	\$ 1,000.00
2	Licensed Land Suretyor	-LR		107.00	\$ 8,560.00
3	Civil Engineer		80.00	97	\$ 11,640.00
4	Project Engineer		16	108	\$ 1,728.00
	Adrim Assist		30	61	\$ 1,830.00
	Field Technician		16	95	\$ 1,520.00
	Contingencies (10%)				\$ 183.00
	Grand Total				\$ 26,461.00
	4% Per year escalation				\$ 27,519.44

Based on Lenard Engr On Call Contract
Estimate only. Scope needs to be negotiated the year before funding is requested

Inspection Type: Screening



BRIDGE NO. 152002

80280 - WATERFORD

Bloomingdale Road

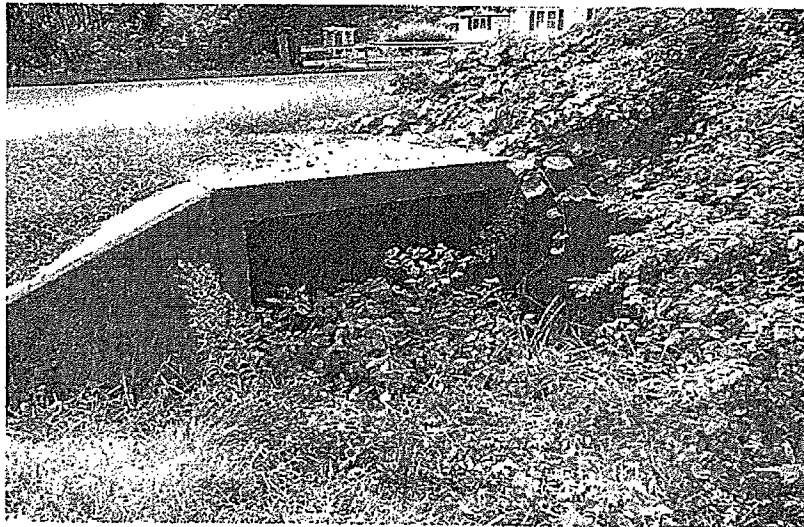
over

an unnamed brook

Screening Inspection

9/08/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152002 Town: 80280 - WATERFORD Carried: Bloomingdale Road Crossed: an unnamed brook

Inspection Date 08/17/2016 Inspection Team Dewberry

OVERLAY

Depression/Settlement	Sat/Better	None noted.
Sidewalk	N/A	
Bridge Rail/Fence	Fair/Worse	Wood posts only. One post is missing.

STRUCTURE

Deck	N/A	Box culvert.
Superstructure	N/A	
Substructure	N/A	

CULVERT

Cell	Sat/Better	The interior of the concrete box culvert has no notable deficiencies.
Headwall/Wingwalls	Sat/Better	No headwalls. Concrete wingwalls have no notable deficiencies.

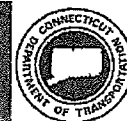
WATERWAY

Debris	Sat/Better	Minor buildup of sediment inside the box.
Stream Alignment	Sat/Better	
Embankment/Erosion	Sat/Better	Embankments are well vegetated.

COMMENTS

To be followed by full inspection ☐

Inspection Type: Screening



BRIDGE NO. 152009

80280 - WATERFORD

Ellen Ward Road

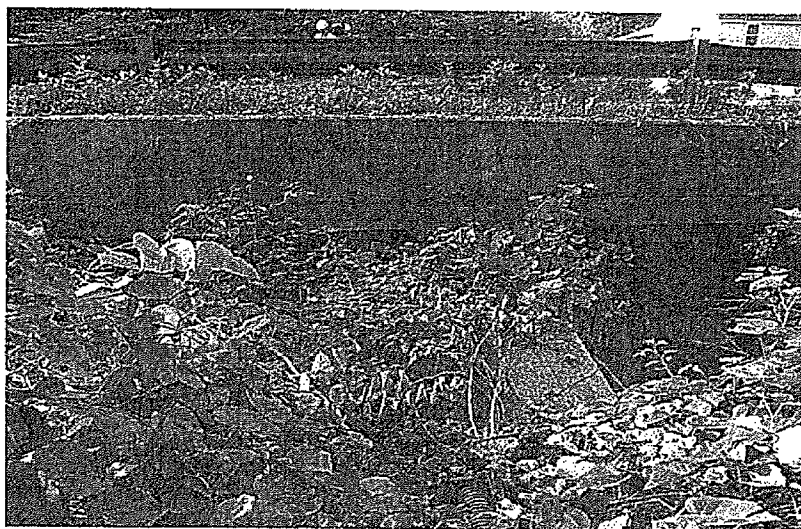
over

an unnamed brook

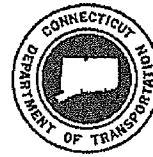
Screening Inspection

9/09/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152009 Town: 80280 - WATERFORD Carried: Ellen Ward Road Crossed: an unnamed brook

Inspection Date Inspection Team

OVERLAY

Depression/Settlement	Sat/Better	None noted.
Sidewalk	N/A	
Bridge Rail/Fence	Sat/Better	MBR on strong posts at both sides.

STRUCTURE

Deck	N/A	Twin concrete box culvert.
Superstructure	N/A	
Substructure	N/A	

CULVERT

Cell	Sat/Better	The cells of the concrete box culvert have random discoloration at the roof joints and random shallow rebars.
Headwall/Wingwalls	Sat/Better	Concrete headwalls and wingwalls have no notable defects.

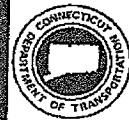
WATERWAY

Debris	Sat/Better	Heavy vegetation at inlet. The East cell has a minor build up of silt and vegetation.
Stream Alignment	Sat/Better	The majority of the flow is in the West box due to debris at the inlet and in the East box.
Embankment/Erosion	Sat/Better	None noted.

COMMENTS

To be followed by full inspection ☐

Inspection Type: Screening



BRIDGE NO. 152007

80280 - WATERFORD

Fog Plain Road

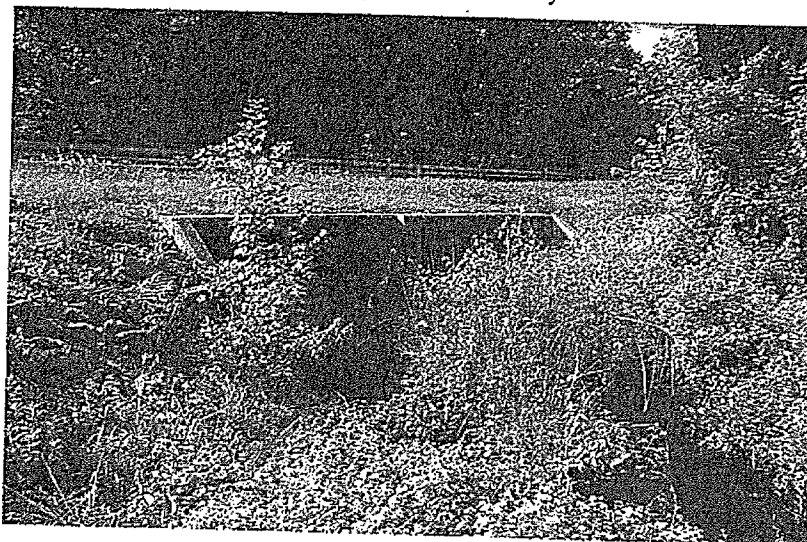
over

Jorden Brook

Screening Inspection

9/08/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152007 Town: 80280 - WATERFORD Carried: Fog Plain Road

Crossed: Jordan Brook

Inspection Date

08/17/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

None noted.

Sidewalk

N/A

Bridge Rail/Fence

Sat/Better

MBR on weak posts is continuous across the structure.

STRUCTURE

Deck

N/A

Twin 8'-6" concrete box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

Both cells have no notable deficiencies.

Headwall/Wingwalls

Sat/Better

Concrete wingwalls have no notable deficiencies.

WATERWAY

Dobris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Embankment/Erosion

Sat/Better

Light vegetation upstream, heavy vegetation downstream.

COMMENTS

To be followed by full inspection

Inspection Type: Screening



BRIDGE NO. 152008

80280 - WATERFORD

Fog Plain Road

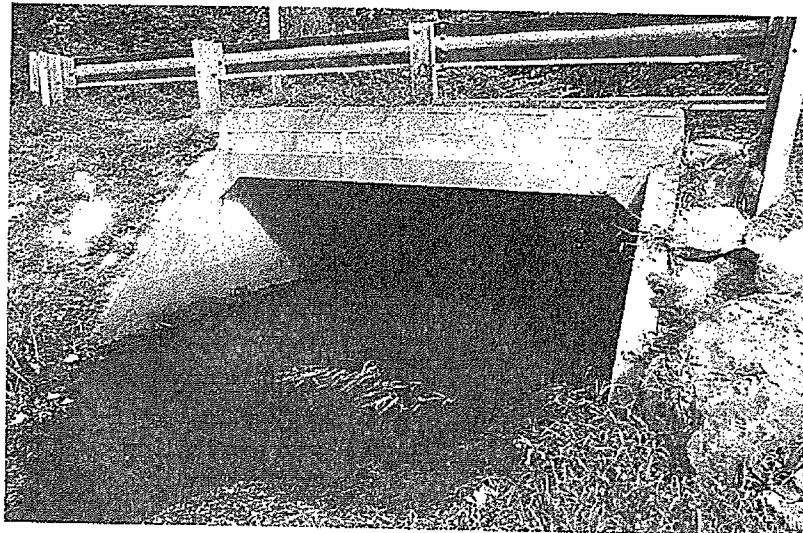
over

Nevins Brook

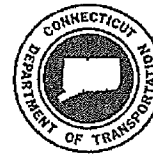
Screening Inspection

9/09/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152008 Town: 80280 - WATERFORD Carried: Fog Plain Road

Crossed: Nevins Brook

Inspection Date

08/17/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

The pavement has isolated potholes and patches up to 25' x 6'.

Sidewalk

Sat/Better

Asphalt sidewalk at South side.

Bridge Rail/Fence

Sat/Better

MBR with steel blockouts on both sides.

STRUCTURE

Deck

N/A

Concrete box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

The concrete box culvert has minor misalignment between the units

Headwall/Wingwalls

Sat/Better

CMU headwalls have no notable deficiencies.

WATERWAY

Debris

Sat/Better

Tree debris at inlet.

Stream Alignment

Sat/Better

Embankment/Erosion

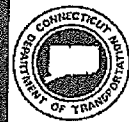
Sat/Better

Embankments are well vegetated.

COMMENTS

To be followed by full inspection

Inspection Type: Screening



BRIDGE NO. 152013

80280 - WATERFORD

Longview Street

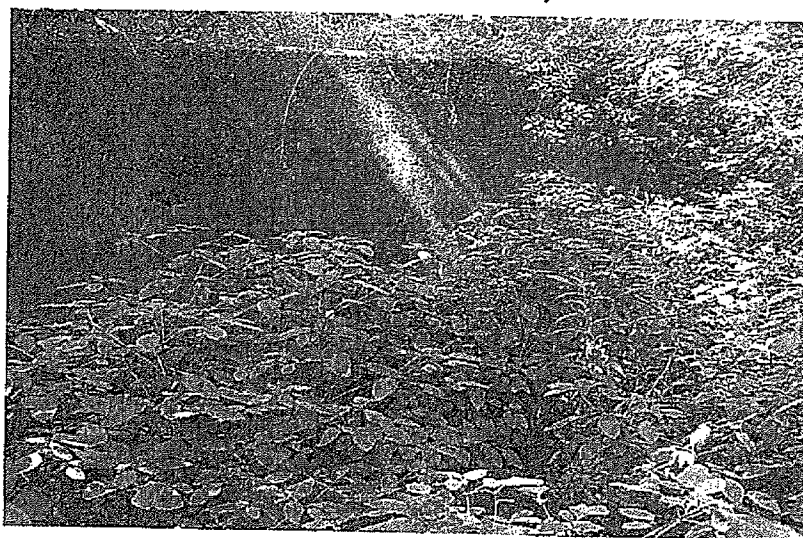
over

Brook (East)

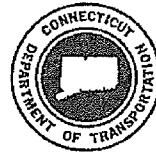
Screening Inspection

9/08/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152013 Town: 80280 - WATERFORD Carried: Longview Street

Crossed: Brook (East)

Inspection Date

08/11/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

None noted.

Sidewalk

Sat/Better

Grass area with curb on north side, concrete sidewalk and curb on south side.

Bridge Rail/Fence

Sat/Better

MBR at both fascias.

STRUCTURE

Deck

N/A

Concrete box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

The concrete box culvert has minor misalignment between random units.

Headwall/Wingwalls

Sat/Better

Concrete headwalls have no notable deficiencies.

WATERWAY

Debris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Embankment/Erosion

Sat/Better

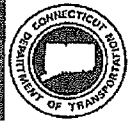
Embankments are well vegetated.

COMMENTS

Structure has no significant changes since the previous inspection.

To be followed by full inspection

Inspection Type: Screening



BRIDGE NO. 152012

80280 - WATERFORD

Longview Street

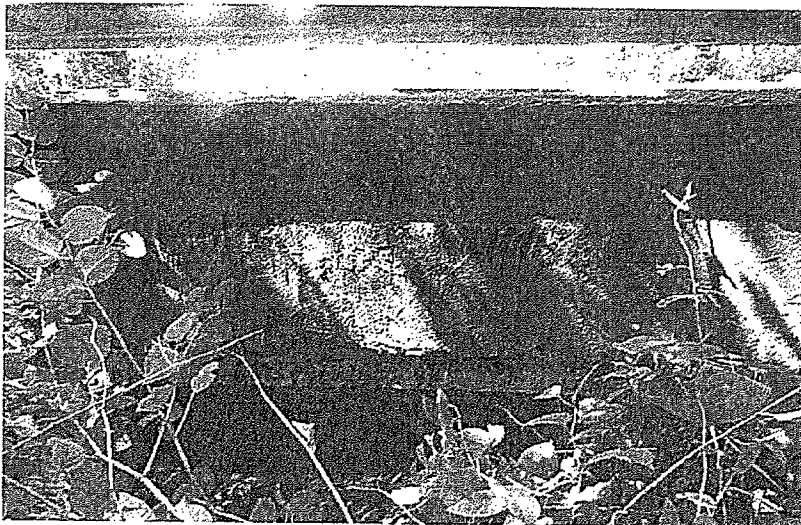
over

Brook (West)

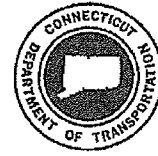
Screening Inspection

9/07/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152012 Town: 80280 - WATERFORD Carried: Longview Street Crossed: Brook (West)

Inspection Date Inspection Team

OVERLAY

Depression/Settlement	Sat/Better	None noted.
Sidewalk	Sat/Better	Grass sidewalk and concrete curb at North fascia, concrete sidewalk and curb at South fascia.
Bridge Rail/Fence	Sat/Better	MBR on strong posts at both fascias.

STRUCTURE

Deck	N/A	Concrete box culvert.
Superstructure	N/A	
Substructure	N/A	

CULVERT

Cell	Sat/Better	There is minor misalignment between the box units.
Headwall/Wingwalls	Sat/Better	Concrete headwalls have no notable deficiencies.

WATERWAY

Debris	Sat/Better	None noted.
Stream Alignment	Sat/Better	
Embankment/Erosion	Sat/Better	Embankments are well vegetated.

COMMENTS

To be followed by full inspection ☐

Inspection Type: Screening



BRIDGE NO. 152014

80280 - WATERFORD

New Shore Road

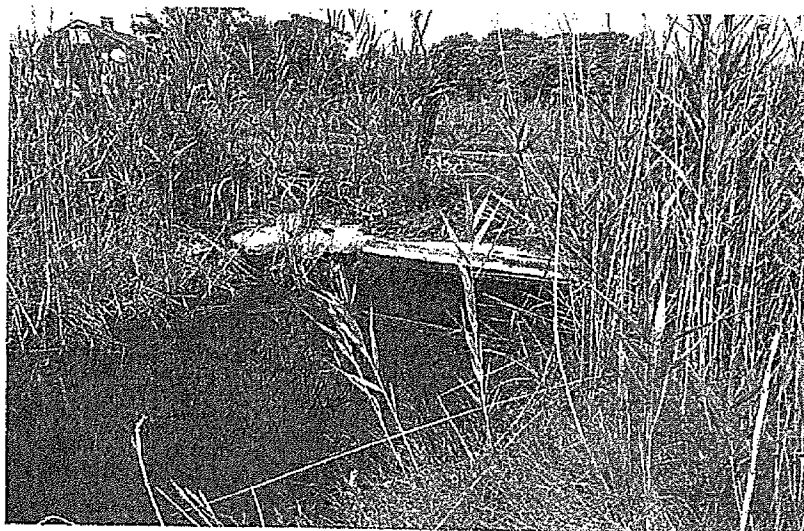
over

an unnamed brook

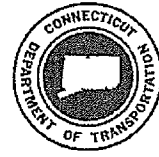
Screening Inspection

9/08/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152014 Town: 80280 - WATERFORD Carried: New Shore Road Crossed: an unnamed brook

Inspection Date

08/11/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

Pavement has 50% mapcracking and an isolated patch.

Sidewalk

N/A

Bridge Rail/Fence

Fair/Worse

Wood posts only.

STRUCTURE

Deck

N/A

Box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

Culvert interior has no notable deficiencies.

Headwall/Wingwalls

Sat/Better

Concrete headwalls have no notable deficiencies.

WATERWAY

Debris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Freeboard was 4" at low tide; following rain event. Flow is tidal.

Embankment/Erosion

Sat/Better

Embankments are in a marsh/swamp area.

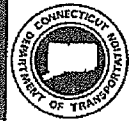
COMMENTS

Structure has no change from previous inspection.

To be followed by full inspection

☐

Inspection Type: Screening



BRIDGE NO. 152010

80280 - WATERFORD

Niantic River Road

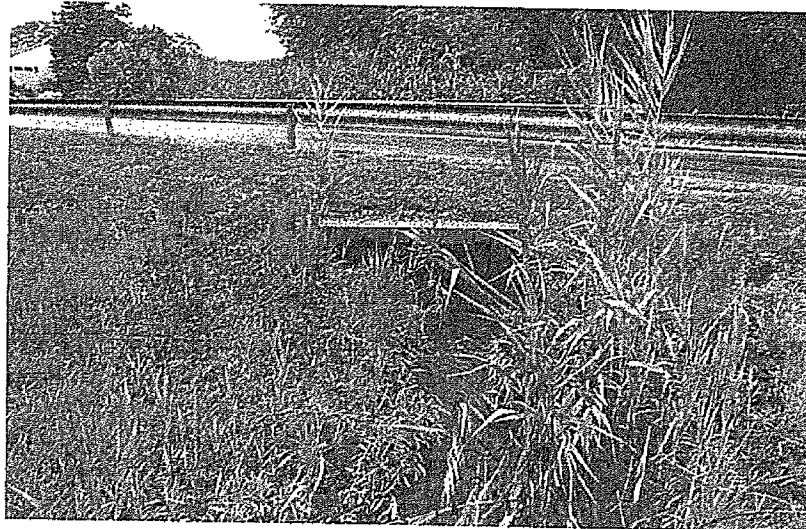
over

an unnamed brook

Screening Inspection

9/07/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152010 Town: 80280 - WATERFORD Carried: Niantic River Road Crossed: an unnamed brook

Inspection Date

08/11/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

None noted.

Sidewalk

Sat/Better

Asphalt sidewalk with curb at the East side.

Bridge Rail/Fence

Sat/Better

MBR on weak posts. No approach guide rails.

STRUCTURE

Deck

N/A

Box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

Minor misalignment between the precast box units.

Headwall/Wingwalls

N/A

None.

WATERWAY

Debris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Embankment/Erosion

Sat/Better

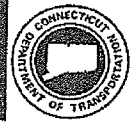
Upstream channel is full of swampy vegetation.

COMMENTS

Very little change from previous inspection.

To be followed by full inspection

Inspection Type: Screening



BRIDGE NO. 152001

80280 - WATERFORD

Old Colchester Road

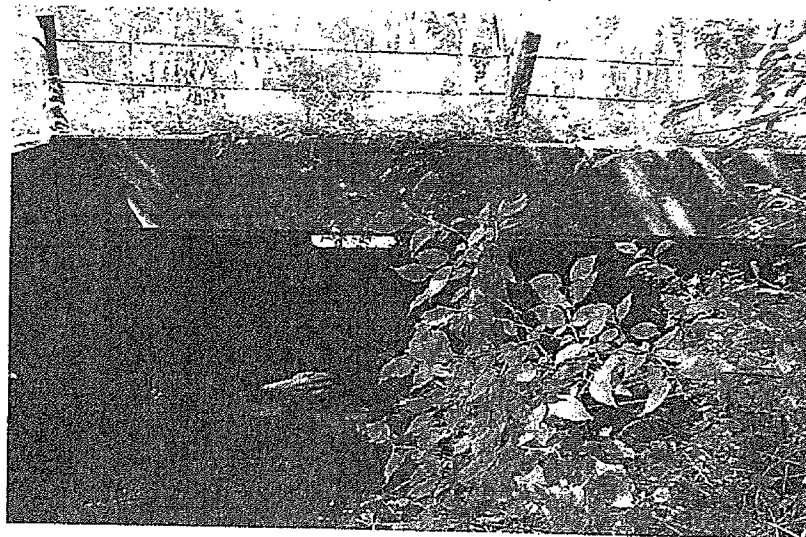
over

an unnamed brook

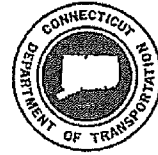
Screening Inspection

9/09/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152001 Town: 80280 - WATERFORD Carried: Old Colchester Road Crossed: an unnamed brook

Inspection Date Inspection Team

OVERLAY

Depression/Settlement	Sat/Better	None noted.
Sidewalk	N/A	
Bridge Rail/Fence	Sat/Better	Two cable guide on wood posts is continuous over the structure.

STRUCTURE

Deck	N/A	Twin concrete box culvert.
Superstructure	N/A	
Substructure	N/A	

CULVERT

Cell	Sat/Better	Both cells have random honeycomb areas on the roof (as-built condition).
Headwall/Wingwalls	Sat/Better	The concrete headwalls and wingwalls have no notable deficiencies.

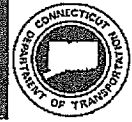
WATERWAY

Debris	Sat/Better	Heavy vegetation and minor build up of silt at the inlet.
Stream Alignment	Sat/Better	
Embankment/Erosion	Sat/Better	The embankments are well vegetated.

COMMENTS

To be followed by full inspection ☐

Inspection Type: Screening



BRIDGE NO. 152006

80280 - WATERFORD

Oswegatchie Road

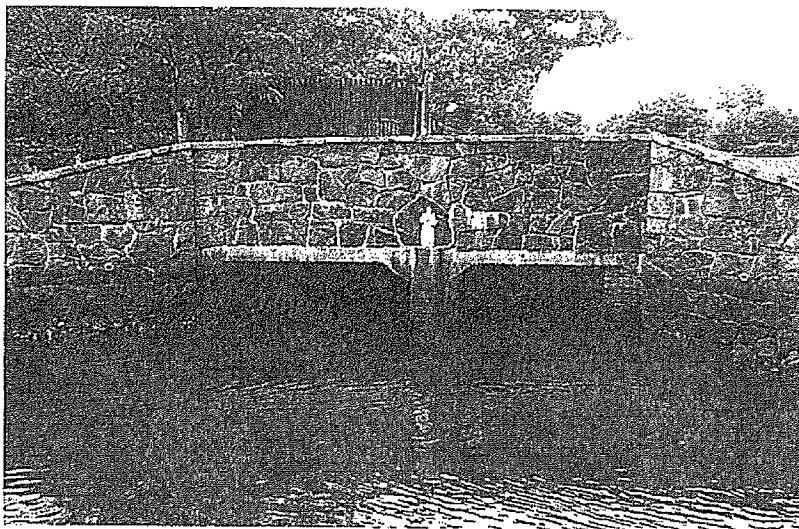
over

Stony Brook

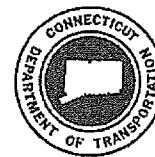
Screening Inspection

9/07/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152006 Town: 80280 - WATERFORD Carried: Oswegatchie Road Crossed: Stony Brook

Inspection Date

08/10/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

None noted.

Sidewalk

N/A

Bridge Rail/Fence

Sat/Better

Two-cable guide rail on wood posts has minor slack in the ropes.

STRUCTURE

Deck

N/A

Twin concrete box culverts.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

Both cells have minor misalignment between the precast units. There is also barnacle growth at the waterline.

Headwall/Wingwalls

Sat/Better

Masonry headwalls and wingwalls have no notable deficiencies.

WATERWAY

Debris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Flow is tidal.

Embankment/Erosion

Sat/Better

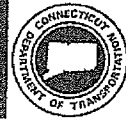
None noted.

COMMENTS

Previous structure replaced with twin 8' x 5' concrete box culverts.

To be followed by full inspection

Inspection Type: Screening



BRIDGE NO. 152011

80280 - WATERFORD

Spithead Road

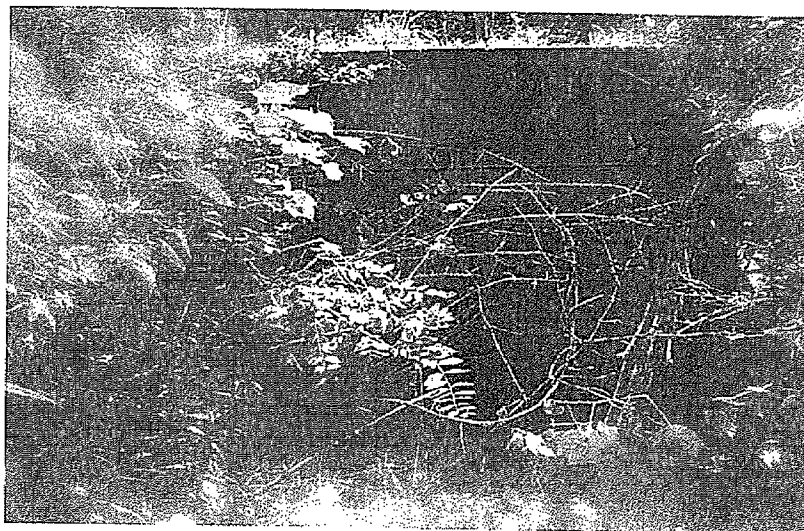
over

an unnamed brook

Screening Inspection

9/07/2016

Inspected by: Dewberry



SCREENING REPORT



Bridge: 152011 Town: 80280 - WATERFORD Carried: Spithead Road

Crossed: an unnamed brook

Inspection Date

08/10/2016

Inspection Team

Dewberry

OVERLAY

Depression/Settlement

Sat/Better

None noted.

Sidewalk

N/A

Bridge Rail/Fence

Sat/Better

MBR on weak posts is continuous over the structure.

STRUCTURE

Deck

N/A

Box culvert.

Superstructure

N/A

Substructure

N/A

CULVERT

Cell

Sat/Better

The concrete box had no notable deficiencies.

Headwall/Wingwalls

Sat/Better

Concrete headwalls and wingwalls had no notable deficiencies.

WATERWAY

Debris

Sat/Better

None noted.

Stream Alignment

Sat/Better

Embankment/Erosion

Sat/Better

Embankments are well vegetated.

COMMENTS

Structure has little change since previous inspection.

To be followed by full inspection

DEPARTMENT/AGENCY Public Works		CONTACT PERSON Gary J. Schneider					
PROJECT NAME Bridges Under 20'		DEPARTMENT PRIORITY					

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)							
The Town has 13 bridges / culverts that the State of CT 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. Funds to hire a bridge engineering firm to take the findings from the State Inspection reports, and prepare a preliminary design and cost estimates for future year funding.							
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 and the State's Field Screening Reports							
7 COST/FUNDING SOURCE							
FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026	
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							
7 Federal/State Grants (detail in section 5)							
8 Other Funding (detail in section 5 above)							
TOTALS	0	0	0	0	0	0	



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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

Phone:

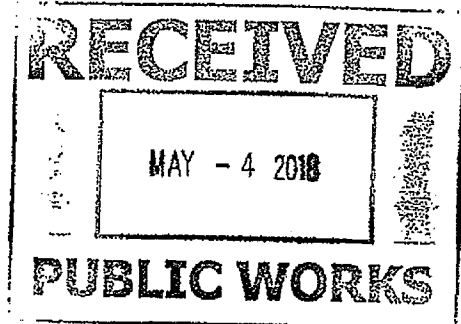


April 30, 2018

The Honorable Daniel M. Steward
First Selectman
Town of Waterford
15 Rope Ferry Road
Waterford, Connecticut 06385

Dear First Selectman Steward:

Subject: Inspection of Municipal Bridge Under 20 Feet in Length
State Project No. 170-3330



The Department of Transportation (Department) has completed field screening of municipally-owned bridges that are 20 feet or less in span length. No further inspections are planned and the field screening information for each bridge is enclosed. The reports are also 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 that were screened were rated in two categories; "Satisfactory or Better" or "Fair or Worse". All structures were in the Satisfactory or Better category.

Any bridge issues detected during the inspections should be corrected and preservation activities through a regular routine maintenance program are encouraged.

Please see the FY 2017 Local Bridge Program Manual, which can be retrieved from the Local Bridge Program webpage at www.ct.gov/dot/localbridge for possible funding eligibility.

It is the Department's belief that serious bridge problems can be prevented or minimized by timely corrective action. The State 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 these structures, please contact Mr. David Tassavor, of the Department's Bridge Safety and Evaluation section, at (860) 594-3170.

Very truly yours,

Theodore H. Nezames, P.E.
Manager of Bridges
Bureau of Engineering and Construction

Enclosures

**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

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:
 - o 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, Tornadoes, 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		

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY	CONTACT PERSON
<u>Public Works</u>	<u>Gary J. Schneider</u>
PROJECT NAME	DEPARTMENT PRIORITY
<u>Concrete Curb Replacement</u>	<u> </u>

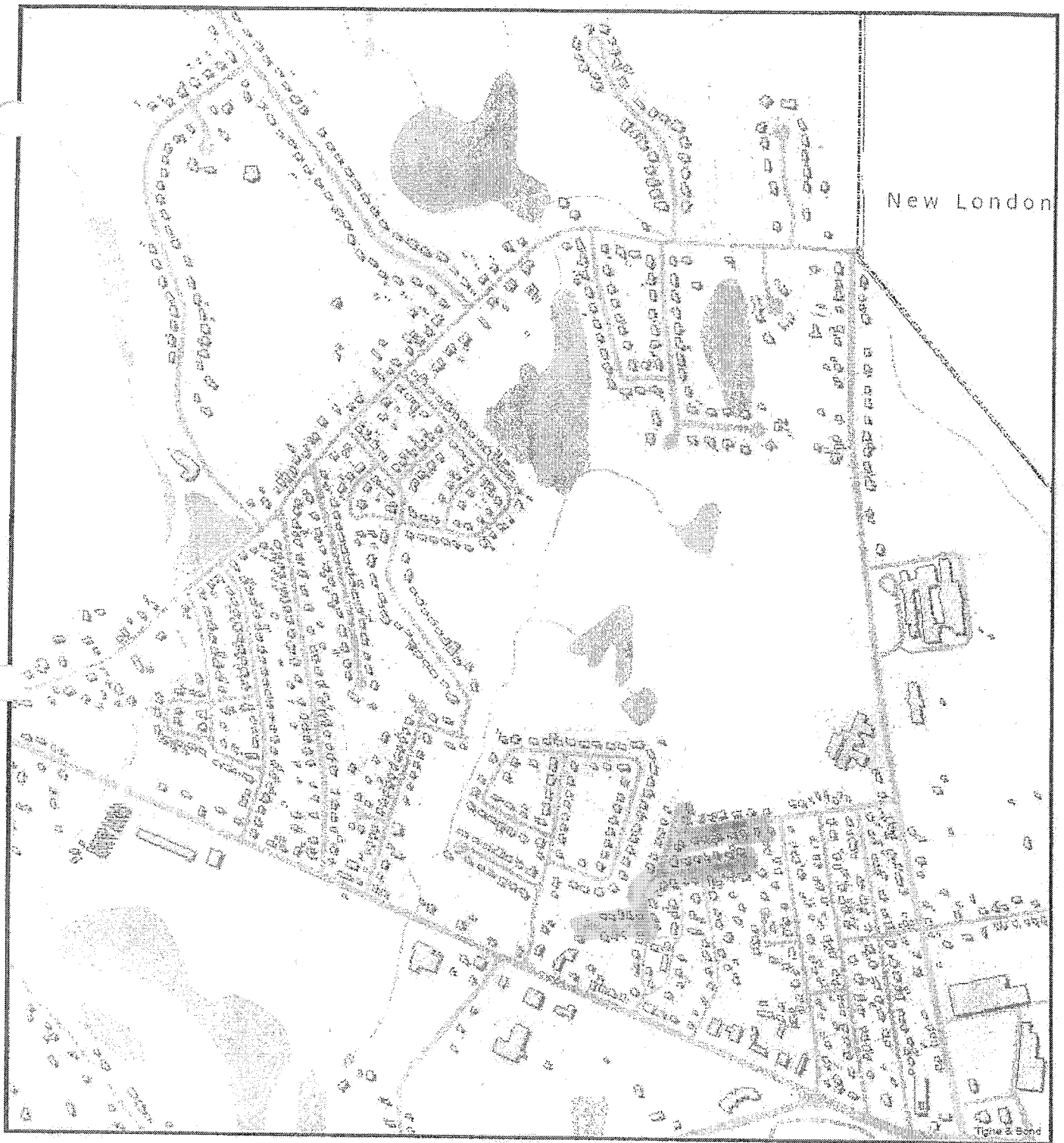
1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)							
Requested in FY 22 are funds to purchase pre-concrete curb section for installation by the Department personnel.							
2 PROJECT STATUS IF IN PROGRESS							
Department has identified areas 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, pictures of existing concrete curb conditions that need to be addresses and a map of areas to be addressed.							
7 COST/FUNDING SOURCE							
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS		0	0	0	0	0

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY <u>Public Works</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Sidewalk Replcement</u>	DEPARTMENT PRIORITY <u>4</u>

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. This project will be to replace sections or entire lengths 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, <u>concrete for concrete, asphalt for asphalt</u>																																																																														
2	PROJECT STATUS IF IN PROGRESS Department has identified areas of concrete and asphalt sidewalks that need to be addressed.																																																																														
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, pictures of existing concrete and asphalt sidewalk conditions that need to be addressed and a map of areas.																																																																														
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Department of Public Works CAPITAL IMPROVEMENT PLAN PROJECT CONSOLIDATION FORM-FY 2022-2026							
Category	Tab #	PROJECT NAME	FISCAL YEAR 2021-2022	FISCAL YEAR 2022-2023	FISCAL YEAR 2023-2024	FISCAL YEAR 2024-2025	FISCAL YEAR 2025-2026
			Funding	Funding	Funding	Funding	Funding
	4	Sidewalk Replacement					
	a	Norman/Concrete Panels	Yes				
	b	William Street/ Concrete Sidewalk	Yes				
	c	Summer Street/Concrete Sidewalk	Yes				
	d	David Street/Concrete Sidewalk	Yes				
	e	Cross Rd-Melanie to Rt 1/Asphalt	Yes				
						</	



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Scale: 1"=850'

Scale is approximate

The information depicted on this map is for planning purposes only.
It is not adequate for legal boundary definition, regulatory
interpretation, or parcel-level analyses.

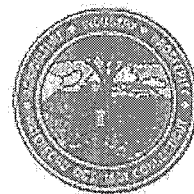
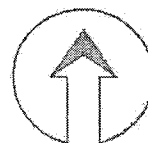




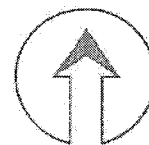
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Scale: 1"=500'

Scale is approximate

The information depicted on this map is for planning purposes only.
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interpretation, or parcel-level analyses.



**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY <u>Public Works</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Rope Ferry Road Sidewalks (connectivity)</u>	DEPARTMENT PRIORITY <u>3</u>

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) Waterford was awarded a Community Connectivity Program Grant from the State to assist in rebuilding existing sidewalks in Jordan Village. This project is supported in the Plan of Preservation, Conservation, and Development, and was included as a priority item in a Road Safety Audit conducted in 2017. The project includes replacing all sidewalks between Avery Lane and B Lane on Rte. 156 through Jordan Village. The new sidewalks will be concrete and will include all required ADA elements at curb cuts and crossings.																																																																													
2	PROJECT STATUS IF IN PROGRESS Final design plans and cost estimates have been prepared.																																																																													
3	LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST None																																																																													
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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) Community Connectivity Program Grant from the State in the amount of \$280,000 which has not been appropriated. In addition to this funds, the Town approved an additional \$100,000 in the CNR Fund (20511-57856).																																																																													
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, Cost estimate, State letter to fund, pictures of existing concrete and sidewalk conditions.																																																																													
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STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION
2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2047



January 15, 2019

Mr. Daniel Steward, First Selectman
Town Hall
15 Rope Ferry Road
Waterford, CT 06385

Dear First Selectman Steward:

Subject: **Commitment to Fund Letter**
Rope Ferry Road Sidewalk Improvements
Project State Project No. 0170-3513
Town of Waterford

On August 9, 2018, the Town of Waterford was awarded a grant under the Community Connectivity Grant Program (CCGP) by the State of Connecticut, Department of Transportation (Department).

The Department hereby commits to fund eligible project costs up to the accepted grant amount of \$280,000, based on the estimated costs provided by the Municipality.

This Commitment to Fund is subject to general conditions including, but not limited to the following:

1. The project is to be administered by the Municipality in accordance with the CCGP Guidelines. The guidelines are available at the following: www.ctconnectivity.com under the CCGP tab at the top.
2. The project costs identified in this Commitment to Fund letter are based on the requested amount from the CCGP application. It is understood that the Department has capped CCGP participation in this project at the application estimate and that any additional project costs will be the responsibility of the Municipality. This capped amount may be different than the actual grant payment, which will be based on the approved low bid. The Municipality will be allowed a maximum of 10% for contingencies and 10% for incidentals up to the capped amount.
3. Should the Municipality elect to use municipal forces to perform the construction, a request should be made to the Department with the final design submission.
4. Any project scope revisions must be reviewed and approved by the Department.

5. Upon completion of project design activities, and prior to issuing a notice to advertise/proceed, the Municipality must forward a Final Design Submission to the Department which includes the following:
 - a. Complete set of final project plans
 - b. Specifications
 - c. Contract documents
 - d. Final Construction Cost Estimate
 - e. Final Design Submission Documentation Form (template attached)
 - f. Completed General Municipal Certification for Design Activities Form (template attached)

A digital submission via e-mail is preferred.

6. The Municipality must execute and deliver a Project Authorization Letter (PAL) issued pursuant to the Master Municipal Agreement for Construction Projects and comply with its terms. The PAL will be forwarded to the Municipality for execution subsequent to the receipt of the Final Design Submission package by the Department.

This commitment is further subject to the following project specific conditions:

1. This project may require environmental permits. In accordance with the CCGP Guidelines, the Municipality will be responsible for the acquisition of all environmental permits that may be required. Please be advised that any project that involves work within waters or wetlands may require State and/or Federal environmental permits. It is critical that the Municipality and/or their consultant contact the Connecticut Department of Energy and Environmental Protection (DEEP) Land and Water Resources Division at 860-424-3019, early in the design process to discuss permitting requirements, and to identify specific concerns and design considerations. Failure to establish early communication with DEEP may result in significant time delays in the permitting process, due to the need for design changes and/or denial of permit applications. More information can be found on DEEP's Environmental Permitting Process website at:
https://www.ct.gov/deep/cwp/view.asp?a+2709&q+324232&deepNav_GID=1643.
2. This project may require utility relocations. Coordination with utility companies who have facilities within the project area should begin early in the design process.
3. This project may require work to be performed within the State-owned right-of-way. Any work within or affecting state right-of-way will require an encroachment permit. It is imperative that the design of the improvements proposed under this project be coordinated with the appropriate Department District Office during the design and construction phase. Therefore, it is requested that the municipality contact the Department District Special Services Office listed below early in the design process to review and coordinate the proposed improvements. More information on the encroachment permit process can be found at:
<https://www.ct.gov/do/cwp/view.asp?A=1394&Q=259544>.

January 15, 2019

DISTRICT 2 MAINTENANCE

Andrew Morrill, Special Services Section Manager
Bureau of Highway Operations and Maintenance
171 Salem Turnpike
Norwich 06360
Tel: (860) 823-3211

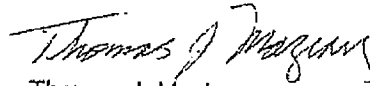
Permit Office - Tel: (860) 823-3230 or email to: Carlos.Wimberly@ct.gov

Please be informed that, in accordance with the CCGP Guidelines, the Department has initiated an Environmental Screening Review for this project to assist the Municipality in identifying items relative to natural resources, and historical/archeological resources, etc. that may need to be investigated or addressed during the design phase. The Environmental Screening Review is expected to be completed within thirty days (30) days from the date of this letter. The results will be forwarded to the Municipality, upon completion.

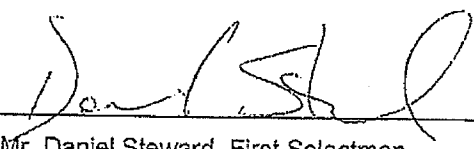
If the Municipality accepts this Commitment to Fund, the Municipal Chief Administrative Officer must sign below and return a copy within thirty (30) days from the date of this letter. Transmission via e-mail is acceptable.

If you have any questions, please contact the Project Manager, Mr. Craig Babowicz, at 860-594-2158 or CTDOT.CCGP@ct.gov.

Very truly yours,



Thomas J. Maziarz
Bureau Chief
Policy and Planning

Concurred by: 

Date: 2-7-19

Print Name: Mr. Daniel Steward, First Selectman

Enclosure

cc: Abby Y. Piersall (Waterford), Brian Long (Waterford), Mark Wujtewicz (Waterford)
Executive Director SECCOG

Waterford, CT Community Connectivity Grant Sidewalk Locations



The information shown on this map is from the Waterford Geographic Information System (GIS) database and is intended for informational purposes only. The Town of Waterford has made reasonable efforts to ensure accuracy of the content, but does not guarantee the accuracy of the information. Users are responsible for determining its suitability for their intended use or purpose. July 25, 2017

0 50 100 200 300 400 500 Feet

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

OP NION OF PROBABLE COST
Sidewalk Improvement Program
Waterford, CT

Estimate 12/20/09/20
LEI Job No. 19-356
Prepared By: JEE

Total		Quantity and	Estimated Unit Price	Extended Price
Item	Unit Measure			
1 Mobilization	1 LS		\$10,000.00	\$10,000.00
2 Water Pollution Control / Erosion and Sediment Control	1 LS		\$5,000.00	\$5,000.00
3 Maintenance & Protection of Traffic	1 LS		\$10,000.00	\$10,000.00
6 Trafficperson	200 HR		\$30.00	\$6,000.00
Processed Aggregate Base	253 CY		\$30.00	\$7,590.00
8 Paving HMA S0.5 Bituminous Concrete	120 TONS		\$120.00	\$14,400.00
Pavement Marking, Symbols, and Legends	1 LS		\$10,000.00	\$10,000.00
Relocation-Signs	9 EA		\$100	\$900.00
12 Conc Sidewalk	1250 SY		\$110.00	\$137,500.00
Sidewalk Removal	1250 SY		\$22.00	\$27,500.00
Concrete Handicap Ramps	5 EA		\$3,000.00	\$15,000.00
13 Saw Cutting	2100 LF		\$5.00	\$10,500.00
Concrete Curbing Removal	1640 LF		\$7.80	\$12,792.78
Bituminous Concrete Curbing Removal	275 LF		\$1.80	\$495.00
Granite Curbing Removal	183 LF		\$7.80	\$1,424.28
New Precast Concrete Curbing	1650 LF		\$35.00	\$57,750.00
Reset Manhole Tops	5 EA		\$1,100	\$5,500.00
Grass Surface Restoration	250 SY		\$10.00	\$2,500.00
Total Estimated Project Cost				\$334,852.06
Contingencies (10 %)				\$33,485.21
Estimated Construction Cost (with contingency)				\$368,337.27
SAY				\$370,000.00
Revision Date 10-20-20				

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY <u>Public Works</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Road Resurfacing/Paving Project</u>	DEPARTMENT PRIORITY <u>1 & 6</u>

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

Pavement Management 2020 Update

Waterford, Connecticut

PREPARED FOR

Town of Waterford
Mr. Gary Schneider
Director of Public Works
15 Rope Ferry Road
Waterford, CT 06385
860.444.5864

PREPARED BY



100 Great Meadow Road
Suite 200
Wethersfield, CT 06109

October 2020

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1

Introduction

The Town of Waterford hired Vanasse Hangen Brustlin, Inc (VHB) to perform an update to the Town's pavement management system. This project is part of an on-going program where the Town road conditions are evaluated periodically, and the road network conditions and budget requirements are analyzed.

In the Spring of 2020, VHB updated the pavement condition ratings for all 120 miles of Waterford's Town-maintained road network. Under the scope of this project, VHB performed a detailed inspection of the pavement conditions of Town maintained roads and has updated a database of this information that can be viewed, edited and analyzed using the Town's pavement management system.

This report describes the steps taken in this project, the results of the field evaluations, and compares the results of potential roadway funding scenarios.

Theory of Pavement Management

Pavement management is the practice of planning for pavement repairs and maintenance with the goal of maximizing the value and life of a pavement network.

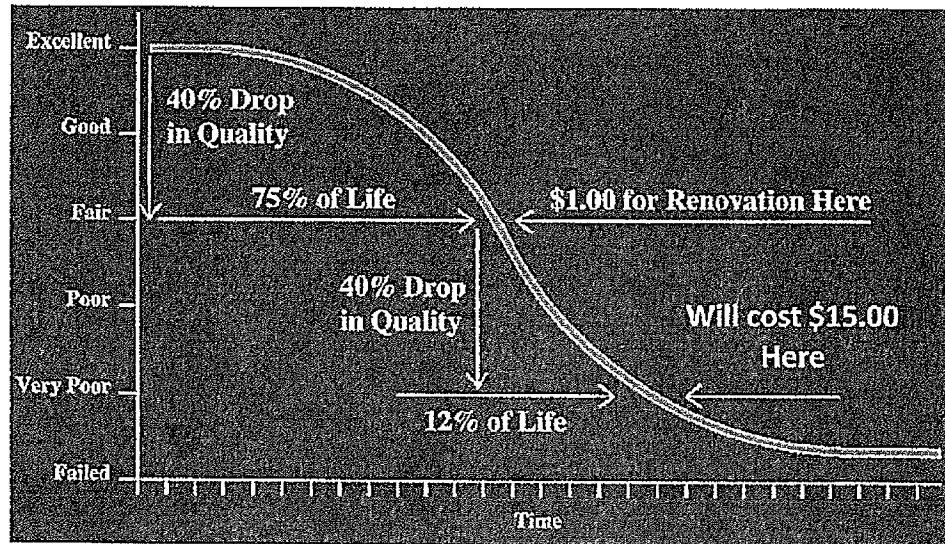
To accomplish this, a community needs to have several repair techniques in its arsenal and the knowledge of when to apply each of these. This is where pavement management comes into play. With a comprehensive database of road conditions, the computer can model when to perform which repairs on a street network. Of course, engineering judgment is required to finalize any list of street repairs, as no computer model can consider every variable analyzed in making a repair decision. The computer system is a great springboard to help a

community start its repair program for each year and is an excellent method of storing the repair data.

The Pavement Deterioration Curve

Below is a model of how a street's pavement deteriorates over time. Interpreting the curve, a street starts in excellent condition when it is newly constructed. Midway through its life, a low-cost repair such as crack seal and patch will cost approximately a dollar a square yard. It takes only a few years for the window of opportunity to perform this low-cost maintenance to pass after which the road would need mill & overlay costing \$15 per square yard. By performing timely maintenance, road conditions can be improved today, and then continue down the deterioration curve from a higher condition level, thereby extending the life of the road.

Figure 1 Typical Pavement Deterioration Curve





2

Methodology

The following methodology has been followed for the Town several times since the program's inception. The methodology described below includes all steps taken in development in the system and not just those completed in this past year's project.

VHB has performed a detailed evaluation of the condition of Waterford's 120.2 miles of Town-maintained roads to build the pavement management system. The complete process of identifying the Town road network, evaluating pavement conditions, configuring the database for analysis purposes and finally, the analysis of future funding scenarios is described below.

Network Identification

Network Identification builds an inventory of streets that describe the municipality's complete roadway network. The direction of travel, street length, width, one-way status, ownership, classification, zone, and pavement type are among the items identified at this initial phase in the pavement management process. This integral step ensures the streets surveyed are the definitive set to be analyzed.

Pavement Management Section Identification

Once the Network Identification is complete, the fieldwork begins. Each street contains one or more pavement management sections. A pavement management section defines the limits of previous construction or maintenance activities within each street. Segments are defined by having the same width, typical distresses, one-way status, functional class, etc.

The goal is to set up homogenous areas of pavement to aid in assigning the appropriate repair. A street may be one section, or it may be comprised of several pavement management sections, depending on its construction history.

Surface Distress Assessment

For each pavement management section, the severity and extent of nine major pavement distresses are recorded and entered a weighted formula to arrive at a Pavement Condition Index (PCI). The distresses are categorized as base related or surface-related distresses. Base related distresses indicate that the subsurface soil strength is inadequate for the existing traffic load. Streets that show significant base related distress may need to have the subsurface soils fortified with stone to strengthen the structure and/or the street may need a significantly thicker layer of pavement. Surface-related distresses are caused by age and weathering of the pavement. Streets that have predominantly surface-related distresses are excellent candidates for maintenance sealing to inhibit further pavement oxidization (the main effect of aging). Streets with more of the base related distresses will most likely need some full-depth patching, structural overlays or reclamation/reconstruction.

The four base-related distresses are:

- › potholes
- › alligator cracking
- › distortion
- › rutting

The five surface-related distresses are:

- › block cracking
- › transverse or longitudinal cracking
- › bleeding or polished aggregate
- › surface wear or raveling
- › corrugations, shoving, and slippage

PCI Defined

A PCI was generated for each inventoried pavement management section in Waterford using the surface distress data collected by VHB. PCI is measured on a scale of one hundred to zero, with one hundred representing a pavement in perfect condition and zero describing a road in impassable condition. Each type of observed pavement distress is assigned a deduct value based on the type, severity, and extent of the defect. A more severe distress type, such as non-utility patching, has a higher deduct point value than a lesser distress such as transverse cracking. A weighted sum of the deduct points is then subtracted from the perfect "100" road in order to generate a PCI for each roadway segment. In general, base related distresses are weighted more heavily than surface-related distresses.

The Five Treatment Bands

VHB uses broad PCI ranges to group the individual repair types into five major treatment bands. Treatment bands are a useful tool to summarize data on a Town-wide basis. An individual road segment will fall into a treatment band based on the PCI and may vary based on the road's functional classification. The goal is to gain a broad understanding of the existing conditions in simple yet meaningful terms.

Table 1

Treatment Band Descriptions

Treatment Band	PCI ¹	Description
Do Nothing	93-100	Excellent condition – in need of no maintenance.
Routine Maintenance	86-92	Good condition – may require crack sealing or minor localized repair.
Preventive Maintenance	73-85	Fair condition – pavement surface may require a surface seal such as microsurfacing, chip seal, or a cape seal or a thin overlay or full-depth patch and/or crack sealing.
Structural Improvement	61-72	Deficient condition – pavement surface structure in need of added strength for existing traffic. Typical repairs are overlay with or without milling.
Base Rehabilitation	0-60	Poor condition – in need of base improvement. Typical repairs are reclamation or full-depth reconstruction.

1 These are only general PCI ranges for reference purposes and represent only one pavement type. There may be multiple fields considered when assigning a treatment to an individual street.

Customizing Repair Strategies

VHB developed repair strategies to model the Town's practices. VHB also refined treatment unit costs. VHB's goal was to understand Waterford's decision-making process and simulate that process in the budget analysis software based on the pavement condition and other criteria of each pavement section.

Preparing Budget Scenarios

Once the roadway conditions are inventoried and analyzed, and the repair strategies are defined, the impact of various spending programs on the road network can be assessed. These studies can range from 1 to 20 years, however, for this report, 10-year studies are used. The purpose of the budget planning process is to determine the impact of various spending levels to find a funding level that will best meet Waterford's needs. The process uses deterioration curves, unit costs, and the strategies developed in the repair strategy definition phase to assign each street a repair type and associated cost for each year of the study. The module also assigns each street a benefit value that is used to determine which streets should be repaired each year. It is important to understand that this is a network-wide planning level analysis. Field verification and testing are recommended to confirm any specific recommendations generated.

Pavement management deals with the life cycle of pavement structure and the various repair treatments to maintain the condition of the pavement. The various repair types utilized in the study do not directly address other physical improvements associated with a roadway such as the storm drainage system, traffic signals, minor traffic items, sidewalks, and utility

adjustments. The actual scope of work and costs will vary for each individual roadway. Actual repair costs will need to be developed at the project level and may differ from the costs utilized in this study.

Deterioration Curves

In order to properly plan for future repairs, a deterioration model is used to estimate the degradation of conditions over time. As Waterford continues to build on its existing repair history database, the Town can refine the curve to more closely approximate local conditions.

Strategy Table

A table of repair strategies is used to assign specific pavement treatments to individual roadway segments. The repair strategy table incorporates PCI ranges as well as functional class and pavement type. The strategy table recommends the types of repairs that the Town has found to be best suited to Waterford's roadway network.

Project Prioritization

Needed pavement improvements are prioritized based on the estimated "Benefit Value". The Benefit Value formula is calculated using variables representing traffic volume, repair service life, PCI, and unit repair costs for each pavement management section. For each plan year, the software prepares a future roadway condition projection, exhausts the assigned budget, and then produces an annual list of roads included in the repair program. The system also allows the user to enter an inflation rate to account for estimated increases in future year construction costs.

The Benefit Value prioritization process generally favors cost-effective maintenance alternatives. Repair actions are typically delayed on those sections that require reconstruction or major rehabilitation because the benefits for dollars spent are generally lower than maintenance candidates. After the relatively good roads are "saved," improvements are directed towards the poorer arterial and collector roads.



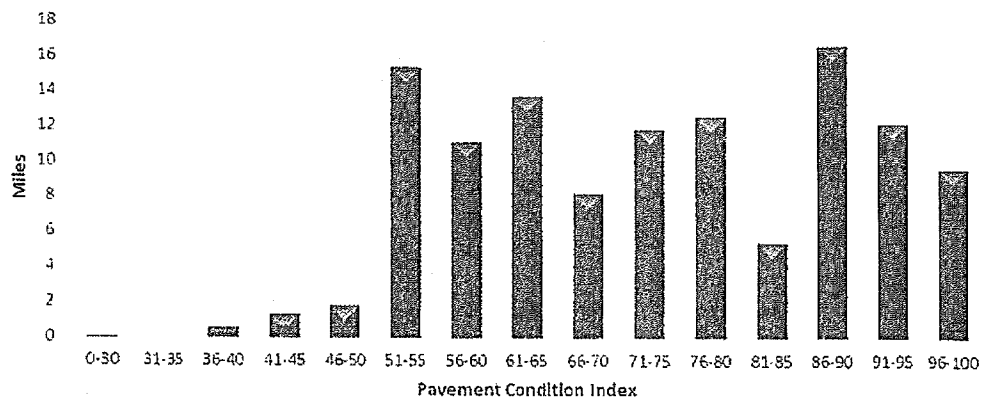
3

Existing Conditions

Town-maintained Streets Pavement Conditions

In the spring of 2020, VHB re-evaluated the condition of Waterford's 102.2 mile Town-maintained road network. The average Pavement Condition Index (PCI) for Waterford was calculated to be a 74. The following chart shows a detailed breakdown of the projected condition of Waterford's roads by summing the number of miles of roadway into bands of 5 PCI points.

Figure 2 PCI Distribution



Backlog of Work

The following table summarizes the condition of Waterford's street network into the 5 treatment bands discussed in Table 1. The unit costs for each treatment band (outlined in Appendix C) have been applied to develop the cost of outstanding work. Also known as "the backlog", this is the investment required to apply the recommended treatment to every roadway.

Table 2 Summary of Miles and Cost of Outstanding Work

Treatment Band	Miles	Dollar Backlog
Do Nothing	20.9	\$0
Routine Maintenance	17.3	\$438,000
Preventive Maintenance	27.8	\$1,701,000
Structural Improvement	24.1	\$5,665,000
Base Rehabilitation	30.2	\$10,376,000
Totals	120.2	\$18,180,000

The following two figures represent the above information graphically.

Figure 3 Miles of Outstanding Work

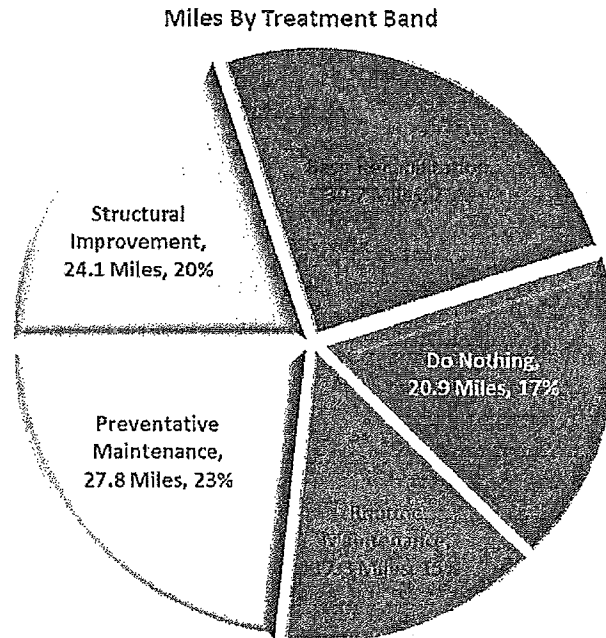
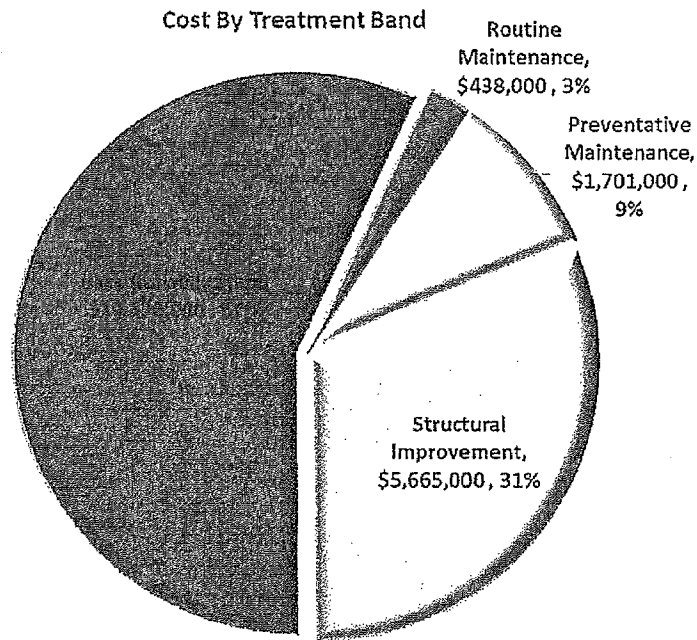


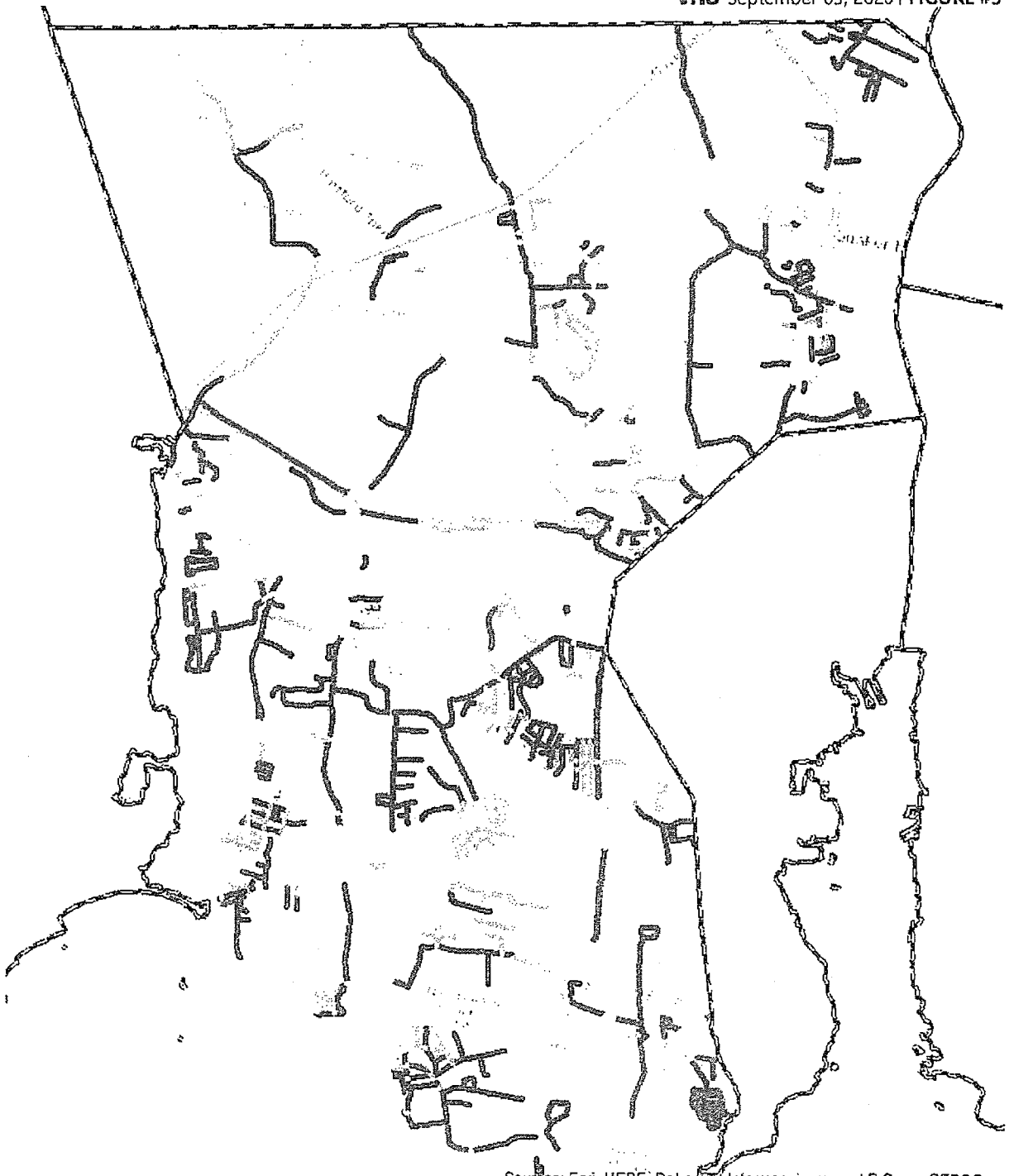
Figure 4 Cost of Outstanding Work



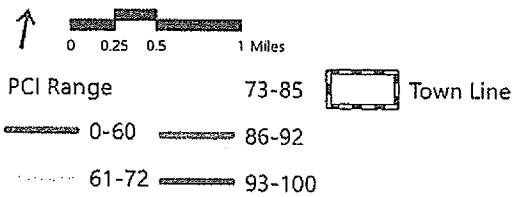
Figures 3 and 4 demonstrate that while only one-quarter of the Town's roads need Base Rehabilitation, they account for 57% of the outstanding backlog of work. Base Rehabilitation is the most expensive category of road repairs. Also noteworthy is that 43% of the Town's miles need preventative maintenance treatments, which only account for 12% of the total backlog cost. It makes logical fiscal sense to consider extending the lives of the large number of roads in need of these treatments before they deteriorate to a condition that would require more expensive repairs.

GIS Map of Current Pavement Conditions

By using the GIS geodatabase, the Town can create maps to help in the analysis and presentation of the information. The Town can easily map current and projected pavement conditions based on numerous potential funding scenarios and create plans for single or multi-year road programs. The map on the following page which displays the current pavement condition is one example of the type of mapping possible.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



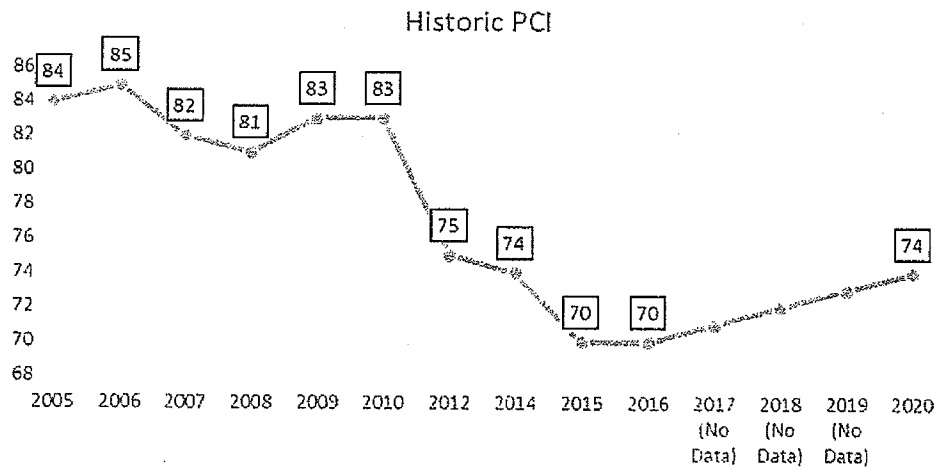
Pavement Conditions Map | Waterford, Connecticut

Pavement Condition Trend

As the pavement management system has been updated over the years, VHB has been able to track the change in overall condition to the Town's pavement network.

The following chart shows the change in Town-wide estimated average PCI since 2005.

Figure 6 Estimated Average PCI 2005-2020



1 Note: No assessments were done 2017-2019.

After maintaining a high estimated average PCI for several years, a drop in average conditions started in 2012, and has remained low since then.



4

Budget Analysis

Waterford has the responsibility to protect a major investment in its 120.2 mile network of Town maintained roads. It is easy to forget that roadways are often a community's single largest investment. Based on Waterford's unit cost for reconstruction, it would cost Waterford about \$28,000,000 in today's dollars to replace the Town's existing roadway infrastructure. This figure does not consider other typical costs such as drainage, signs, signals, curbing, or sidewalks,

VHB analyzed the predicted effects of various annual spending levels. The goal of this analysis is to provide a resource for local decision makers who are tasked with evaluating these important budgets.

Scenarios Explored

VHB projected the PCI and backlog for four 10-year scenarios. Each scenario assumes the historic budget of \$700,000 in 2020. The two bond scenarios use lump sum spending in 2021 on capital projects, as the 2020 paving season is nearly completed. VHB also explored the funding required to maintain overall conditions, as well as to maintain and increase the PCI by 9 points.

- › \$ 1,600,000 for 10 Years (Maintain PCI)
- › \$ 2,400,000 for 10 Years (Improve PCI)

- > \$ 5,000,000 Bond Lump Sum Capital Spending for 1 Year and \$1,700,000 for next 9 Years
- > \$ 7,000,000 Bond Lump Sum Capital Spending for 1 Year and \$1,700,000 for next 9 Years

Summary of Scenario Analysis Results

The following graphs show the projected effects of the four funding levels analyzed on Waterford's street network over the next ten years.

Figure 7 PCI Projections

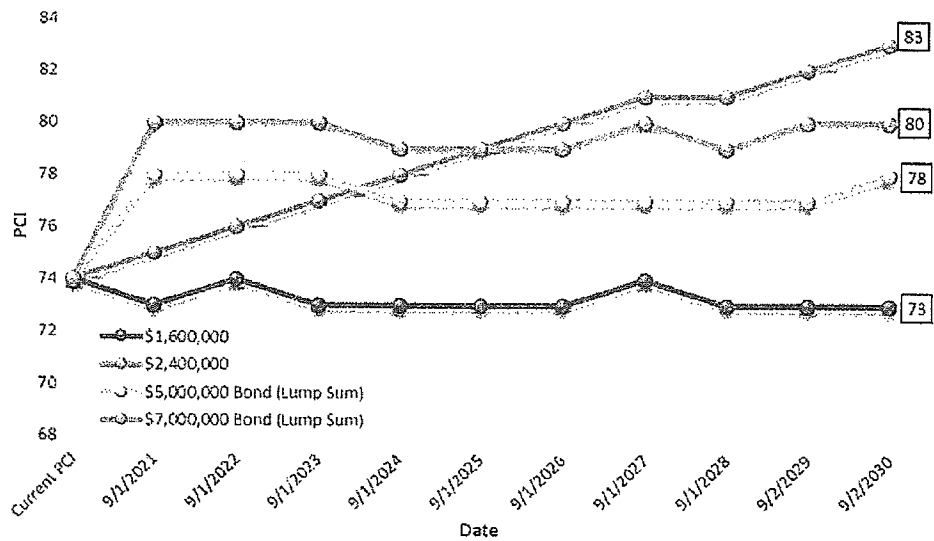
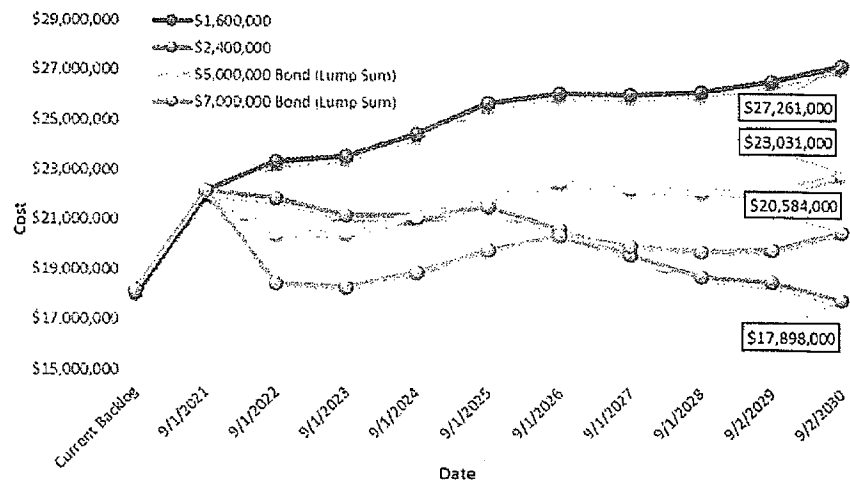


Figure 8 Backlog Projections



These scenario analysis results have been provided for the town's consideration. Other funding scenarios can be analyzed using the Town's pavement management system.

The PCI trend shown in Section 3 of this report shows that the town was able to maintain a relatively high level of pavement condition for several years using relatively low-cost surface treatments. These treatments do not improve a pavement's structural capacity and the trend that began in 2012 of a declining average pavement condition index can be attributed to the fact that many of the pavements in town have reached the point where some type of structural improvement will be necessary to provide a foundation for a continued high level of service.

Appendix A: Backlog List Alphabetical

All backlogs are based on PCIs projected to September 2020.

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
ALBACORE DRIVE	HOUSE #4	CUL DE SAC	857	Residential - Dead End	54	Base Rehabilitation	\$51,238	4
ALEWIFE ROAD	GLENWOOD AVE	CUL DE SAC	705	Residential - Dead End	90	Patch & Crackseal	\$4,094	88
ALICE STREET	LINDA AVE	PERRY AVE	552	Residential - Thru Street	53	Base Rehabilitation	\$38,503	33
ALMOND DRIVE	DIANE DR	CUL DE SAC	558	Residential - Dead End	67	Mill & Overlay A/C	\$31,480	23
ANTA AVENUE	SHORE RD	PERRY RD	932	Residential - Thru Street	63	Mill & Overlay A/C	\$43,302	25
ANN ROAD	SOULIER DR	KENYON RD	333	Residential - Thru Street	70	Mill & Overlay A/C	\$18,743	22
APPLEWOOD DRIVE	BLOOMINGDALE RD	CUL DE SAC	736	Residential - Dead End	57	Base Rehabilitation	\$47,591	31
ARTHUR STREET	PRINNVILLE AVE	WILSON AVE	290	Residential - Thru Street	89	Patch & Crackseal	\$1,347	89
AUSTIN STREET	GILEAD RD	END	150	Residential - Dead End	94	Do Nothing	\$0	0
AVENUE A #1	MILLSTONE RD WEST	SECOND STREET	564	Residential - Thru Street	89	Patch & Crackseal	\$2,182	89
AVENUE A #2	SUMMER ST	WILD ROSE PL	54	Residential - Thru Street	54	Base Rehabilitation	\$11,897	32
AVENUE B	FOURTH STREET	SECOND STREET	199	Residential - Thru Street	73	Preventative Maintenance	\$6,286	50
AVERY LANE	ROUTE 156	ROUTE 1	1836	Major/Minor Collector	78	Preventative Maintenance	\$25,155	128
B LANE	ROUTE 156	END	1966	Residential - Dead End	50	Base Rehabilitation	\$117,542	35
BACK STREET	EAST WOOD ST	EAST BISHOP ST	203	Residential - Thru Street	67	Mill & Overlay A/C	\$8,084	23
BAIDWIN DRIVE	TRUMBULL RD	CUL DE SAC	1128	Residential - Dead End	68	Mill & Overlay A/C	\$63,638	23
BARTLETT PLACE	SOUTH BARTLETT RD	CUL DE SAC LOOP	956	Residential - Dead End	89	Patch & Crackseal	\$3,701	89
BAYSIDE AVENUE	NIANTIC RIVER RD(N)	NIANTIC RIVER RD(S)	534	Residential - Thru Street	63	Mill & Overlay A/C	\$17,721	25
BEACH STREET #1	PALMER RD	LANDING ST	345	Residential - Thru Street	54	Base Rehabilitation	\$12,032	32
BEACH STREET #2	NIANTIC RIVER RD	END	326	Residential - Thru Street	88	Patch & Crackseal	\$1,262	90
BEACON HILL DRIVE	GRABNER DR	HOUSE #4	338	Residential - Thru Street	88	Patch & Crackseal	\$2,224	90
BEACON HILL DRIVE	HOUSE #4	GREEN TREE DR	3050	Residential - Thru Street	76	Preventative Maintenance	\$43,055	48
BELLA VISTA STREET	BENHAM AVE	CUL DE SAC	682	Residential - Dead End	92	Patch & Crackseal	\$2,640	4
BENHAM AVENUE	COLD NORWICH RD	ROUTE 32	1089	Residential - Thru Street	93	Do Nothing	\$0	0
BENJAMIN AVENUE	ROUTE 32	DEAD END	2335	Residential - Dead End	92	Patch & Crackseal	\$10,848	8
BESTVIEW ROAD	ROUTE 32	SCOTCH CAP ROAD	968	Residential - Thru Street	73	Preventative Maintenance	\$9,645	50
BETTY STREET	LINDA AVE	PERRY AVE	467	Residential - Thru Street	76	Preventative Maintenance	\$5,429	48
BEVERLY ROAD	SPRINGDALE RD	HAYES ST	579	Residential - Thru Street	53	Base Rehabilitation	\$34,617	33
BIRCH STREET	FOREST ST	SHORE ST	924	Residential - Thru Street	90	Patch & Crackseal	\$3,577	3
BISHOP STREET	NIANTIC RIVER RD	MAGO BLVD	901	Residential - Thru Street	63	Mill & Overlay A/C	\$35,881	25
BLOOMINGDALE ROAD	TOWNLINE	GALLOWS LA	2214	Residential - Thru Street	80	Preventative Maintenance	\$29,435	48
BLOOMINGDALE ROAD	GALLOWS LA	100 S OF APPLEWOOD DR	3339	Residential - Thru Street	99	Do Nothing	\$0	0
BLOOMINGDALE ROAD	HOUSE #133	HUNTS BROOK BRIDGE	5229	Residential - Thru Street	89	Patch & Crackseal	\$25,306	89
BLOOMINGDALE ROAD	HUNTS BROOK BRIDGE	QUAKER HILL SCHOOL ENTR.	1002	Residential - Thru Street	99	Do Nothing	\$0	0
BLOOMINGDALE ROAD	QUAKER HILL SCHOOL ENTR.	COLD COLCHESTER RD	1446	Residential - Thru Street	86	Patch & Crackseal	\$6,718	231
BOLLES COURT	SCOTCH CAP RD	CUL DE SAC	337	Residential - Dead End	61	Mill & Overlay A/C	\$13,420	26
BRAMAN ROAD	ROUTE 213	MARY BUTLER DR	2969	Residential - Thru Street	63	Mill & Overlay A/C	\$98,531	35
BRAMAN ROAD	MARY BUTLER DR	544 W OF GOUNDRY DR	894	Residential - Thru Street	95	Do Nothing	\$0	0
BRAMAN ROAD	544 W OF GOUNDRY DR	GOUNDRY DR	545	Residential - Thru Street	56	Base Rehabilitation	\$27,148	44
BRAMAN ROAD	GOUNDRY DR	367 E OF GOUNDRY DR	367	Residential - Thru Street	72	Mill & Overlay A/C	\$12,179	31
BRAMAN ROAD	367 E OF GOUNDRY DR	PEPPERBOX RD	1039	Residential - Thru Street	87	Patch & Crackseal	\$4,100	127
BRARWOOD DRIVE	VAUXHALL ST EX #1 (N)	VAUXHALL ST EX #1 (S)	1338	Residential - Thru Street	58	Base Rehabilitation	\$79,996	30
BRILL AVENUE	ROUTE 1	FOG PLAIN RD	1849	Residential - Thru Street	61	Mill & Overlay A/C	\$73,634	7
BROADVIEW COURT	SCOTCH CAP RD(W)	SCOTCH CAP RD(E)	1078	Residential - Thru Street	74	Preventative Maintenance	\$10,741	50
BROOK STREET	DEAD END AT WILCOX CT	HAMMERHEAD DEAD END	650	Residential - Dead End	67	Mill & Overlay A/C	\$25,885	23

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
BURLAKE ROAD	ROUTE 32	CUL DE SAC	858	Residential - Dead End	59	Base Rehabilitation	\$51,297	30
BUTLER COURT	WILLETTTS AVE	END	400	Residential - Dead End	53	Base Rehabilitation	\$19,929	33
BUTLERTOWN ROAD	TOWNLINE	LAKE POND ROAD	5740	Rural	61	Mill & Overlay A/C	\$209,540	26
CAROLINE CT	OLD NORWICH RD	DEAD END	6049	Rural	55	Base Rehabilitation	\$331,518	32
CEGAR STREET	TIFANY S	WILLOW ST	341	Residential - Dead End	54	Base Rehabilitation	\$13,591	32
CENTER ROAD	LAMPIERE ROAD	CUL-DE-SAC	496	Residential - Thru Street	45	Base Rehabilitation	\$29,654	39
CENTER STREET	FIFTH AVE	SEVENTH AVE	1237	Residential - Dead End	55	Base Rehabilitation	\$73,957	32
CHAPMAN AVENUE	VAUXHALL EX. #1	PIEGRIM RD	475	Residential - Thru Street	88	Patch & Crackseal	\$2,206	90
CHARLES AVENUE	FITZGERALD AVE	MAY AVE	1802	Major/Minor Collector	71	Mill & Overlay A/C	\$71,762	31
CHERRY STREET	WILLOW ST	TIFANY AVE	543	Residential - Thru Street	56	Base Rehabilitation	\$32,464	31
CHIPMAN ROAD	FARGO RD	END	336	Residential - Thru Street	49	Base Rehabilitation	\$20,088	36
CIRCLE STREET	TENTH AVE	EIGHTH AVE	311	Rural	55	Base Rehabilitation	\$17,044	32
CLARK LANE	FOG PLAIN RD	S. ENTRANCE OF JR HIGH	476	Residential - Thru Street	85	Preventative Maintenance	\$4,745	43
CLARK LANE	S. ENTRANCE OF JR HIGH	ROUTE 1	2570	Major/Minor Arterials	93	Do Nothing	\$0	0
CLARK PLACE	HARDWICK RD	CUL DE SAC	3102	Major/Minor Arterials	88	Patch & Crackseal	\$20,417	451
CLEMENT STREET	WILLETTTS AVE	LONGVIEW ST	794	Residential - Dead End	70	Mill & Overlay A/C	\$42,160	22
CLIFF STREET	VALLEY ST #2	NEW SHORE RD	615	Residential - Thru Street	75	Preventative Maintenance	\$7,149	49
CLIFTON STREET	PHILLIPS ST	END	229	Residential - Thru Street	57	Base Rehabilitation	\$11,409	31
COLLEGE COURT	NIANTIC R. VER RD	DEAD END	568	Residential - Thru Street	87	Patch & Crackseal	\$2,639	91
COLONIAL DRIVE	TOWNLINE	END	541	Residential - Dead End	88	Patch & Crackseal	\$1,885	90
COLONIAL DRIVE	ROUTE 213	HOUSE #48	555	Residential - Dead End	74	Preventative Maintenance	\$6,912	50
COLONIAL DRIVE	HOUSE #48	CUL DE SAC	2771	Residential - Dead End	62	Mill & Overlay A/C	\$156,332	25
COMSTOCK AVENUE	TOWNLINE	DEAD END	1739	Residential - Dead End	59	Base Rehabilitation	\$147,292	30
CONNSHIRE DRIVE	GREENTREE DR	ROGERS HILL RD	205	Residential - Dead End	99	Do Nothing	\$0	0
COOLIDGE COURT	ROBIN HILL RD	CUL DE SAC	1987	Residential - Thru Street	85	Preventative Maintenance	\$28,049	43
COUNTRY CLUB DRIVE	GOSHEN RD	CUL DE SAC	253	Residential - Dead End	67	Mill & Overlay A/C	\$14,273	23
COVE VIEW DRIVE	RICHARDS GROVE RD(W)	RICHARDS GROVE RD(E)	1065	Residential - Dead End	54	Base Rehabilitation	\$90,204	32
COZY COURT	RIDGEWOOD AVENUE	END	638	Residential - Thru Street	70	Mill & Overlay A/C	\$25,407	22
CROSS DRIVE	CUL DE SAC(W)	CUL DE SAC(E)	604	Residential - Dead End	65	Mill & Overlay A/C	\$8,071	6
CROSS ROAD	ROUTE 1	HOUSE #35	1621	Major/Minor Collector	79	Preventative Maintenance	\$20,190	268
CROSS ROAD	HOUSE #35	1175 S OF PARKWAY SOUTH	2288	Major/Minor Collector	80	Preventative Maintenance	\$28,498	264
CROSS ROAD	1175 S OF PARKWAY SOUTH	CENTER OF I-95 BRIDGE	1175	Major/Minor Collector	79	Preventative Maintenance	\$41,955	268
CROSS ROAD	CENTER OF I-95 BRIDGE	NOVA-CHIP	802	Major/Minor Arterials	84	Preventative Maintenance	\$28,636	214
CROSS ROAD	NOVA-CHIP	FOSTER RD	2664	Major/Minor Arterials	56	Base Rehabilitation	\$292,003	158
CROSS ROAD	FOSTER RD	ROUTE 85	3173	Major/Minor Arterials	55	Base Rehabilitation	\$347,795	179
CROWN STREET	ROUTE 85	SNOWDEN ST	600	Residential - Thru Street	77	Preventative Maintenance	\$5,978	48
CROWDON COURT	HIGH RIDGE DR	CUL DE SAC	358	Residential - Dead End	52	Base Rehabilitation	\$30,322	34
DANIELS AVENUE	NIANTIC R VER RD	SOUTHWEST SCHOOL	2441	Major/Minor Collector	51	Base Rehabilitation	\$182,427	27
DANIELS AVENUE	SOUTHWEST SCHOOL	SPTHEAD RD	1157	Major/Minor Collector	73	Preventative Maintenance	\$14,411	35
DARLING LANE	OSWEATCHIE RD	DEAD END	511	Residential - Dead End	61	Mill & Overlay A/C	\$11,870	26
DAVID STREET	SUMMER ST	END	401	Residential - Dead End	55	Base Rehabilitation	\$21,970	32
DAYTON PLACE	ROUTE 85	DAYTON RD #1	576	Major/Minor Collector	83	Preventative Maintenance	\$7,149	112
DAYTON ROAD #1	ROUTE 85	DAYTON PL	1609	Residential - Thru Street	73	Preventative Maintenance	\$14,696	50
DAYTON ROAD #1	DAYTON PL	928 NORTH OF DAYTON PL	928	Major/Minor Collector	69	Mill & Overlay A/C	\$55,435	23

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
DAYTON ROAD #1	928' NORTH OF DAYTON PL	HOUSE #123	3353	Residential - Thru Street	83	Preventative Maintenance	\$30,627	44
DAYTON ROAD #1	HOUSE #123	VAUXHALL STREET EXT #1	625	Residential - Thru Street	71	Mill & Overlay A/C	\$20,741	22
DE CAB LANE	SCOTCH CAP RD	CUL DE SAC	395	Residential - Dead End	62	Mill & Overlay A/C	\$15,730	25
DEBORAH STREET	VALERIE ST	OSWEGATCHIE RD	1099	Residential - Thru Street	99	Do Nothing	\$0	0
DEERFIELD ROAD	ROUTE 213	CUL DE SAC	1414	Residential - Dead End	65	Mill & Overlay A/C	\$56,311	24
DEVONSHIRE DRIVE	FOG PLAIN RD	CUL DE SAC	2595	Residential - Thru Street	65	Mill & Overlay A/C	\$146,403	24
DIANE DRIVE	ROCKWOOD DR	CUL DE SAC	473	Residential - Dead End	68	Mill & Overlay A/C	\$26,685	23
DIMMOCK ROAD	ROUTE 213	BRAMAN RD	3647	Residential - Thru Street	87	Patch & Crackseal	\$16,944	91
DIVISION STREET	SHORE RD (N)	SHORE RD (S)	1102	Residential - Thru Street	68	Mill & Overlay A/C	\$43,886	23
DOCK ROAD	VALLEY ST	NEW SHORE RD	290	Residential - Thru Street	77	Preventative Maintenance	\$2,839	48
DOGWOOD DRIVE	OLD COLCHESTER RD	CUL DE SAC	469	Residential - Dead End	75	Preventative Maintenance	\$4,673	49
DONALD AVENUE	MAPLE RD	ROUTE 32	601	Residential - Thru Street	54	Base Rehabilitation	\$35,932	32
DONNA STREET	NIANTIC RIVER RD	EAST WOOD ST	830	Residential - Thru Street	67	Mill & Overlay A/C	\$38,562	23
DOUGLAS LANE	HOUSE #43	VAUXHALL ST EXT	4913	Residential - Thru Street	76	Preventative Maintenance	\$61,191	54
DOYLE ROAD	SPTHEAD RD	PAULA LA	2354	Residential - Thru Street	55	Base Rehabilitation	\$164,197	32
DUBREUIL DRIVE	OSWEGATCHIE RD	CUL DE SAC	488	Residential - Dead End	54	Base Rehabilitation	\$34,039	32
DUNBAR ROAD	OLD NORWICH RD	CUL DE SAC	1317	Residential - Thru Street	53	Base Rehabilitation	\$114,613	33
EAST BISHOP STREET	BACK ST	NIANTIC RIVER RD	425	Residential - Thru Street	67	Mill & Overlay A/C	\$16,925	23
EAST BROOK DRIVE	TI-FANY AVE	CUL DE SAC	618	Residential - Dead End	53	Base Rehabilitation	\$36,948	33
EAST DRIVE	RIVERSIDE DR	OSWEGATCHIE RD	315	Residential - Thru Street	94	Do Nothing	\$0	0
EAST LAKE DRIVE	PILGRIM RD	CUL DE SAC	448	Residential - Dead End	56	Base Rehabilitation	\$29,016	31
EAST STREET	ROUTE 156	END	323	Residential - Dead End	42	Base Rehabilitation	\$14,483	42
EAST WHARF ROAD	NIANTIC RIVER RD	HIGH RIDGE RD	916	Residential - Thru Street	55	Base Rehabilitation	\$77,584	32
EAST WOOD STREET	FOG PLAIN RD	DONNA ST	469	Residential - Thru Street	63	Mill & Overlay A/C	\$18,677	25
EDGEWOOD AVENUE	NIANTIC RIVER RD	CIRCLE ST	505	Residential - Thru Street	89	Patch & Crackseal	\$2,346	89
EIGHTH AVENUE	NIANTIC RIVER RD	ROUTE 1	1115	Residential - Thru Street	99	Do Nothing	\$0	0
ELLEN WARD ROAD	NORTH RD	GLENVALE ST	1038	Residential - Thru Street	68	Mill & Overlay A/C	\$41,337	23
FAIRLAWN STREET	VAUXHALL ST EX #1	CHIPMAN RD	861	Residential - Dead End	99	Do Nothing	\$0	0
FARGO ROAD	ROUTE 85	END	1520	Residential - Dead End	100	Do Nothing	\$0	0
FARMSTEAD LANE	BEACON HILL DR	CUL DE SAC	796	Residential - Dead End	87	Patch & Crackseal	\$5,239	91
FAULKNER DRIVE	VAUXHALL ST EXT	OLD BARRY RD	1685	Residential - Thru Street	67	Mill & Overlay A/C	\$67,108	23
FIFTH AVENUE	NIANTIC RIVER RD	CENTER ST	1275	Residential - Thru Street	74	Preventative Maintenance	\$12,704	50
FIRST AVENUE	NIANTIC RIVER RD	HIGH ST	1352	Residential - Thru Street	53	Base Rehabilitation	\$80,833	33
FITZGERALD AVENUE	OLD NORWICH RD	ROUTE 32 (WEST)	1071	Residential - Thru Street	75	Preventative Maintenance	\$10,672	49
FITZGERALD AVENUE	ROUTE 32 (EAST)	CHARLES AV	249	Residential - Thru Street	59	Base Rehabilitation	\$14,887	30
FOG PLAIN ROAD	CLARK LA	ROUTE 1	6824	Major/Minor Collector	100	Do Nothing	\$0	0
FOOT COURT	TRUMBULL CT	CUL DE SAC	416	Residential - Dead End	71	Mill & Overlay A/C	\$23,469	22
FOREST STREET	GLENWOOD RD	RIDGEWOOD RD	1367	Residential - Thru Street	90	Patch & Crackseal	\$5,292	88
FOSTER ROAD	CROSS ROAD	SECOND DRIVEWAY	660	Rural	100	Do Nothing	\$0	0
FOURTH AVENUE	NIANTIC RIVER RD	HIGH ST	1512	Residential - Thru Street	40	Base Rehabilitation	\$33,899	11
FOURTH STREET	RIVER STREET	END	447	Residential - Thru Street	56	Base Rehabilitation	\$90,399	31
FULMORE DRIVE	NIANTIC RIVER RD	CUL DE SAC	1452	Residential - Dead End	67	Mill & Overlay A/C	\$17,801	23
GALLOW'S LANE	BLOOMINGDALE RD	TOWNLIN	2391	Residential - Thru Street	55	Base Rehabilitation	\$86,811	4
					57	Base Rehabilitation	\$154,865	15

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
GALLUP LANE	ROUTE 156	HOUSE #62 DRIVEWAY	3215	Residential - Thru Street	95	Do Nothing	\$0	0
GALLUP LANE	ROUTE #63 DRIVEWAY	MULLEN HILL RD	1284	Residential - Thru Street	85	Preventative Maintenance	\$14,927	43
GARDINERS WOOD ROAD	ROUTE 156	JORDAN COVE CIR	3625	Rural	52	Base Rehabilitation	\$247,745	38
GEORGE STREET	LARSON STREET	DEAD END	623	Residential - Dead End	86	Patch & Crackseal	\$2,894	92
GILEAD ROAD	ROUTE 85	LORENZO STREET	1139	Residential - Thru Street	79	Preventative Maintenance	\$11,349	47
GILEAD ROAD	LORENZO STREET	CUL DE SAC	2437	Residential - Dead End	87	Patch & Crackseal	\$7,548	91
GIOVANNI LANE	FOG PLAIN RD	PAVEMENT CHANGE	1086	Residential - Dead End	73	Patch & Crackseal	\$10,821	12
GIOVANNI LANE	PAVEMENT CHANGE	CUL DE SAC LOOP	624	Residential - Dead End	100	Do Nothing	\$0	0
GLENVALE STREET	FARLAWN ST	HILLCREST DR	601	Residential - Thru Street	72	Mill & Overlay A/C	\$23,934	22
GLENWOOD AVENUE	ROUTE 213	NEW LONDON CITY LINE	755	Residential - Thru Street	88	Patch & Crackseal	\$4,092	29
GLENWOOD ROAD	WOODLAND RD	SHORE DR	880	Residential - Thru Street	90	Patch & Crackseal	\$3,747	88
GOSHEN ROAD	SHORE RD	ROUTE 213	3053	Residential - Thru Street	55	Base Rehabilitation	\$212,954	29
GOUNDRY DRIVE	BRAUMAN RD	CUL DE SAC	802	Residential - Dead End	75	Preventative Maintenance	\$9,323	49
GRABNER DRIVE	VAUXHALL ST EXT #1	BEACON HILL RD	855	Residential - Thru Street	63	Mill & Overlay A/C	\$34,049	25
GRABNER DRIVE	BEACON HILL RD	END OF CUL DE SAC	1303	Residential - Dead End	70	Mill & Overlay A/C	\$60,539	22
GRAHAM STREET	EDGEWOOD AVE	BRILL AVE	1008	Residential - Thru Street	61	Mill & Overlay A/C	\$40,142	26
GRANITE COURT	RTE 156	CUL-DE-SAC	640	Residential - Dead End	67	Mill & Overlay A/C	\$25,487	23
GREEN HILLS ROAD	LATHROP RD(S)	LATHROP RD(N)	851	Residential - Thru Street	100	Do Nothing	\$0	0
GREENFIELD STREET	PENINSULAR AVE	RIDGEWOOD AVE	530	Residential - Thru Street	90	Patch & Crackseal	\$1,846	88
GREENTREE DRIVE	VAUXHALL ST EXT	CENTER OF POWER LINES	744	Residential - Thru Street	56	Base Rehabilitation	\$63,016	31
GREENTREE DRIVE	CENTER OF POWER LINES	ROGERS HILL RD	2063	Residential - Thru Street	86	Patch & Crackseal	\$13,578	92
GRISWOLD COURT	TRUMBULL RD	CUL DE SAC	644	Residential - Dead End	71	Mill & Overlay A/C	\$36,332	22
GUN SHOT ROAD	MILLSTONE RD #1	CUL DE SAC	867	Residential - Dead End	62	Mill & Overlay A/C	\$34,527	25
GURLEY ROAD	PARKWAY SOUTH	TOWNLINE	1913	Residential - Dead End	94	Do Nothing	\$0	0
HAMAST AVENUE	STROBERS RD	END	579	Residential - Dead End	75	Preventative Maintenance	\$7,211	49
HAMEL COURT	MINER AVE(N)	MINER AVE(S)	223	Residential - Thru Street	57	Base Rehabilitation	\$13,332	31
HANSSON STREET	MILLSTONE RD #2	END	409	Residential - Dead End	39	Base Rehabilitation	\$20,377	45
HARBOR VIEW AVENUE	CLIFTON ST	TOWN LINE	1027	Residential - Thru Street	85	Preventative Maintenance	\$10,233	1
HARDWICK ROAD	OLD NORWICH RD	ROUTE 32	661	Residential - Thru Street	80	Preventative Maintenance	\$6,586	46
HARVEY AVENUE #1	CUL DE SAC	CUL DE SAC	1316	Residential - Dead End	30	Base Rehabilitation	\$101,051	14
HARVEY AVENUE #2	LOIS AVE	END	248	Residential - Dead End	81	Preventative Maintenance	\$2,059	45
HAYES STREET	BEVERLY RD	MARLYN RD	318	Residential - Dead End	76	Preventative Maintenance	\$5,168	48
HEMPSTEAD DRIVE	ROUTE 32	CUL DE SAC	856	Residential - Dead End	47	Base Rehabilitation	\$55,443	37
HICKORY LANE	DATON RD #1	HOUSE #13	925	Residential - Thru Street	52	Base Rehabilitation	\$78,346	34
HICKORY LANE	HOUSE #13	HOUSE #39	1468	Residential - Thru Street	53	Base Rehabilitation	\$102,396	8
HICKORY LANE	HOUSE #39	VAUXHALL ST EX	1088	Residential - Thru Street	54	Base Rehabilitation	\$75,890	32
HIGH RIDGE ROAD	ROUTE 156	CUL DE SAC	1877	Residential - Dead End	52	Base Rehabilitation	\$158,980	34
HIGH STREET	FOURTH AVE	FIRST AVE	860	Residential - Thru Street	65	Mill & Overlay A/C	\$34,248	24
HIGHLAND DRIVE	MAPLE TER	ROUTE 156	754	Residential - Thru Street	99	Do Nothing	\$0	0
HIGHWAY POINT	ROUTE 156	END	550	Residential - Dead End	65	Mill & Overlay A/C	\$10,951	24
HILLCREST DRIVE	FAIRLAWN ST	GLENVALE ST	694	Residential - Thru Street	87	Patch & Crackseal	\$3,224	91
HILLTOP TERRACE	GALLUP LA	CUL DE SAC	737	Residential - Dead End	99	Do Nothing	\$0	0
HUNTINGTON COURT	TRUMBULL CT	CUL DE SAC	270	Residential - Dead End	71	Mill & Overlay A/C	\$15,232	22
HUNTS BROOK ROAD	VAUXHALL ST	TOWNLINE	6206	Rural	73	Preventative Maintenance	\$51,533	50
INA BOULEVARD	SPLITHEAD RD	CUL-DE-SAC	645	Residential - Dead End	56	Base Rehabilitation	\$59,451	31

Name	From Segment	To Segment	Length (ft)	Pave ment Class	PCI	Repair Alternative	Cost	Benefit Value
INDIAN VALLEY DRIVE	OSWEGATCHIE RD	MANATUCK DR	860	Residential - Thru Street	94	Do Nothing	\$0	0
INDUSTRIAL DRIVE	ROUTE 85	CUL DE SAC	2329	Residential - Dead End	44	Base Rehabilitation	\$209,010	40
JAMES AVENUE	FITZGERALD AVE	DEAD END	801	Residential - Dead End	56	Base Rehabilitation	\$47,890	31
JAMES STREET	WILSON AVE #1	DEAD END	188	Residential - Dead End	94	Do Nothing	\$0	0
JEFFERSON AVENUE	PHILLIPS ST	BROAD ST EX	316	Residential - Thru Street	49	Base Rehabilitation	\$18,892	90
JEFFERSON AVENUE	BROAD ST EX	TOWN LINE	278	Residential - Thru Street	71	Mill & Overlay A/C	\$16,145	5
JODRY STREET	FAULKNER DR	OLD BARRY ROAD	978	Residential - Thru Street	74	Preventative Maintenance	\$9,745	50
JOHN AVENUE	FITZGERALD AVE	MAY AVE	542	Residential - Thru Street	60	Base Rehabilitation	\$32,404	29
JOHNSON COURT	GALLUP LA	CUL DE SAC	786	Residential - Dead End	99	Do Nothing	\$0	0
JONATHAN LAW COURT	TRUMBULL CT	CUL DE SAC	265	Residential - Dead End	71	Mill & Overlay A/C	\$14,950	22
JORDAN COVE CIRCLE	JORDAN COVE RD(W)	JORDAN COVE RD(E)	1266	Residential - Thru Street	78	Preventative Maintenance	\$12,615	47
JORDAN COVE ROAD	GARDINERS WOOD RD	663' W OF SHORE RD	1780	Residential - Thru Street	77	Preventative Maintenance	\$17,737	31
JORDAN COVE ROAD	663' W OF SHORE RD	SHORE RD	663	Residential - Thru Street	100	Do Nothing	\$0	0
JORDAN TERRACE	ROUTE 213	JORDAN TER	1285	Residential - Dead End	63	Mill & Overlay A/C	\$51,173	25
KEENEY DRIVE	OSWEGATCHIE RD	CUL DE SAC	662	Residential - Dead End	61	Mill & Overlay A/C	\$28,560	26
KEENEY COURT	OSWEGATCHIE ROAD	HAMMERHEAD	229	Residential - Dead End	69	Mill & Overlay A/C	\$7,599	23
KENYON ROAD	DAYTON RD #1	ANN ROAD	1535	Major/Minor Collector	83	Preventative Maintenance	\$17,844	29
KENYON ROAD	ANN ROAD	VAUXHALL ST EXT #1	1077	Major/Minor Collector	94	Do Nothing	\$0	0
KESTREL LANE	KINGFISHER WAY	WOODLAWN AVE	261	Residential - Thru Street	65	Mill & Overlay A/C	\$12,126	24
KINGFISHER WAY	MACKENZIE RD	KESTREL LA	1514	Residential - Thru Street	59	Base Rehabilitation	\$105,605	30
KONOMOC AVENUE	OSWEGATCHIE RD	SHAWMADASSE RD #1	1449	Residential - Thru Street	89	Patch & Crackseal	\$5,610	89
LADLEY ROAD	OLD NORWICH RD	TURNROUND	757	Residential - Dead End	57	Base Rehabilitation	\$45,259	31
LAKES POND ROAD	ROUTE 85	685' WEST OF ROUTE 85	683	Rural	62	Mill & Overlay A/C	\$27,199	25
LAKES POND ROAD	685' WEST OF ROUTE 85	1555' WEST OF ROUTE 85	868	Rural	67	Mill & Overlay A/C	\$36,007	23
LAKES POND ROAD	1555' WEST OF ROUTE 85	BUTLER TOWN RD	1279	Rural	53	Base Rehabilitation	\$70,096	33
LAMPHERE ROAD	SHORE RD	ROUTE 213	3458	Residential - Thru Street	95	Do Nothing	\$0	0
LANCASHIRE COURT	YORKSHIRE DR	CUL DE SAC	353	Residential - Dead End	63	Mill & Overlay A/C	\$19,915	25
LANDING STREET	BEACH ST #1	NEW SHORE RD	470	Residential - Thru Street	57	Base Rehabilitation	\$14,050	31
LANYARD LANE	MILLSTONE RD #1	WINDWARD WAY	807	Residential - Thru Street	66	Mill & Overlay A/C	\$32,138	24
LARK STREET	ROBIN ST	MACKENZIE RD	498	Residential - Thru Street	52	Base Rehabilitation	\$29,774	34
LARSON STREET	MILLSTONE RD #2	END	311	Residential - Dead End	58	Base Rehabilitation	\$18,593	30
LATHROP ROAD	ROUTE 32	TOWN LINE	2221	Residential - Thru Street	90	Patch & Crackseal	\$10,318	220
LATIMER COURT	QUINLEY WAY	CUL DE SAC	439	Residential - Dead End	92	Patch & Crackseal	\$2,889	86
LAUREL CREST DRIVE	ROUTE 213	CUL DE SAC	1396	Residential - Dead End	64	Mill & Overlay A/C	\$78,758	24
LAUREL GLEN ROAD	OLD NORWICH RD	CUL DE SAC	574	Residential - Dead End	57	Base Rehabilitation	\$34,318	31
LAUREL STREET	R DEGWOOD AVE	SHORE DR	664	Residential - Thru Street	90	Patch & Crackseal	\$2,313	88
LEARY DRIVE	QUARRY RD(W)	QUARRY RD(E)	1108	Residential - Thru Street	52	Base Rehabilitation	\$66,244	34
LEE ROAD	ANITA AVE	LINDA AVE	1079	Residential - Thru Street	62	Mill & Overlay A/C	\$50,131	25
LEONARD ROAD	NEW SHORE RD	121' W OF NEW SHORE RD	121	Residential - Dead End	65	Mill & Overlay A/C	\$2,011	24
LEONARD ROAD	121' W OF NEW SHORE RD	53' W OF END OF LOOP	104	Residential - Dead End	100	Do Nothing	\$0	0
LEONARD ROAD	53' W OF END OF LOOP	CUL DE SAC LOOP	53	Residential - Dead End	49	Base Rehabilitation	\$1,315	36
LINCOLN ROAD	CUL DE SAC(W)	CUL DE SAC(E)	1389	Residential - Dead End	69	Mill & Overlay A/C	\$78,363	23
LINDA AVENUE	ANITA AVE	GOSHEN RD	1871	Residential - Thru Street	56	Base Rehabilitation	\$130,506	31
LINDROS LANE	SHORE ROAD	END	988	Residential - Dead End	87	Patch & Crackseal	\$3,825	22
LLOYD ROAD	NILES HILL RD #1	ROUTE 213	2150	Residential - Thru Street	63	Mill & Overlay A/C	\$64,216	25

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
LOCUST COURT	MIANTIC RIVER RD	CUL DE SAC	1850	Residential - Dead End	65	Mill & Overlay A/C	\$73,674	24
LOGGER HILL ROAD	ROUTE 156(W)	ROUTE 156(E)	1250	Residential - Thru Street	43	Base Rehabilitation	\$62,278	41
LOIS AVENUE	MARJORIE ST	END	567	Residential - Dead End	85	Preventative Maintenance	\$5,649	43
LONGVIEW AVENUE	GALLUP LA	CUL DE SAC	1048	Residential - Dead End	99	Do Nothing	\$0	0
LONGVIEW STREET	N.L. TOWNLINE	SOUNDVIEW DR	887	Residential - Thru Street	57	Base Rehabilitation	\$70,708	31
LORENZO STREET	ROUTE 85	GILDED ROAD	332	Residential - Thru Street	89	Patch & Crackseal	\$1,542	89
LOUISE STREET	ROUTE 1	NOHMAN ST	2089	Residential - Thru Street	60	Base Rehabilitation	\$124,896	29
LOWER BARTLETT ROAD	LATHROP RD	DEAD END	2287	Residential - Dead End	100	Do Nothing	\$0	0
MACKENZIE ROAD	QUAIL ST	FOG PLAIN RD	2183	Residential - Thru Street	38	Base Rehabilitation	\$130,516	46
MADISON STREET	LAMPHERE RD	LINCOLN RD	386	Residential - Thru Street	64	Mill & Overlay A/C	\$21,777	24
MAGINNIS PARKWAY	PRINDIVILLE AVE	NILES HILL RD #1	749	Residential - Thru Street	88	Patch & Crackseal	\$3,479	90
MAGO BOULEVARD	BISHOP ST	WOOD ST	225	Residential - Thru Street	64	Mill & Overlay A/C	\$8,960	24
MAGONK POINT ROAD	SHORE RD	END	1283	Residential - Dead End	74	Preventative Maintenance	\$8,523	50
MALLARD LANE	SCENIC VIEW DR	ROUTE 1	1043	Residential - Thru Street	89	Patch & Crackseal	\$6,865	89
MAMACOCKE ROAD	RTE 32	DEAD END	638	Residential - Dead End	56	Base Rehabilitation	\$38,144	31
MANATUCK DRIVE	OSWEGATCHIE RD	CUL DE SAC	633	Residential - Dead End	94	Do Nothing	\$0	0
MAPLE AVENUE	ROUTE 32	SCOTCH CAP RD	432	Residential - Dead End	79	Preventative Maintenance	\$4,304	47
MAPLE COURT	FAIRLAWN ST	DEAD END	992	Residential - Dead End	78	Preventative Maintenance	\$9,884	47
MAPLE ROAD	ROUTE 32	HOUSE #10	423	Residential - Thru Street	93	Do Nothing	\$0	0
MAPLE ROAD	HOUSE #10	MARGUY ST	734	Residential - Thru Street	73	Preventative Maintenance	\$6,097	50
MAPLE TERRACE	GALLUP LA	TOWNLINE	670	Residential - Thru Street	75	Preventative Maintenance	\$5,561	49
MARGUY STREET	MAPLE RD	CUL DE SAC	883	Residential - Thru Street	99	Do Nothing	\$0	0
MARILYN ROAD	SPRINGDALE RD	CROSS RD	924	Residential - Dead End	55	Base Rehabilitation	\$78,262	32
MARJORIE STREET	ROUTE 85	LOIS AVE	1260	Residential - Thru Street	59	Base Rehabilitation	\$75,332	30
MARLIN DRIVE	ROUTE 156	HOUSE #3	741	Residential - Dead End	81	Preventative Maintenance	\$2,531	45
MARY BUTLER DRIVE	BRAMAN RD	CUL DE SAC	995	Residential - Dead End	88	Patch & Crackseal	\$3,442	22
MARY STREET	GILEAD RD	TOWNLINE	1894	Residential - Dead End	48	Base Rehabilitation	\$59,488	37
MAY AVENUE	JAMES AVE	ROUTE 32 (WEST)	250	Residential - Thru Street	55	Base Rehabilitation	\$113,238	32
MAY AVENUE	ROUTE 32 (EAST)	END OF ROAD (RIVER)	597	Residential - Thru Street	66	Mill & Overlay A/C	\$9,956	24
MAYFAIR DRIVE	DIMMOCK RD	CUL DE SAC	747	Residential - Dead End	56	Base Rehabilitation	\$35,693	31
MEADOW DRIVE	VAUXHALL ST EXT	MEADOW DR	2270	Residential - Thru Street	61	Mill & Overlay A/C	\$29,748	26
MELANIE DRIVE	CROSS RD	CUL DE SAC	649	Residential - Dead End	69	Mill & Overlay A/C	\$128,067	57
MEMORY LANE	SPLITHEAD ROAD	CUL DE SAC	808	Residential - Dead End	57	Base Rehabilitation	\$38,802	31
MIDDLE STREET	FIRST AVE	FOURTH AVE	882	Residential - Thru Street	66	Mill & Overlay A/C	\$32,177	6
MILL LANE	ROUTE 156	END	443	Residential - Dead End	64	Mill & Overlay A/C	\$35,124	24
MILLER AVENUE	RICHARDS GROVE RD	PORTER ST	825	Residential - Thru Street	61	Mill & Overlay A/C	\$17,642	26
MILLERS POND ROAD	BLOOMINGDALE RD	DEAD END	1721	Residential - Thru Street	73	Preventative Maintenance	\$8,320	50
MILLSTONE ROAD	GUN SHOT RD	GARDINERS WOOD RD	1659	Rural	89	Patch & Crackseal	\$5,330	89
MILLSTONE ROAD WEST	CUL DE SAC	RTE 156	2358	Residential - Thru Street	60	Base Rehabilitation	\$99,187	29
MILTON ROAD	HOUSE #6	HUNBAR ROAD	418	Residential - Dead End	57	Base Rehabilitation	\$140,979	31
MILTON ROAD	HOUSE #6	HUNBAR ROAD	2744	Residential - Thru Street	51	Base Rehabilitation	\$20,826	34
MINER AVENUE	ROUTE 1	FOG PLAIN RD	2400	Residential - Thru Street	71	Mill & Overlay A/C	\$74,376	22
MINER COURT	MINER AV	CUL DE SAC	497	Residential - Thru Street	78	Preventative Maintenance	\$23,915	30
MINER LANE	ROUTE 1	VET HOSPITAL	679	Residential - Dead End	58	Mill & Overlay A/C	\$16,493	5
				Residential - Dead End	65	Mill & Overlay A/C	\$29,293	10

Appendix A - Sorted Alphabetically

Name	From Segment	To Segment	Length (ft)	Pave ment Class	PCI	Repair Alternative	Cost	Benefit Value
MINER LANE	VET HOSPITAL	540' N OF RR TRACKS	1115	Residential - Dead End	78	Preventative Maintenance	\$12,082	11
MINER LANE	540' N OF RR TRACKS	RR TRACKS	542	Residential - Dead End	52	Base Rehabilitation	\$35,131	8
MINER LANE	RA TRACKS	CUL-DE-SAC	3040	Residential - Dead End	87	Patch & Crackseal	\$14,124	91
MISS VANS COURT	NIANTIC RIVER RD	CUL DE SAC	749	Residential - Dead End	75	Preventative Maintenance	\$10,573	49
MOHEGAN AVENUE	FITZGERALD AVE	MAY AVE	520	Residential - Thru Street	63	Mill & Overlay A/C	\$20,708	25
MONROE STREET	OLIVE ST	CLARK LANE	498	Residential - Thru Street	63	Mill & Overlay A/C	\$19,832	25
MONROE STREET	CLARK LANE	END	1102	Residential - Dead End	68	Mill & Overlay A/C	\$43,886	23
MULLEN HILL ROAD	SPITHEAD RD	STONEHEIGHTS DR	2475	Residential - Thru Street	95	Do Nothing	\$0	0
MULLEN HILL ROAD	STONEHEIGHTS DR	ELLEN WARD RD	2313	Residential - Thru Street	100	Do Nothing	\$0	0
MURRAY COURT	CLIFTON ST	END	174	Residential - Dead End	94	Do Nothing	\$0	0
MYROCK AVENUE	WILLETTTS AVE	END	1457	Residential - Dead End	98	Do Nothing	\$0	0
NEW SHORE ROAD	DOCK RD	NELSON WHITE RESIDENCE	2217	Residential - Thru Street	53	Base Rehabilitation	\$110,457	33
NEW SHORE ROAD	NELSON WHITE RESIDENCE	SHORE RD	967	Residential - Thru Street	87	Patch & Crackseal	\$3,369	91
NIANTIC RIVER ROAD	ROUTE # 1	HOUSE #194	4409	Major/Minor Collector	55	Base Rehabilitation	\$307,538	65
NIANTIC RIVER ROAD	HOUSE #194	OLD NIANTIC RIVER RD (S)	1298	Major/Minor Collector	88	Patch & Crackseal	\$7,035	225
NIANTIC RIVER ROAD	EIGHTH AVENUE	FIRST AVENUE	1873	Major/Minor Collector	75	Preventative Maintenance	\$18,663	124
NIANTIC RIVER ROAD	OLD NIANTIC RIVER RD (S)	EIGHTH AVENUE	2105	Major/Minor Collector	71	Mill & Overlay A/C	\$83,831	56
NIANTIC RIVER ROAD	FIRST AVENUE	EAST WOOD	670	Major/Minor Collector	79	Preventative Maintenance	\$6,676	117
NIANTIC RIVER ROAD	EAST WOOD	ROUTE # 156	2131	Major/Minor Collector	76	Preventative Maintenance	\$21,832	80
NICHOLS LANE	NEW SHORE RD	SHORE RD	1059	Residential - Thru Street	55	Base Rehabilitation	\$52,762	32
NILES HILL RD #1	BRAMAN RD	HOUSE # 169	487	Residential - Thru Street	100	Do Nothing	\$0	0
NILES HILL RD #1	HOUSE # 169	EAST NECK ROAD	2468	Residential - Thru Street	75	Preventative Maintenance	\$24,552	12
NILES HILL RD #1	EAST NECK ROAD	NEW LONDON CITY LINE	404	Major/Minor Collector	87	Patch & Crackseal	\$1,877	228
NILES HILL RD #2	DIMMOCK RD	NILES HILL RD #1	352	Residential - Thru Street	55	Base Rehabilitation	\$14,907	32
NINTH AVENUE	NIANTIC RIVER RD	CIRCLE ST	515	Residential - Thru Street	89	Patch & Crackseal	\$2,392	89
NORMAN STREET	SUMNER ST	150' E OF VIVIAN ST	546	Residential - Thru Street	78	Preventative Maintenance	\$5,439	28
NORMAN STREET	150' E OF VIVIAN ST	CLARK LA	890	Residential - Thru Street	54	Base Rehabilitation	\$53,217	19
NORTH PHILLIPS STREET	END	TOWNLINE	496	Residential - Thru Street	78	Preventative Maintenance	\$4,942	47
NORTH ROAD	ELLEN WARD RD	ROUTE 156	3014	Residential - Thru Street	99	Do Nothing	\$0	0
NORTHWOOD ROAD	OLD NORWICH RD	DEAD END	712	Residential - Dead End	60	Base Rehabilitation	\$42,568	29
OAK ROAD	BETTY ST	ALICE ST	810	Residential - Thru Street	61	Mill & Overlay A/C	\$37,633	26
OIL MILL ROAD	BUTLERTOWN RD	HOUSE #82	6129	Residential - Thru Street	61	Mill & Overlay A/C	\$203,401	24
OIL MILL ROAD	HOUSE #82	ROUTE 1	2743	Residential - Thru Street	57	Base Rehabilitation	\$136,664	31
OIL MILL ROAD	HOUSE #27	ROUTE 1	1279	Residential - Thru Street	52	Base Rehabilitation	\$76,468	23
OLD BARRY ROAD	VAUXHALL ST EXT #1	CUL DE SAC	1461	Residential - Dead End	70	Mill & Overlay A/C	\$58,182	22
OLD COLCHESTER ROAD	OLD NORWICH RD	HOUSE #106	4575	Major/Minor Collector	75	Preventative Maintenance	\$60,784	58
OLD COLCHESTER ROAD	HOUSE #106	CENTER LINE 395 BRIDGE	4114	Major/Minor Collector	89	Patch & Crackseal	\$22,299	89
OLD COLCHESTER ROAD	CENTER OF 395 BRIDGE	TOWNLINE	1148	Major/Minor Collector	86	Patch & Crackseal	\$5,778	83
OLD GREAT NECK ROAD	JORDAN TER	END	285	Residential - Dead End	64	Mill & Overlay A/C	\$11,349	24
OLD MILL ROAD	OLD NORWICH RD	Bridge	1363	Residential - Thru Street	59	Base Rehabilitation	\$81,490	30
OLD MILL ROAD	BRIDGE	257' E OF BLOOMINGDALE RD	286	Residential - Thru Street	89	Patch & Crackseal	\$1,219	10
OLD NIANTIC RIVER ROAD	257' E OF BLOOMINGDALE RD	BLOOMINGDALE RD	258	Residential - Thru Street	47	Base Rehabilitation	\$14,117	4
OLD NIANTIC RIVER ROAD	NIANTIC RIVER RD (NO	NIANTIC RIVER RD(S)	718	Residential - Thru Street	89	Patch & Crackseal	\$2,918	89
OLD NORWICH ROAD	TOWN LINE	SEMKOW DR	2161	Major/Minor Collector	95	Do Nothing	\$0	0
OLD NORWICH ROAD	SEMKOW DR	RICHARDS GROVE RD	3617	Major/Minor Collector	80	Preventative Maintenance	\$37,543	46

Name	Frm Segment	To Segment	Length (ft)	Pave ment Class	PCI	Repair Alternative	Cost	Benefit Value
OLD NORWICH ROAD	RICHARDS GROVE RD	HUNTS BROOK	438	Major/Minor - Collector	93	Do Nothing	\$0	0
OLD NORWICH ROAD	HUNTS BROOK	CINDERELLA LANE	4854	Major/Minor - Collector	78	Preventative Maintenance	\$64,491	112
OLD NORWICH ROAD	CINDERELLA LA	ROXWOOD RD	1006	Major/Minor - Collector	89	Patch & Crackseal	\$6,232	11
OLD NORWICH ROAD	ROXWOOD RD	BURLAKE RD	490	Residential - Thru Street	95	Do Nothing	\$0	0
OLIVE STREET	NORMAN ST	ROUTE 1	1366	Residential - Thru Street	61	Mill & Overlay A/C	\$76,294	26
ORIENT STREET	VIVIAN ST	OLIVE ST	232	Residential - Thru Street	65	Mill & Overlay A/C	\$9,239	24
OSWEGATCHIE ROAD	ROUTE 1	RIVERSIDE DRIVE	4715	Residential - Thru Street	78	Preventative Maintenance	\$48,940	31
OSWEGATCHIE ROAD	RIVERSIDE DRIVE	WILCOX COURT	4846	Residential - Thru Street	94	Do Nothing	\$0	0
OSWEGATCHIE ROAD	WILCOX COURT	NANTIC RIVER RD	310	Residential - Thru Street	78	Preventative Maintenance	\$2,831	17
OVERLOOK DRIVE	GALLUP LA	CUL DE SAC	1149	Residential - Dead End	85	Preventative Maintenance	\$16,219	43
PADGETT PLACE	HICKORY LANE	CUL DE SAC	327	Residential - Dead End	61	Mill & Overlay A/C	\$13,022	6
PALMER ROAD	GOSHEN ST	SHORE RD	1034	Residential - Dead End	86	Patch & Crackseal	\$5,604	20
PALMER ROAD	SHORE RD	BEACH ST #1	508	Residential - Thru Street	71	Mill & Overlay A/C	\$20,230	22
PAMELA WAY	ROUTE 1	CUL DE SAC	974	Residential - Dead End	69	Mill & Overlay A/C	\$54,950	23
PARK DRIVE	KONOMOC AVE(N)	KONOMOC AVE(S)	1703	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY	SHORE DR	PENINSULAR AVE	309	Residential - Thru Street	90	Patch & Crackseal	\$1,316	88
PARKWAY NORTH	CUL DE SAC	832' W OF CUL DE SAC	834	Residential - Thru Street	70	Mill & Overlay A/C	\$44,284	22
PARKWAY NORTH	832' W OF CUL DE SAC	360' W OF 195 OFF RAMP	1451	Residential - Thru Street	73	Preventative Maintenance	\$18,073	12
PARKWAY NORTH	360' W OF 195 OFF RAMP	1090' W OF 195 OFF RAMP	732	Residential - Thru Street	79	Preventative Maintenance	\$12,156	117
PARKWAY NORTH	1090' W OF 195 OFF RAMP	1421' W OF CROSS RD	1445	Residential - Thru Street	74	Preventative Maintenance	\$5,598	50
PARKWAY NORTH	854' W OF CROSS RD	OIL MILL RD	898	Residential - Thru Street	89	Patch & Crackseal	\$5,167	223
PARKWAY NORTH	1421' W OF CROSS RD	525' W OF CROSS RD	5551	Residential - Thru Street	88	Patch & Crackseal	\$36,865	90
PARKWAY NORTH	650' E OF CROSS RD	2626' E OF GURLEY RD	1178	Residential - Thru Street	77	Preventative Maintenance	\$33,259	120
PARKWAY SOUTH	GURLEY RD	2626' E OF GURLEY RD	2626	Residential - Thru Street	78	Preventative Maintenance	\$33,979	119
PARKWAY SOUTH	2626' E OF GURLEY RD	700' E OF CROSS RD	2774	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	700' E OF CROSS RD	CROSS RD	700	Residential - Thru Street	79	Preventative Maintenance	\$16,856	117
PARKWAY SOUTH	CROSS ROAD	630' EAST OF CROSS ROAD	630	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	630' EAST OF CROSS ROAD	BEECHWOOD DR	1600	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	BEECHWOOD DR	END [NEAR OLD AIRPORT]	2771	Residential - Thru Street	67	Mill & Overlay A/C	\$147,110	23
PAULA LANE	INA BLVD	CUL DE SAC	2419	Residential - Dead End	52	Base Rehabilitation	\$204,887	5
PENINSULAR AVENUE	RIDGEWOOD AVE	TOWNLINE	836	Residential - Thru Street	90	Patch & Crackseal	\$3,236	88
PENNICOTT ROAD	OLD COLCHESTER RD	CUL DE SAC	737	Residential - Dead End	63	Mill & Overlay A/C	\$29,350	25
PEPPERBOX ROAD	BRAMAN RD	HOUSE #28	5124	Residential - Dead End	100	Do Nothing	\$0	0
PEPPERIDGE DRIVE	UPPER BARTLETT RD(W)	UPPER BARTLETT RD(E)	1151	Residential - Thru Street	89	Patch & Crackseal	\$4,902	89
PERRY AVENUE	ANITA AVE	GOSHEN RD	1559	Residential - Thru Street	65	Mill & Overlay A/C	\$72,433	24
PHILLIPS STREET	ROUTE 85	TOWNLINE	887	Residential - Thru Street	68	Mill & Overlay A/C	\$32,380	23
PILGRIM ROAD	BLOOMINGDALE RD	CHAPMAN AV	1192	Major/Minor Collector	100	Do Nothing	\$0	0
PILGRIM ROAD	CHAPMAN AV	DEAD END	1206	Residential - Dead End	79	Preventative Maintenance	\$6,010	47
PINE STREET	ROUTE 1	CUL DE SAC	1371	Residential - Dead End	68	Mill & Overlay A/C	\$54,598	23
PLANT DRIVE	PARK DR	OSWEGATCHIE RD	705	Residential - Thru Street	94	Do Nothing	\$0	0
POINT COMFORT	OSWEGATCHIE RD	END	430	Residential - Dead End	89	Patch & Crackseal	\$1,331	89
POND EDGE DRIVE	TWIN LAKES DR (N)	TWIN LAKES DR (S)	1857	Residential - Thru Street	64	Mill & Overlay A/C	\$104,767	24
PORTER STREET	OLD NORWICH RD	RICHARDS GROVE RD	1280	Residential - Thru Street	57	Base Rehabilitation	\$76,528	31
PRINDIVILLE AVENUE	ARTHUR ST	NILES HILL RD #1	716	Residential - Thru Street	87	Patch & Crackseal	\$3,603	91
QUAL STREET	ROBIN ST	MACKENZIE RD	413	Residential - Thru Street	60	Base Rehabilitation	\$24,692	29

Appendix A - Sorted Alphabetic

Name	From Segment	To Segment	Length (ft.)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
QUAKER LANE	BLOOMINGDALE RD	OLD NORWICH RD	1002	Residential - Thru Street	77	Preventative Maintenance	\$9,984	48
QUARRY ROAD	SHORE RD	GREAT NECK ROAD	3130	Residential - Thru Street	54	Base Rehabilitation	\$218,324	8
QUINLEY WAY	GREENTREE DR	CUL DE SAC	2315	Residential - Dead End	83	Preventative Maintenance	\$35,503	44
RACE ROCK ROAD	WINNWARD WAY	CUL DE SAC	1016	Residential - Dead End	65	Mill & Overlay A/C	\$40,461	24
RAINBOW COURT	WILTON ROAD	CUL DE SAC	779	Residential - Dead End	84	Preventative Maintenance	\$7,762	11
RAYMOND LANE	INDIAN VALLEY RD	CUL DE SAC	300	Residential - Dead End	94	Do Nothing	\$0	0
RED CEDAR AVENUE	ROUTE 32	TOWNLINE	712	Residential - Thru Street	55	Base Rehabilitation	\$39,021	32
REED AVENUE	VALLEY ST #1	END	161	Residential - Dead End	79	Preventative Maintenance	\$1,336	47
REYNOLDS LANE	ROUTE 1	END	672	Residential - Dead End	47	Base Rehabilitation	\$20,088	37
RICHARDS GROVE ROAD	OLD NORWICH RD	ROUTE 32 (WEST)	1218	Residential - Thru Street	87	Patch & Crackseal	\$5,659	0
RICHARDS GROVE ROAD	ROUTE 32 (EAST)	END OF ROAD (RIVER)	1034	Residential - Dead End	93	Do Nothing	\$0	0
RIDGEWOOD AVENUE	ROUTE 213	GREENFIELD ST	2898	Residential - Thru Street	95	Do Nothing	\$0	0
RIVER STREET	EAST END	MAGO POINT PARK	1026	Residential - Dead End	52	Base Rehabilitation	\$71,565	34
RIVERSIDE DRIVE	OSWEGATCHIE RD(N)	OSWEGATCHIE RD(S)	1945	Residential - Thru Street	89	Patch & Crackseal	\$6,024	89
RIVERVIEW PLACE	RICHARDS GROVE	DEAD END	585	Residential - Dead End	76	Preventative Maintenance	\$5,829	48
ROBERTS COURT	SEMKOW DR	CUL DE SAC	326	Residential - Dead End	57	Base Rehabilitation	\$25,987	31
ROBIN HILL ROAD	LINCOLN RD	CUL DE SAC	1078	Residential - Dead End	74	Preventative Maintenance	\$15,217	50
ROBIN STREET	FOG PLAIN RD	MACKENZIE RD	745	Residential - Thru Street	52	Base Rehabilitation	\$44,541	34
ROCK RIDGE ROAD	CROSS RD	CUL DE SAC	1463	Residential - Dead End	53	Base Rehabilitation	\$87,457	73
ROCKWOOD DRIVE	FOG PLAIN RD(W)	FOG PLAIN RD(E)	2129	Residential - Thru Street	59	Base Rehabilitation	\$127,288	51
ROGERS HILL ROAD	GREENTREE DR	CUL DE SAC	2384	Residential - Dead End	76	Preventative Maintenance	\$33,653	48
ROSELEAH DRIVE	VAUXHALL ST EXT #1	CUL DE SAC	1334	Residential - Dead End	63	Mill & Overlay A/C	\$92,558	25
ROSEMARY LANE	OLD NORWICH RD	ROUTE 32	935	Residential - Thru Street	73	Preventative Maintenance	\$9,316	50
ROXWOOD ROAD	NORWICH RD	CUL DE SAC	736	Residential - Dead End	62	Mill & Overlay A/C	\$29,310	25
SANDY HOLLOW DRIVE	FOG PLAIN RD	CUL DE SAC	1462	Residential - Dead End	59	Base Rehabilitation	\$123,830	30
SAVI AVENUE	TIFFANY AVE(N)	TIFFANY AVE(S)	1623	Residential - Thru Street	51	Base Rehabilitation	\$97,035	34
SCENIC VIEW DRIVE	ROUTE 1	CUL DE SAC	1226	Residential - Dead End	89	Patch & Crackseal	\$8,069	89
SCHOOL HOUSE LANE	OLD NORWICH RD	END	291	Residential - Dead End	77	Preventative Maintenance	\$1,933	48
SCOTCH CAP ROAD	OLD NORWICH RD	ROUTE 32	1499	Residential - Thru Street	76	Preventative Maintenance	\$19,915	7
SCOTCH CAP ROAD	ROUTE 32	HOUSE #55	995	Residential - Thru Street	75	Preventative Maintenance	\$11,567	4
SCOTCH CAP ROAD	HOUSE #55	DEAD END	1033	Residential - Dead End	83	Preventative Maintenance	\$12,009	44
SEA MEADOW LANE	THE STRAND	HAMMERHEAD	445	Residential - Dead End	78	Preventative Maintenance	\$3,325	11
SEABREEZE DRIVE	NILES HILL RD #1 (W)	NILES HILL RD #1 (E)	2390	Residential - Thru Street	67	Mill & Overlay A/C	\$134,837	23
SECOND AVENUE	NANTIC RIVER RD	MIDDLE ST	709	Residential - Thru Street	64	Mill & Overlay A/C	\$28,235	24
SECOND STREET NO. 2	RIVER STREET	AVENUE B	221	Residential - Thru Street	81	Preventative Maintenance	\$1,835	45
SEMKOW DRIVE	OLD NORWICH RD	ROUTE 32	825	Residential - Thru Street	61	Mill & Overlay A/C	\$43,806	26
SEVENTH AVENUE	NANTIC RIVER RD	CENTER ST	984	Residential - Thru Street	79	Preventative Maintenance	\$9,805	47
SEWOUR LANE	TRUMBULL RD	CROSS DR	440	Residential - Dead End	69	Mill & Overlay A/C	\$24,823	23
SHAWANDASSEE ROAD	KONOMIC AVE	OSWEGATCHIE RD	2918	Residential - Thru Street	94	Do Nothing	\$0	0
SHAWANDASSEE ROAD	OSWEGATCHIE RD	END	619	Residential - Dead End	99	Do Nothing	\$0	0
SHORE DRIVE	RIDGEWOOD AVE	GLENWOOD RD	1511	Residential - Thru Street	90	Patch & Crackseal	\$6,435	88
SHORE ROAD	LAMPHERE RD	JORDAN COVE RD	1665	Residential - Thru Street	95	Do Nothing	\$0	0
SHORE ROAD	JORDAN COVE RD	DIVISION ST. SOUTH SIDE	2447	Residential - Thru Street	72	Mill & Overlay A/C	\$97,429	13
SHORE ROAD	DIVISION ST. SOUTH SIDE	PALMER RD (EAST)	1981	Residential - Thru Street	54	Base Rehabilitation	\$118,442	4
SHORE ROAD	PALMER RD (EAST)	QUARRY RD	767	Residential - Thru Street	62	Mill & Overlay A/C	\$30,545	25

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
SHORE ROAD	QUARRY RD	NEW SHORE RD	1126	Residential - Thru Street	54	Base Rehabilitation	\$67,321	32
SHORE ROAD	NEW SHORE RD	MAGONK POINT RD	1738	Residential - Thru Street	88	Patch & Crackseal	\$7,738	15
SHORE ROAD	WOODSFA PL	ROUTE 213	2556	Residential - Thru Street	52	Base Rehabilitation	\$152,810	6
SILVA LANE	VAUXHALL STREET	END	1096	Residential - Dead End	92	Patch & Crackseal	\$4,243	86
SIXTH AVENUE #1	NIANTIC RIVER RD	CENTER ST	990	Residential - Thru Street	79	Preventative Maintenance	\$9,864	47
SIXTH AVENUE #2	PHILLIPS ST	TOWNLINE	490	Residential - Thru Street	61	Mill & Overlay A/C	\$19,513	26
SNOWDEN STREET	TREMONT ST	CLIFTON ST	468	Residential - Thru Street	85	Preventative Maintenance	\$4,663	43
SOLDER DRIVE	ROSELEAH DR	ANN RD	1942	Residential - Thru Street	74	Preventative Maintenance	\$24,220	50
SOUND VIEW DRIVE	WILLETTS AV	LONDVIEW ST	578	Residential - Thru Street	52	Base Rehabilitation	\$34,557	34
SOUTH BARTLETT ROAD	UPPER BARTLETT RD	DEAD END	1008	Residential - Dead End	89	Patch & Crackseal	\$3,902	89
SPINNAKER ROAD	GOSHEN RD	CUL DE SAC	829	Residential - Dead End	54	Base Rehabilitation	\$49,564	32
SPITHEAD ROAD	ROUTE 1	MULLEN HILL RD	2075	Major/Mfr or Collector	88	Patch & Crackseal	\$9,640	194
SPITHEAD ROAD	MULLEN HILL RD	HOUSE #30	5483	Major/Mfr or Collector	93	Do Nothing	\$0	0
SPITHEAD ROAD	HOUSE #30	ROUTE 136	1795	Major/Mfr or Collector	84	Preventative Maintenance	\$17,886	61
SPRINGDALE ROAD	DEAD END	MARLYN RD	511	Residential - Dead End	74	Preventative Maintenance	\$5,091	50
STANTON STREET	OSWEGATCHIE ROAD(N)	OSWEGATCHIE ROAD(E)	1044	Residential - Thru Street	89	Patch & Crackseal	\$4,711	89
STONE STREET	SPITHEAD RD(E)	MULLEN HILL ROAD	973	Residential - Thru Street	55	Base Rehabilitation	\$58,173	32
STONEHEIGHTS DRIVE	BOSTON POST ROAD	ROUTE 1	2194	Residential - Thru Street	100	Do Nothing	\$0	0
STONEBROOK DRIVE	BROOK ST	CUL DE SAC	672	Residential - Thru Street	78	Preventative Maintenance	\$6,666	47
STROBERG ROAD	ROUTE 1	CUL DE SAC	1051	Residential - Dead End	65	Mill & Overlay A/C	\$41,855	24
SUMMER REST ROAD	MILSTONE ROAD WEST	END	678	Residential - Dead End	77	Preventative Maintenance	\$5,630	48
SUNMEER STREET	WILD ROSE PLACE	CUL DE SAC	1305	Residential - Thru Street	47	Base Rehabilitation	\$8,220	15
SUNNECREST DRIVE	CROSS RD	CUL DE SAC	825	Residential - Dead End	78	Preventative Maintenance	\$8,220	47
SUNNECREE COURT	SUNNECREE DR	CUL DE SAC	495	Residential - Dead End	70	Mill & Overlay A/C	\$19,712	22
SUNSET DRIVE	HIGHLAND STREET	CUL DE SAC	327	Residential - Dead End	99	Do Nothing	\$0	0
SUNSHINE ROAD	LONGVIEW STREET	NEW LONDON TOWN LINE	346	Residential - Thru Street	52	Base Rehabilitation	\$24,134	34
SUNSHINE ROAD	OLD NORWICH ROAD	SUNSHINE ROAD (LOOP)	1649	Residential - Dead End	67	Mill & Overlay A/C	\$65,669	23
SUSAN TERRACE	BRAMAN ROAD	CUL DE SAC	2937	Residential - Dead End	60	Base Rehabilitation	\$248,761	29
TANGLEWIDE PLACE	OLD COLCHESTER ROAD	DEAD END	390	Residential - Dead End	65	Mill & Overlay A/C	\$15,531	24
TENTH AVENUE	NIANTIC RIVER ROAD	CIRCLE STREET	509	Residential - Thru Street	89	Patch & Crackseal	\$2,364	89
THE STRAND	ROUTE 213	50' N OF HOUSE #16	677	Residential - Thru Street	79	Preventative Maintenance	\$5,059	47
THE STRAND	50' N OF HOUSE #16	WESTSCOTT RD	535	Residential - Dead End	55	Base Rehabilitation	\$15,993	32
THIRD AVENUE	NIANTIC RIVER ROAD	MIDDLE ST	779	Residential - Thru Street	63	Mill & Overlay A/C	\$31,018	25
THIRD AVENUE	MIDDLE ST	END	368	Residential - Thru Street	51	Base Rehabilitation	\$22,007	34
THOMAS AVENUE	FITZGERALD AVENUE	MAY AVENUE	538	Residential - Thru Street	74	Preventative Maintenance	\$5,360	50
THRUSH STREET	MACKENZIE STREET(N)	MACKENZIE STREET(S)	511	Residential - Thru Street	55	Base Rehabilitation	\$30,551	32
TIFFANY AVENUE	ROUTE 1	SAVI AVENUE	1382	Residential - Thru Street	51	Base Rehabilitation	\$82,626	34
TIMOTHY STREET	BEVERLY ROAD	MARILYN ROAD	311	Residential - Thru Street	65	Mill & Overlay A/C	\$12,385	24
TOTOKET ROAD	OLD NORWICH ROAD	CUL DE SAC	1170	Residential - Dead End	56	Base Rehabilitation	\$69,951	31
TREMONT STREET	ROUTE 85	SNOWDEN STREET	496	Residential - Thru Street	87	Patch & Crackseal	\$2,304	91
TRUMBULL ROAD	ROUTE 213	HOUSE #36	2549	Residential - Dead End	69	Mill & Overlay A/C	\$143,808	23
TRUMBULL ROAD	HOUSE #36	CUL DE SAC	1114	Residential - Dead End	75	Preventative Maintenance	\$15,725	49
TWIN LAKES DRIVE	BEACON HILL DRIVE	VAUXHALL ST EXT #1	4175	Residential - Thru Street	61	Mill & Overlay A/C	\$335,542	26
TYLER PLACE	RIEVERVIEW PLACE	DEAD END	683	Residential - Thru Street	75	Preventative Maintenance	\$5,104	49
UNCAS AVENUE	OLD NORWICH ROAD	ROUTE 32 (WEST)	1021	Residential - Thru Street	61	Mill & Overlay A/C	\$40,660	26

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
UNCAS AVENUE	ROUTE 32 (EAST)	DEAD END	441	Residential - Thru Street	76	Preventative Maintenance	\$3,652	12
UNCAS COURT	UNCAS AVENUE	DEAD END	248	Residential - Dead End	90	Patch & Crackseal	\$768	88
UNGER ROAD	HUNTS BROOK RD	TOWNLINE	1975	Rural	73	Preventative Maintenance	\$19,680	50
UPPER BARTLETT ROAD	LATHROP ROAD	DEAD END	2546	Residential - Dead End	89	Patch & Crackseal	\$10,843	89
VALERIE STREET	OSWEGATCHIE ROAD	CLD 5052	857	Residential - Thru Street	89	Patch & Crackseal	\$3,981	89
VALLEY STREET #1	DOCK ROAD	END	773	Residential - Thru Street	85	Preventative Maintenance	\$6,418	43
VALLEY STREET #2	DOCK ROAD	END	457	Residential - Dead End	55	Base Rehabilitation	\$23,267	32
VAUXHALL ST EXT #1	TOWNLINE	HUNTS BROOK ROAD	7003	Rural	59	Base Rehabilitation	\$383,802	9
VAUXHALL ST EXT #1	HUNTS BROOK RD	OLD BARRY ROAD	1203	Residential - Thru Street	93	Do Nothing	\$0	0
VAUXHALL ST EXT #1	OLD BARRY ROAD	100'S OF DOUGLAS LA	3319	Residential - Thru Street	93	Do Nothing	\$0	0
VAUXHALL ST EXT #1	130'S OF DOUGLAS LA	SILVA LA	2124	Residential - Thru Street	98	Do Nothing	\$0	0
VAUXHALL ST EXT #1	SILVA LA	HOUSE #685 & HYD 804	2851	Residential - Thru Street	79	Do Nothing	\$0	0
VAUXHALL ST EXT #1	KENYON RD	ROSELEAH DRIVE	1400	Major/Minor Collector	81	Preventative Maintenance	\$33,144	84
VAUXHALL ST EXT #1	HOUSE #685 & HYD 804	KENYON RD	3046	Residential - Thru Street	81	Preventative Maintenance	\$18,606	92
VAUXHALL ST EXT #2	WATERFORD PKWY	TOWNLINE	1700	Major/Minor Collector	94	Do Nothing	\$0	0
VAUXHALL ST EXT #2	WATERFORD PKWY	TOWN LINE	490	Major/Minor Collector	72	Mill & Overlay A/C	\$34,392	55
VILLAGE DRIVE	VAUXHALL ST EXT #1	195	769	Major/Minor Collector	93	Do Nothing	\$0	0
VIVIAN COURT	GREAT NECK ROAD	CUL DE SAC	642	Residential - Dead End	77	Preventative Maintenance	\$6,397	12
VIVIAN STREET	CUL DE SAC	NORMAN STREET	436	Residential - Dead End	61	Mill & Overlay A/C	\$17,363	26
WALLACE STREET	ROBIN HILL ROAD	LINCOLN ROAD	1783	Residential - Thru Street	58	Base Rehabilitation	\$106,601	30
WARWICK TERRACE	GREENREE DRIVE	CONNSHIRE DRIVE	882	Residential - Thru Street	73	Preventative Maintenance	\$12,450	50
WATERFORD PKWY NORTH	VAUXHALL ST EXT #1	TOWNLINE	797	Residential - Thru Street	87	Patch & Crackseal	\$5,245	91
WATERFORD PKWY SOUTH	VAUXHALL ST EXT #2	TOWNLINE	470	Major/Minor Collector	72	Mill & Overlay A/C	\$30,784	99
WATERVIEW DRIVE	TWIN LAKES DRIVE	CUL DE SAC	633	Major/Minor Collector	84	Preventative Maintenance	\$5,073	106
WAY HILL ROAD	BUTLERTOWN ROAD	ROUTE 85	2846	Residential - Dead End	68	Mill & Overlay A/C	\$35,712	23
WEST NECK ROAD	ROUTE 213	WESTWOOD DRIVE	791	Residential - Dead End	82	Preventative Maintenance	\$25,996	45
WEST STREET	NIANTIC RIVER RD	ROPE FERRY RD	479	Major/Minor Collector	100	Do Nothing	\$0	0
WESTCOTT ROAD	THE STRAND (S)	THE STRAND (N)	500	Residential - Dead End	70	Mill & Overlay A/C	\$31,792	5
WESTWOOD DRIVE	WEST NECK ROAD	WESTWOOD DRIVE	2912	Residential - Dead End	56	Base Rehabilitation	\$17,438	7
WHALING DRIVE	LAMPHERE ROAD	CUL DE SAC	1137	Residential - Dead End	100	Do Nothing	\$0	0
WHITE OAK LANE	VAUXHALL STREET EXT	GULL DE SAC	1389	Residential - Dead End	61	Mill & Overlay A/C	\$64,146	26
WIENES COURT	GALLUP LANE(N)	GALLUP LANE(S)	809	Residential - Dead End	79	Preventative Maintenance	\$8,061	11
WILCOX COURT	OSWEGATCHIE ROAD	BROOK STREET	1389	Residential - Thru Street	99	Do Nothing	\$0	0
WILD ROSE AVENUE	ROUTE 1	WILLIAM STREET	805	Residential - Thru Street	86	Patch & Crackseal	\$2,493	92
WILD ROSE PLACE	ROUTE 1	END	1132	Residential - Thru Street	45	Base Rehabilitation	\$50,759	39
WILLETS AVENUE	ROUTE 1	BUTLER CT	849	Residential - Thru Street	60	Base Rehabilitation	\$33,839	29
WILLETS AVENUE	ROUTE 1	END	1613	Major/Minor Collector	95	Do Nothing	\$0	0
WILLIAM STREET	BUTLER CT	TOWN LINE	828	Major/Minor Collector	95	Do Nothing	\$0	0
WILLIAMSBURG DRIVE	COLONIAL DRIVE(N)	CUL DE SAC	624	Residential - Dead End	57	Base Rehabilitation	\$40,416	31
WILLOW STREET	CEDAR STREET	COLONIAL DRIVE(S)	700	Residential - Thru Street	71	Mill & Overlay A/C	\$39,492	22
WILSON AVENUE #1	BENHAM AVENUE	CHERRY STREET	395	Residential - Thru Street	49	Base Rehabilitation	\$23,616	36
WILSON AVENUE #2	ARTHUR STREET	DEAD END	536	Residential - Dead End	93	Do Nothing	\$0	0
WILSON ROAD	RICHARDS GROVE ROAD	MAGINNIS PKWY	281	Residential - Thru Street	89	Patch & Crackseal	\$1,305	89
WINDWARD WAY	MILSTONE ROAD(N)	DEAD END	336	Residential - Dead End	91	Patch & Crackseal	\$1,040	87
	MILSTONE ROAD(S)		2324	Residential - Thru Street	55	Base Rehabilitation	\$138,946	32

Name	From Segment	To Segment	length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
WINDY RIDGE PLACE	FOG PLAIN RD	CUL DE SAC	439	Residential - Dead End	66	Mill & Overlay A/C	\$17,482	6
WINTERGREEN DRIVE	OLD NORWICH ROAD	WINTERGREEN DRIVE (LOOP)	1963	Residential - Dead End	50	Base Rehabilitation	\$146,704	35
WINTHROP COURT	GRISWOLD COURT	CUL DE SAC	713	Residential - Dead End	69	Mill & Overlay A/C	\$40,225	23
WOOD STREET	MAGO BLVD	NIANTIC RIVER ROAD	743	Residential - Thru Street	63	Mill & Overlay A/C	\$29,589	25
WOODBINE STREET	RIDGEWOOD AVENUE	SHORE DRIVE	593	Residential - Thru Street	86	Patch & Crackseal	\$2,525	92
WOODLAND GROVE	ROUTE 1	END	382	Residential - Dead End	62	Mill & Overlay A/C	\$12,677	25
WOODLAND ROAD	GLENWOOD ROAD	FOREST STREET	816	Residential - Thru Street	90	Patch & Crackseal	\$3,475	88
WOODLAWN AVENUE	ROUTE 1	CUL DE SAC	1290	Residential - Dead End	59	Base Rehabilitation	\$77,126	30
WOODLAWN COURT	WOODLAWN AVENUE	CUL DE SAC	228	Residential - Dead End	65	Mill & Overlay A/C	\$9,079	24
WOODSEA PLACE	SHORE ROAD	CUL DE SAC	670	Residential - Dead End	74	Preventative Maintenance	\$6,676	50
WOODWORTH DRIVE	OLD NORWICH RD	DEAD END	343	Residential - Dead End	43	Base Rehabilitation	\$11,962	10
YORKSHIRE DRIVE	DEVONSHIRE DRIVE	1560' N OF FOG PLAIN ROAD	624	Residential - Thru Street	63	Mill & Overlay A/C	\$35,204	25
YORKSHIRE DRIVE	1560' N OF FOG PLAIN ROAD	FOG PLAIN ROAD	1560	Residential - Thru Street	87	Patch & Crackseal	\$8,457	91
YORKSHIRE DRIVE	NEW SECTION	1560' N OF FOG PLAIN ROAD	1314	Residential - Thru Street	70	Mill & Overlay A/C	\$61,041	22

Appendix B: Backlog List by PCI

All backlogs are based on PCIs projected to September 2020.

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
HARVEY AVENUE #1	CUL DE SAC	CUL DE SAC	1,316	Residential - Dead End	30	Base Rehabilitation	\$101,051	14
MACKENZIE ROAD	QUAIL ST	FOG PLAIN RD	2,183	Residential - Thru Street	38	Base Rehabilitation	\$130,516	46
HANSON STREET	MILLSTONE RD #2	END	409	Residential - Dead End	39	Base Rehabilitation	\$20,377	45
FOSTER ROAD	SECOND DRIVEWAY	END	567	Rural	40	Base Rehabilitation	\$33,899	11
EAST STREET	ROUTE 156	END	323	Residential - Dead End	42	Base Rehabilitation	\$14,483	42
LOGGER HILL ROAD	ROUTE 156(W)	ROUTE 156(E)	1,250	Residential - Thru Street	43	Base Rehabilitation	\$62,278	41
WOODWORTH DRIVE	OLD NORWICH RD	DEAD END	343	Residential - Dead End	43	Base Rehabilitation	\$11,962	10
INDUSTRIAL DRIVE	ROUTE 85	CUL DE SAC	2,329	Residential - Dead End	44	Base Rehabilitation	\$203,010	40
CEDAR STREET	TIFFANY ST	WILLOW ST	496	Residential - Thru Street	45	Base Rehabilitation	\$29,654	39
WILD ROSE AVENUE	ROUTE 1	WILLIAM STREET	1,132	Residential - Thru Street	45	Base Rehabilitation	\$50,759	39
HEMPSTEAD DRIVE	ROUTE 32	CUL DE SAC	856	Residential - Dead End	47	Base Rehabilitation	\$55,443	37
OLD MILL ROAD	257' E OF BLOOMINGDALE RD	BLOOMINGDALE RD	258	Residential - Thru Street	47	Base Rehabilitation	\$14,117	4
REYNOLDS LANE	ROUTE 1	END	672	Residential - Dead End	47	Base Rehabilitation	\$20,088	37
SUMMER STREET	WILD ROSE PLACE	END	1,305	Residential - Thru Street	47	Base Rehabilitation	\$65,019	15
MARY BUTLER DRIVE	BRAMAN RD	CUL DE SAC	995	Residential - Dead End	48	Base Rehabilitation	\$59,488	37
CHERRY STREET	WILLIAMS ST	TIFFANY AVE	336	Residential - Thru Street	49	Base Rehabilitation	\$20,088	36
JEFFERSON AVENUE	PHILLIPS ST	BROAD ST EX	316	Residential - Thru Street	49	Base Rehabilitation	\$18,892	90
LEONARD ROAD	53' W OF END OF LOOP	CUL DE SAC LOOP	53	Residential - Dead End	49	Base Rehabilitation	\$1,315	36
WILLOW STREET	CEDAR STREET	CHERRY STREET	395	Residential - Thru Street	49	Base Rehabilitation	\$23,616	36
B LANE	ROUTE 156	END	1,966	Residential - Thru Street	50	Base Rehabilitation	\$117,542	35
WINTERGREEN DRIVE	OLD NORWICH ROAD	WINTERGREEN DRIVE (LOOP)	1,963	Residential - Dead End	50	Base Rehabilitation	\$146,704	35
DANIELS AVENUE	NIANTIC RIVER RD	SOUTHWEST SCHOOL	2,441	Major/Minor Collector	51	Base Rehabilitation	\$182,427	27
MILTON ROAD	OLD NORWICH RD	HOUSE #6	418	Residential - Thru Street	51	Base Rehabilitation	\$20,826	34
SAVI AVENUE	TIFFANY AVE(N)	TIFFANY AVE(S)	1,623	Residential - Thru Street	51	Base Rehabilitation	\$97,035	34
THIRD AVENUE	MIDDLE ST	END	368	Residential - Thru Street	51	Base Rehabilitation	\$22,007	34
TIFFANY AVENUE	ROUTE 1	SAVI AVENUE	1,382	Residential - Thru Street	51	Base Rehabilitation	\$82,626	34
CROYDON COURT	HIGH RIDGE DR	CUL DE SAC	358	Residential - Dead End	52	Base Rehabilitation	\$30,322	34
GARDINERS WOOD ROAD	ROUTE 156	JORDAN COVE CIR	3,825	Rural	52	Base Rehabilitation	\$247,745	38
HICKORY LANE	DAYTON RD #1	HOUSE #13	925	Residential - Thru Street	52	Base Rehabilitation	\$78,346	34
HIGH RIDGE ROAD	ROUTE 156	CUL DE SAC	1,877	Residential - Dead End	52	Base Rehabilitation	\$158,980	34
LARK STREET	ROBIN ST	MACKENZIE RD	498	Residential - Thru Street	52	Base Rehabilitation	\$29,774	34
LEARY DRIVE	QUARRY RD(W)	QUARRY RD(E)	1,108	Residential - Thru Street	52	Base Rehabilitation	\$66,244	34
MINER LANE	540' N OF RR TRACKS	RR TRACKS	542	Residential - Dead End	52	Base Rehabilitation	\$35,131	8
OIL MILL ROAD	HOUSE #27	ROUTE 1	1,279	Residential - Thru Street	52	Base Rehabilitation	\$76,468	23
PAULA LANE	INA BLVD	CUL DE SAC	2,419	Residential - Dead End	52	Base Rehabilitation	\$204,887	5
RIVER STREET	FOG END	MAGO POINT PARK	1,026	Residential - Dead End	52	Base Rehabilitation	\$71,565	34
ROBIN STREET	FOG PLAIN RD	MACKENZIE RD	745	Residential - Thru Street	52	Base Rehabilitation	\$44,541	34
SHORE ROAD	WOODSEA PL	ROUTE 213	2,556	Residential - Thru Street	52	Base Rehabilitation	\$152,810	6
SOUND VIEW DRIVE	WILLETTS AV	LONGVIEW ST	578	Residential - Thru Street	52	Base Rehabilitation	\$34,557	34
SUNSET STREET	LONGVIEW STREET	NEW LONDON TOWN LINE	346	Residential - Thru Street	52	Base Rehabilitation	\$24,134	34
ALICE STREET	LINDA AVE	PERRY AVE	552	Residential - Thru Street	53	Base Rehabilitation	\$38,503	33
BEVERLY ROAD	SPRINGDALE RD	HAYES ST	579	Residential - Thru Street	53	Base Rehabilitation	\$34,617	33
BUTLER COURT	WILLETTS AVE	END	400	Residential - Dead End	53	Base Rehabilitation	\$19,929	33
DUNBAR ROAD	OLD NORWICH RD	CUL DE SAC	1,917	Residential - Thru Street	53	Base Rehabilitation	\$114,613	33
EAST BROOK DRIVE	TIFFANY AVE	CUL DE SAC	618	Residential - Dead End	53	Base Rehabilitation	\$36,948	33

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
FIRST AVENUE	NIANTIC RIVER RD	HIGH ST	1,352	Residential - Thru Street	53	Base Rehabilitation	\$80,833	33
HICKORY LANE	HOUSE #13	HOUSE #39	1,468	Residential - Thru Street	53	Base Rehabilitation	\$102,396	8
LAKES POND ROAD	1555' WEST OF ROUTE 85	BUTLERTOWN RD	1,279	Rural	53	Base Rehabilitation	\$70,096	33
NEW SHORE ROAD	DOCK RD	NELSON WHITE RESIDENCE	2,217	Residential - Thru Street	53	Base Rehabilitation	\$110,457	33
ROCK RIDGE ROAD	CROSS RD	CUL DE SAC	1,463	Residential - Dead End	53	Base Rehabilitation	\$87,457	33
ALBACORE DRIVE	HOUSE #4	CUL DE SAC	857	Residential - Dead End	54	Base Rehabilitation	\$51,238	4
AVENUE A #2	SUMMER ST	WILD ROSE PL	199	Residential - Thru Street	54	Base Rehabilitation	\$11,897	32
BACH STREET #1	PALMER RD	LANDING ST	345	Residential - Thru Street	54	Base Rehabilitation	\$12,032	32
CAROLINE CT	OLD NORWICH RD	DEAD END	341	Residential - Dead End	54	Base Rehabilitation	\$13,591	32
COUNTRY CLUB DRIVE	GOSHEN RD	CUL DE SAC	1,065	Residential - Dead End	54	Base Rehabilitation	\$90,204	32
DONALD AVENUE	MAPLE RD	ROUTE 32	601	Residential - Thru Street	54	Base Rehabilitation	\$35,932	32
DUREUIL DRIVE	OSWEGATCHIE RD	CUL DE SAC	488	Residential - Dead End	54	Base Rehabilitation	\$34,039	32
HICKORY LANE	HOUSE #39	VAUXHALL ST EX	1,088	Residential - Thru Street	54	Base Rehabilitation	\$75,890	32
NORMAN STREET	150' E OF VIVIAN ST	CLARK LA	890	Residential - Thru Street	54	Base Rehabilitation	\$53,217	19
QUARRY ROAD	SHORE RD	GREAT NECK ROAD	3,130	Residential - Thru Street	54	Base Rehabilitation	\$218,324	8
SHORE ROAD	DIVISION ST: SOUTH SIDE	PALMER RD (EAST)	1,981	Residential - Thru Street	54	Base Rehabilitation	\$218,442	4
SHORE ROAD	QUARRY RD	NEW SHORE RD	1,126	Residential - Thru Street	54	Base Rehabilitation	\$67,321	32
SPINNAKER ROAD	GOSHEN RD	CUL DE SAC	829	Residential - Dead End	54	Base Rehabilitation	\$49,564	32
BUTLERTOWN ROAD	LAKES POND ROAD	OIL MILL ROAD	6,049	Rural	55	Base Rehabilitation	\$331,518	32
CENTER ROAD	LAMPHERE ROAD	CUL-DE-SAC	1,237	Residential - Dead End	55	Base Rehabilitation	\$73,957	32
CHIPMAN ROAD	FARGO RD	END	311	Rural	55	Base Rehabilitation	\$17,044	32
CROSS ROAD	FOSTER RD	ROUTE 85	3,173	Major/Minor Arterials	55	Base Rehabilitation	\$347,795	179
DAVID STREET	SUMMER ST	END	401	Residential - Dead End	55	Base Rehabilitation	\$27,970	32
DOYLE ROAD	SPLITHEAD RD	PAULA LA	2,354	Residential - Thru Street	55	Base Rehabilitation	\$164,197	32
EAST WHARF ROAD	NIANTIC RIVER RD	HIGH RIDGE RD	916	Residential - Thru Street	55	Base Rehabilitation	\$77,584	32
FULMORE DRIVE	NIANTIC RIVER RD	CUL DE SAC	1,452	Residential - Dead End	55	Base Rehabilitation	\$86,811	4
GOSHEN ROAD	SHORE RD	ROUTE 213	3,053	Residential - Thru Street	55	Base Rehabilitation	\$212,954	29
MARGUY STREET	MAPLE RD	CUL DE SAC	924	Residential - Dead End	55	Base Rehabilitation	\$78,262	32
MARY STREET	GILEAD RD	TOWNLINE	1,894	Residential - Thru Street	55	Base Rehabilitation	\$113,238	32
NIANTIC RIVER ROAD	ROUTE # 1	HOUSE #194	4,409	Major/Minor Collector	55	Base Rehabilitation	\$307,538	65
NICHOLS LANE	NEW SHORE RD	SHORE RD	1,059	Residential - Thru Street	55	Base Rehabilitation	\$52,762	32
NILES HILL RD #2	DIMMOCK RD	NILES HILL RD #1	352	Residential - Thru Street	55	Base Rehabilitation	\$14,907	32
RED CEDAR AVENUE	ROUTE 32	TOWNLINE	712	Residential - Thru Street	55	Base Rehabilitation	\$39,021	32
STONE STREET	SPLITHEAD RD(N)	SPITHEAD RD(E)	973	Residential - Thru Street	55	Base Rehabilitation	\$58,173	32
THE STRAND	50' N OF HOUSE #16	WESTSCOTT RD	535	Residential - Dead End	55	Base Rehabilitation	\$15,993	32
THRUSH STREET	MACKENZIE STREET(N)	MACKENZIE STREET(S)	511	Residential - Thru Street	55	Base Rehabilitation	\$30,551	32
VALLEY STREET #2	DOCK ROAD	END	467	Residential - Dead End	55	Base Rehabilitation	\$23,267	32
WINDWARD WAY	MILLSTONE ROAD(N)	MILLSTONE ROAD(S)	2,324	Residential - Thru Street	55	Base Rehabilitation	\$138,946	32
BRAMAN ROAD	544' W OF GOUNDRY DR	GOUNDRY DR	545	Residential - Thru Street	56	Base Rehabilitation	\$27,148	44
CHARLES AVENUE	FITZGERALD AVE	MAY AVE	543	Residential - Thru Street	56	Base Rehabilitation	\$32,464	31
CROSS ROAD	NOVA-CHIP	FOSTER RD	2,664	Major/Minor Arterials	56	Base Rehabilitation	\$292,003	158
EAST LAKE DRIVE	PILGRIM RD	CUL DE SAC	448	Residential - Dead End	56	Base Rehabilitation	\$29,016	31
FOURTH AVENUE	NIANTIC RIVER RD	HIGH ST	1,512	Residential - Thru Street	56	Base Rehabilitation	\$90,399	31
GREENTREE DRIVE	VAUXHALL ST EXT	CENTER OF POWER LINES	744	Residential - Thru Street	56	Base Rehabilitation	\$63,016	31
JNA BOULEVARD	SPLITHEAD RD	CUL-DE-SAC	645	Residential - Dead End	56	Base Rehabilitation	\$59,451	31

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
JAMES AVENUE	FITZGERALD AVE	DEAD END	801	Residential - Dead End	56	Base Rehabilitation	\$47,890	31
LINDA AVENUE	ANITA AVE	GOSHEN RD	1,871	Residential - Thru Street	56	Base Rehabilitation	\$130,506	31
MAMACOCKE ROAD	RTE 32	DEAD END	638	Residential - Dead End	56	Base Rehabilitation	\$38,144	31
MAY AVENUE	ROUTE 32 (EAST)	END OF ROAD (RIVER)	597	Residential - Thru Street	56	Base Rehabilitation	\$35,693	31
TOTOKET ROAD	OLD NORWICH ROAD	CUL DE SAC	1,370	Residential - Dead End	56	Base Rehabilitation	\$69,951	31
WESTCOTT ROAD	THE STRAND (S)	THE STRAND (N)	500	Residential - Dead End	56	Base Rehabilitation	\$17,438	7
APPLEWOOD DRIVE	BLOOMINGDALE RD	CUL DE SAC	796	Residential - Dead End	57	Base Rehabilitation	\$47,591	31
CLIFF STREET	VALLEY ST #2	NEW SHORE RD	229	Residential - Thru Street	57	Base Rehabilitation	\$11,409	31
GALLOW LANE	BLOOMINGDALE RD	TOWNLINE	2,391	Residential - Thru Street	57	Base Rehabilitation	\$154,865	15
HAMEL COURT	MINER AVE(N)	MINER AVE(S)	223	Residential - Thru Street	57	Base Rehabilitation	\$13,332	31
LADLEY ROAD	OLD NORWICH RD	TURNAROUND	757	Residential - Dead End	57	Base Rehabilitation	\$45,259	31
LANDING STREET	BEACH ST #1	NEW SHORE RD	470	Residential - Thru Street	57	Base Rehabilitation	\$14,050	31
LAUREL GLEN ROAD	OLD NORWICH RD	CUL DE SAC	574	Residential - Dead End	57	Base Rehabilitation	\$34,318	31
LONGVIEW STREET	N.L. TOWNLINE	SOUNDVIEW DR	887	Residential - Thru Street	57	Base Rehabilitation	\$70,708	31
MELANIE DRIVE	CROSS RD	CUL DE SAC	649	Residential - Dead End	57	Base Rehabilitation	\$38,802	31
MILLSTONE ROAD WEST	CUL DE SAC	RTE 156	2,358	Residential - Dead End	57	Base Rehabilitation	\$140,979	31
OIL MILL ROAD	HOUSE #82	HOUSE #27	2,743	Residential - Thru Street	57	Base Rehabilitation	\$136,664	31
PORTER STREET	OLD NORWICH RD	RICHARDS GROVE RD	1,280	Residential - Thru Street	57	Base Rehabilitation	\$76,528	31
ROBERTS COURT	SENKOW DR	CUL DE SAC	326	Residential - Dead End	57	Base Rehabilitation	\$25,987	31
WILLIAM STREET	SUMMER STREET	CUL DE SAC	624	Residential - Dead End	57	Base Rehabilitation	\$40,416	31
BRIARWOOD DRIVE	VAUXHALL ST EX #1 (N)	VAUXHALL ST EX #1 (S)	1,338	Residential - Thru Street	58	Base Rehabilitation	\$79,996	30
LARSON STREET	MILLSTONE RD #2	END	311	Residential - Dead End	58	Base Rehabilitation	\$18,593	30
VIVIAN STREET	ROUTE 1	NORMAN STREET	1,783	Residential - Thru Street	58	Base Rehabilitation	\$106,601	30
BURLAKE ROAD	ROUTE 32	CUL DE SAC	858	Residential - Dead End	59	Base Rehabilitation	\$51,297	30
COLONIAL DRIVE	HOUSE #48	CUL DE SAC	1,739	Residential - Dead End	59	Base Rehabilitation	\$147,292	30
FITZGERALD AVENUE	ROUTE 32 (EAST)	CHARLES AV	249	Residential - Thru Street	59	Base Rehabilitation	\$14,887	30
KINGFISHER WAY	MACKENZIE RD	KESTREL LA	1,514	Residential - Thru Street	59	Base Rehabilitation	\$105,605	30
MARILYN ROAD	SPRINGDALE RD	CROSS RD	1,260	Residential - Thru Street	59	Base Rehabilitation	\$75,332	30
OLD MILL ROAD	OLD NORWICH RD	Bridge	1,363	Residential - Thru Street	59	Base Rehabilitation	\$81,490	30
ROCKWOOD DRIVE	FOG PLAIN RD(W)	FOG PLAIN RD(E)	2,129	Residential - Thru Street	59	Base Rehabilitation	\$127,288	75
SANDY HOLLOW DRIVE	FOG PLAIN RD	CUL DE SAC	1,462	Residential - Dead End	59	Base Rehabilitation	\$123,830	30
VAUXHALL ST EXT #1	TOWNLINE	HUNTS BROOK ROAD	7,003	Rural	59	Base Rehabilitation	\$383,802	9
WOODLAWN AVENUE	ROUTE 1	CUL DE SAC	1,290	Residential - Dead End	59	Base Rehabilitation	\$77,126	30
JOHN AVENUE	FITZGERALD AVE	MAY AVE	542	Residential - Thru Street	60	Base Rehabilitation	\$32,404	29
LOUISE STREET	ROUTE 1	NORMAN ST	2,089	Residential - Thru Street	60	Base Rehabilitation	\$124,896	29
MILLSTONE ROAD	GUN SHOT RD	GARDINERS WOOD RD	1,659	Residential - Thru Street	60	Base Rehabilitation	\$99,187	29
NORTHWOOD ROAD	OLD NORWICH RD	DEAD END	712	Residential - Dead End	60	Base Rehabilitation	\$42,568	29
QUAIL STREET	ROBIN ST	MACKENZIE RD	413	Residential - Thru Street	60	Base Rehabilitation	\$24,692	29
SUSAN TERRACE	BRAMAN ROAD	CUL DE SAC	2,937	Residential - Dead End	60	Base Rehabilitation	\$248,761	29
WILD ROSE PLACE	ROUTE 1	END	849	Residential - Thru Street	60	Base Rehabilitation	\$33,839	29
BOLLES COURT	SCOTCH CAP RD	CUL DE SAC	337	Residential - Dead End	61	Mill & Overlay A/C	\$13,420	26
BRILL AVENUE	ROUTE 1	FOG PLAIN RD	1,849	Residential - Thru Street	61	Mill & Overlay A/C	\$73,634	7
BUTLERTOWN ROAD	TOWNLINE	LAKES POND ROAD	5,740	Rural	61	Mill & Overlay A/C	\$209,540	26
DARLING LANE	OSWEGATCHIE RD	DEAD END	511	Residential - Dead End	61	Mill & Overlay A/C	\$11,870	26
GRAHAM STREET	EDGEWOOD AVE	BRILL AVE	1,008	Residential - Thru Street	61	Mill & Overlay A/C	\$40,142	26

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
JOSAN DRIVE	OSWEGATCHIE RD	CUL DE SAC	662	Residential - Dead End	61	Mill & Overlay A/C	\$28,560	26
MAYFAIR DRIVE	DIMMOCK RD	CUL DE SAC	747	Residential - Dead End	61	Mill & Overlay A/C	\$29,748	26
MILL LANE	ROUTE 156	END	443	Residential - Dead End	61	Mill & Overlay A/C	\$17,642	26
OAK ROAD	BETTY ST	ALICE ST	810	Residential - Thru Street	61	Mill & Overlay A/C	\$37,533	26
OIL MILL ROAD	BUTLERTOWN RD	HOUSE #82	6,129	Residential - Thru Street	61	Mill & Overlay A/C	\$203,401	24
OLIVE STREET	NORMAN ST	ROUTE 1	1,966	Residential - Thru Street	61	Mill & Overlay A/C	\$78,294	26
PADGETT PLACE	HICKORY LANE	CUL DE SAC	327	Residential - Dead End	61	Mill & Overlay A/C	\$13,022	6
SENGOW DRIVE	OLD NORWICH RD	ROUTE 32	825	Residential - Thru Street	61	Mill & Overlay A/C	\$43,806	26
SIXTH AVENUE #2	PHILLIPS ST	TOWNLINE	490	Residential - Thru Street	61	Mill & Overlay A/C	\$19,513	26
TWIN LAKES DRIVE	BEACON HILL DRIVE	VAUXHALL ST EXT #1	4,175	Residential - Thru Street	61	Mill & Overlay A/C	\$235,542	26
UNCAS AVENUE	OLD NORWICH ROAD	ROUTE 32 (WEST)	1,021	Residential - Thru Street	61	Mill & Overlay A/C	\$40,660	26
VIVIAN COURT	VIVIAN STREET	CUL DE SAC	436	Residential - Dead End	61	Mill & Overlay A/C	\$17,363	26
WHALING DRIVE	LAMPHERE ROAD	CUL DE SAC	1,137	Residential - Dead End	61	Mill & Overlay A/C	\$64,146	26
COLONIAL DRIVE	ROUTE 213	HOUSE #48	2,771	Residential - Dead End	62	Mill & Overlay A/C	\$156,332	25
DE CAB LANE	SCOTCH CAP RD	CUL DE SAC	395	Residential - Dead End	62	Mill & Overlay A/C	\$15,730	25
GUN SHOT ROAD	MILLSTONE RD #1	CUL DE SAC	867	Residential - Dead End	62	Mill & Overlay A/C	\$34,527	25
LAKES POND ROAD	ROUTE 85	685' WEST OF ROUTE 85	683	Rural	62	Mill & Overlay A/C	\$27,199	25
LEE ROAD	ANITA AVE	LINDA AVE	1,079	Residential - Thru Street	62	Mill & Overlay A/C	\$50,131	25
ROXWOOD ROAD	NORWICH RD	CUL DE SAC	736	Residential - Dead End	62	Mill & Overlay A/C	\$29,310	25
SHORE ROAD	PALMER RD (EAST)	QUARRY RD	767	Residential - Thru Street	62	Mill & Overlay A/C	\$30,545	25
WOODLAND GROVE	ROUTE 1	END	382	Residential - Dead End	62	Mill & Overlay A/C	\$12,677	25
ANITA AVENUE	SHORE RD	PERRY RD	932	Residential - Thru Street	63	Mill & Overlay A/C	\$43,302	25
BAYSIDE AVENUE	NIANTIC RIVER RD(N)	NIANTIC RIVER RD(S)	534	Residential - Thru Street	63	Mill & Overlay A/C	\$17,721	25
BISHOP STREET	NIANTIC RIVER RD	MAGO BLVD	901	Residential - Thru Street	63	Mill & Overlay A/C	\$35,881	25
BRAMAN ROAD	ROUTE 213	MARY BUTLER DR	2,969	Residential - Thru Street	63	Mill & Overlay A/C	\$98,531	35
EAST WOOD STREET	NIANTIC RIVER RD	DONNA ST	469	Residential - Thru Street	63	Mill & Overlay A/C	\$18,677	25
GRABNER DRIVE	VAUXHALL ST EXT #1	BEACON HILL RD	855	Residential - Thru Street	63	Mill & Overlay A/C	\$34,049	25
JORDAN TERRACE	ROUTE 213	JORDAN TER	1,285	Residential - Dead End	63	Mill & Overlay A/C	\$51,173	25
LANCASHIRE COURT	YORKSHIRE DR	CUL DE SAC	353	Residential - Dead End	63	Mill & Overlay A/C	\$19,915	25
LLOYD ROAD	NILES HILL RD #1	ROUTE 213	2,150	Residential - Thru Street	63	Mill & Overlay A/C	\$64,216	25
MOHEGAN AVENUE	FITZGERALD AVE	MAY AVE	520	Residential - Thru Street	63	Mill & Overlay A/C	\$20,708	25
MONROE STREET	OLIVE ST	CLARK LANE	498	Residential - Thru Street	63	Mill & Overlay A/C	\$19,832	25
PENNICOTT ROAD	OLD COLCHESTER RD	CUL DE SAC	737	Residential - Dead End	63	Mill & Overlay A/C	\$29,350	25
ROSELEAH DRIVE	VAUXHALL ST EXT #1	CUL DE SAC	1,834	Residential - Dead End	63	Mill & Overlay A/C	\$92,558	25
THIRD AVENUE	NIANTIC RIVER ROAD	MIDDLE ST	779	Residential - Thru Street	63	Mill & Overlay A/C	\$31,018	25
WOOD STREET	MAGO BLVD	NIANTIC RIVER ROAD	743	Residential - Thru Street	63	Mill & Overlay A/C	\$29,589	25
YORKSHIRE DRIVE	DEVONSHIRE DRIVE	1560' N OF FOG PLAIN ROAD	624	Residential - Thru Street	63	Mill & Overlay A/C	\$35,204	25
LAUREL CREST DRIVE	ROUTE 213	CUL DE SAC	1,396	Residential - Dead End	64	Mill & Overlay A/C	\$78,758	24
MADISON STREET	LAMPHERE RD	LINCOLN RD	386	Residential - Thru Street	64	Mill & Overlay A/C	\$21,777	24
MAGO BOULEVARD	BISHOP ST	WOOD ST	225	Residential - Thru Street	64	Mill & Overlay A/C	\$8,960	24
MIDDLE STREET	FIRST AVE	FOURTH AVE	882	Residential - Thru Street	64	Mill & Overlay A/C	\$35,124	24
OLD GREAT NECK ROAD	JORDAN TER	END	285	Residential - Dead End	64	Mill & Overlay A/C	\$11,349	24
POND EDGE DRIVE	TWIN LAKES DR (N)	TWIN LAKES DR (S)	1,857	Residential - Thru Street	64	Mill & Overlay A/C	\$104,767	24
SECOND AVENUE	NIANTIC RIVER RD	MIDDLE ST	709	Residential - Thru Street	64	Mill & Overlay A/C	\$28,235	24
COZY COURT	RIDGEWOOD AVENUE	END	304	Residential - Dead End	65	Mill & Overlay A/C	\$8,071	6

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair/Alternative	Cost	Benefit Value
DEERFIELD ROAD	ROUTE 213	CUL DE SAC	1,414	Residential - Dead End	65	Mill & Overlay A/C	\$56,311	24
DEVONSHIRE DRIVE	FOG PLAIN RD	CUL DE SAC	2,595	Residential - Thru Street	65	Mill & Overlay A/C	\$146,403	24
HIGH STREET	FOURTH AVE	FIRST AVE	860	Residential - Thru Street	65	Mill & Overlay A/C	\$34,248	24
HIGHWAY POINT	ROUTE 156	END	550	Residential - Dead End	65	Mill & Overlay A/C	\$10,951	24
KESTREL LANE	KINGFISHER WAY	WOODLAWN AVE	261	Residential - Thru Street	65	Mill & Overlay A/C	\$12,126	24
LEONARD ROAD	NEW SHORE RD	121' W OF NEW SHORE RD	121	Residential - Dead End	65	Mill & Overlay A/C	\$2,011	24
LOCUST COURT	NIANTIC RIVER RD	CUL DE SAC	1,850	Residential - Dead End	65	Mill & Overlay A/C	\$73,674	24
MINER LANE	ROUTE 1	VET HOSPITAL	679	Residential - Dead End	65	Mill & Overlay A/C	\$29,293	10
ORIENT STREET	VIVIAN ST	OLIVE ST	232	Residential - Thru Street	65	Mill & Overlay A/C	\$9,239	24
PERRY AVENUE	ANITA AVE	GOSHEN RD	1,559	Residential - Thru Street	65	Mill & Overlay A/C	\$72,433	24
RACE ROCK ROAD	WINDWARD WAY	CUL DE SAC	1,016	Residential - Dead End	65	Mill & Overlay A/C	\$40,461	24
STROSBURG ROAD	ROUTE 1	CUL DE SAC	1,051	Residential - Dead End	65	Mill & Overlay A/C	\$41,855	24
TANGLEWYLDE PLACE	OLD COLCHESTER ROAD	DEAD END	390	Residential - Dead End	65	Mill & Overlay A/C	\$15,331	24
TIMOTHY STREET	BEVERLY ROAD	MARILYN ROAD	311	Residential - Thru Street	65	Mill & Overlay A/C	\$12,385	24
WOODLAWN COURT	WOODLAWN AVENUE	CUL DE SAC	228	Residential - Dead End	65	Mill & Overlay A/C	\$9,079	24
LANYARD LANE	MILLSTONE RD #1	WINDWARD WAY	807	Residential - Thru Street	66	Mill & Overlay A/C	\$32,138	24
IMAY AVENUE	JAMES AVE	ROUTE 32 (WEST)	250	Residential - Thru Street	66	Mill & Overlay A/C	\$9,956	24
MEMORY LANE	SPITHEAD ROAD	CUL DE SAC	808	Residential - Dead End	66	Mill & Overlay A/C	\$32,177	6
WINDY RIDGE PLACE	FOG PLAIN RD	CUL DE SAC	439	Residential - Dead End	66	Mill & Overlay A/C	\$17,482	6
ALMOND DRIVE	DIANE DR	CUL DE SAC	558	Residential - Dead End	67	Mill & Overlay A/C	\$31,480	23
BACK STREET	EAST WOOD ST	EAST BISHOP ST	203	Residential - Thru Street	67	Mill & Overlay A/C	\$8,084	23
BROOK STREET	DEAD END AT WILCOX CT	HAMMERHEAD DEAD END	650	Residential - Dead End	67	Mill & Overlay A/C	\$25,885	23
COOLIDGE COURT	ROBIN HILL RD	CUL DE SAC	253	Residential - Dead End	67	Mill & Overlay A/C	\$14,273	23
DONNA STREET	NIANTIC RIVER RD	EAST WOOD ST	830	Residential - Thru Street	67	Mill & Overlay A/C	\$38,562	23
EAST BISHOP STREET	BACK ST	NIANTIC RIVER RD	425	Residential - Thru Street	67	Mill & Overlay A/C	\$16,925	23
FAULKNER DRIVE	VAUXHALL ST EXT	OLD BARRY RD	1,685	Residential - Thru Street	67	Mill & Overlay A/C	\$67,103	23
FOURTH STREET	RIVER STREET	END	447	Residential - Thru Street	67	Mill & Overlay A/C	\$17,801	23
GRANITE COURT	RTE 156	CUL DE SAC	640	Residential - Dead End	67	Mill & Overlay A/C	\$25,487	23
LAKES POND ROAD	685' WEST OF ROUTE 85	1555' WEST OF ROUTE 85	868	Rural	67	Mill & Overlay A/C	\$36,007	23
PARKWAY SOUTH	BEECHWOOD DR	END [NEAR OLD AIRPORT]	2,771	Residential - Thru Street	67	Mill & Overlay A/C	\$147,110	23
SEABREEZE DRIVE	NILES HILL RD #1 (W)	NILES HILL RD #1 (E)	2,390	Residential - Thru Street	67	Mill & Overlay A/C	\$134,837	23
SUNSHINE ROAD	OLD NORWICH ROAD	SUNSHINE ROAD (LOOP)	1,649	Residential - Dead End	67	Mill & Overlay A/C	\$65,669	23
BALDWIN DRIVE	TRUMBULL RD	CUL DE SAC	1,128	Residential - Dead End	68	Mill & Overlay A/C	\$63,638	23
DIANE DRIVE	ROCKWOOD DR	CUL DE SAC	473	Residential - Dead End	68	Mill & Overlay A/C	\$26,685	23
DIVISION STREET	SHORE RD (S)	SHORE RD (S)	1,102	Residential - Thru Street	68	Mill & Overlay A/C	\$43,886	23
FAIRLAWN STREET	VAUXHALL ST EX #1	GLENVALE ST	1,038	Residential - Thru Street	68	Mill & Overlay A/C	\$41,337	23
MINER COURT	MINER AV	CUL DE SAC	497	Residential - Dead End	68	Mill & Overlay A/C	\$16,493	5
MONROE STREET	CLARK LANE	END	1,402	Residential - Dead End	68	Mill & Overlay A/C	\$43,886	23
PHILLIPS STREET	ROUTE 85	TOWNLINE	887	Residential - Thru Street	68	Mill & Overlay A/C	\$32,380	23
PINE STREET	ROUTE 1	CUL DE SAC	1,371	Residential - Dead End	68	Mill & Overlay A/C	\$54,598	23
WATERVIEW DRIVE	TWIN LAKES DRIVE	CUL DE SAC	633	Residential - Dead End	68	Mill & Overlay A/C	\$35,712	23
DAYTON ROAD #1	DAYTON PL	928' NORTH OF DAYTON PL	928	Major/Minor Collector	69	Mill & Overlay A/C	\$55,435	23
KEENEY COURT	OSWEGATCHIE ROAD	HAMMERHEAD	229	Residential - Dead End	69	Mill & Overlay A/C	\$7,599	23
LINCOLN ROAD	CUL DE SAC (W)	CUL DE SAC (E)	1,389	Residential - Dead End	69	Mill & Overlay A/C	\$78,363	23
MEADOW DRIVE	VAUXHALL ST EXT	MEADOW DR	2,270	Residential - Thru Street	69	Mill & Overlay A/C	\$128,067	57

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
PAMELA WAY	ROUTE 1	CUL DE SAC	974	Residential - Dead End	69	Mill & Overlay A/C	\$54,950	23
SEYMOUR LANE	TRUMBULL RD	CROSS DR	440	Residential - Dead End	69	Mill & Overlay A/C	\$24,823	23
TRUMBULL ROAD	ROUTE 213	HOUSE #36	2,549	Residential - Dead End	69	Mill & Overlay A/C	\$143,808	23
WINTHROP COURT	GRISWOLD COURT	CUL DE SAC	713	Residential - Dead End	69	Mill & Overlay A/C	\$40,225	23
ANN ROAD	SOLIER DR	KENYON RD	353	Residential - Thru Street	70	Mill & Overlay A/C	\$18,743	22
CLARK PLACE	HARDWICK RD	CUL DE SAC	794	Residential - Dead End	70	Mill & Overlay A/C	\$42,160	22
COVE VIEW DRIVE	RICHARDS GROVE RD(W)	RICHARDS GROVE RD(E)	638	Residential - Thru Street	70	Mill & Overlay A/C	\$25,407	22
CROSS DRIVE	CUL DE SAC(W)	CUL DE SAC(E)	604	Residential - Dead End	70	Mill & Overlay A/C	\$34,076	22
GRABNER DRIVE	BEACON HILL RD	END OF CUL DE SAC	1,303	Residential - Dead End	70	Mill & Overlay A/C	\$60,539	22
OLD BARRY ROAD	VAUXHALL ST EXT #1	CUL DE SAC	1,461	Residential - Dead End	70	Mill & Overlay A/C	\$38,182	22
PARKWAY NORTH	CUL DE SAC	832' W OF CUL DE SAC	834	Residential - Thru Street	70	Mill & Overlay A/C	\$44,284	22
SUNNIESIDE COURT	SUNNIECREST DR	CUL DE SAC	495	Residential - Dead End	70	Mill & Overlay A/C	\$19,712	22
WEST STREET	NIANTIC RIVER RD	ROPE FERRY RD	479	Major/Minor Collector	70	Mill & Overlay A/C	\$31,792	5
YORKSHIRE DRIVE	NEW SECTION	1560' N OF FOG PLAIN ROAD	1,314	Residential - Thru Street	70	Mill & Overlay A/C	\$61,041	22
CHAPMAN AVENUE	VAUXHALL EXT #1	PILGRIM RD	1,802	Major/Minor Collector	71	Mill & Overlay A/C	\$71,762	31
DAYTON ROAD #1	HOUSE #123	VAUXHALL STREET EXT #1	625	Residential - Thru Street	71	Mill & Overlay A/C	\$20,741	22
FOOT COURT	TRUMBULL CT	CUL DE SAC	416	Residential - Dead End	71	Mill & Overlay A/C	\$23,469	22
GRISWOLD COURT	TRUMBULL RD	CUL DE SAC	644	Residential - Dead End	71	Mill & Overlay A/C	\$36,332	22
HUNTINGTON COURT	TRUMBULL CT	CUL DE SAC	270	Residential - Dead End	71	Mill & Overlay A/C	\$15,232	22
JEFFERSON AVENUE	BROAD ST EX	TOWN LINE	278	Residential - Thru Street	71	Mill & Overlay A/C	\$16,145	5
JONATHAN LAW COURT	TRUMBULL CT	CUL DE SAC	265	Residential - Dead End	71	Mill & Overlay A/C	\$14,950	22
MILTON ROAD	HOUSE #6	DUNBAR ROAD	2,744	Residential - Thru Street	71	Mill & Overlay A/C	\$74,376	22
NIANTIC RIVER ROAD	OLD NIANTIC RIVER RD (S)	EIGHTH AVENUE	2,105	Major/Minor Collector	71	Mill & Overlay A/C	\$83,831	56
PALMER ROAD	SHORE RD	BEACH ST #1	508	Residential - Thru Street	71	Mill & Overlay A/C	\$20,230	22
WILLIAMSBURG DRIVE	COLONIAL DRIVE(N)	COLONIAL DRIVE(S)	700	Residential - Thru Street	71	Mill & Overlay A/C	\$39,492	22
BRAMAN ROAD	GOINDRY DR	367' E OF GOWINDRY DR	367	Residential - Thru Street	72	Mill & Overlay A/C	\$12,179	31
GLENVALE STREET	FAIRLAWN ST	HILLCREST DR	601	Residential - Thru Street	72	Mill & Overlay A/C	\$23,934	22
SHORE ROAD	JORDAN COVE RD	DIVISION ST: SOUTH SIDE	2,447	Residential - Thru Street	72	Mill & Overlay A/C	\$97,429	13
VAUXHALL ST EXT #2	WATERFORD PKWY	TOWN LINE	490	Major/Minor Collector	72	Mill & Overlay A/C	\$24,392	55
WATERFORD PKWY NORTH	VAUXHALL ST EXT #1	TOWNLINE	773	Major/Minor Collector	72	Mill & Overlay A/C	\$30,784	99
AVENUE B	FOURTH STREET	SECOND STREET	757	Residential - Thru Street	73	Preventative Maintenance	\$6,286	50
BESTVIEW ROAD	ROUTE 32	SCOTCH CAP ROAD	968	Residential - Thru Street	73	Preventative Maintenance	\$9,645	50
DANIELS AVENUE	SOUTHWEST SCHOOL	SPITHEAD RD	1,157	Major/Minor Collector	73	Preventative Maintenance	\$14,411	35
DAYTON ROAD #1	ROUTE 85	DAYTON PL	1,609	Residential - Thru Street	73	Preventative Maintenance	\$14,696	50
GIOVANNI LANE	FOG PLAIN RD	PAVEMENT CHANGE	1,086	Residential - Dead End	73	Preventative Maintenance	\$10,821	12
HUNTS BROOK ROAD	VAUXHALL ST	TOWNLINE	6,206	Rural	73	Preventative Maintenance	\$51,533	50
MAPLE ROAD	HOUSE #10	MARGUY ST	734	Residential - Thru Street	73	Preventative Maintenance	\$6,097	50
MILLER AVENUE	RICHARDS GROVE RD	PORTER ST	825	Residential - Thru Street	73	Preventative Maintenance	\$8,220	50
PARKWAY NORTH	832' W OF CUL DE SAC	360' W OF 195 OFF RAMP	1,451	Residential - Thru Street	73	Preventative Maintenance	\$18,073	12
ROSEMARY LANE	OLD NORWICH RD	ROUTE 32	935	Residential - Thru Street	73	Preventative Maintenance	\$9,316	50
UNGER ROAD	HUNTS BROOK RD	TOWNLINE	1,975	Rural	73	Preventative Maintenance	\$19,680	50
WALLACE STREET	ROBIN HILL ROAD	LINCOLN ROAD	882	Residential - Thru Street	73	Preventative Maintenance	\$12,450	50
BROADVIEW COURT	SCOTCH CAP RD(W)	SCOTCH CAP RD(E)	1,078	Residential - Thru Street	74	Preventative Maintenance	\$10,741	50
COLLEGE COURT	TOWNLINE	END	555	Residential - Dead End	74	Preventative Maintenance	\$6,912	50
EDGEWOOD AVENUE	FOG PLAIN RD	BRILL AVE	1,371	Residential - Thru Street	74	Preventative Maintenance	\$13,661	50

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
FIFTH AVENUE	NIANTIC RIVER RD	CENTER ST	1,275	Residential - Thru Street	74	Preventative Maintenance	\$12,704	50
JODRY STREET	FAULKNER DR	OLD BARRY ROAD	978	Residential - Thru Street	74	Preventative Maintenance	\$9,745	50
MAGONK POINT ROAD	SHORE RD	END	1,283	Residential - Dead End	74	Preventative Maintenance	\$8,523	50
PARKWAY NORTH	1090' W OF 195 OFF RAMP	650' E OF CROSS RD	1,445	Residential - Thru Street	74	Preventative Maintenance	\$17,998	50
ROBIN HILL ROAD	LINCOLN RD	CUL DE SAC	1,078	Residential - Dead End	74	Preventative Maintenance	\$15,217	50
SOLIER DRIVE	ROSELEAH DR	ANN RD	1,942	Residential - Thru Street	74	Preventative Maintenance	\$24,220	50
SPRINGDALE ROAD	DEAD END	MARILYN RD	511	Residential - Dead End	74	Preventative Maintenance	\$5,091	50
THOMAS AVENUE	FITZGERALD AVENUE	MAY AVENUE	538	Residential - Thru Street	74	Preventative Maintenance	\$5,360	50
WOODSEA PLACE	SHORE ROAD	CUL DE SAC	670	Residential - Dead End	74	Preventative Maintenance	\$6,676	50
CLEMENT STREET	WILLETS AVE	LONGVIEW ST	615	Residential - Thru Street	75	Preventative Maintenance	\$7,149	49
DOGWOOD DRIVE	OLD COLCHESTER RD	CUL DE SAC	469	Residential - Dead End	75	Preventative Maintenance	\$4,673	49
FITZGERALD AVENUE	OLD NORWICH RD	ROUTE 32 (WEST)	1,071	Residential - Thru Street	75	Preventative Maintenance	\$10,672	49
GOUNDRY DRIVE	BRAMAN RD	CUL DE SAC	802	Residential - Dead End	75	Preventative Maintenance	\$9,323	49
HAMAST AVENUE	STROSBURG RD	END	579	Residential - Dead End	75	Preventative Maintenance	\$7,211	49
MAPLE ROAD	MARGUY ST	TOWNLINE	670	Residential - Thru Street	75	Preventative Maintenance	\$5,561	49
MISS VANS COURT	NIANTIC RIVER RD	CUL DE SAC	749	Residential - Dead End	75	Preventative Maintenance	\$10,573	49
NIANTIC RIVER ROAD	EIGHTH AVENUE	FIRST AVENUE	1,873	Major/Minor Collector	75	Preventative Maintenance	\$18,663	124
NILES HILL RD #1	HOUSE # 169	EAST NECK ROAD	2,468	Residential - Thru Street	75	Preventative Maintenance	\$24,592	12
OLD COLCHESTER ROAD	OLD NORWICH RD	HOUSE #106	4,575	Major/Minor Collector	75	Preventative Maintenance	\$60,784	58
SCOTCH CAP ROAD	ROUTE 32	HOUSE #55	995	Residential - Thru Street	75	Preventative Maintenance	\$11,567	4
TRUMBULL ROAD	HOUSE #36	CUL DE SAC	1,114	Residential - Dead End	75	Preventative Maintenance	\$15,725	49
TYLER PLACE	RIVERVIEW PLACE	DEAD END	683	Residential - Thru Street	75	Preventative Maintenance	\$5,104	49
BEACON HILL DRIVE	HOUSE #4	GREENTREE DR	3,050	Residential - Thru Street	76	Preventative Maintenance	\$43,055	48
BETTY STREET	LINDA AVE	PERRY AVE	467	Residential - Thru Street	76	Preventative Maintenance	\$5,429	48
DOUGLAS LANE	HOUSE #43	VAUXHALL ST EXT	4,913	Residential - Thru Street	76	Preventative Maintenance	\$61,191	54
HAYES STREET	BEVERLY RD	MARILYN RD	318	Residential - Thru Street	76	Preventative Maintenance	\$3,168	48
NIANTIC RIVER ROAD	EAST WOOD	ROUTE # 156	2,191	Major/Minor Collector	76	Preventative Maintenance	\$21,832	80
RIVERVIEW PLACE	RICHARDS GROVE	DEAD END	585	Residential - Dead End	76	Preventative Maintenance	\$5,829	48
ROGERS HILL ROAD	GREENTREE DR	CUL DE SAC	2,384	Residential - Dead End	76	Preventative Maintenance	\$33,653	48
SCOTCH CAP ROAD	OLD NORWICH RD	ROUTE 32	1,499	Residential - Thru Street	76	Preventative Maintenance	\$19,915	7
UNCAS AVENUE	ROUTE 32 (EAST)	DEAD END	441	Residential - Thru Street	76	Preventative Maintenance	\$3,662	12
CROWN STREET	ROUTE 85	SNOWDEN ST	600	Residential - Thru Street	77	Preventative Maintenance	\$5,978	48
DOCK ROAD	VALLEY ST	NEW SHORE RD	290	Residential - Thru Street	77	Preventative Maintenance	\$2,889	48
JORDAN COVE ROAD	GARDINERS WOOD RD	663' W OF SHORE RD	1,780	Residential - Thru Street	77	Preventative Maintenance	\$17,737	31
PARKWAY NORTH	650' E OF CROSS RD	525' W OF CROSS RD	1,178	Residential - Thru Street	77	Preventative Maintenance	\$33,259	120
QUAKER LANE	BLOOMINGDALE RD	OLD NORWICH RD	1,002	Residential - Thru Street	77	Preventative Maintenance	\$9,984	48
SCHOOL HOUSE LANE	OLD NORWICH RD	END	291	Residential - Dead End	77	Preventative Maintenance	\$1,933	48
SUMMER REST ROAD	MILLSTONE ROAD WEST	END	678	Residential - Dead End	77	Preventative Maintenance	\$5,630	48
VILLAGE DRIVE	GREAT NECK ROAD	CUL DE SAC	642	Residential - Dead End	77	Preventative Maintenance	\$6,397	12
AVERY LANE	ROUTE 156	ROUTE 1	1,836	Major/Minor Collector	78	Preventative Maintenance	\$25,155	128
JORDAN COVE CIRCLE	JORDAN COVE RD(W)	JORDAN COVE RD(E)	1,266	Residential - Thru Street	78	Preventative Maintenance	\$12,615	47
MAPLE COURT	FAIRLAWN ST	DEAD END	992	Residential - Dead End	78	Preventative Maintenance	\$9,884	47
MINER AVENUE	ROUTE 1	FOG PLAIN RD	2,400	Residential - Thru Street	78	Preventative Maintenance	\$23,915	30
MINER LANE	VET HOSPITAL	540' N OF RR TRACKS	1,115	Residential - Dead End	78	Preventative Maintenance	\$12,032	11
NORMAN STREET	SUMMER ST	150' E OF VIVIAN ST	546	Residential - Thru Street	78	Preventative Maintenance	\$5,439	28

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
NORTH PHILLIPS STREET	END	TOWNLINE	496	Residential - Thru Street	78	Preventative Maintenance	\$4,942	47
OLD NORWICH ROAD	HUNTS BROOK	CINDERELLA LANE	4,854	Major/Minor Collector	78	Preventative Maintenance	\$64,491	112
OSWEGATCHIE ROAD	ROUTE 1	RIVERSIDE DRIVE	4,715	Residential - Thru Street	78	Preventative Maintenance	\$48,940	31
OSWEGATCHIE ROAD	WILCOX COURT	NIANTIC RIVER RD	310	Residential - Thru Street	78	Preventative Maintenance	\$2,831	17
PARKWAY SOUTH	GURLEY RD	2626' E OF GURLEY RD	2,626	Residential - Thru Street	78	Preventative Maintenance	\$35,979	119
SEA MEADOW LANE	THE STRAND	HAMMERHEAD	445	Residential - Dead End	78	Preventative Maintenance	\$3,325	11
STONEY BROOK DRIVE	BROOK ST	ROUTE 1	672	Residential - Thru Street	78	Preventative Maintenance	\$6,896	47
SUNNIECREST DRIVE	CROSS RD	CUL DE SAC	825	Residential - Dead End	78	Preventative Maintenance	\$8,220	47
CROSS ROAD	ROUTE 1	HOUSE #35	1,621	Major/Minor Collector	79	Preventative Maintenance	\$20,190	268
CROSS ROAD	1175' S OF PARKWAY SOUTH	CENTER OF I-95 BRIDGE	1,175	Major/Minor Collector	79	Preventative Maintenance	\$41,955	268
GILEAD ROAD	ROUTE 85	LORENZO STREET	1,139	Residential - Thru Street	79	Preventative Maintenance	\$11,349	47
MAPLE AVENUE	ROUTE 32	SCOTCH CAP RD	432	Residential - Thru Street	79	Preventative Maintenance	\$4,304	47
NIANTIC RIVER ROAD	FIRST AVENUE	EAST WOOD	670	Major/Minor Collector	79	Preventative Maintenance	\$6,676	117
PARKWAY NORTH	360' W OF 195 OFF RAMP	1090' W OF 195 OFF RAMP	732	Residential - Thru Street	79	Preventative Maintenance	\$12,156	117
PARKWAY SOUTH	700' E OF CROSS RD	CROSS RD	700	Residential - Thru Street	79	Preventative Maintenance	\$16,856	117
PILGRIM ROAD	CHAPMAN AV	DEAD END	1,206	Residential - Dead End	79	Preventative Maintenance	\$6,010	47
REED AVENUE	VALLEY ST #1	END	161	Residential - Dead End	79	Preventative Maintenance	\$1,336	47
SEVENTH AVENUE	NIANTIC RIVER RD	CENTER ST	984	Residential - Thru Street	79	Preventative Maintenance	\$9,805	47
SIXTH AVENUE #1	NIANTIC RIVER RD	CENTER ST	990	Residential - Thru Street	79	Preventative Maintenance	\$9,864	47
THE STRAND	ROUTE 213	50' N OF HOUSE #16	677	Residential - Dead End	79	Preventative Maintenance	\$5,059	47
VAUXHALL ST EXT #1	SILVA LA	HOUSE #685 & HYD 804	2,851	Residential - Thru Street	79	Preventative Maintenance	\$33,144	84
WHITE OAK LANE	VAUXHALL STREET EXT	CUL DE SAC	809	Residential - Dead End	79	Preventative Maintenance	\$8,061	11
BLOOMINGDALE ROAD	TOWNLINE	GALLOWES LA	2,214	Residential - Thru Street	80	Preventative Maintenance	\$29,415	48
CROSS ROAD	HOUSE #35	1175' S OF PARKWAY SOUTH	2,288	Major/Minor Collector	80	Preventative Maintenance	\$28,498	264
HARDWICK ROAD	OLD NORWICH RD	ROUTE 32	661	Residential - Thru Street	80	Preventative Maintenance	\$6,586	46
OLD NORWICH ROAD	SENKOW DR	RICHARDS GROVE RD	3,617	Major/Minor Collector	80	Preventative Maintenance	\$37,543	46
HARVEY AVENUE #2	LOIS AVE	END	248	Residential - Dead End	81	Preventative Maintenance	\$2,059	45
MARJORIE STREET	ROUTE 85	LOIS AVE	254	Residential - Thru Street	81	Preventative Maintenance	\$2,531	45
SECOND STREET NO. 2	RIVER STREET	AVENUE B	221	Residential - Thru Street	81	Preventative Maintenance	\$1,835	45
VAUXHALL ST EXT #1	KENYON RD	ROSELEAH DRIVE	1,400	Major/Minor Collector	81	Preventative Maintenance	\$18,606	92
VAUXHALL ST EXT #1	HOUSE #685 & HYD 804	KENYON RD	3,046	Residential - Thru Street	81	Preventative Maintenance	\$40,464	92
WAY HILL ROAD	BUTLERTOWN ROAD	ROUTE 85	2,846	Rural	82	Preventative Maintenance	\$25,996	45
DAYTON PLACE	ROUTE 85	DAYTON RD #1	574	Major/Minor Collector	83	Preventative Maintenance	\$7,149	112
DAYTON ROAD #1	928' NORTH OF DAYTON PL	HOUSE #123	3,353	Residential - Thru Street	83	Preventative Maintenance	\$30,627	44
KENYON ROAD	DAYTON RD #1	ANN ROAD	1,535	Major/Minor Collector	83	Preventative Maintenance	\$17,844	29
QUINLEY WAY	GREENTREE DR	CUL DE SAC	2,515	Residential - Dead End	83	Preventative Maintenance	\$35,503	44
SCOTCH CAP ROAD	HOUSE #55	DEAD END	1,033	Residential - Dead End	83	Preventative Maintenance	\$12,009	44
CROSS ROAD	CENTER OF I-95 BRIDGE	NOVA-CHIP	802	Major/Minor Arterials	84	Preventative Maintenance	\$28,636	214
RAINBOW COURT	MILTON ROAD	CUL DE SAC	779	Residential - Dead End	84	Preventative Maintenance	\$7,762	11
SPITHEAD ROAD	HOUSE #30	ROUTE 156	1,795	Major/Minor Collector	84	Preventative Maintenance	\$17,886	61
WATERFORD PKWY SOUTH	VAUXHALL ST EXT #2	TOWNLINE	470	Major/Minor Collector	84	Preventative Maintenance	\$5,073	106
CIRCLE STREET	TENTH AVE	EIGHTH AVE	476	Residential - Thru Street	85	Preventative Maintenance	\$4,743	43
CONNISHIRE DRIVE	GREENTREE DR	ROGERS HILL RD	1,987	Residential - Thru Street	85	Preventative Maintenance	\$28,049	43
GALLUP LANE	HOUSE #62 DRIVEWAY	MULLEN HILL RD	1,284	Residential - Thru Street	85	Preventative Maintenance	\$14,927	43
HARBOR VIEW AVENUE	CLIFTON ST	TOWN LINE	1,027	Residential - Thru Street	85	Preventative Maintenance	\$10,233	1

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
LOIS AVENUE	MARJORIE ST	END	567	Residential - Dead End	85	Preventative Maintenance	\$5,649	43
OVERLOOK DRIVE	GALLUP LA	CUL DE SAC	1,149	Residential - Dead End	85	Preventative Maintenance	\$16,219	43
SNOWDEN STREET	TREMON ST	CLIFTON ST	468	Residential - Thru Street	85	Preventative Maintenance	\$4,683	43
VALLEY STREET #1	DOCK ROAD	END	773	Residential - Thru Street	85	Preventative Maintenance	\$5,418	43
BLOOMINGDALE ROAD	QUAKER HILL SCHOOL ENTR.	OLD COLCHESTER RD	1,446	Residential - Thru Street	86	Patch & Crackseal	\$6,718	231
GEORGE STREET	LARSON STREET	DEAD END	623	Residential - Dead End	86	Patch & Crackseal	\$2,894	92
GREENTREE DRIVE	CENTER OF POWER LINES	ROGERS HILL RD	2,063	Residential - Thru Street	86	Patch & Crackseal	\$13,578	92
OLD COLCHESTER ROAD	CENTER OF 395 BRIDGE	TOWNLINE	1,148	Major/Minor Collector	86	Patch & Crackseal	\$5,778	83
PALMER ROAD	GOSHEN ST	SHORE RD	1,034	Residential - Thru Street	86	Patch & Crackseal	\$5,604	20
WILCOX COURT	OSWEGATCHIE ROAD	BROOK STREET	805	Residential - Thru Street	86	Patch & Crackseal	\$2,493	92
WOODBINE STREET	RIDGEWOOD AVENUE	SHORE DRIVE	593	Residential - Thru Street	86	Patch & Crackseal	\$2,525	92
BRAMAN ROAD	367' E OF GOUNDRY DR	PEPPERBOX RD	1,059	Residential - Thru Street	87	Patch & Crackseal	\$4,100	127
CLIFTON STREET	PHILLIPS ST	END	568	Residential - Thru Street	87	Patch & Crackseal	\$2,639	91
DIMMOCK ROAD	ROUTE 213	BRAMAN RD	3,647	Residential - Thru Street	87	Patch & Crackseal	\$16,944	91
FARMSTEAD LANE	BEACON HILL DR	CUL DE SAC	796	Residential - Dead End	87	Patch & Crackseal	\$5,239	91
GILEAD ROAD	LORENZO STREET	CUL DE SAC	2,437	Residential - Dead End	87	Patch & Crackseal	\$7,548	91
HILLCREST DRIVE	FAIRLAWN ST	GLENVALE ST	694	Residential - Thru Street	87	Patch & Crackseal	\$3,224	91
LINDROS LANE	SHORE ROAD	END	988	Residential - Dead End	87	Patch & Crackseal	\$3,825	22
MINER LANE	RR TRACKS	CUL-DE-SAC	3,040	Residential - Dead End	87	Patch & Crackseal	\$14,124	91
NEW SHORE ROAD	NELSON WHITE RESIDENCE	SHORE RD	967	Residential - Thru Street	87	Patch & Crackseal	\$3,369	91
NILES HILL RD #1	EAST NECK ROAD	NEW LONDON CITY LINE	404	Major/Minor Collector	87	Patch & Crackseal	\$1,877	228
PRINDVILLE AVENUE	ARTHUR ST	NILES HILL RD #1	716	Residential - Thru Street	87	Patch & Crackseal	\$3,603	91
RICHARDS GROVE ROAD	OLD NORWICH RD	ROUTE 32 (WEST)	1,218	Residential - Thru Street	87	Patch & Crackseal	\$5,659	0
TREMONT STREET	ROUTE 85	SNOWDEN STREET	496	Residential - Thru Street	87	Patch & Crackseal	\$2,304	91
WARWICK TERRACE	GREENTREE DRIVE	CONNSHIRE DRIVE	797	Residential - Thru Street	87	Patch & Crackseal	\$5,245	91
YORKSHIRE DRIVE	1560' N OF FOG PLAIN ROAD	FOG PLAIN ROAD	1,560	Residential - Thru Street	87	Patch & Crackseal	\$8,457	91
BEACH STREET #2	NIANTIC RIVER RD	END	326	Residential - Thru Street	88	Patch & Crackseal	\$1,262	90
BEACON HILL DRIVE	GRABNER DR	HOUSE #4	338	Residential - Thru Street	88	Patch & Crackseal	\$2,224	90
CENTER STREET	FIFTH AVE	SEVENTH AVE	475	Residential - Thru Street	88	Patch & Crackseal	\$2,206	90
CLARK LANE	S. ENTRANCE OF JR HIGH	ROUTE 1	3,102	Major/Minor Arterials	88	Patch & Crackseal	\$20,417	451
COIT COURT	NIANTIC RIVER RD	DEAD END	541	Residential - Dead End	88	Patch & Crackseal	\$1,885	90
GLENWOOD AVENUE	ROUTE 213	NEW LONDON CITY LINE	755	Residential - Thru Street	88	Patch & Crackseal	\$4,092	29
MAGINNIS PARKWAY	PRINDVILLE AVE	NILES HILL RD #1	749	Residential - Thru Street	88	Patch & Crackseal	\$3,479	90
MARLIN DRIVE	ROUTE 156	HOUSE #3	741	Residential - Dead End	88	Patch & Crackseal	\$3,442	22
NIANTIC RIVER ROAD	HOUSE #194	OLD NIANTIC RIVER RD (S)	1,298	Major/Minor Collector	88	Patch & Crackseal	\$7,035	225
PARKWAY NORTH	1421' W OF CROSS RD	OIL MILL RD	5,951	Residential - Thru Street	88	Patch & Crackseal	\$36,865	90
SHORE ROAD	NEW SHORE RD	MAGONK POINT RD	1,738	Residential - Thru Street	88	Patch & Crackseal	\$7,738	15
SPLITHEAD ROAD	ROUTE 1	MULLEN HILL RD	2,075	Major/Minor Collector	88	Patch & Crackseal	\$9,640	194
ARTHUR STREET	PRINDVILLE AVE	WILSON AVE	290	Residential - Thru Street	89	Patch & Crackseal	\$1,347	89
AVENUE A #1	MILLSTONE RD WEST	SECOND STREET	564	Residential - Thru Street	89	Patch & Crackseal	\$2,182	89
BARTLETT PLACE	SOUTH BARTLETT RD	CUL DE SAC LOOP	956	Residential - Dead End	89	Patch & Crackseal	\$3,701	89
BLOOMINGDALE ROAD	HOUSE #133	HUNTS BROOK BRIDGE	5,229	Residential - Thru Street	89	Patch & Crackseal	\$25,306	89
EIGHTH AVENUE	NIANTIC RIVER RD	CIRCLE ST	505	Residential - Thru Street	89	Patch & Crackseal	\$2,346	89
KONOMOC AVENUE	OSWEGATCHIE RD	SHAWANDASSEE RD #1	1,449	Residential - Thru Street	89	Patch & Crackseal	\$5,610	89
LORENZO STREET	ROUTE 85	GILEAD ROAD	332	Residential - Thru Street	89	Patch & Crackseal	\$1,542	89

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
MALLARD LANE	SCENIC VIEW DR	ROUTE 1	1,043	Residential - Thru Street	89	Patch & Crackseal	\$6,865	89
MILLERS POND ROAD	BLOOMINGDALE RD	DEAD END	1,721	Rural	89	Patch & Crackseal	\$5,330	89
NINTH AVENUE	NIANTIC RIVER RD	CIRCLE ST	515	Residential - Thru Street	89	Patch & Crackseal	\$2,392	89
OLD COLCHESTER ROAD	HOUSE #106	CENTER LINE 395 BRIDGE	4,114	Major/Minor Collector	89	Patch & Crackseal	\$22,299	89
OLD MILL ROAD	BRIDGE	257' E OF BLOOMINGDALE RD	286	Residential - Thru Street	89	Patch & Crackseal	\$1,219	10
OLD NIANTIC RIVER ROAD	NIANTIC RIVER RD(N)	ROXWOOD RD	718	Residential - Thru Street	89	Patch & Crackseal	\$2,918	89
OLD NORWICH ROAD	CINDERELLA LA	NIANTIC RIVER RD(S)	1,006	Major/Minor Collector	89	Patch & Crackseal	\$6,232	11
PARKWAY NORTH	854' W OF CROSS RD	1421' W OF CROSS RD	898	Residential - Thru Street	89	Patch & Crackseal	\$5,562	223
PEPPERIDGE DRIVE	UPPER BARTLETT RD(W)	UPPER BARTLETT RD(E)	1,151	Residential - Thru Street	89	Patch & Crackseal	\$4,902	89
POINT COMFORT	OSWEGATCHIE RD	END	430	Residential - Dead End	89	Patch & Crackseal	\$1,331	89
RIVERSIDE DRIVE	OSWEGATCHIE RD(N)	OSWEGATCHIE RD(S)	1,905	Residential - Dead End	89	Patch & Crackseal	\$6,024	89
SCENIC VIEW DRIVE	ROUTE 1	CUL DE SAC	1,226	Residential - Dead End	89	Patch & Crackseal	\$8,069	89
SOUTH BARTLETT ROAD	UPPER BARTLETT RD	DEAD END	1,008	Residential - Dead End	89	Patch & Crackseal	\$3,902	89
STANTON STREET	OSWEGATCHIE ROAD(N)	OSWEGATCHIE ROAD(E)	1,014	Residential - Thru Street	89	Patch & Crackseal	\$4,711	89
TENTH AVENUE	NIANTIC RIVER ROAD	CIRCLE STREET	509	Residential - Thru Street	89	Patch & Crackseal	\$2,364	89
UPPER BARTLETT ROAD	LATHROP ROAD	DEAD END	2,546	Residential - Dead End	89	Patch & Crackseal	\$10,843	89
VALERIE STREET	OSWEGATCHIE ROAD	CLIP 5052	857	Residential - Thru Street	89	Patch & Crackseal	\$3,981	89
WILSON AVENUE #2	ARTHUR STREET	MAGINNIS PKWY	281	Residential - Thru Street	89	Patch & Crackseal	\$1,305	89
ALOWIFE ROAD	GLENWOOD AVE	CUL DE SAC	705	Residential - Dead End	90	Patch & Crackseal	\$4,094	88
BIRCH STREET	FOREST ST	SHORE ST	974	Residential - Thru Street	90	Patch & Crackseal	\$3,577	3
FOREST STREET	GLENWOOD RD	RIDGEWOOD RD	1,367	Residential - Thru Street	90	Patch & Crackseal	\$5,292	88
GLENWOOD ROAD	WOODLAND RD	SHORE DR	880	Residential - Thru Street	90	Patch & Crackseal	\$3,747	88
GREENFIELD STREET	PENINSULAR AVE	RIDGEWOOD AVE	530	Residential - Thru Street	90	Patch & Crackseal	\$1,846	88
LATHROP ROAD	ROUTE 32	TOWN LINE	2,221	Residential - Thru Street	90	Patch & Crackseal	\$10,318	220
LAUREL STREET	RIDGEWOOD AVE	SHORE DR	664	Residential - Thru Street	90	Patch & Crackseal	\$2,313	88
PARKWAY	SHORE DR	PENINSULAR AVE	309	Residential - Thru Street	90	Patch & Crackseal	\$1,316	88
PENINSULAR AVENUE	RIDGEWOOD AVE	TOWNLINE	836	Residential - Thru Street	90	Patch & Crackseal	\$3,236	88
SHORE DRIVE	RIDGEWOOD AVE	GLENWOOD RD	1,511	Residential - Thru Street	90	Patch & Crackseal	\$6,435	88
UNCAS COURT	GLENWOOD ROAD	DEAD END	248	Residential - Dead End	90	Patch & Crackseal	\$768	88
WOODLAND ROAD	RICHARDS GROVE ROAD	FOREST STREET	816	Residential - Thru Street	90	Patch & Crackseal	\$3,475	88
WILSON ROAD	BENHAM AVE	DEAD END	336	Residential - Dead End	91	Patch & Crackseal	\$1,040	87
BELLA VISTA STREET	QUINLEY WAY	CUL DE SAC	682	Residential - Dead End	92	Patch & Crackseal	\$2,640	4
BENHAM AVENUE	ROUTE 32	DEAD END	2,335	Residential - Dead End	92	Patch & Crackseal	\$10,848	8
LATIMER COURT	QUINLEY WAY	CUL DE SAC	439	Residential - Dead End	92	Patch & Crackseal	\$2,889	86
SILVA LANE	VAUXHALL STREET	END	1,096	Residential - Dead End	92	Patch & Crackseal	\$4,243	86
BENHAM AVENUE	OLD NORWICH RD	ROUTE 32	1,089	Residential - Thru Street	93	Do Nothing	\$0	0
CLARK LANE	FOG PLAIN RD	S. ENTRANCE OF JR HIGH	2,570	Major/Minor Arterials	93	Do Nothing	\$0	0
MAPLE ROAD	ROUTE 32	HOUSE #10	423	Residential - Thru Street	93	Do Nothing	\$0	0
OLD NORWICH ROAD	RICHARDS GROVE RD	HUNTS BROOK	488	Major/Minor Collector	93	Do Nothing	\$0	0
RICHARDS GROVE ROAD	ROUTE 32 (EAST)	END OF ROAD (RIVER)	1,034	Residential - Dead End	93	Do Nothing	\$0	0
SPITHEAD ROAD	MULLEN HILL RD	HOUSE #30	5,483	Major/Minor Collector	93	Do Nothing	\$0	0
VAUXHALL ST EXT #1	HUNTS BROOK RD	OLD BARRY ROAD	1,203	Residential - Thru Street	93	Do Nothing	\$0	0
VAUXHALL ST EXT #1	OLD BARRY ROAD	100' S OF DOUGLAS LA	3,319	Residential - Thru Street	93	Do Nothing	\$0	0
VAUXHALL STREET	VAUXHALL ST EXT #1	I-95	769	Major/Minor Collector	93	Do Nothing	\$0	0
WILSON AVENUE #1	BENHAM AVENUE	DEAD END	536	Residential - Dead End	93	Do Nothing	\$0	0

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair/Alternative	Cost	Benefit Value
AUSTIN STREET	GILEAD RD	END	150	Residential - Dead End	94	Do Nothing	\$0	0
EAST DRIVE	RIVERSIDE DR	OSWEGATCHIE RD	315	Residential - Thru Street	94	Do Nothing	\$0	0
GURLEY ROAD	PARKWAY SOUTH	TOWNLINE	1,913	Residential - Dead End	94	Do Nothing	\$0	0
INDIAN VALLEY DRIVE	OSWEGATCHIE RD	MANATUCK DR	860	Residential - Thru Street	94	Do Nothing	\$0	0
JAMES STREET	WILSON AVE #1	DEAD END	188	Residential - Dead End	94	Do Nothing	\$0	0
KENTON ROAD	ANN ROAD	VAUXHALL ST EXT #1	1,077	Major/Minor Collector	94	Do Nothing	\$0	0
MANATUCK DRIVE	OSWEGATCHIE RD	CUL DE SAC	633	Residential - Dead End	94	Do Nothing	\$0	0
MURRAY COURT	CLIFTON ST	END	174	Residential - Dead End	94	Do Nothing	\$0	0
OSWEGATCHIE ROAD	RIVERSIDE DRIVE	WILCOX COURT	4,846	Residential - Thru Street	94	Do Nothing	\$0	0
PARK DRIVE	KONOMOC AVE(N)	KONOMOC AVE(S)	1,703	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	2626' E OF GURLEY RD	700' E OF CROSS RD	2,774	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	CROSS ROAD	630' E OF CROSS ROAD	630	Residential - Thru Street	94	Do Nothing	\$0	0
PARKWAY SOUTH	630' E OF CROSS ROAD	BEECHWOOD DR	1,600	Residential - Thru Street	94	Do Nothing	\$0	0
PLANT DRIVE	PARK DR	OSWEGATCHIE RD	705	Residential - Thru Street	94	Do Nothing	\$0	0
RAYMOND LANE	INDIAN VALLEY RD	CUL DE SAC	300	Residential - Dead End	94	Do Nothing	\$0	0
SHAWANDASSEE ROAD	KONOMOC AVE	OSWEGATCHIE RD	1,918	Residential - Thru Street	94	Do Nothing	\$0	0
VAUXHALL ST EXT #1	ROSELEAH DRIVE	TOWNLINE	1,700	Major/Minor Collector	94	Do Nothing	\$0	0
BRAMAN ROAD	MARY BUTLER DR	544' W OF GOUNDRY DR	894	Residential - Thru Street	95	Do Nothing	\$0	0
GALLUP LANE	ROUTE 156	HOUSE #62 DRIVEWAY	3,215	Residential - Thru Street	95	Do Nothing	\$0	0
MULLEN HILL ROAD	SHORE RD	ROUTE 213	3,458	Residential - Thru Street	95	Do Nothing	\$0	0
OLD NORWICH ROAD	SPITHEAD RD	STONEHEIGHTS DR	2,475	Residential - Thru Street	95	Do Nothing	\$0	0
OLD NORWICH ROAD	TOWN LINE	SENKOW DR	2,161	Major/Minor Collector	95	Do Nothing	\$0	0
RIDGEWOOD AVENUE	ROXWOOD RD	BURLAKE RD	490	Residential - Thru Street	95	Do Nothing	\$0	0
SHORE ROAD	ROUTE 213	GREENFIELD ST	2,898	Residential - Thru Street	95	Do Nothing	\$0	0
WILLETTS AVENUE	LAMPHERE RD	JORDAN COVE RD	1,666	Residential - Thru Street	95	Do Nothing	\$0	0
WILLETTS AVENUE	ROUTE 1	BUTLER CT	1,613	Major/Minor Collector	95	Do Nothing	\$0	0
WILLETTS AVENUE	BUTLER CT	TOWN LINE	828	Major/Minor Collector	95	Do Nothing	\$0	0
MYROCK AVENUE	WILLETTS AVE	END	1,457	Residential - Dead End	98	Do Nothing	\$0	0
VAUXHALL ST EXT #1	100' S OF DOUGLAS LA	SILVA LA	2,124	Residential - Thru Street	98	Do Nothing	\$0	0
BLOOMINGDALE ROAD	GALLOW'S LA	100' S OF APPLEWOOD DR	3,319	Residential - Thru Street	99	Do Nothing	\$0	0
BLOOMINGDALE ROAD	HUNTS BROOK BRIDGE	QUAKER HILL SCHOOL ENTR.	1,002	Residential - Thru Street	99	Do Nothing	\$0	0
COMSTOCK AVENUE	TOWNLINE	DEAD END	205	Residential - Dead End	99	Do Nothing	\$0	0
DEBORAH STREET	VALERIE ST	OSWEGATCHIE RD	1,099	Residential - Thru Street	99	Do Nothing	\$0	0
ELLEN WARD ROAD	NORTH RD	ROUTE 1	1,115	Residential - Thru Street	99	Do Nothing	\$0	0
FARGO ROAD	ROUTE 85	CHIPMAN RD	861	Residential - Dead End	99	Do Nothing	\$0	0
HIGHLAND DRIVE	MAPLE TER	ROUTE 156	754	Residential - Thru Street	99	Do Nothing	\$0	0
HILLTOP TERRACE	GALLUP LA	CUL DE SAC	737	Residential - Dead End	99	Do Nothing	\$0	0
JOHNSON COURT	GALLUP LA	CUL DE SAC	786	Residential - Dead End	99	Do Nothing	\$0	0
LONGVIEW AVENUE	GALLUP LA	CUL DE SAC	1,048	Residential - Dead End	99	Do Nothing	\$0	0
MAPLE TERRACE	GALLUP LA	END	883	Residential - Thru Street	99	Do Nothing	\$0	0
NORTH ROAD	ELLEN WARD RD	ROUTE 156	3,014	Residential - Thru Street	99	Do Nothing	\$0	0
SHAWANDASSEE ROAD	OSWEGATCHIE RD	END	619	Residential - Dead End	99	Do Nothing	\$0	0
SUNSET DRIVE	HIGHLAND STREET	CUL DE SAC	327	Residential - Dead End	99	Do Nothing	\$0	0
WIEMES COURT	GALLUP LANE(N)	GALLUP LANE(S)	1,389	Residential - Thru Street	99	Do Nothing	\$0	0
FARGO ROAD	CHIPMAN RD	END	1,520	Residential - Dead End	100	Do Nothing	\$0	0

Name	From Segment	To Segment	Length (ft)	Pavement Class	PCI	Repair Alternative	Cost	Benefit Value
FOG PLAIN ROAD	CLARK LA	ROUTE 1	6,824	Major/Minor Collector	100	Do Nothing	\$0	0
FOSTER ROAD	CROSS ROAD	SECOND DRIVEWAY	660	Rural	100	Do Nothing	\$0	0
GIOVANNI LANE	PAVEMENT CHANGE	CUL DE SAC LOOP	624	Residential - Dead End	100	Do Nothing	\$0	0
GREEN HILLS ROAD	LATHROP RD(S)	LATHROP RD(N)	851	Residential - Thru Street	100	Do Nothing	\$0	0
JORDAN COVE ROAD	663' W OF SHORE RD	SHORE RD	663	Residential - Thru Street	100	Do Nothing	\$0	0
LEONARD ROAD	121' W OF NEW SHORE RD	53' W OF END OF LOOP	104	Residential - Dead End	100	Do Nothing	\$0	0
LOWER BARTLETT ROAD	LATHROP RD	DEAD END	2,287	Residential - Dead End	100	Do Nothing	\$0	0
MULLEN HILL ROAD	STONEHEIGHTS DR	ELLEN WARD RD	2,313	Residential - Thru Street	100	Do Nothing	\$0	0
NILES HILL RD #1	BRAMAN RD	HOUSE # 169	487	Residential - Thru Street	100	Do Nothing	\$0	0
PEPPERBOX ROAD	BRAMAN RD	HOUSE #28	5,124	Residential - Dead End	100	Do Nothing	\$0	0
PILGRIM ROAD	BLOOMINGDALE RD	CHAPMAN AV	1,192	Major/Minor Collector	100	Do Nothing	\$0	0
STONEHEIGHTS DRIVE	BOSTON POST ROAD	MULLEN HILL ROAD	2,194	Residential - Thru Street	100	Do Nothing	\$0	0
WEST NECK ROAD	ROUTE 213	WESTWOOD DRIVE	791	Residential - Dead End	100	Do Nothing	\$0	0
WESTWOOD DRIVE	WEST NECK ROAD	WESTWOOD DRIVE	2,912	Residential - Dead End	100	Do Nothing	\$0	0

Appendix C: Unit Costs

Unit costs updated and reviewed in 2020.

Name	Cost/SY
Do Nothing	\$0.00
Routine Maintenance	\$1.25
Preventive Maintenance	\$3.75
Structural Improvement	\$15.00
Base Rehabilitation	\$22.50

Appendix D: Glossary of Terms

BASE INDEX (BI): is an index derived from controlled measurements and evaluations of condition survey distresses attributed to the underlying unbound base and subbase materials, and is manifested as non-utility patches, alligator cracking, cross section, and consolidation. It is a rating established as an indicator of asphalt materials quality and performance on a scale from 0 to 100, with 100 being excellent.

BENEFIT VALUE (BV): The benefit value for each road section is computed based on the following formula;

$$(\text{ADT} \times \text{Estimated Repair Life}) / (\text{Repair Unit Cost} \times \text{Condition Index})$$

Where: "ADT" = average daily traffic, "Estimated Repair Life" is the number of years of life added to a road by the selected treatment, "Repair Unit Cost" is the cost per square yard of the selected repair type, and "Condition Index" is the PCI (pavement condition index, on a 0-100 scale) for the road section.

Benefit value is on a relative scale. The range of values varies from agency to agency.

CAPITAL REPAIRS: Capital repairs are extensive and costly repairs such as Structural Improvement and Base Rehabilitation work.

DEDUCT VALUES: Deduct values represent the penalty assessed for each identified distress and is used in the calculation of the Pavement Condition Index. Each distress has multiple severity and extent levels, with a specific deduct value at each level. Deduct values may be modified for all nine pavement distress types. The deduct value is ultimately subtracted from a perfect pavement condition of 100.

DEFICIENCY: is any indication of poor or unfavorable pavement performance or signs of impending failure; or any unsatisfactory performance of a pavement short of failure.

DETERIORATION RATE: is a prediction of the anticipated change in a roadway's condition over time.

DISTRESS: Distresses are the physical defects in a pavement system which can be observed and quantified through visual inspection of the roadway surface. Broad categories include cracking, patching, depressions, and surface wear.

FUNCTIONAL CLASSIFICATION: Road functional classification places all streets and roads in the network into one of three general categories - arterial, collector, or local - according to vehicular volume, roadway geometry, and traffic characteristics.

GRADE: is a measure of the steepness of a slope, expressed as a percentage. One percent slope has one foot of elevation change in one hundred feet of horizontal distance.

MAINTENANCE: is anything done to the pavement after original construction short of complete reconstruction, excluding shoulders and bridges.

NETWORK LEVEL: is an assessment of conditions and/or program needs across the entire roadway system encompassed by the roadway management study.

PAVEMENT CONDITION INDEX (PCI): is an index derived from established measurements of pavement surface condition distress or deficiencies. It is a serviceability rating established under controlled conditions having a scale of 0 to 100, with 100 being excellent.

PAVEMENT MANAGEMENT (PM): Pavement Management is the effective and efficient directing of the various activities involved in providing and sustaining pavements in a condition acceptable to the traveling public at the lowest life-cycle cost.

PAVEMENT MANAGEMENT SYSTEM (PMS): is an established, documented procedure treating many or all of the Pavement Management activities in a systematic and coordinated manner. It consists of five essential elements structured to serve decision-making responsibilities at various management levels.

1. Pavement surveys related to condition and serviceability;
2. Database containing all pavement-related information;
3. Analysis scheme;
4. Decision criteria;
5. Implementation procedures.

PAVEMENT PERFORMANCE: is the assessment of how well the pavement served the user over time. The engineer often associates pavement condition with an arbitrary, but quantifiable, value relating to pavement roughness, pavement distress, or pavement strength. Performance is the measured change of condition and/or serviceability over increments of time.

PAVEMENT TYPES: Possible pavement types include bituminous concrete, surface treated, gravel, portland cement concrete, and composite. Pavement types serve to inform pavement engineers of the materials that exist in the cross section of the road section and is a key factor in selecting possible rehabilitation alternatives. "Surface treated" designates a road surface and pavement structure that evolved over time. Generally, this type of surface starts as a dirt road, then is built up over time with a series of sand seals and stone seals. Conversely, a "bituminous concrete" roadway is typically engineered with a pavement structure designed to withstand predicted traffic volumes. The roadway usually has a gravel base, a binder course, and an asphalt wearing surface. A "composite" surface type is a Portland cement concrete pavement that has been overlaid with hot mix asphalt.

PRESERVATION MAINTENANCE: Preservation maintenance is used to describe the routine and preventive maintenance repair categories.

PREVENTIVE MAINTENANCE: Preventive maintenance activities are those which are performed at planned intervals to protect and seal the pavement. Seals are designed to provide one or more of the following benefits:

1. Prevent the intrusion of air and moisture;
2. Fill small cracks and voids;
3. Rejuvenate an oxidized binder;
4. Provide a new wearing surface.

Examples of preventative maintenance treatments include microsurfacing, chip seal, cape seal, or thin overlay.

PROJECT LEVEL: is a detailed assessment or identification of needs relative to a specific roadway, or a section thereof, as opposed to network level applications. It may include on site pavement testing, lab evaluation, life cycle cost analysis, and treatment recommendation for the pavement section.

RECONSTRUCTION: Reconstruction is the complete removal and replacement of a failed pavement, and might also involve widening, realignment, traffic control devices, safety hardware, and major base and drainage work.

REHABILITATION: The rehabilitation of pavements includes the work necessary to restore the pavement to a condition that will allow it to perform satisfactorily for several years. Rehabilitation also includes the work necessary to prepare the pavement for an overlay.

REPAIR STRATEGIES: Repair treatments are assigned to individual road sections based on a decision table or "strategy table". The recommended treatments are based on multiple decision factors such as PCI range, Base Index, Surface Index, Functional Classification, and Surface Type. These input conditions to the strategy table represent the various conditions for each decision factor.

REPAIR TYPES: are the various choices of treatment available for providing a solution to a pavement deficiency or problem. The associated repair type cost is based on a locality's experience.

ROADWAY MANAGEMENT SYSTEM: A roadway management system has all the database attributes of a pavement management system as defined above, along with recording additional inventory and condition data on a range of roadside elements. These additions to the management system database may include drainage features, utilities, traffic signs, pavement markings, sidewalks, pedestrian ramps and other road related elements within the right of way. Because the roadway management system has common locating and identifying fields for each roadside element, the database can be comprehensively evaluated for system wide planning and management

ROUTINE MAINTENANCE: Routine maintenance activities are those which are taken to correct a specific pavement failure or area distress. Routine maintenance usually addresses localized pavement defects and includes activities such as:

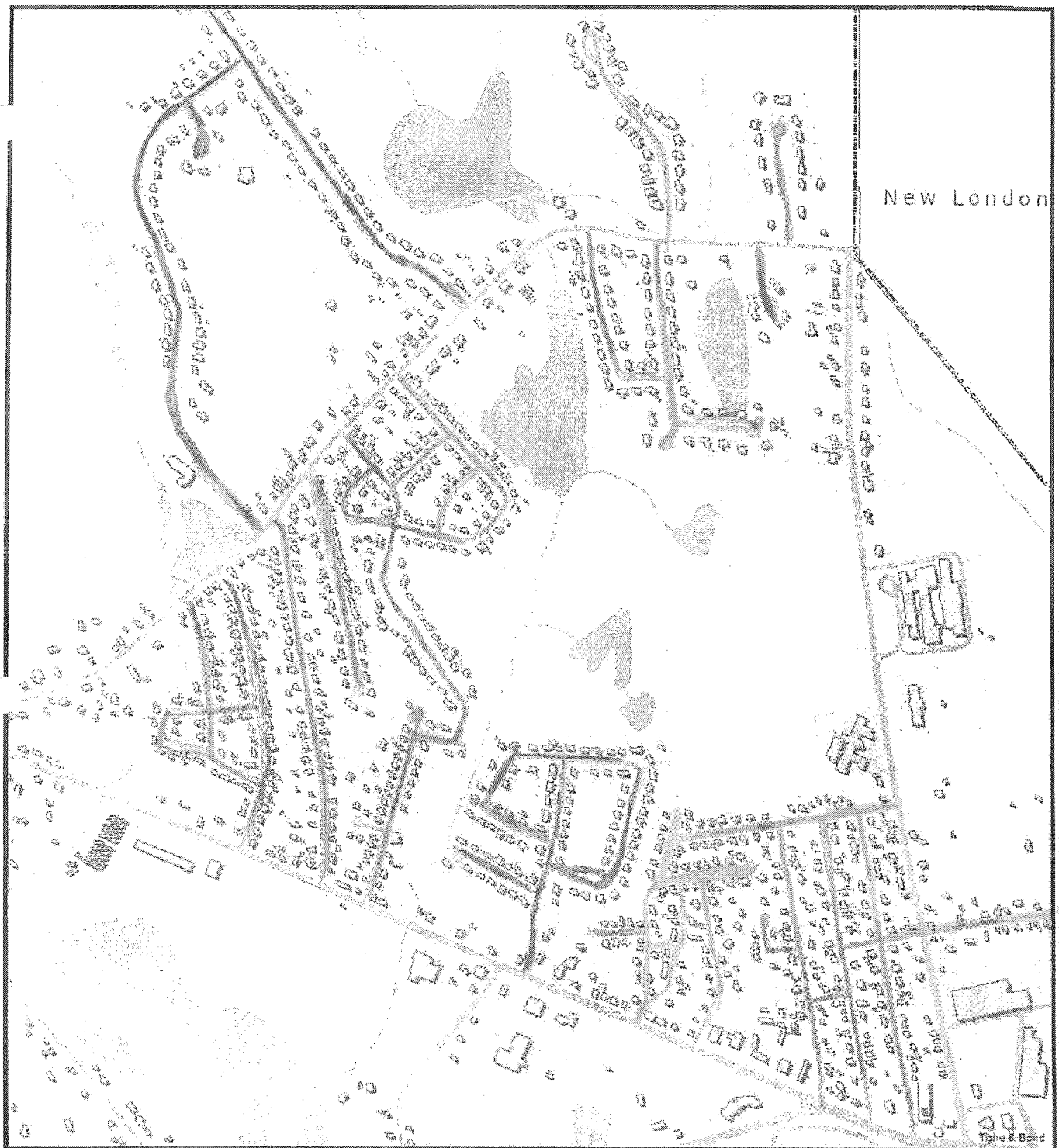
1. Full-depth patching;
2. Partial depth patching;
3. Crack sealing.

SURFACE INDEX (SI): is an index derived from controlled measurements and evaluations of the pavement condition survey distresses attributed to such asphalt mixture and material components as: surface wear/raveling, mix characteristics, and polished aggregate. It is a rating established as an indicator of asphalt materials quality and performance on a scale from 0 to 100, with 100 being excellent.

THRESHOLDS: The thresholds define various condition index ranges used in the determination of recommended repairs. These thresholds identify PCI ranges from 1 to 5, with 5 representing optimal conditions and 1 representing complete reconstruction.

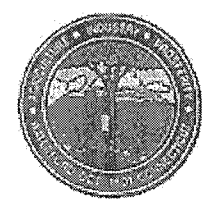
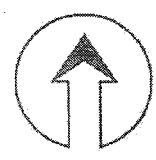
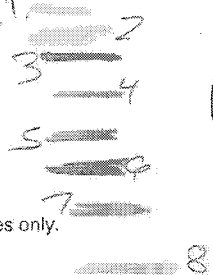
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	Name	From Segment	To Segment	Length (')	Pavement Class	PCI	Volume
26	DANIELS AVENUE	NIANTIC RIVER RD	SOUTHWEST SCHOOL	2,441	Major/Minor Collector	52	1,587
↑	NIANTIC RIVER ROAD	ROUTE # 1	HOUSE #194	4,409	Major/Minor Collector	56	4,056
↑	CROSS ROAD	FOSTER RD	ROUTE 85	3,173	Major/Minor Arterials	56	11,100
↑	CROSS ROAD	NOVA-CHIP	FOSTER RD	2,664	Major/Minor Arterials	57	10,000
↑	DAYTON ROAD #1	DAYTON PL	928' NORTH OF DAYTON PL	928	Major/Minor Collector	70	2,000
↑	WEST STREET	NIANTIC RIVER RD	ROPE FERRY RD	479	Major/Minor Collector	71	500
↑	CHAPMAN AVENUE	VAUXHALL EXT #1	PILGRIM RD	1,802	Major/Minor Collector	72	2,763
↑	NIANTIC RIVER ROAD	OLD NIANITIC RIVER RD (S)	EIGHTH AVENUE	2,105	Major/Minor Collector	72	5,000
	VAUXHALL ST EXT #2	WATERFORD PKWY	TOWN LINE	490	Major/Minor Collector	73	5,000
	WATERFORD PKWY NORTH	VAUXHALL ST EXT #1	TOWNLINE	773	Major/Minor Collector	73	9,000
	DANIELS AVENUE	SOUTHWEST SCHOOL	SPLITHEAD RD	1,157	Major/Minor Collector	74	1,400
	OLD COLCHESTER ROAD	OLD NORWICH RD	HOUSE #106	4,575	Major/Minor Collector	76	2,353
	NIANTIC RIVER ROAD	EIGHTH AVENUE	FIRST AVENUE	1,873	Major/Minor Collector	76	5,000
	NIANTIC RIVER ROAD	EAST WOOD	ROUTE # 156	2,191	Major/Minor Collector	77	3,300
	AVERY LANE	ROUTE 156	ROUTE 1	1,836	Major/Minor Collector	79	5,381
	OLD NORWICH ROAD	HUNTS BROOK	CINDERELLA LANE	4,854	Major/Minor Collector	79	4,732
	CROSS ROAD	ROUTE 1	HOUSE #35	1,621	Major/Minor Collector	80	11,390
	CROSS ROAD	1175' S OF PARKWAY SOUTH	CENTER OF I-95 BRIDGE	1,175	Major/Minor Collector	80	11,390
	NIANTIC RIVER ROAD	FIRST AVENUE	EAST WOOD	670	Major/Minor Collector	80	5,000
	CROSS ROAD	HOUSE #35	1175' S OF PARKWAY SOUTH	2,288	Major/Minor Collector	81	11,390
	OLD NORWICH ROAD	SENKOW DR	RICHARDS GROVE RD	3,617	Major/Minor Collector	81	2,000
	VAUXHALL ST EXT #1	KENYON RD	ROSELEAH DRIVE	1,400	Major/Minor Collector	82	4,006
	DAYTON PLACE	ROUTE 85	DAYTON RD #1	574	Major/Minor Collector	84	5,000
	KENYON ROAD	DAYTON RD #1	ANN ROAD	1,535	Major/Minor Collector	84	1,300
	WATERFORD PKWY SOUTH	VAUXHALL ST EXT #2	TOWNLINE	470	Major/Minor Collector	85	4,800
	CROSS ROAD	CENTER OF I-95 BRIDGE	NOVA-CHIP	802	Major/Minor Arterials	85	9,700
	SPLITHEAD ROAD	HOUSE #30	ROUTE 156	1,795	Major/Minor Collector	85	2,763
	OLD COLCHESTER ROAD	CENTER OF 395 BRIDGE	TOWNLINE	1,148	Major/Minor Collector	87	1,800
	NILES HILL RD #1	EAST NECK ROAD	NEW LONDON CITY LINE	404	Major/Minor Collector	88	5,000
	SPLITHEAD ROAD	ROUTE 1	MULLEN HILL RD	2,075	Major/Minor Collector	89	4,300
	CLARK LANE	S. ENTRANCE OF JR HIGH	ROUTE 1	3,102	Major/Minor Arterials	89	10,000
	NIANTIC RIVER ROAD	HOUSE #194	OLD NIANITIC RIVER RD (S)	1,298	Major/Minor Collector	89	5,000
	OLD COLCHESTER ROAD	HOUSE #106	CENTER LINE 395 BRIDGE	4,114	Major/Minor Collector	90	2,000
	OLD NORWICH ROAD	CINDERELLA LA	ROXWOOD RD	1,006	Major/Minor Collector	90	250
	OLD NORWICH ROAD	RICHARDS GROVE RD	HUNTS BROOK	438	Major/Minor Collector	93	4,600
	CLARK LANE	FOG PLAIN RD	S. ENTRANCE OF JR HIGH	2,570	Major/Minor Arterials	94	10,000
	VAUXHALL STREET	VAUXHALL ST EXT #1	I-95	769	Major/Minor Collector	94	5,000
	SPLITHEAD ROAD	MULLEN HILL RD	HOUSE #30	5,483	Major/Minor Collector	94	2,000
	OLD NORWICH ROAD	TOWN LINE	SENKOW DR	2,161	Major/Minor Collector	95	2,000
	WILLETTS AVENUE	ROUTE 1	BUTLER CT	1,613	Major/Minor Collector	95	10,600
	KENYON ROAD	ANN ROAD	VAUXHALL ST EXT #1	1,077	Major/Minor Collector	95	5,000
	WILLETTS AVENUE	BUTLER CT	TOWN LINE	828	Major/Minor Collector	95	10,600
	VAUXHALL ST EXT #1	ROSELEAH DRIVE	TOWNLINE	1,700	Major/Minor Collector	95	6,800
	FOG PLAIN ROAD	CLARK LA	ROUTE 1	6,824	Major/Minor Collector	100	5,000
	PILGRIM ROAD	BLOOMINGDALE RD	CHAPMAN AV	1,192	Major/Minor Collector	100	2,000



SECTION A

AREAS: 1



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Scale: 1"=850'

Scale is approximate

The information depicted on this map is for planning purposes only.
It is not adequate for legal boundary definition, regulatory
interpretation, or parcel-level analyses.

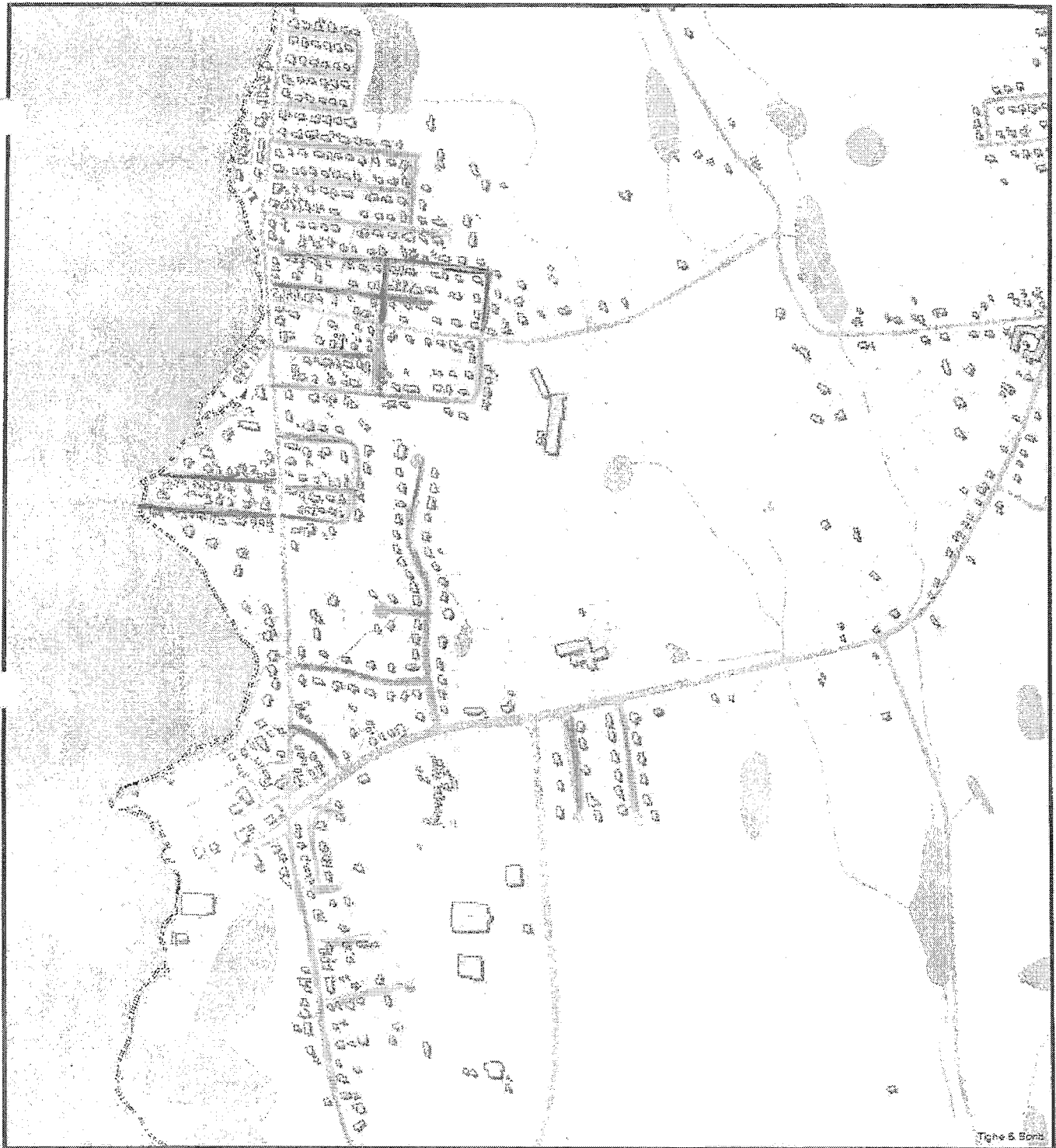


Figure 5.5.5.5.5

SECTION B

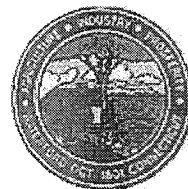
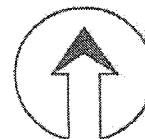
AREAS

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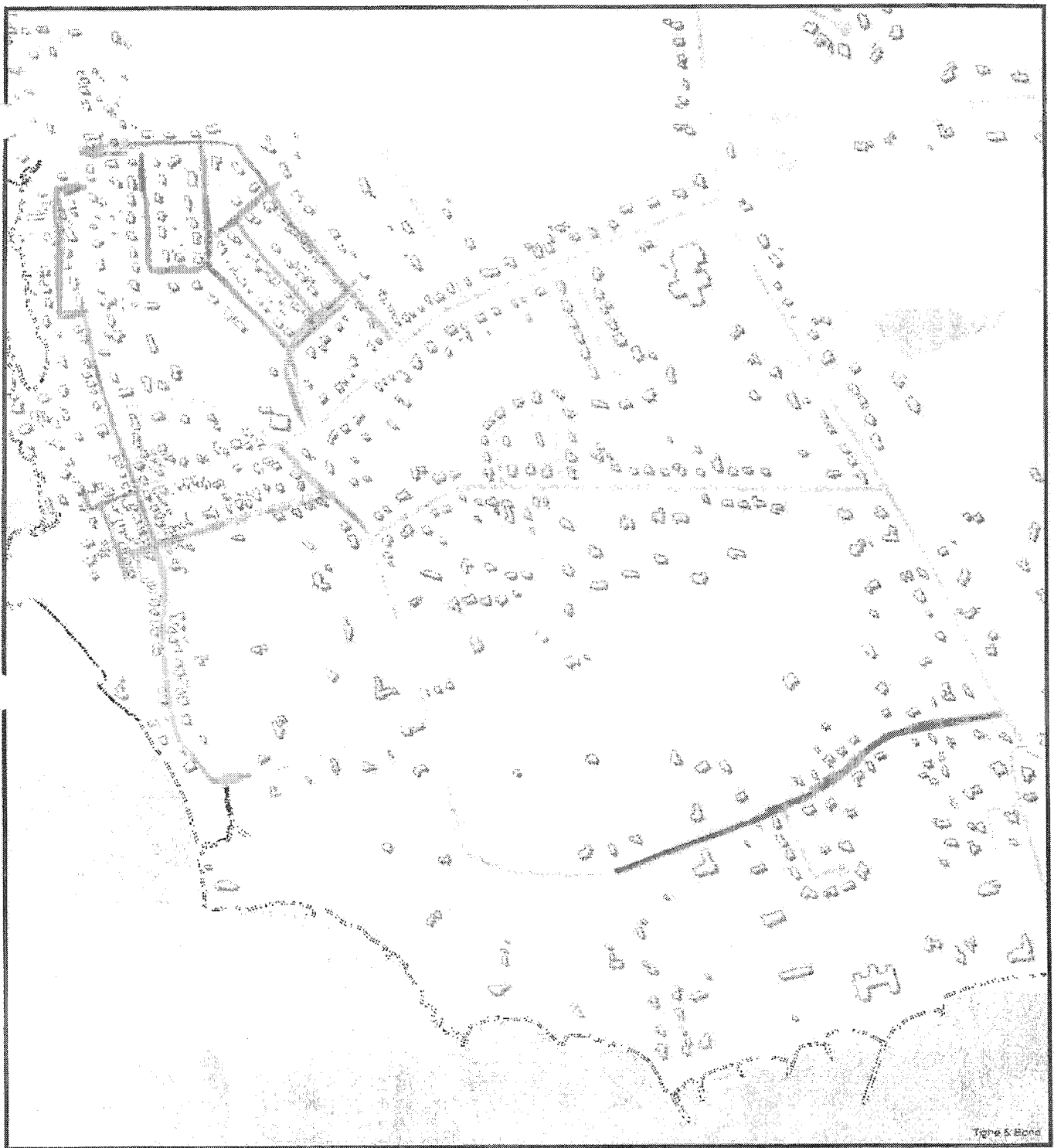
Scale: 1"=900'

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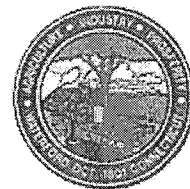
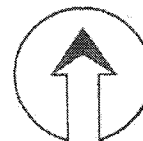
The information depicted on this map is for planning purposes only.
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interpretation, or parcel-level analyses.



SECTION C

A DEAS

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- 2
- 3



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Scale: 1"=800'

Scale is approximate

The information depicted on this map is for planning purposes only.
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interpretation, or parcel-level analyses.

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME Gardiner's Wood Road	DEPARTMENT PRIORITY _____

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. 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 its pavement condition. The preliminary design has been completed, along with legal descriptions for easements required for the road and drainage work. This 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.							
2 PROJECT STATUS IF IN PROGRESS							
Funding of the preliminary design, cost estimate and permitting was authorized in 2017. Those plans have been submitted to the property owner for comment as the town doesn't own the property or have an easement over the property for the road.							
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)							
None							
6 ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below)							
Attached is the expanded narrative, preliminary cost estimate.							
7	COST/FUNDING SOURCE						
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	0	0	0

Gary Schneider

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

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.

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

Please check out our updated company website at: www.lenard-eng.com

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	<i>This is reclassified as a capability and can be removed from this list of actions.</i>
Continue to promote local and regional planning exercises that increase readiness to respond to disasters	Capability	<i>This is reclassified as a capability and can be removed from this list of actions.</i>
Continue to evaluate communication capabilities and pursue upgrades to communication and ensure redundant equipment is available	Capability	<i>This is reclassified as a capability and can be removed from this list of actions.</i>
Continue to promote regional transportation planning through SCCOG	Capability	<i>This is a regional capability.</i>
Work with the SCCOG to perform a regional study of the vulnerability of critical facilities to natural hazard damage	Complete	<i>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.</i>
Work with the SCCOG to develop regional evacuation scenarios that build upon the Millstone evacuation plan	Complete	<i>Carried out evacuation exercise. SCCOG is assessing exercise results to determine whether evacuation plan is practically feasible</i>
Local Emergency Response & Public Information		
Acquire and install evacuation signs in coastal flood hazard areas	Carry Forward	<i>Not yet complete due to lack of funding.</i>
Continue to make evacuation routes in the Gardiners Wood Road area more resilient through elevation, culvert upgrades, etc.	Carry Forward	<i>Funding has been allocated in the Capital Improvement Plan</i>
Encourage the State to perform improvements to reduce the frequency of flooding at Route 156 (Jordan Brook) and at Route 156 / Route 213	Delisted	<i>This falls within the Jurisdiction of the State.</i>
Consider installing an emergency egress between Laurel Crest Drive and Miner Lane.	Carry Forward	<i>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.</i>
Continue to review and update the Town EOP at least once annually	Capability / Carry Forward	<i>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.</i>

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:
 - o 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, Tornadoes, 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		

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY <u>Public Works</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Eversource Escrow Road</u>	DEPARTMENT PRIORITY <u>2</u>

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 attempted 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 the lateral. The Town and Eversource should consider that for some of the roads, in lieu of Eversource performing what is required by the Ordinance, to have Eversource deposit to the town a sum that will be used in conjunction with town funds to address the entire width of the road. The roads selected would be based on the just recently completed pavement analysis by VHB our pavement consultant. There appears to be several roads that are in a condition that the entire width should be milled and overlaid with asphalt.																																																																													
2	PROJECT STATUS IF IN PROGRESS Department has identified the roads 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 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.																																																																													
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 Pavement Management 2020 Update (October 2020), prepared by VHB, consulting engineering and list of roads affected by the installation of the gas mains.																																																																													
7	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="7" style="text-align: center;">COST/FUNDING SOURCE</th> </tr> <tr> <th style="width: 35%;">FUNDING SOURCE</th> <th style="width: 10%;">APPROVED FUNDING TO DATE</th> <th style="width: 10%;">FY2022</th> <th style="width: 10%;">FY2023</th> <th style="width: 10%;">FY2024</th> <th style="width: 10%;">FY2025</th> <th style="width: 10%;">FY2026</th> </tr> </thead> <tbody> <tr> <td>1 Current Year Capital</td> <td></td> <td style="text-align: center;">215,813</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2 Utility Budget/Sewer Cap Maint Fund</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3 Transfer to CNR</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4 Short/Long-term Bonds</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5 LoCIP (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>6 CNR Undesignated Fund Balance</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7 Federal/State Grants (detail in section 5)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8 Other Funding (detail in section 5 above)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TOTALS</td> <td style="text-align: center;">0</td> <td style="text-align: center;">215,813</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> </tbody> </table>	COST/FUNDING SOURCE							FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026	1 Current Year Capital		215,813					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	215,813	0	0	0	0
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Three Year from installation

Name

Benham Avenue
April/May 2020
Scotch Cap Road
April/May 2020

Brill Avenue
April 2022
Kingfisher Way
April 2022
Mackenzie Road
April 2022
Miller Avenue
April 2022
Sandy Hollow Drive
April 2022
Woodlawn Avenue
April 2022
Dayton Road
August 2022
Roseleah Drive
August 2022
Soljer Drive
August 2022
Fitzgerald Avenue
October 2022
James Avenue
October 2022
John Avenue
October 2022
Ladley Road
October 2022
May Avenue
October 2022
Robert's Court
October 2022
Senkow Drive
October 2022
Thomas Avenue
October 2022
Wintergreen Drive
October 2022

Old Norwich Road
April 2023
Bolles Court
In 2023
Broad View Court
In 2023
Clark Place
In 2023
Cove View Drive
In 2023
Decab Lane
In 2023
Dunbar Road
In 2023
Hardwick Road
In 2023
Miller Avenue
In 2023
Milton Road
In 2023
Old Colchester Road
In 2023
Pennicott Road
In 2023
Porter Street
In 2023
Quaker Lane
In 2023
Rainbow Court
In 2023
Richards Grove Road
In 2023
Tanglewyde Place
In 2023
Uncas Avenue
In 2023

Final Restoration: Waterford Roads
(Source: Email dated Jan 22, 2020)

In 2023
In 2023

Uncas Court
Wilson Road

Waterford Residential Expansion

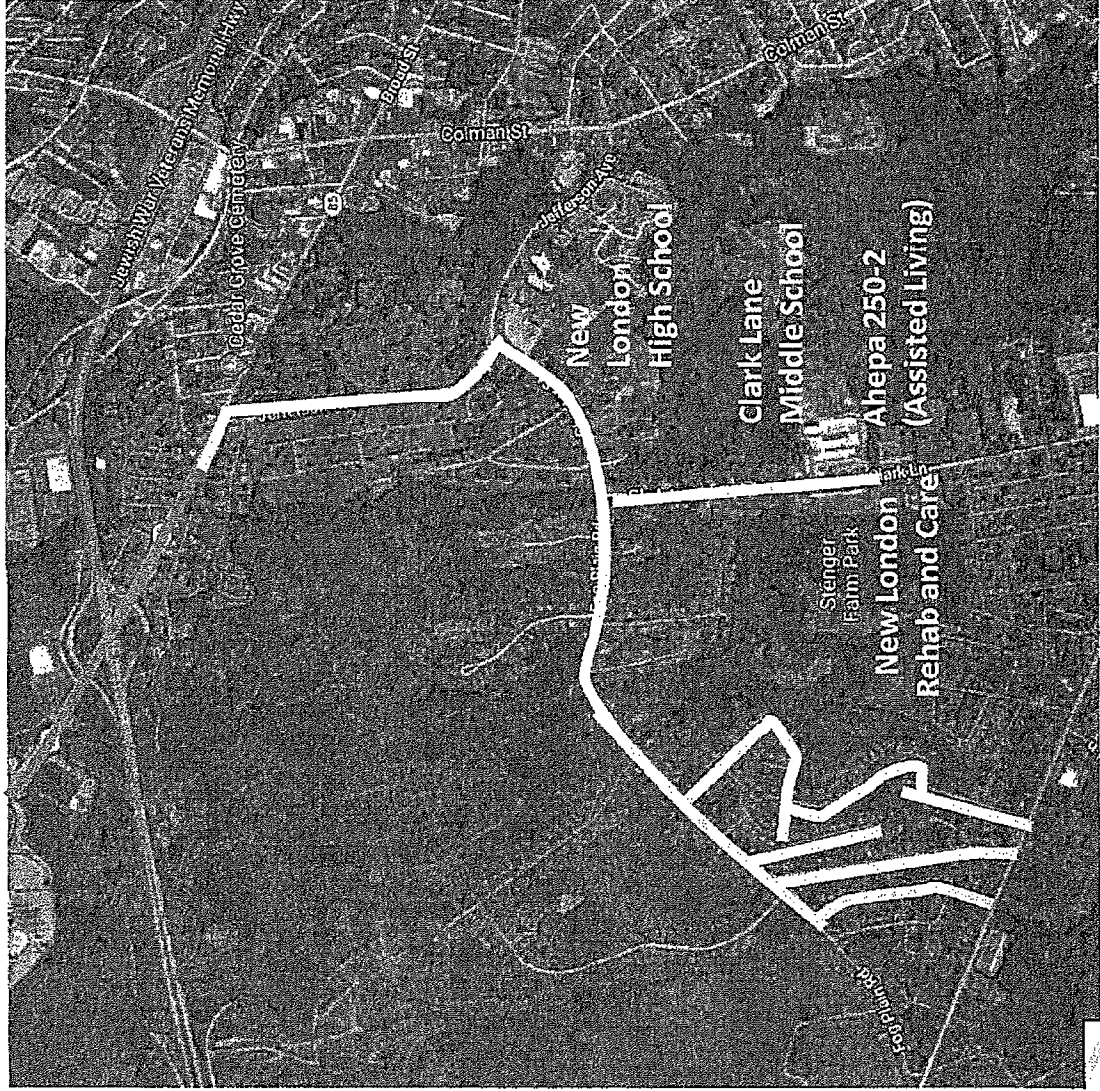
EVERSOURCE
ENERGY

Street	Main (ft.)
Clark Ln	3,291
Woodlawn Ave	1,320
Kestrel Ln	281
Kingfisher Way	1,535
Miner Ave	2,350
Brill Ave	1,852
Fog Plain Rd	4,905
Sandy Hollow Dr	1,410
Mackenzie Rd	2,180
Chester St	1,864
Jefferson Ave	2,832
Broad St	588
Total	24,408

KEY

 Existing Main

 Proposed Expansion



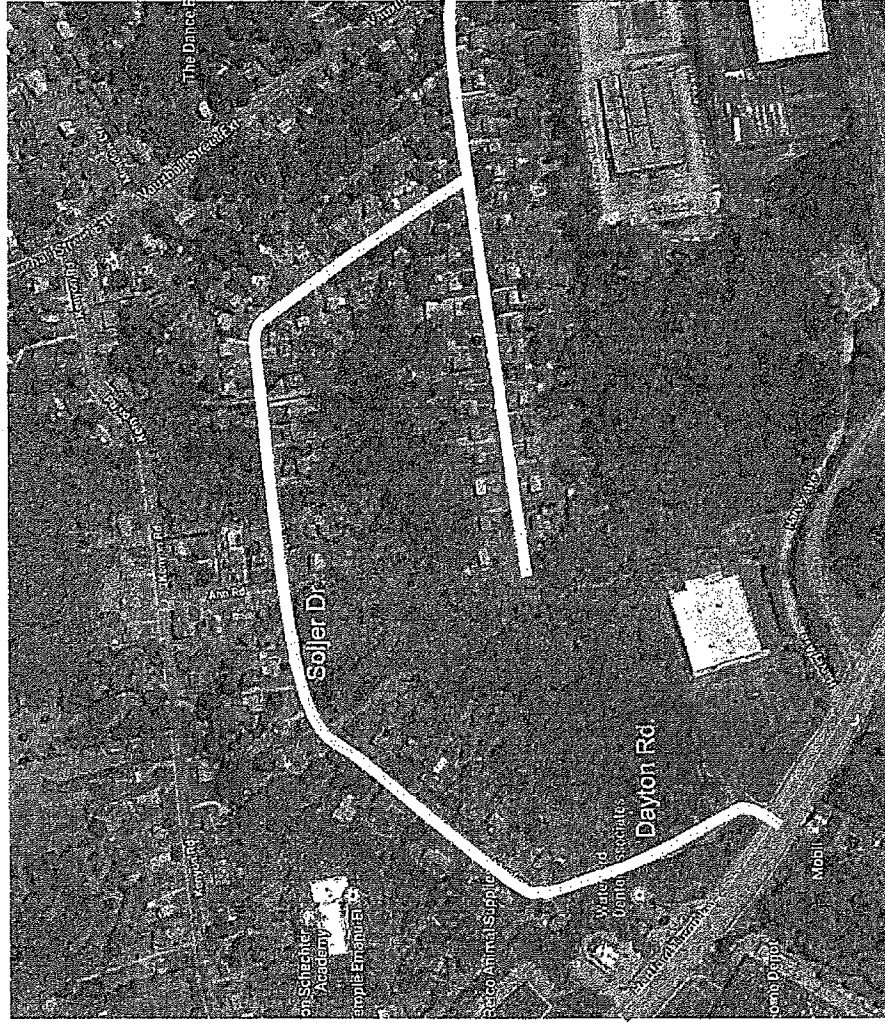
Approved Waterford B Route

Street	Homes	Main	Service Length	Sq. Ft.
Roseleah Dr. (West of Soljer Dr.)	25	1,000	60	1100
Roseleah Dr. (East of Soljer Dr.)	10	513	60	1100
Soljer Dr.	39	2,621	70	1550
Dayton Rd.	2	803	72	1600
Totals/ Averages	76	4,937	68	1,417

KEY

 Proposed Main

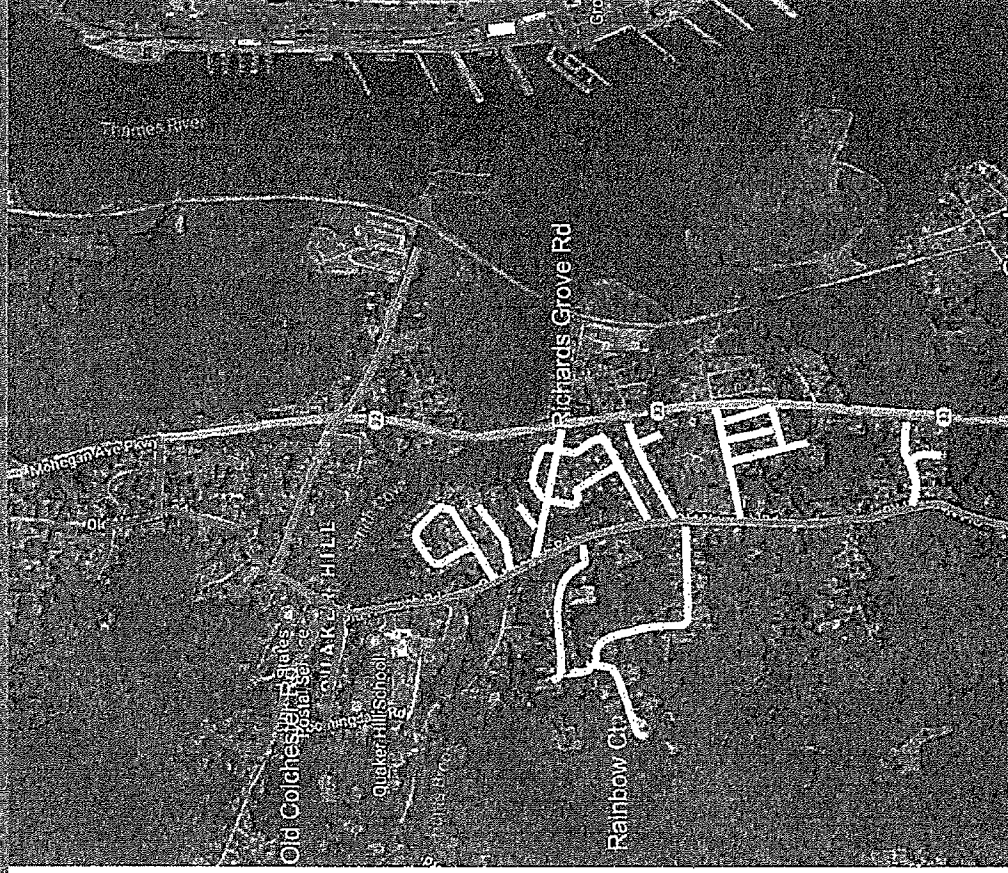
 Existing Main



Approved Waterford A Route

EVERSOURCE
ENERGY

Streets Allocated In 2019				
Streets	Homes	Main	Service Lengths	Sq. Ft.
Richards Grove Rd	19	1,195	62	1500
Miller Ave	10	830	62	1500
Porter St	17	1,283	64	1300
Uncas Ave	21	987	50	1500
Cove View Dr	5	640	48	1200
Dunbar Rd	23	1,900	73	1700
Milton Rd	25	2,297	87	2000
Rainbow Ct	6	778	125	2600
Uncas Ct	5	247	30	1100
Wilson Rd	3	351	80	1300
Ladley Rd	15	748	55	1000
Wintergreen Dr	37	1,970	60	1600
Fitzgerald Ave	6	1,030	55	1600
James Ave	20	800	48	1000
Thomas Ave	8	542	36	1300
May Ave	6	386	50	1600
John Ave	5	515	45	1800
Senkow Dr	14	803	67	1500
Roberts Ct	6	325	70	1600
Total for 2019	251	17,627	61	1511
Streets Allocated In 2020				
Streets	Homes	Main	Service Lengths	Sq. Ft.
Quaker Ln	14	917	63	1500
Decab Ln	3	394	77	1700
Bolles Ct	2	335	85	1900
Broad View Ct	13	1,087	55	1500
Hardwick Rd	7	646	50	1300
Clark Pl	15	785	85	1100
Laurel Glen Rd	11	555	65	1200
Old Norwich Rd	16	1,705	80	1900
Old Colchester Rd	15	1,440	87	2000
Pennicott Rd	10	733	94	1500
Tanglewilde Pl	5	395	63	1900
Totals for 2020	111	8,992	73	1591
Project Totals/ Averages	362	26,619	66	1540



KEY

Existing Main Proposed Main 2019 Proposed Main 2020

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME MS4 (Retro fits, DCIA Disconnect)	DEPARTMENT PRIORITY

1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)							
This project funds the local drainage system improvements consisting by 1) retrofitting existing systems, 2) mandated modifications to eliminate impervious surfaces and 3) purchase of land or easements Drainage systems are installed to control flooding, prevent erosion, improve water quality, and protect public and private property from damage. All new systems are designed to current drainage standards and include best management practices to treat the stormwater before discharged into the receiving waters. Very little of our existing drainage system has been designed or retrofitted to the current best management practices.							
2 PROJECT STATUS IF IN PROGRESS							
Stormwater Management Plan prepared by Anchor Engineering Services Inc. was prepared for the Town in 2017 in response to the State requirement. Since 2017, the Department has been funding the reporting, inspection and testing requirements of the permit in the							
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)							
Operations budgets will still fund items such as testing, reporting, general maintenance of the system and training.							
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 and excerpts from the 2017 Stormwater Management Plan.							
7 COST/FUNDING SOURCE							
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS:	0	0	0	0	0	0

Stormwater Management Plan
for
Town of Waterford

15 Rope Ferry Road
Waterford, CT 06385

September 2017

Prepared By:



ANCHOR
ENGINEERING SERVICES, INC.

41 Sequin Drive
Glastonbury, CT 06033
T: 860.633.8770
F: 860.633.5971



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A	Abbreviations and Definitions
B	MS4 Permit Registration Form, USGS Town Map, DEEP General Permit
C	Factsheet for the Town of Waterford Water Quality and Stormwater Summary
D	Pollution Prevention Team Members
E	Key Maps Subregional Drainage Basin Map with Impaired Water Bodies Connecticut Aquifer Protection Areas Map DEEP Natural Diversity Data Base Areas Map
F	MCM Timeline
G	IDDE Timeline
H	DEEP's BMPs for Disposal of Snow Accumulation from Roadways and Parking Lots

I. GENERAL PERMIT AUTHORIZATION AND ELIGIBLE ACTIVITIES

The Connecticut Department of Energy and Environmental Protection's (DEEP or "the Department") *General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems* (MS4 General Permit or General Permit) authorizes the discharge of stormwater from or associated with a Small MS4, provided the requirements of Section 3.(b) of the General Permit are satisfied and the activity is conducted in accordance with the conditions listed in Section 5 of the General Permit to the Maximum Exent Practicable (MEP).

The General Permit also authorizes certain non-stormwater discharges provided they are controlled to the MEP as required, they do not contribute to a violation of water quality standards, and they are documented in the Stormwater Management Plan (SMP) and are not significant contributors of pollutants to any identified MS4. These permitted non-stormwater discharges include:

- Uncontaminated groundwater discharges including, but not limited to, pumped groundwater, foundation drains, water from crawl space pumps and footing drains
- Irrigation water including, but not limited to, landscape irrigation and lawn watering runoff
- Residual street wash water associated with sweeping
- Discharges or flows from firefighting activities (except training)
- Naturally occurring discharges such as rising groundwaters, uncontaminated groundwater infiltration as defined in 40CFR 35.2005(20), springs, diverted stream flows and flows from riparian habitats and wetlands

Per Section 3.(b) of the General Permit, the Town will remain authorized under the General Permit, given the activities are consistent with the following:

- (1) Coastal Management Act
- (2) Protections given to Endangered and Threatened Species
- (3) Regulations for Aquifer Protection Areas pursuant to Section 22a-354i of the Connecticut General Statutes
- (4) Stormwater is not discharged to a Publicly Owned Treatment Works (POTW)
- (5) Stormwater is not discharged entirely to groundwater
- (6) New or increased discharges to High Quality Waters will be evaluated and implemented with the MEP practices
- (7) Stormwater discharges to impaired waters in categories 5 or 4b of the most recent Connecticut Integrated Water Quality Report will not be increased

II. BACKGROUND AND DEVELOPMENT OF THE PLAN

The Town of Waterford (hereafter "Waterford", "Town", or "Municipality") is registered under the DEEP's General Permit. This General Permit is effective from July 1, 2017 to June 30, 2022. The Town was previously registered under the DEEP's former General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, permit number GSM000023, which was effective from January 9, 2004 to June 30, 2017.

The General Permit is applicable to any municipality or any state or federal institution that initiates, creates, originates or maintains a discharge authorized by the General Permit and that has filed a registration pursuant to Section 4 of the General Permit. Municipal separate storm sewer system (MS4) means conveyances for stormwater (including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned or operated by any municipality or by any state or federal institution and discharging to surface waters of the state. Small MS4, as referenced in the General Permit and this Stormwater Management Plan (SMP or "the Plan"), means any municipally-owned or -operated MS4 including all those located partially or entirely within an Urbanized Area (UA) that have at least 1,000 residents in the Urbanized Area (as determined by the 2000 or 2010 census) and all state- and federally-operated MS4s (except DOT) and any other MS4s located outside an Urbanized Area as may be designated by the Commissioner of the DEEP.

The General Permit requires many actions to reduce pollution coming from stormwater. Common water pollutants include, but are not limited to: pesticides, fertilizers, oils, salt, litter, debris, and sediment. These pollutants can cause water bodies to become impaired. Another concern is the possible illicit connections from sanitary sewers and other sources which can transport harmful bacteria and other pollutants to water bodies.

One requirement of the General Permit is the preparation of and compliance with this SMP. This SMP was developed in accordance with the General Permit issued under the authority of Section 22a-430b of the Connecticut General Statutes (CGS). This SMP provides a framework for the rest of the conditions and actions required by the General Permit.

This plan requires the development of Best Management Practices (BMPs) for each of the following Minimum Control Measures (MCM) of the Plan:

- MCM 1 – Public Education
- MCM 2 – Public Participation
- MCM 3 – Illicit Discharge Detection and Elimination (IDDE)
- MCM 4 – Construction Site Runoff Control
- MCM 5 – Post-Construction Stormwater Management
- MCM 6 – Pollution Prevention/Good Housekeeping

Following the discussion of minimum control measures and their BMPs are sections discussing sharing of the responsibilities with other MS4s, water quality monitoring requirements, and the plan certifications.

The Town is required to develop an implementation schedule with measurable goals through the five-year permit period. A timeline of the MCM for the Town is provided in *Appendix F*. The Town is required to submit annual progress reports, and is subject to enforcement action as described in the Clean Water Act for failure to implement the BMPs they have selected. The goals and implementation schedule provided in the Plan will meet the requirements of the General Permit subject to modification based on performance, review, and funding.

A copy of the Town's General Permit registration forms, a USGS map of the Town and a copy of the General Permit are provided in *Appendix B*.

A. Overview of the Town

The Town covers an area of approximately 44.6 square miles, located in Southeastern Connecticut, in New London County, as shown on the USGS Town Map, provided in *Appendix B*. The approximate population of the town is 18,638 residents. There is approximately 120 miles of Town-owned and -operated roadway, with approximately 3,300 catch basins in operation. Approximately two-thirds of the Town of Waterford is classified as an Urbanized Area; the northwest third of the Town is not considered to be urbanized.

The Connecticut Department of Transportation (DOT) operates an MS4 on state highways located in the Town. This system is regulated under the CT DOT's General Permit.

There may be a small interconnection with the City of New London's MS4. The Town is investigating this potential interconnection. Implementation of the BMPs identified in this SMP will be coordinated between the Town, the CT DOT, and New London, and others, as applicable.

The following drainage basins are located within the Town of Waterford:

<u>Subbasin #</u>	<u>Name</u>
2000	Southeast Shoreline, Long Island Sound (including Fenger Brook)*
2201	Jordan Brook
2202	Latimer Brook*
2203	Oil Mill Brook
2204	Niantic River (including Stony Brook)*
3000	Thames River*
3004	Oxoboxo Brook*
3006	Hunts Brook*

*Sections of this waterbody may be impaired

Latimer Brook and Oxoboxo Brook are not actually located within the Town limits. A table of impaired waterways and a map showing drainage basins and impaired waters are presented in Appendix E.

Additional information regarding the water quality for the Town was developed by the DEEP and is provided in the *Factsheet: Town of Waterford Water Quality and Stormwater Summary*, provided in Appendix C. This document was created for each town that has submitted monitoring data under the current MS4 General Permit. This document includes information on how stormwater can affect water quality in streams and rivers and a summary of data submitted by the Town to the DEEP. This factsheet is intended to help the Town interpret their monitoring results and assist in compliance with the MS4 program.

B. Overview of Selected Components

A brief overview of some of the most important components of the SMP and the reasons they are critical is provided below.

i. Annual Report

By April 1, 2019, and annually thereafter by April 1, the Town will submit an Annual Report for the preceding calendar year electronically to the Department. The report will include a written discussion of the status of compliance with the General Permit including but not limited to: a listing and brief description of all BMPs within each MCM; implementation schedules and overall status for each BMP; a discussion of the progress and status of the MS4 IDDE program; a discussion of measures to control discharges to impaired waters; a discussion of the MS4 stormwater monitoring program; and all monitoring data and information collected over the year. A more detailed description of these requirements can be found within the General Permit, and goals on fulfilling these requirements before submitting the Annual Report can be found in this SMP.

ii. Public Education and Involvement

The Town's residents can contribute to the pollution transported via stormwater by applying lawn pesticides, herbicides and fertilizers, littering, dumping pollutants into storm drains, failing to properly dispose of pet waste, and other actions which can be detrimental to the quality of stormwater discharging into water bodies. Many people are unaware that they are polluting when engaged in these activities. Therefore, public education and outreach and public involvement and participation will help minimize the amount of pollution contributed to the Town's water bodies by residents. Also, public education and outreach coupled with public involvement and participation allows the Town's residents to have a voice regarding stormwater.

iii. IDDE

Illicit Discharge Detection and Elimination (IDDE) will lessen the amount of pollutants discharging to local water bodies. Some people unknowingly dump pollutants into the storm drain or have illegal connections to the storm drainage system. Once pollutants are present in a water body, or after a receiving water body's physical structure and habitat have been altered, it is much more difficult and

expensive to restore it to its previous condition. Therefore, the use of a management system that relies first on preventing degradation of receiving waters is recommended.

iv. *Construction Site Stormwater Runoff Control*

Construction site runoff and post-construction site runoff should be reduced so that water bodies are not receiving additional pollutants or sediment. Sediment causes water bodies to become physically and biologically altered. Decreases in habitat quality can result from significant amounts of sediment covering these habitat areas.

v. *Pollution Prevention/Good Housekeeping*

Pollution prevention and good housekeeping is a critical MCM because it concentrates on municipal operations including the maintenance of other control measures. These activities can make an immediate difference with local water body pollutant levels. Street sweeping and other maintenance activities prevent sediment, salt and pollutants from entering the drainage system thereby minimizing pollutant loads to local water bodies.

C. **SMP Implementation Team**

The General Permit requires the Town to designate specific team members to be responsible for implementing each MCM. This section outlines the responsibilities of designated team members for each BMP. Town personnel may be responsible for more than one team member position. Current team member names and contact information are included in the table provided in *Appendix D*. Changes in team members will be documented by updating this table, as necessary.

The SMP Implementation Team for the Town of Waterford includes the following personnel:

Director of Public Works

Planning Director

Recreation & Parks Director

Utility Commission Chief Engineer

Board of Education Facilities Manager

Fire Services Administrator

D. **Coastal Management**

The Town will comply with the State of Connecticut Coastal Management Act (CCMA), CGS Section 22a-90 through 22a-112. The Town will regulate development of the shoreline through

municipal planning and the zoning boards and commissions. Due to the low impact nature of work performed by the Town, the Town does not anticipate a conflict to occur.

E. Endangered or Threatened Species

The Town will comply with the State of Connecticut Endangered Species Act, CGS Section 26-310(a). The Town will conserve endangered and threatened species and their essential habitats and shall ensure that any action authorized, funded or performed by the Town does not threaten the continued existence of any endangered or threatened species unless the Town has been granted exemption by the DEEP. Due to the low impact nature of work performed by the Town, the Town does not anticipate a conflict to occur. A map detailing the locations in the Town that may contain endangered or threatened species is provided in *Appendix E*.

F. Aquifer Protection Areas

There are no aquifer protection areas identified in the Town of Waterford.

G. Record Keeping

The Town shall keep records required by the MS4 General Permit for at least five years following its expiration, or longer if requested by the Commissioner of the DEEP in writing. Such records, including the SMP, shall be available to the public at reasonable times during regular business hours.

III. MINIMUM CONTROL MEASURES (MCM)

A copy of the DEEP's MCM timeline is provided in *Appendix F*.

MCM 1 – Public Education

Public education is a key component of effective stormwater management. By informing the public of potential risks to water quality caused by common activities, the potential for stormwater impacts can be reduced. The goals of this MCM are:

- To raise awareness that polluted stormwater runoff is the most significant source of water quality problems;
- To motivate residents to use BMPs, which reduce polluted stormwater runoff; and
- To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.

BMP 1-1 – Implement Public Education Program

Per Section 6.(a)(1)(A) of the General Permit, the Town will implement a Public Education Program by June 30, 2018.

Educational articles will continue to be published in local publications such as the Recreation and Park Bulletin and the Senior Newsletter. Fact sheets will continue to be available.

The Town website (<http://www.waterfordct.org>) will provide links to promote the availability of these materials. Currently, the Planning Department distributes educational material through annual mailings, newspaper article publications, and by including fact sheets with every permit application. The Town will also provide materials in a printed format to be on display in public locations at the town hall.

Additional targeted outreach efforts will be completed by the Town to educate citizen developers on particular aspects of stormwater management. The Town will coordinate with appropriate contractors where applicable to ensure that all required topics listed in this plan are covered and tracked on an annual basis.

BMP 1-2 – Address Education/Outreach for Pollutants of Concern

Per Section 6.(a)(1)(C) of the General Permit, the Town will acquire and/or develop and distribute associated stormwater educational materials that, at a minimum, address the impacts of phosphorus, nitrogen, bacteria, and mercury impairments and how they might relate to water quality. Some of the areas of concern may include:

- sources of stormwater
- impact of stormwater on water bodies
- steps residents can do to reduce pollutants
- septic systems
- grass clippings and leaves management
- detergent use
- sediment discharge
- pet and farm (manure) waste
- waterfowl
- impervious cover
- use of fertilizers, pesticides, and herbicides
- mercury disposal and recycling
- illicit discharges and cross connections
- improper disposal of wastes into the MS4

The Town will identify locations where their MS4 discharges into impaired waters and will provide educational outreach specific to the sources of that impairment. Targeted outreach efforts may include K-12 students, agricultural areas, commercial businesses, developers, homeowners, etc.

Currently, the Town distributes information on common sources of phosphorus, nitrogen, bacteria, and mercury pollution and how to prevent or reduce the amount reaching the MS4 and discharging into waterways since the beginning of the existing 2004 General Permit, and will continue these efforts under the new General Permit.

Examples of public education conducted and to be continued include but are not limited to:

- Brochure distribution featuring topics such as "Don't Trash the Grass", "Step by Step" produced by the Long Island Sound Study, "10 Things You Can Do to Prevent Stormwater Runoff Pollution", and more;

- Visitation to Waterford elementary schools by the "Windows on the Waters" van to demonstrate how stormwater enters watersheds;
- Household Hazardous Waste collection days (Qualifying Local Program); and
- Catch basin stenciling in recreational and high pedestrian areas (completed in 2007).

BMP 1-3 – Town Website

The Town will update its website to include additional stormwater-related information. Copies of the SMP, annual stormwater reports, recent stormwater monitoring results, the requirements to determine if a proposed development/construction activity is subject to authorization under the DEEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (Construction Stormwater General Permit), a link to the DEEP's *General Permit for the Discharge of Stormwater Associated with Industrial Activities* (Industrial Stormwater General Permit), and links to stormwater educational materials discussed with BMP 1-1 and 1-2 will be presented on the website. In addition, the annual schedule for regional household hazardous waste collection days and leaf pickups will be posted on the Town's website.

Links to the stormwater webpage will be provided from both the Public Works and the Planning & Development pages on <http://www.waterfordct.org>.

BMP 1-4 – Catch Basin Stenciling

The Town will continue an on-going stenciling program in which catch basins in the Town are prioritized and stenciled. Currently, the highest priority 10% and an additional 20% of catch basins have been stenciled. A working map of the prioritized and completed catch basins will be kept updated and on file with the Public Works Department. Catch basin stenciling is currently completed. The Town will continue stenciling new catch basins, as necessary.

BMP 1-5 – Household Hazardous Waste (HHW) Collection Days

The Town will continue to coordinate and advertise this Qualifying Local Program to raise public awareness on methods for use and disposal of common household pollutants wastes. The town will publish an article and schedule for the regional HHW Collection Days annually. Collections will be coordinated through the Southeastern Connecticut Regional Resource Recovery Authority (SCRRA) and performed by a private contractor at various locations in Southeastern Connecticut, including one per year in Waterford. Town residents may also utilize HHW Collection Days hosted by other participating municipalities.

MCM 2 – Public Participation

Public participation is a key component of effective stormwater management. By involving the public in management of water quality affected by common activities, the potential for stormwater impacts can be reduced. The goals of this MCM are to:

- Involve the community in planning and implementing the Town's stormwater management activities.
- Provide a minimum 30-day notice to the public for this plan and annual reports.

BMP 2-1 – Comply with Public Notice Requirements for the SMP and Annual Reports

Per Section 6.(a)(2) of the General Permit, the Town will publish a public notice on its website (<http://www.waterfordct.org/>) and in the local newspapers to inform the public of the SMP and the Annual Report, and to solicit comments on the SMP and Annual Report. The notice will provide a contact name (with phone number, address, and email) to whom the public can send comments and a publicly accessible location on the web and in the town hall and/or library where the SMP and Annual Report are available for public review. The public notices will allow for 30-day comment periods, at a minimum. The Town will publish the public notice for this SMP in April 2017. The Town will publish the public notice for the Annual Reports annually, no later than January 31.

A hard copy of the SMP and the Annual Reports will be available for public review at the Public Works Department, the Planning and Zoning office, the Library, and the Town Clerk's office.

BMP 2-2 – Community Group Engagement

The Town will identify and reach out to local organizations, such as The Niantic River Watershed Committee, Eastern Connecticut Conservation District, Waterford Land Trust, and scout troops, that may want to participate in the review and implementation of this SMP.

The Town will also reach out to SCRRRA on partnering on both public participation and public education activities.

BMP 2-3 – Interagency Meetings

The Town will continue to facilitate a panel of staff and volunteers in order to annually review and update the SMP.

MCM 3 – Illicit Discharge Detection and Elimination (IDDE)

This MCM outlines a program to detect and eliminate current illicit discharges to the MS4 and prevent further illicit discharges in the future. All activities for this measure will be completed in the Town's Priority Areas (urbanized area, catchment areas with directly connected impervious area (DCIA) >11%, and outfalls that discharge to impaired waters). The goals of this MCM are:

- Find the source of any illicit discharges.
- Eliminate those illicit discharges.
- Ensure ongoing screening and tracking to prevent and eliminate future illicit discharges.

BMP 3-1 – Develop Written IDDE Program

Per Section 6.(a)(3) of the General Permit, the Town will develop a written IDDE Program to detect, locate and eliminate illicit discharges (to the maximum extent practicable) from the MS4 within the Town's priority areas by June 30, 2018. The IDDE Program will provide enforceable legal authority to eliminate illicit discharges, assign responsibilities, and develop a citizen reporting program. The IDDE Program will also outline the outfall screening and IDDE protocols consistent with Appendix B of the General Permit to identify, prioritize, and investigate MS4 catchments for suspected illicit discharge of pollutants. Also, the IDDE Program will outline follow-up screening and illicit discharge prevention procedures.

The Town will develop and implement an IDDE Program, that complies with Appendix B of the General Permit in accordance with the timeline provided in *Appendix G*.

BMP 3-2 – Develop List and Maps of all MS4 Stormwater Outfalls in Priority Areas

The Town will develop an outfall and interconnection inventory that identifies each outfall and interconnection discharging from the MS4, records its location and condition, and provides a framework for tracking inspections, screenings and other activities under the Town's IDDE Program by June 30, 2019. Additional requirements regarding this BMP are provided in Section 6.(a)(3)(C) of the General Permit. The Town will complete a database of all stormwater discharges from a pipe or conduit located within and owned or operated by the municipality and all interconnections with other MS4s.

The Town is well underway to completing this task and has mapped approximately all outfalls 15" and wider in the town, and all outfalls 12" and wider in the UA to date. The Town will continue to comply with this BMP to meet the required deadlines established in the General Permit and this SMP.

BMP 3-3 – Develop Citizen Reporting Program

Per Section 6.(a)(3)(A)(iii), the Town will develop and implement a citizen's reporting program for illicit discharges. Currently, citizens call the Public Works Department to report suspected illicit discharges into the stormwater system. An updated system will be developed to include use of *Municipality Software* for submitting a report. This information will be posted on the town's website per BMP 1-3.

The Town will affirmatively investigate and eliminate any illicit discharges for which a time and location of discharge are provided. The Town will promptly inspect the reported outfall or manhole and proceed according to the requirements of the written IDDE program.

All citizen reports and responses will be included in the Town's Annual Report.

BMP 3-4 – Establish Legal Authority to Prohibit Illicit Discharges

Per Section 6.(a)(3)(B) of the General Permit, the Town will update the necessary and enforceable legal authority by statute, ordinance, rules and regulations, permit, easement, contract, order or any other means, to eliminate illicit discharges.

Chapter 13.16 of the Town Ordinances addresses Stormwater Quality Management and Discharge Control. *"The purpose and intent of this chapter is to ensure the health, safety, and general welfare of the citizens, and protect and enhance the water quality of watercourses and water bodies in a manner pursuant to and consistent with the Federal Clean Water Act by reducing pollutants in stormwater discharges to the maximum extent practicable and prohibiting non-stormwater discharges to the municipal storm street drainage system."* This ordinance generally meets the requirements for this BMP. The entire ordinance will be reviewed and updated by June 30, 2018. Specific areas to be reviewed include the list of discharges from certain activities that are not considered a source of pollutants to the storm drain system (such as dechlorinated swimming pool discharges) and the authorization of fines and penalties.

BMP 3-5 – Develop Record Keeping System for IDDE Tracking

Per Section 6.(a)(3)(A)(v), the Town will keep a record of illicit discharge abatement activities including location (latitude and longitude or address), description, date(s) of inspection, sampling data (if applicable), action(s) taken, date of removal or repair and responsible party.

BMP 3-6 – Address IDDE in Areas with Pollutants of Concern

The Town will identify which areas in town are most likely to contribute nitrogen, phosphorus, and bacteria to the MS4. This assessment will consider: historic on-site sanitary system failures, proximity to bacterial impaired waters, low infiltrative soils, and shallow groundwater. Any areas determined to have a high potential for septic system failure will be reported to the Health Department for corrective action.

Sanitary sewers are available to the majority of residences and businesses in Town. All residences within 200 feet of a public road equipped with sewers are required to be connected. Houses within 100 feet of a waterbody are required to be connected to the sewer system, even if they are more than 200 feet from a public road equipped with sewers. The Town Utility Commission maintains a list of a residence that are not connected to the sanitary sewer system. The majority of these residences are not located within the UA. The Town will identify areas where structures that are not connected to the sanitary sewer system and are located near the MS4 by June 30, 2018. These areas will be prioritized for screening in the IDDE program.

MCM 4 – Construction Site Runoff Control

This MCM outlines procedures for minimizing polluted stormwater runoff from activities that disturb one or more acres of land. The goal of this MCM is to minimize polluted stormwater runoff from construction sites and prevent it from carrying sediment into waterways via MS4 infrastructure.

BMP 4-1 – Implement, Upgrade, and Enforce Land Use Regs or Other Legal Authority

Per Section 6.(a)(4)(A) of the General Permit, the Town will revise its land use regulations to establish the legal authority to control stormwater runoff from construction sites by June 30, 2019. Additional requirements for establishing legal authority can be found in Section 6.(a)(4)(A) of the General Permit.

The General Permit addresses projects with one acre or more of soil disturbance, but current zoning regulations call for approved erosion and sediment control plans for any site where the area of disturbance is cumulatively greater than 0.5 acre per section 25.5 of the Waterford Zoning Regulations. Per the existing 2004 General Permit, revisions have been made to the Waterford Zoning Regulations to reduce the impact of development.

The Town will review the existing regulations within six months for compliance with The General Permit. The regulations will be updated by June 30, 2019.

BMP 4-2 – Develop/Implement Plan for Coordination in Site Plan Review and Approval

In accordance with Section 6.(a)(4)(B) of the General Permit, the Town coordinates the functions of all the departments and boards involved in the review, permitting, or approval of land disturbance and development projects within the MS4. Applications are received by the Department of Planning Development. Applications are then routed through the Planner, Environmental Planner, Director of Public Works, Utility Commission, and Fire Marshal for technical review and comment. The Town's regulations provide for third party technical review, as needed.

BMP 4-3 & 4-4 – Review Site Plans/Conduct Site Inspections for Stormwater Quality Concerns

Per Section 6.(a)(4)(C) of the General Permit, the Town will conduct site plan reviews that incorporate consideration of stormwater controls or management practices to prevent or minimize impacts to water quality.

The Town conducts site inspections during installation of drainage and stormwater management system as well as during times when land disturbances are occurring. The purpose of these routine inspections is to assess the adequacy of the installation, maintenance, operation, and repair of construction and post-construction control measures and take enforcement action when necessary.

BMP 4-5 – Implement Procedure to Allow Public Comment on Site Development

Per Section 6.(a)(4)(D) of the General Permit, the Town's procedure for public involvement in proposed and on-going development and land disturbance activities is as follows:

The Town follows all State of Connecticut public notice and public hearing requirements on applications for planning and zoning, subdivision, wetlands applications, etc. The Town follows up on all public comments or complaints received concerning on-going land disturbance and development activities.

BMP 4-6 – Notify Developers about DEEP Construction Stormwater General Permit

Per Section 6.(a)(4)(E) of the General Permit, the Town will notify developers and contractors of their potential obligation to obtain authorization under DEEP's Construction Stormwater General Permit if their project disturbs more than one acre of land and results in a point source discharge to Connecticut surface waters directly or through the Town's MS4. The Town will also require a copy of the Storm Water Pollution Control Plan be made available to the Town on request.

Town ordinance currently requires all developers to comply with State requirements for stormwater discharges from construction activities and from industrial activities. The Town will update its application forms to include a line item on the application checklist to include determining if an

authorization is required under the DEEP's Construction Stormwater General Permit by July 1, 2017. In addition, the Town will add a note relative to this requirement on the webpage identified in BMP 1-3.

MCM 5 – Post-Construction Stormwater Management

This MCM outlines the Town's program to address stormwater runoff from new or re-development projects that disturb one or more acres of land. The goal of this MCM is to mitigate the long-term impacts of new and re-development projects on water quality through proper use of low impact development (LID) and runoff reduction practices.

BMP 5-1 – Establish and/or Update Legal Authority and Guidelines Regarding LID and Runoff Reduction in Site Development Planning

Per Section 6.(a)(5) (LID) of the General Permit, by June 30, 2021, the Town shall implement and enforce a program to address construction and post-construction stormwater discharges from land disturbing activities and after site stabilization has been achieved. This shall be based on the Connecticut Guidelines for Soil Erosion and Sediment Control (latest edition) and the Connecticut Stormwater Quality Manual (as amended).

The Town will establish or update the existing legal authority by ordinance, bylaw, regulation, standard condition of approval, or other means to require, to the MEP, developers and contractors seeking the Municipality's approval to consider the use of LID and runoff reduction site planning and development practices that meet or exceed those LID and runoff reduction practices in the CT Stormwater Quality Manual prior to other stormwater management practices allowed in the Town's land use regulations, guidance or construction project requirements.

Refer to Section 6.(a)(5) of the General Permit for additional information regarding the requirements for establishing legal authority in site development planning.

Currently, Section 25.5 of the Waterford Zoning Regulations requires an approved erosion and sediment control plan for any site plan application where area of disturbance is cumulatively greater than 0.5 acre. The approved plan must include design criteria, construction details, application/installation procedures, and an operation and management (O&M) plan for stormwater management facilities.

The Planning & Zoning Commission is in the process of revising the Subdivision Regulations to incorporate green infrastructure, LID techniques, and stormwater design specifications into Waterford's infrastructure specifications. The Commission will finalize these amendments and bring them to a public hearing for adoption in 2017. The Commission has also begun work to amend sections 25.5 and 1 [Definitions] of the Zoning Regulations to integrate standards from the new subdivision regulations into the Zoning Regulations.

In addition, the Town will review its current regulations including site planning requirements, zoning regulations, street design regulations, and infrastructure specifications with minimum size criteria for impervious cover, to identify and, where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices to the MEP.

BMP 5-2 – Enforce LID/Runoff Reduction Requirements for Development and Redevelopment

Per Section 6.(a)(5)(A) of the General Permit, the Town will review its current regulations including site planning requirements, zoning regulations, street design regulations, and infrastructure specifications with minimum size criteria for impervious cover, to identify and, where appropriate, reduce or eliminate existing regulatory barriers to implementation of LID and runoff reduction practices to the MEP.

BMP 5-3 – Long-Term Maintenance Plan for Stormwater Basins and Treatment Structures

Per Section 6.(a)(5)(D) & (B) of the General Permit, the Town will develop a maintenance plan for retention/detention ponds and stormwater treatment structures that it owns or over which it holds an easement or other authority and that are located in the Town's Priority Areas to ensure their long-term effectiveness.

The Town maintains a list of retention/detention basins and stormwater treatment structures, and will update the list, as needed. The Town will perform an annual inspection of those retention/detention ponds and stormwater treatment structures and removal of accumulated sediment and pollutants in excess of 50% design capacity. This plan will be implemented by June 30, 2019.

BMP 5-4 – DCIA Mapping

Per Section 6.(a)(5)(C) of the General Permit, the Town will develop and maintain an estimate of the DCIA that contributes stormwater to each MS4 outfall. The Town will develop its DCIA estimate by June 30, 2020. The DCIA will be estimated utilizing GIS layers of impervious surfaces, water bodies and drainage catchment areas following guidelines presented on the DEEP's website. The Town will reach out to the DEEP and other municipalities for assistance with this task.

The Town will annually track the total acreage of DCIA that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town. For each retrofit/redevelopment project, the Town will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, the Town's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. The Town will provide updates on this goal in its Annual Reports. The Town will also incorporate all DCIA disconnections which occurred since July 1, 2012 towards meeting this goal. The Town is also

considering purchasing the 2016 Sanborn Impervious Areas Layer for calculating and monitoring DCIA.

BMP 5-5 – Address Post-Construction Issues in Areas with Pollutants of Concern

Per Section 6.(a)(5)(E) of the General Permit, if erosion and sediment are noted in the areas contributing to waters where nitrogen, phosphorus or bacteria is a stormwater pollutant of concern, then the Town will prioritize those areas for the DCIA retrofit program per BMP 6-8.

MCM 6 – Pollution Prevention/ Good Housekeeping

This MCM outlines a program to mitigate the impact of town operations and maintenance on town-owned and/or operated properties and the MS4 itself to water quality. The goal of this MCM is to prevent or reduce pollutant runoff as a result of municipal operations.

BMP 6-1 – Develop/Implement Formal Employee Training Program

Per Section 6.(a)(6)(A) of the General Permit, the Town will continue its MS4 training program for town employees to increase awareness of water quality issues. Training will include:

- Standard operating procedures consistent with the General Permit;
- General goals and objectives of this Stormwater Management Plan;
- Identification and reporting of illicit discharges and improper disposal; and
- Spill response protocols and responsibilities.

Training is given to employees of the Town as relevant to their department. These trainings may also include regional or statewide trainings.

The Town will continue to implement training as required as part of the existing 2004 General Permit. All training activities will be documented in the Annual Reports.

BMP 6-2 – Implement MS4 Property and Operations Maintenance

A Parks and Open Space

Per Section 6.(a)(6)(C)(i) of the General Permit, the Town will optimize the application of fertilizers by municipal employees, institutional staff, or private contractors on lands and easements for which it is responsible for maintenance. Several optimization practices that may be considered are provided in Section 6.(a)(6)(C)(i) of the General Permit.

The Town will work to comply with the requirements established in Section 6.(a)(6)(C)(i) - Parks and Open Space of the General Permit.

The Town will evaluate and optimize the application of fertilizers on Town-owned or -operated property. Optimization procedures may include:

- Soil testing to determine soil phosphorous levels
- Reducing or eliminating fertilizer use where possible
- Using alternative fertilizers, including slow release or insoluble phosphorous compositions
- Storing fertilizers properly to limit spills
- Not applying fertilizers to impervious surfaces where they can run off

Other park and open space optimization procedures include:

- Developing standard operating procedures for handling, storage, application, and disposal of pesticides and herbicides
- Reducing mowing schedules where possible
- Disposing of lawn clipping properly
- Maintaining trash containers at parks

B Pet Waste Management

Per Section 6.(a)(6)(C)(ii) of the General Permit, the Town will identify locations where inappropriate pet waste management practices are immediately apparent and pose a threat to receiving water quality due to proximity and potential for direct conveyance of waste to its storm system and waters. In such areas, the Town will implement targeted management efforts such as public education and enforcement. Additional requirements for complying with pet waste management are provided in Section 6.(a)(6)(C)(ii) of the General Permit.

Currently, as part of the existing 2004 General Permit, signs and pet waste bags have been installed at some dog parks including the dog parks on Clark Lane and at the Waterford Beach. These pet waste stations are maintained by the Parks and Recreation Department. The Town will identify additional pet walking facilities signs, bags, and waste receptacles to be installed during the course of the General Permit.

C Waterfowl Management

Per Section 6.(a)(6)(C)(iii) of the General Permit, the Town will identify lands where waterfowl congregate and feeding by the public occurs and will comply with the requirements established in this section.

Currently, the Town has identified the pond at the Civic Triangle Park and at the Waterford Beach, as being areas where waterfowl congregate.

The Town will install signage in these areas to educate the public about the detrimental impacts of feeding waterfowl. The Town will also investigate and implement procedures to discourage waterfowl congregation.

D Buildings and Facilities

Per Section 6.(a)(6)(C)(iv) of the General Permit, the Town will comply with the requirements established in this section.

Currently, storage of most materials with the potential to affect stormwater occurs at the Public Works Department Facility and Transfer Station, located at 1000 Hartford Turnpike in Waterford.

The Transfer Station shall be managed in accordance with the required Stormwater Pollution Prevention Plan (SWPPP) and the Industrial Stormwater General Permit to avoid impacts to stormwater by materials stored on-site.

The Public Works Department minimizes exposure of materials by storing various materials (oils, lubricants, etc.) indoors. All repair and maintenance operations are performed indoors. Salt is stored inside the salt shed. Routine inspection of the aboveground storage tanks (ASTs), underground storage tank (UST) area, and fueling area is performed to minimize exposure of materials to stormwater. Adequate supplies of spill prevention materials are located around the site in case of a spill or leak. Windscreens are in place at the Transfer Station to minimize materials from leaving the Transfer Station area. This Facility shall continue to be managed in accordance with the SWPPP and the Industrial Stormwater General Permit, and the *General Permit for the Discharge of Vehicle Maintenance Wastewater* (Vehicle Wastewater General Permit).

During the first two years of the General Permit, the Town will identify and evaluate other town buildings and facilities whose operations may impact stormwater runoff and provide operations maintenance recommendations for each facility relative to the following:

- Use, storage and disposal of petroleum and non-petroleum products
- Employee training and procedures for handling these products
- The need for and the adequacy of spill prevention plans and/or spill prevention countermeasures and control (SPCC) plans
- Waste management and dumpster management procedures
- Housekeeping and sweeping
- Floor drains
- The need for other permits or approvals

E Vehicles and Equipment

Per Section 6.(a)(6)(C)(v) of the General Permit, the Town will comply with the requirements established in this section.

Currently, the majority of town vehicles and equipment are stored at the Waterford Public Works Department facility located at 1000 Hartford Road. Buses owned by a private bus company are also stored at this site. Police and fire department vehicles and equipment are stored at their facilities.

The Town's goal is to store vehicle or equipment that may be leaking fluids inside or to provide containment (i.e., drip pans or absorbents) under these vehicles to minimize stormwater impacts.

The majority of town vehicles and equipment, including the school buses, are fueled at the Public Works Department facility. The fuel pumps are located under a canopy. Fueling also occurs at the Police Station at 41 Avery Lane and at the Cohanzie Fire Station. Facility users and companies filling the fuel tanks are required to remain with their vehicles to ensure that there are no overfills.

Town vehicles are not to be washed outside where the wash water can drain to the stormwater system. There is a vehicle wash bay at the Public Works Department facility.

As part of the evaluation of town facilities, buildings will be evaluated for floor drains that may discharge to the MS4. If these connections occur, they will be sealed. In addition, floor drains that may require permits will be assessed.

F Leaf Management

Per Section 6.(a)(6)(C)(vi) of the General Permit, the Town will establish and implement procedures to minimize or prevent the deposition of leaves in catch basins, streets, parking lots, driveways, sidewalks or other paved surfaces that discharge to the MS4.

The Town will comply with this BMP by continuing its leaf pickup program biannually in the Fall and Spring. This program retrieves bagged leaves from curbs by call for pickup.

BMP 6-3 – Implement Coordination with Interconnected MS4s

Per Section 6.(a)(6)(F) of the General Permit, as part of interagency agreements established pursuant to Section 6(c)(3) of the General Permit, the Town will coordinate with operators of interconnected MS4s (such as neighboring municipalities, institutions and DOT) regarding the contribution of potential pollutants from the storm sewer systems, contributing land use areas and stormwater control measures in the respective MS4s. This same coordination will be conducted regarding operation and maintenance procedures utilized in the respective systems.

The Town's MS4 interconnects with, or is adjacent to, the DOT's MS4 on several state highways/roads and along I-95 and I-395. A small section may also interconnect with New London's MS4. In these areas, the Town will coordinate their activities with their neighboring towns.

BMP 6-4 – Develop/Implement Program to Control Other Sources of Pollutants to the MS4

Per Section 6.(a)(6)(G) of the General Permit, the Town will develop and implement a program to control the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities, not otherwise authorized by permit issued pursuant to Sections 22a-430 or 22a-430b of the Connecticut General Statutes (CGS).

The Town will identify a program, through the IDDE Program, to control other sources of pollutants to the MS4. Cessation of illicit discharges or permitting of discharges to the sanitary sewer system are likely ways to manage/eliminate these pollutants.

The Town will track its efforts in controlling the contribution of pollutants to its MS4 from commercial, industrial, municipal, institutional or other facilities in the Annual Reports.

BMP 6-5 – Evaluate Additional Measures for Discharges to Impaired Waters

Per Section 6.(a)(6)(H) of the General Permit, the Town will evaluate and designate additional measures for discharges to impaired waters.

For waters for which bacteria is a stormwater pollutant of concern on Town-owned or -operated properties with a high potential to contribute bacteria (such as dog parks, parks with open water, and sites with failing septic systems), the Town will develop, fund, implement, and prioritize a retrofit or source management program to correct problems.

For waters for which bacteria is a stormwater pollutant of concern, the Town will also prohibit the feeding of geese or waterfowl. The Town will track activities to manage waterfowl activities.

BMP 6-6 – Track Projects that Disconnect DCIA

Per Section 6.(a)(6)(B)(ii) of the General Permit, the Town will annually track the total acreage of DCIA that is disconnected from the MS4 as a result of redevelopment or retrofit projects within the town.

For each retrofit/redevelopment project, the Town will document the amount of existing DCIA that is disconnected. The total amount of disconnected DCIA will be reported each year in the Annual Report. Starting on July 1, 2021, the Town's goal will be to reduce 1% of its total DCIA acreage per year to the maximum extent possible. The Town will provide updates on this goal in its Annual Reports. The Town will also incorporate all DCIA disconnections which occurred since July 1, 2012 towards meeting this goal.

BMP 6-7 – Develop/Implement Infrastructure Repair/Rehab Program

Per Section 6.(a)(6)(B)(i) of the General Permit, the Town will continue a program to identify MS4 structures to repair, rehabilitate, or upgrade to reduce or eliminate the discharge of pollutants into water bodies. This program will be responsive to new information on outfalls discharging pollutants, impaired waters, inspections, or observations made during outfall mapping under the IDDE section of this SMP. The Town will repair and rehabilitate its MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from its MS4 to receiving waters.

The Town maintains a list of MS4 infrastructure to be repaired. The list is updated when new information becomes available. The repairs are prioritized based on structural integrity and the potential level of impacts to stormwater quality.

BMP 6-8 – Develop/Implement Plan to Identify/Prioritize Retrofit Projects

Per Section 6.(a)(6)(B)(ii) of the General Permit, the Town will develop a Retrofit Project Plan to identify and prioritize potential DCIA disconnection projects by June 30, 2020. Prioritization will be based on several factors, including whether the project lies within one of the MS4 Priority Areas (urbanized area, DCIA >11%, discharge to impaired waters). The Town will include in its Annual Report for the third year of the permit (2020-2021) its identification and prioritization process, a rationale for the selection of projects to be implemented, and the total acres of DCIA to be disconnected upon implementation. The implementation of projects in this plan will begin by June 30, 2022.

BMP 6-9 – Develop/Implement Street Sweeping Program

Per Section 6.(a)(6)(D)(i) of the General Permit, the Town will implement a program to provide for regular inspection and maintenance of municipally-owned or -operated streets, parking areas and other MS4 infrastructure.

Street sweeping of the approximate 120 miles of roadway, and municipal parking lots and facilities, within the Town will be conducted annually. Sweeping will begin as soon as possible after the snowmelt, and will begin in areas of concern such as the Coastal Zone. Maps of street sweeping are maintained to track the progress annually. Historically, street sweeping picks up little debris since salt is used on the roadway instead of sand.

Town personnel track area that may need additional sweeping, such as the Public Works Department facility, construction zones, and areas near the beaches. These areas are swept as needed.

BMP 6-10 – Develop/Implement Catch Basin Cleaning Program

Per Section 6.(a)(6)(D)(ii) of the General Permit, the Town will conduct routine cleaning of all catch basins and track catch basin inspection observations. Stormwater structures will be cleaned annual by a subcontractor. Town forces will clean structures that are impaired or are reported. Sediment chambers and vortech units will be cleaned annually. Sediment basins in Town that are owned by the Town will be inspected and maintained annually.

The approximately 3,300 catch basins are in operation, and are inspected and maintained on a 1,000 (+/-) per year rotation. Near impaired waters or construction zones, catch basins will be inspected more frequently than once every three years. Based on historic information, the Town has established a schedule to ensure that no catch basin will be more than 50% full. If a catch basin becomes more than 50% full, the Town will investigate and address the source of the sediment loading to the maximum extent practicable. The Town will maintain logs of all catch basins inspected and/or cleaned.

BMP 6-11 – Develop/Implement Snow Management Practices

A De-Icing Material Management

Per Section 6.(a)(6)(E)(i) of the General Permit, the Town will develop and implement BMPs for the use, handling, storage, application, and disposal of de-icing products.

The Town currently stores de-icing materials at the Public Works Department Facility. De-icing materials (salt) in large quantities are stored inside in the salt shed at the Facility; they do not come into contact with stormwater. This facility is not located within a 100-year flood zone. The nearest well for potable water is more than 250 feet away from the shed. This material shall be stored indoors to prevent impacts to stormwater quality.

Currently, the Town uses salt to de-ice roads, unless the temperature falls below 5° F, at which time the Town will use a sand-salt mixture. No liquid de-icing material will be used by the Town. Sand is only used on the roadways in the event of an ice storm. A small amount of sand is stored at the Public Works Department facility and used sparingly throughout the year.

B Snow and Ice Control Practices

Per Section 6.(a)(6)(E)(ii) of the General Permit, the Town will implement and refine its standard operating practices regarding its snow and ice control to minimize the discharge of sand, anti-icing or de-icing chemicals and other pollutants (while maintaining public safety).

In its Annual Report, the Town will document results of its snow removal program including, at a minimum: the type of staff training conducted on application methods and equipment, type(s) of de-icing materials used; lane-miles treated; total amount of each de-icing material used; type(s) of de-icing equipment used; any changes in de-icing practices (and the reasons for the change); and snow disposal methods.

The Town will attempt to minimize the amount of salt used on the roads and on Town-owned or -operated properties. Town staff will be trained in the proper application of deicing materials. The Town will maintain records on staff training, types and quantities of deicing material(s) used, types of deicing equipment used, lane miles treated, and any changes to standard deicing procedures.

If necessary to remove snow from one section of Town and store it somewhere else, the Town will follow the guidelines set forth in the DEEP's BMPs for Disposal of Snow Accumulation from Roadways and Parking Lots, provided in *Appendix H*. The Town will keep records on the snow disposal methods.

IV. SHARING RESPONSIBILITY

A. Qualifying Local Program

The Town may satisfy the requirement to implement a BMP for a MCM by having a third party implement the BMP.

The Town is responsible for the implementing the BMPs. The Town may receive assistance from local groups or volunteers for these tasks.

B. Qualifying State or Federal Program

If a BMP or MCM is the responsibility of a third party under another National Pollutant Discharge Elimination System (NPDES) stormwater permit, the Town is not required to include such BMP or MCM in its SMP. The Town will reference this qualifying program in their SMP. However, the Town is not responsible for its implementation if the third party fails to perform. The Town will periodically confirm that the third party is still implementing this measure. If the third party fails to implement the measure, the SMP may be modified to address the measure, if necessary.

In the case of a permitted municipal industrial activity that is covered by the Industrial Stormwater General Permit, the Town may reference the activity's SWPPP to address a portion of the Town's SMP.

The Town currently holds two Industrial Stormwater General Permits:

- Public Works Department Facility, 1000 Hartford Turnpike – GSI001471
- Closed Waterford Bulky Waste Landfill, 85 Miner Lane – GSI001409

C. Coordination of Permit Responsibilities

Where a portion of the separate storm sewer system within a municipality is owned or otherwise the responsibility of another municipality, institution or a state or federal agency the entities will coordinate the development and implementation of their respective SMPs to address all the elements of Section 6 of the General Permit. A description of the respective responsibilities for these elements will be included in the SMP for each municipality.

The Town's MS4 interconnects with, or is adjacent to, the DOT's MS4 on several state highways/roads and along I-95 and I-395. A small section may also interconnect with New London's MS4. In these areas, the Town will coordinate their activities with their neighboring towns.

V. PROPER OPERATION AND MAINTENANCE

In accordance with Section 6.(c) of the General Permit, the Town shall at all times properly operate and maintain all facilities and systems of treatment and control, including related appurtenances, which are installed or used by the Town to achieve compliance with the General Permit.

VI. SIGNATURES AND PLAN MAINTENANCE

The Plan shall be signed and retained by the Town First Selectman. Copies shall be retained MS4 officials and employees responsible for implementation of the Plan.

VII. KEEPING PLAN CURRENT

The SMP shall be amended whenever:

- There is a change which has the potential to cause pollution to the waters of the state;
- The actions required by the Plan fail to prevent pollution to the waters of the state or otherwise comply with any provision of the General Permit; or
- The DEEP Commissioner requests modification of the Plan.

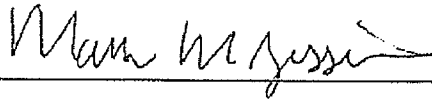
If the DEEP notifies the Town in writing that the Plan does not meet one or more requirements of the General Permit, then the Town shall:

- Notify the DEEP within 30 days of how they plan to modify the Plan to address the requirements; and
- Revise the Plan, perform all actions required by the revised Plan, and certify to the DEEP Commissioner that the changes have been made and implemented within 90 days of the original response.

Page 1 of 1
Date: 10/10/2019
Time: 10:10:10
User: admin
IP: 192.168.1.1
Version: 1.0.0
Build: 10/10/2019
Status: OK
Error: None
Message: Success

X. STORMWATER MANAGEMENT PLAN ENGINEERING CERTIFICATION

"I hereby certify that I am a qualified professional engineer, as defined in the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems. I am making this certification in connection with a registration under such general permit, submitted to the Commissioner by the Town of Waterford for an activity located at or within the Town of Waterford. I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(9)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of all information described in Section 3(b)(9)(A) of such general permit and on the standard of care for such projects, that I have made an affirmative determination in accordance with Section 3(b)(9)(B) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."



Date:

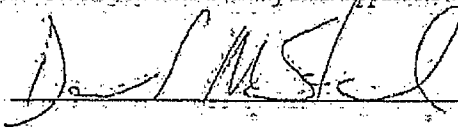
4/3/2017

Mark M. Zessin, P.E. (CT 16215)
Anchor Engineering Services, Inc.

XI. SIGNATURE AND PLAN REVIEW

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems, submitted to the Commissioner by the Town of Waterford for an activity located at or within the Town of Waterford and that all terms and conditions of the general permit are being met for all discharges which have been created, initiated or maintained and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b)(8)(B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and will comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under section 53a-157b of the Connecticut General Statutes and any other applicable law."

Town:

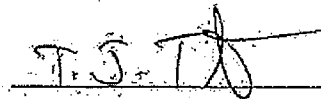


Date:

4/3/17

Mr. Daniel M. Steward, First Selectman
Town of Waterford, Connecticut

Preparer:



Date:

4/3/17

T.J. Theriault, Environmental Project Engineer
Anchor Engineering Services, Inc.

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME Risk Assesment Roadways	DEPARTMENT PRIORITY _____

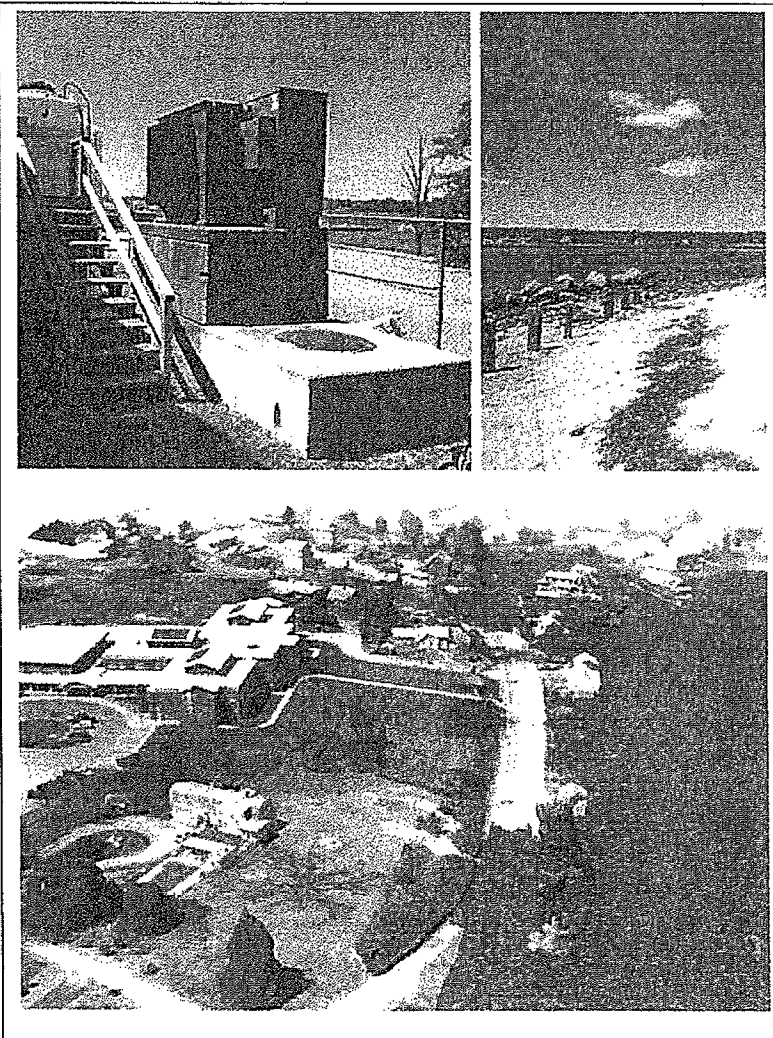
1 DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)							
In 2017 Waterford completed a Climate Change Risk Vulnerability, Risk Assessment and Adaptation Study. Section F, Adaptation Strategies – Roadways, identified 6 (four town, 2 state) areas on the “network of evacuation and emergency access routes that should be strengthened to improve the Town’s resilience to flooding”. <i>*Osveatchie Road *Near Point Comfort Road, raise roadway *Reinforce Roadway Embankments at Keeny Cove *Niantic River Road – Reinforce Roadway Embankments *Gardiners Wood Road - Elevate /redesign (Separate CIP project) * Old Norwich Road – Elevate roadway near Old Colchester Road.</i> The remaining three areas should be prioritized and design/permitting funding approved to identify construction funding.							
2 PROJECT STATUS IF IN PROGRESS							
2017 Waterford completed a Climate Change Risk Vulnerability, Risk Assessment and Adaptation Study by Kleinfelder Northeast, Inc.							
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)							
Grants may be available for a portion of these projects.							
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 excerpts from the Climate Change Risk Vulnerability, Risk Assessment and Adaptation Study.							
7 COST/FUNDING SOURCE							
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	0	0	0



CDBG-DR 2015

**CLIMATE CHANGE RISK VULNERABILITY, RISK
ASSESSMENT AND ADAPTATION STUDY**

WATERFORD, CONNECTICUT



Prepared For:
Town of Waterford
15 Rope Ferry Road
Waterford, CT 06385

Prepared By:
Kleinfelder Northeast, Inc.
215 First Street
Cambridge, MA 02142

November 16, 2017

E. ADAPTATION STRATEGIES - BUILDINGS/FACILITIES

Base Flood Elevations

Flood maps produced for this project depict potential water surface elevations at various time frames for a 1% (100 year) probability event. These are known as the Base Flood Elevations (BFE). This means that there is a 1% chance in the given year that there will be a storm that generates flood elevations exceeding the elevations shown in the table. The currently approved FEMA Flood Insurance Rate Maps define the current legally-binding BFEs for the Town of Waterford. Table 4 below depicts potential future BFEs, taking into account the effects of future sea level rise and storm surge and higher precipitation levels. In most cases, the BFEs shown in Table 4 are higher than the current FEMA BFEs.

Table 4 - Potential Future Base Flood Elevations (BFEs) for 1% (100-Year) Probability Flood

Facility	Critical Elevation	Coastal			Riverine		
		Present	2030	2070	Present	2030	2070
Mago Point Pump Station	6.91	10.03	10.58	13.27	13.00	13.39	14.3
Niantic River Pump Station	10.40	10.03	10.58	13.27	12.00	12.36	13.20
Oil Mill Pump Station	10.63	10.03	10.58	13.27	12.00	12.36	13.20
Jordan Park House Building 13	15.00	9.11	9.66	12.35	15.00	15.45	16.50
Jordan Park House Building 15	14.00	9.11	9.66	12.35	15.00	15.45	16.50
Bolles Court Pump Station	10.07	9.87	10.42	13.11	10.00	10.30	11.00
Quaker Hill Pump Station	10.30	9.87	10.42	13.11	10.00	10.30	11.00
Shore Drive Pump Station	9.66	8.89	9.53	12.22	No	No	No
Seaside Drive Pump Station	10.28	8.89	9.53	12.22	No	No	No
Gardiners Wood Pump Station	10.70	8.89	9.53	12.22	No	No	No
Stony Brook Pump Station	13.10	10.03	10.58	13.27	12.00	12.36	13.2
Colonial Drive Pump Station	11.86	8.89	9.53	12.22	No	No	No
East Nock Pump Station	12.78	8.89	9.53	12.22	No	No	No
Dock Road Pump Station	12.70	8.89	9.53	12.22	No	No	No
Harrison's Landing Pump Sta.	15.70	9.87	10.42	13.11	11.00	11.33	12.10
Jordan Park House Building 14	16.00	9.11	9.66	12.35	15.00	15.45	16.50
Public Works Facility	122.39	No	No	No	117.00	120.51	128.7
Quaker Hill Fire Station	14.40	9.87	10.42	13.11	No	No	No

Colors indicate the time horizon of vulnerability: = Present = 2030 = 2070

Design Flood Elevations

When designing adaption measures to protect against the effects of long-term flooding, a Design Flood Elevation (DFE) needs to be established to determine the height of flood protection required to protect the asset.

DFEs for pump stations will be determined based on the design guide specific to the design of wastewater treatment works in New England: *Technical Report-16, "Guides for the Design of Wastewater Treatment Works"* from the New England Interstate Water Pollution Control Commission (NEIWPCC). In this document, under the section *Protection of New and Existing Equipment*, it states: *Apply the standard of a 1% annual chance of flood elevation (100-year flood elevation) plus 2 feet for non-critical equipment and plus 3 feet for critical equipment.* As most equipment inside a pump station, such as electric switches and panels, pump motors and

CLIMATE CHANGE RISK VULNERABILITY, RISK ASSESSMENT AND ADAPTATION STUDY WATERFORD, CT

emergency generators, is considered critical equipment, the DFE for pump stations will be defined as the BFE plus 3 feet.

DFEs for other vulnerable buildings will be determined using the American Society of Civil Engineers publication ASCE 24-14 "Flood Resistant Design and Construction". Table 6-1 in ASCE 24-14 defines DFE's depending on the Flood Design Class of the Facility. For Fire Stations, the Flood Design Class is Class 4, with an additional freeboard of 2 ft. For other buildings, the Flood Design Class is Class 2, with an additional freeboard of 1 ft.

DFEs for the impacted buildings and facilities in Waterford are shown in Table 5 below. For example, to be more resilient by 2070, the Quaker Hill Pump Station should be protected to an elevation of 16.11, which is the higher of the coastal and riverine flood DFEs.

Table 5 - Proposed Design Flood Elevations (DFEs) for 1% (100-Year) Probability Flood

Facility	Critical Elevation	Coastal			Riverine		
		Present	2030	2070	Present	2030	2070
Bolles Court Pump Station	10.07	12.87	13.42	16.11	13.00	13.30	14.00
Quaker Hill Pump Station	10.30	12.87	13.42	16.11	13.00	13.30	14.00
Jordan Park House Building 13	15.00	10.11	10.66	13.35	13.00	16.45	17.50
Jordan Park House Building 14	16.00	10.11	10.66	13.35	16.00	16.45	17.50
Jordan Park House Building 15	14.00	10.11	10.66	13.35	13.00	16.45	17.50
Shore Drive Pump Station	9.66	11.89	12.53	15.22	N/A	N/A	N/A
East Neck Pump Station	12.78	11.89	12.53	15.22	N/A	N/A	N/A
Colonial Drive Pump Station	11.86	11.89	12.53	15.22	N/A	N/A	N/A
Gardiners Wood Pump Station	10.70	11.89	12.53	15.22	N/A	N/A	N/A
Dock Road Pump Station	12.70	11.89	12.53	15.22	N/A	N/A	N/A
Seaside Drive Pump Station	10.28	11.89	12.53	15.22	N/A	N/A	N/A
Mago Point Pump Station	6.91	13.03	13.58	16.27	15.00	16.39	17.30
Oil Mill Pump Station	10.63	13.03	13.58	16.27	15.00	15.36	16.20
Stony Brook Pump Station	13.10	13.03	13.58	16.27	15.00	15.36	16.20
Niantic River Pump Station	10.40	13.03	13.58	16.27	15.00	15.36	16.20
Public Works Facility	122.39	N/A	N/A	N/A	118.00	121.5	129.7
Harrison's Landing Pump Sta.	15.70	12.87	13.42	16.11	14.00	14.33	15.10
Quaker Hill Fire Station	14.40	11.87	12.42	15.11	N/A	N/A	N/A

Colors indicate the time horizon of vulnerability: = Present = 2030 = 2070

Pump Stations: DFE = BFE + 3 ft.

Fire Stations: DFE = BFE + 2 ft.

Other Buildings: DFE = BFE + 1 ft.

Impacted Wastewater Pump Stations

The proposed Design Flood Elevations exceed the critical elevations at a total of 13 wastewater pump stations at various time frames, which would cause flooding of the pump stations. If flooding were to occur, the likely result would be damage to electrical equipment, pump motors and emergency generators that could potentially keep the pump stations out of service for an extended period of time while repairs are made. This would require the Town to provide emergency pumping. Even if the pump stations could be cleaned and re-started quickly, there would likely be long-term corrosion effects that would greatly reduce the service life of the facilities. Therefore,

**CLIMATE CHANGE RISK VULNERABILITY, RISK ASSESSMENT AND ADAPTATION STUDY
WATERFORD, CT**

Table 6 – Adaptation Recommendations for Building and Facilities (Continued)

BUILDING OR FACILITY	DFE/ YEAR	ADAPTATION RECOMMENDATIONS	ESTIMATED CONSTRUCTION COST
PUBLIC WORKS FACILITY	El. 129.7 2070	Adaptation Strategy No. 1 – Temporary Flood Barrier to El. 129.70 This strategy provides long-term protection to the Public Works Facility to Elevation 129.70 using a lower-cost temporary flood barrier system. This elevation is the projected DFE in 2070. Protecting to this elevation prevents flooding of the facility, although the surrounding roads may be flooded. Specific recommendations include the following: • Purchase, store and have ready for deployment during a flood event 400 ft. of 6 ft. high temporary flood barrier along east and south sides. • Install a sump pump system to drain the space between the wall and the building from rain water and flood water that may seep under the wall. The sump pump should discharge over the wall.	\$200,000
	El. 129.7 2070	Adaptation Strategy No. 2 – Permanent Flood Wall to El. 129.70 This strategy provides long-term protection to the Public Works Facility to Elevation 129.70 using a more expensive, but permanent flood wall system. This elevation is the projected DFE in 2070. Protecting to this elevation prevents flooding of the facility, although the surrounding roads may be flooded. Specific recommendations include the following: • Construct 400 ft. of 6 ft. high permanent flood wall along east and south sides of building with a passive vehicle barrier at the roadway entrance. • Install a sump pump system to drain the space between the wall and the building from rain water and flood water that may seep under the wall. The sump pump should discharge over the wall.	\$1,200,000
	El. 129.7 2070	Adaptation Strategy No. 3 – Replace Building with Flood-Resistant Building This strategy provides long-term protection to the Public Works Facility to Elevation 129.70 with the most expensive solution, replacing the building. This elevation is the projected DFE in 2070. Protecting to this elevation prevents flooding of the facility, although the surrounding roads may be flooded. Specific recommendations include the following: • Replace the building with a new flood-proof building with the lowest floor above El. 129.70.	\$11,314,000
QUAKER HILL FIRE STATION	El. 15.11 2070	Adaptation Strategy No. 1 – Floodproof to El. 15.11 This strategy provides long-term protection to the Quaker Hill Fire Station to Elevation 15.11. This elevation is the projected DFE in 2070. Protecting to this elevation will prevent flooding of the lower level of the station, which houses the kitchen, and some HVAC, communications and electrical systems. Implementing these recommendations will allow the station to function during a flood event, although many roads near the station may be flooded. Specific recommendations include the following: • Furnish and store a temporary 4 ft. high panelized flood barrier system that can be deployed before a major flood along the lower (northeast) side of the station and attached to the building at both ends. The total length of barrier is approximately 50 ft. • Regrade the small concrete block retaining wall at the northeast corner of the station and construct a concrete pad to receive the flood barrier to allow it to be attached to the building. • Seal miscellaneous electrical conduits and penetrations below El. 15.11 that would allow water to enter the building.	\$72,000

F. ADAPTATION STRATEGIES - ROADWAYS

Many roads in Waterford are wholly or partially vulnerable to coastal and/or riverine flooding in the present, 2030 and 2070 timeframes. Roadway flooding has a number of potential consequences. The most common impact is a temporary disruption to economic activity and access to public services. At a minimum, flooded roadways can be closed for short periods after a flood to allow for debris removal and cleanup. At worse, flooded roads can be closed for extensive periods of time for extensive repairs to washed-out embankments, damaged pavements, damaged or exposed utilities, and damaged signage and safety equipment. The most significant impacts affect life safety. For example, the most common cause of flood-related drowning deaths is from people driving through moving or standing water on roadways. Another danger is that emergency services will be unable to respond to medical emergencies and fires in areas isolated by flooding.

Roadway flooding risks can be mitigated by a variety of physical strategies, including:

- Raising roadways or bridges above projected flood levels.
- Relocating roadways to routes over higher ground.
- Creating new emergency access routes to serve areas potentially cut off from flooding.
- Enlarging culverts to reduce flooding from flow restrictions (riverine only).
- Creating or enlarging stormwater pump stations (riverine only).
- Enlarging natural flood storage areas and diverting flows to these areas (riverine only).
- Adding bio-swales and other green infrastructure on roadsides to slow and store rainfall runoff and to improve runoff quality (riverine only).
- Adding structural protection to prevent erosion and roadway undermining.

These physical strategies are often challenging to implement. Raising or relocating roads by any substantial amount typically requires property takings and might result in impacts to adjacent wetlands. Increasing flood storage or flow through culverts can increase flooding upstream or downstream from the improvements. As such, these types of projects require technical study, stakeholder and community engagement, extensive permitting and significant capital resources.

The Town and the State of Connecticut have implemented many projects over the years to address roadway flooding risks, including replacing and enlarging culverts, elevating bridges, reinforcing roadway embankments, removing debris from culverts and drains, and improving roadway drainage systems.

Preventing all roads in Waterford from flooding is not realistically feasible due to the number of vulnerable roads, the extremely high capital cost to raise or otherwise protect roads, and the numerous physical constraints to changing roadway alignments. The following operational strategies can be applied in many situations to help mitigate life safety impacts:

- Implement road closures in advance of flooding.
- Install permanent warning signs at road segments prone to flooding.
- Educate drivers of the dangers of driving through flooded roads.
- Issue early evacuation orders to areas typically isolated by flooding.
- Pre-stage emergency response assets in flood-isolated areas.
- Obtain emergency equipment, such as boats and high-water vehicles, to be able to provide emergency access to flood-isolated areas.

Figure 28 shows a network of evacuation and emergency access routes in Waterford that should be strengthened to improve the Town's resilience to flooding. It also identifies some possible adaptation strategies to improve the accessibility of certain areas that could otherwise become isolated during flooding events.

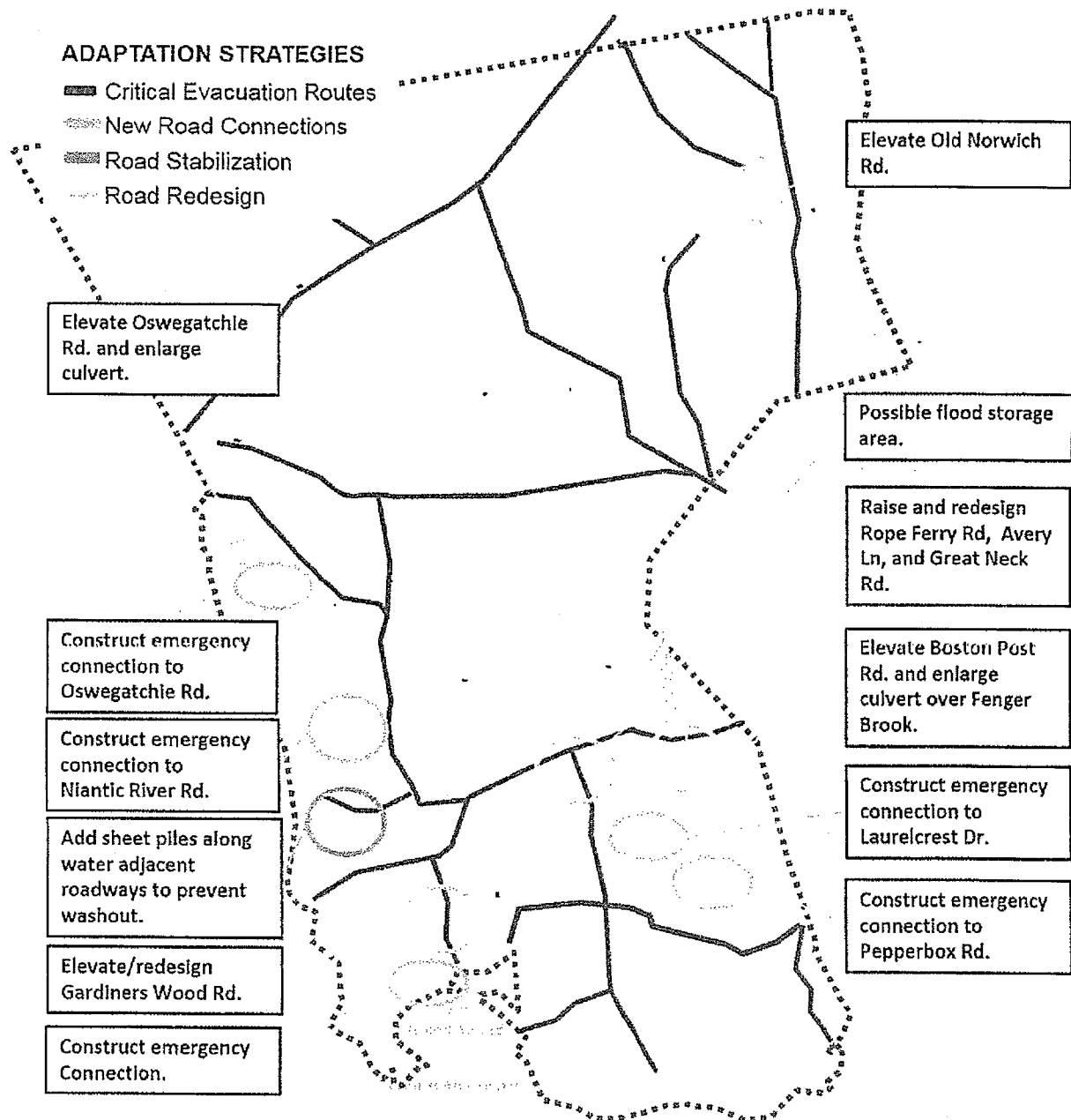


Figure 27 - Potential Adaptation Strategies to Strengthen Evacuation and Emergency Access Routes

Below are discussions on several adaptation strategies for several specific roads.

Adaptation Strategies – Gardiners Wood Road

The southern end of Gardiners Wood Road, at its intersection with Millstone Road East, is subject to coastal flooding in the present, 2030 and 2070 time frames.

The low-point elevation at Gardiners Wood Road near the railroad tracks is approximately El. 6.8. The projected coastal flood levels are El. 8.89 in the present, El. 9.53 in 2030 and El. 12.22 in 2070. Raising the road at the low point by 2.73 feet to be above the 2030 flood or 5.42 feet to be above the 2070 flood is not realistic because it would require raising the tracks to meet current required bridge under-clearances. Raising this section of high-speed track would require raising thousands of feet of embankment and track to meet track vertical curve requirements. Therefore, raising the road at the southern end intersection with the railroad is not considered to be a feasible option.

The road also floods regularly from overwash caused by heavy precipitation running along Gardiners Wood Road from Rope Ferry Road. There is a relatively large drainage catchment area that drains along the road and eventually discharges under Jordan Cove Road into Long Island Sound. There are three culverts that the drainage must pass through, and it appears that these culverts might be undersized, which causes the water to back-up and flood onto the roadway. Performing a drainage study or culvert analyses to verify their capacity was not part of the scope of this project.

Adaptation Strategy No. 1 - Drainage Improvements on Gardiners Wood Road – Estimated Range of Construction Costs: \$1,797,000 - \$2,994,000

Adaptation Strategy No. 1, as illustrated in Figure 28 below, will help address flooding related to heavy precipitation with drainage improvements along the southern end of Gardiners Wood Road. It does not address coastal flooding issues, which would still flood the lower roadway area during a major storm surge event. Implementing this adaptation strategy will help to eliminate nuisance flooding that causes cumulative damage to the road and impacts emergency services to the neighborhood. Recommendations for this strategy include the following:

- Perform a detailed drainage and hydraulic study of the roadway corridor to project drainage flows along Gardiners Wood Road in the present, 2030 and 2070 time frames. Verify the capacities of the three existing culverts.
- Raise the middle and northern parts of Gardiners Wood Road to fill in a low point in the vicinity to the entrance of the baseball fields at the south end of the road. The length of road to be raised is approximately 450 feet. The low point at about El 7.3 would be raised to about El. 10.5.
- Build a "constructed stormwater wetland" on the west side of Gardiners Wood Road just upstream of the 42-inch culvert that crosses Gardiners Wood Road. Provide a sediment forebay to remove sediment at the north end of the stormwater wetland to help reduce stormwater velocity and to remove sediment. The constructed wetland would act as a storage basin to attenuate the flow of stormwater and improve the water quality of the discharge into Long Island Sound. By raising the road in this area by up to 3 feet would substantially more storage volume for roadway runoff.
- Replace the existing 42-inch culvert under Gardiners Wood Road and the culvert under the railroad tracks with larger, higher capacity culverts. This will help to reduce overwash on the road when the existing culverts do not have sufficient capacity and geometry to pass through the required stormwater volume and velocity.

- Replace the Jordan Cove culvert with a larger culvert, if the drainage analysis indicates that the culvert is undersized in 2070. The cost estimate assumes replacement.
- Construct a large sediment forebay between the northernmost culvert under Gardiners Wood Road and the railroad track. This will help remove sediment from the flow prior to discharging into Long Island Sound.
- Clean all existing drainage pathways of accumulated sediment and debris that reduces the capacity of the drainage system.

It should be noted that during a major coastal flood event, water will overtop Jordan Brook Road and flood Gardiners Wood Road under the railroad bridge. In this case, the road will be impassable under the bridge. If the road is raised as proposed, coastal flooding would not affect the road north of the railroad, until it reached approximately El. 10.1. Flood barriers and tide gates could be installed to prevent coastal flooding beyond the railroad tracks, but the road south of the tracks would still be impassable, so these measures are not warranted for this strategy. The duration of coastal flooding is dependent on the storm duration and tide cycles, but in general would not be expected to be longer than 12 hours, assuming a storm lasts through two tide cycles. This area can be expected to drain relatively quickly due to its proximity to the coast.

Adaptation Strategy No. 2 – Flood Walls on Gardiner Wood Road, Millstone Road East and Jordan Cove Road – Estimated Range of Construction Costs: \$877,000 - \$1,462,000

This adaptation strategy, as illustrated in Figure 29, would address coastal flooding issues. Although this strategy could be implemented as a stand-alone strategy, we recommend that it be implemented together with Strategy No. 1, which addresses flooding issues due to heavy precipitation that could occur independent of coastal flooding. The costs shown are in addition to the costs identified in Strategy No. 1. Under this concept, Gardiners Wood Road and Millstone Road East could remain open during a coastal flood up to an elevation 12.22, which would provide emergency access to the neighborhood. Access to Jordan Cove Road, however, would be closed during the flood. This would address coastal flooding concerns through 2070. This concept includes the following:

- Construct concrete floodwalls with a top-of-wall elevation of El. 12.22. Building to El. 12.22 would result in a wall with a maximum height of about 4.92 feet in front of the house at 305 Millstone Road East. The wall would need to have openings at two house driveways, across Jordan Cove Road, and across Windward Way. These openings would need to be closed with a temporary barrier just prior to a major flood. The total length of floodwall (varying height) would be approximately 360 feet.
- Install a tide gate at the downstream end of the culvert under the railroad tracks to prevent coastal flood water from flooding Gardiners Wood Road through the culvert system. It should be noted that the tide gate will keep coastal flood waters out, but it will also prevent roadway drainage from precipitation from discharging to Long Island Sound. Assuming a major rain event is occurring simultaneously with a major coastal flood, there would be some drainage overflow onto the roadway. The exact quantities and expected depths of flooding would have to be determined as part of the drainage and hydraulic analysis for the project.
- Install a pre-packaged duplex pump system at the low point of the intersection of Millstone Road and Gardiners Wood Road to pump out any accumulation of drainage on the roadway. In lieu of a permanent fixed pump, a portable gas-fired pump could also be used.

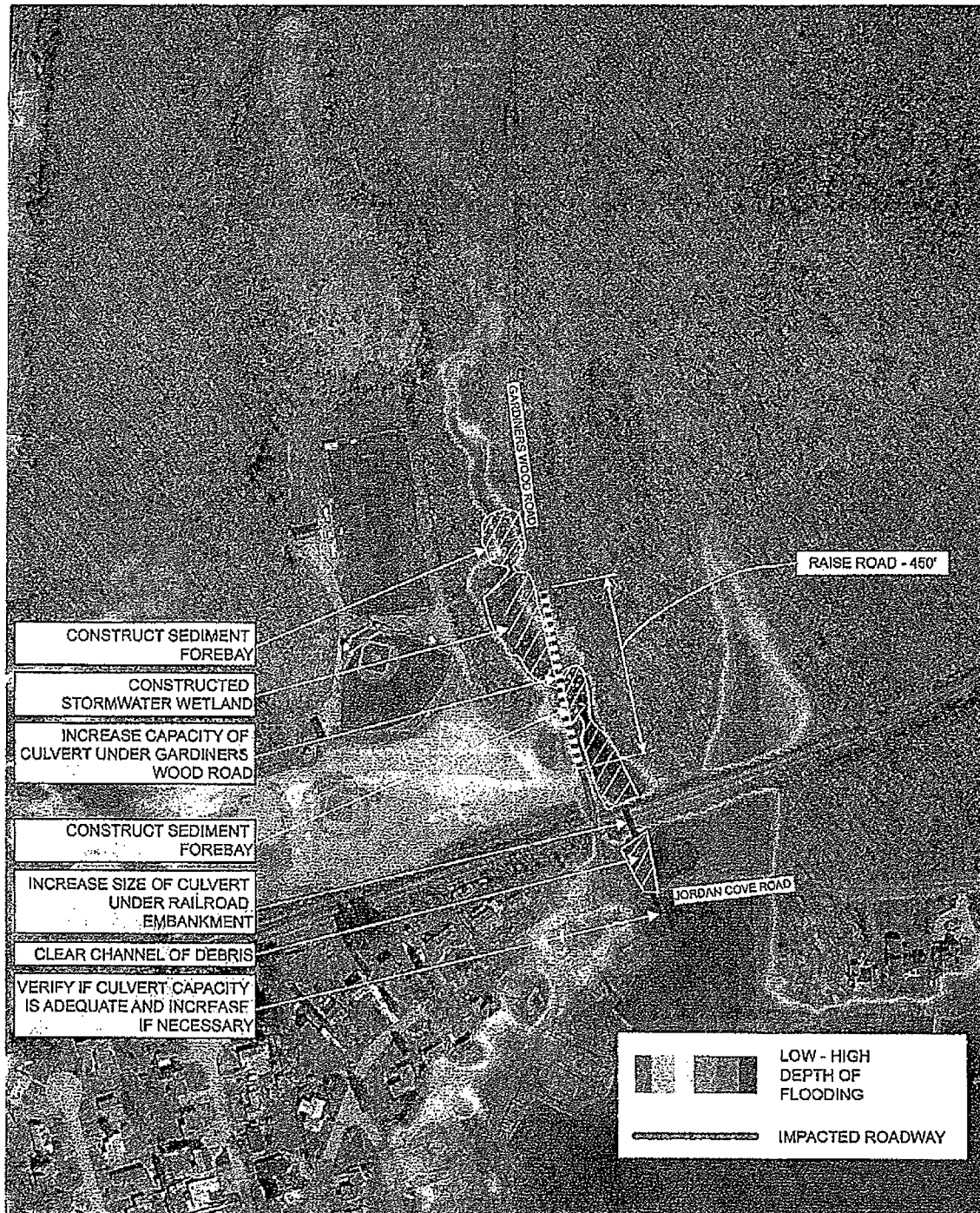


Figure 28 - Gardiners Wood Road Adaptation Strategy No. 1 - 2070, 100-Year Coastal Flood Scenario

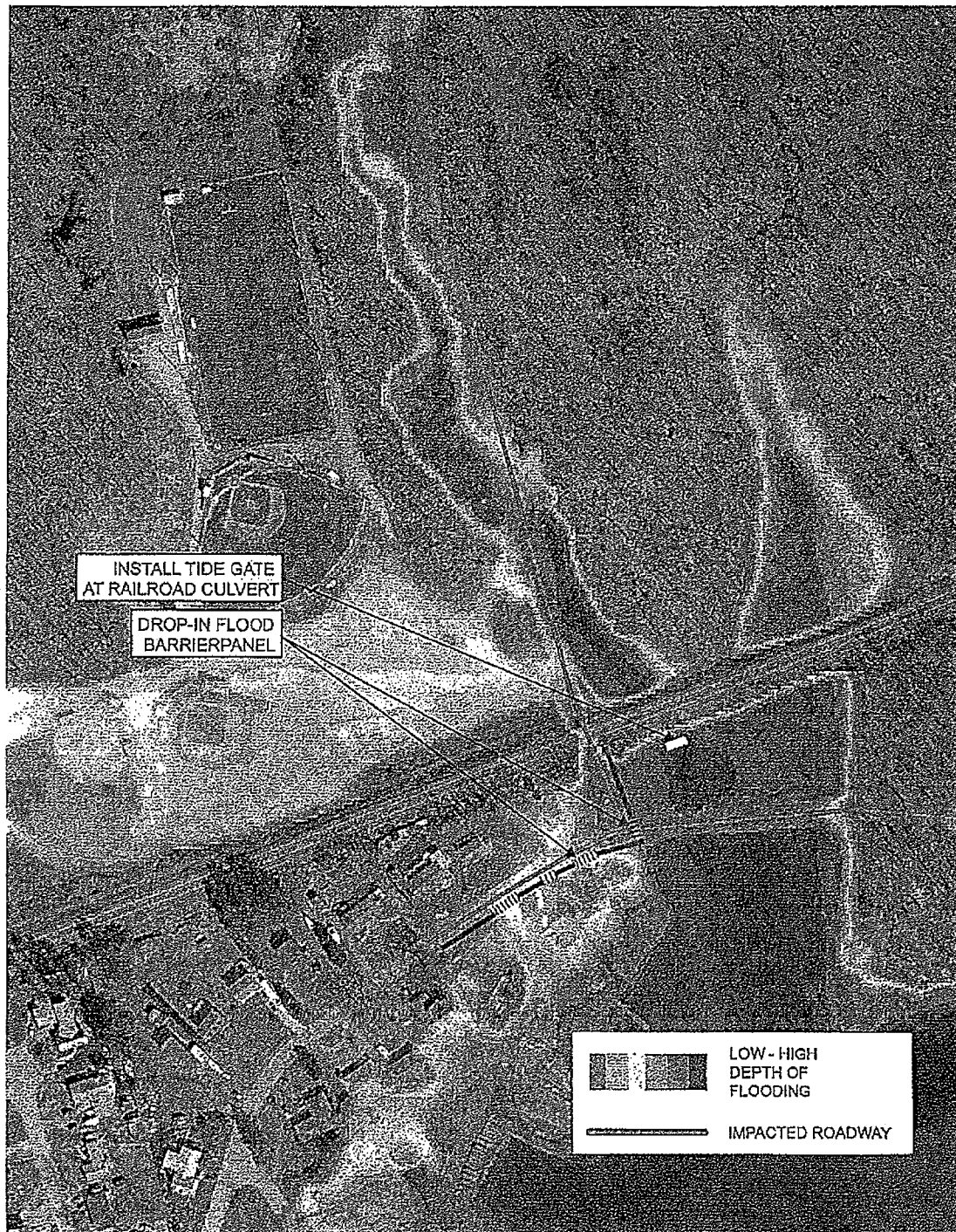


Figure 29 - Gardiners Wood Road Adaptation Strategy No. 2 - 2070, 100-Year Coastal Flood Scenario

Adaptation Strategies – Oswegatchie Road

As illustrated in Figure 30, there are two sections of Oswegatchie Road that are vulnerable to flooding. One is on the Niantic River near Point Comfort Road. The low point in the road is approximately El. 7.50 feet and the length that can flood is about 130 feet long. The other section of road is along the north end of Keeney Cove, near the intersection with Niantic River Road. This section of road is about 300 feet long and varies in elevation between El. 4.8 to about El. 5.8. For the 2030 timeframe, the predicted water elevations for a 1% (100 year) storm are El. 10.58 and El. 12.36 for coastal and riverine storms, respectively. For the 2070 timeframe, the predicted water elevations for a 1% (100 year) storm event are El. 13.27 and El. 13.2 for coastal and riverine storms, respectively.

If both ends of Oswegatchie Road are flooded, there is a relatively large neighborhood that would not have vehicular access into or out of the neighborhood during a flood. In addition, a major flood could cause major damage to the roadway infrastructure and associated utilities, which could be costly to repair and keep the road out of service for several weeks. This would be a public safety issue as well as a major inconvenience to citizens living in this area of town.

Adaptation Strategy No. 1 – Raise Oswegatchie Road near Point Comfort Road - Estimated Range of Construction Costs: \$516,000 - \$860,000

The best way to adapt to future flooding and to maintain emergency access to the adjacent neighborhood is to raise Oswegatchie Road just south of Point Comfort Road. We estimate that this road can be raised over a distance of about 500 feet to a minimum elevation near El. 13. Several driveways would need to be adjusted, but it appears that there is room to do so. This would provide long-term flood protection for a 100-year storm in 2070. This is the recommended approach to maintain at least one means of egress into the neighborhood.

Adaptation Strategy No. 2 – Reinforce Roadway Embankments- Estimated Range of Construction Costs: \$118,000 - \$196,000

If Oswegatchie Road is raised per Adaptation Strategy No. 1, it is not necessary to raise the section of road along Keeney Cove, as the adjacent neighborhood would have at least one means of emergency access. However, the road along Keeney Cove could be susceptible to erosion and possible collapse during an extreme coastal or riverine flood in the present, 2030 or 2070 timeframes. Therefore, to minimize the potential for roadway damage, this strategy reinforces the roadway embankments for about 300 feet of roadway directly adjacent to Keeney Cove with additional stone revetment or sheet pile cut-off walls to prevent erosion of the road embankment during a major storm. Although the road would be out of service during a major flood, the goal is to return it to service as quickly as possible after the water recedes. If sections of the road collapse, reopening the road would be greatly delayed. The total length of revetment reinforcement is estimated to be 300 feet.

Adaptation Strategy No. 3 – Construct New Emergency Road- Estimated Range of Construction Costs: \$175,000 - \$290,000

This strategy allows both ends of Oswegatchie Road to flood, but constructs a new emergency access road from Raymond Lane to Pamela Way to allow emergency services to access the otherwise isolated neighborhood. The general area of the potential emergency road is shown in Figure 30. There are also other possible starting and ending points for a small new emergency access road. This emergency road does not necessarily need to be a paved access road for daily use, but rather it can be a "Geo-Grid" cellular, interlocking HDPE paving grid for reinforcing grass, creating a surface that

can be driven on. This road would normally be closed to vehicular traffic, but would be opened in advance of a major flood event. This strategy helps to provide emergency access to the neighborhood, but could result in potential damage to Oswegatchie Road, which could be costly to repair and keep the road out of service for several weeks, causing a major inconvenience to citizens living in this section of town.

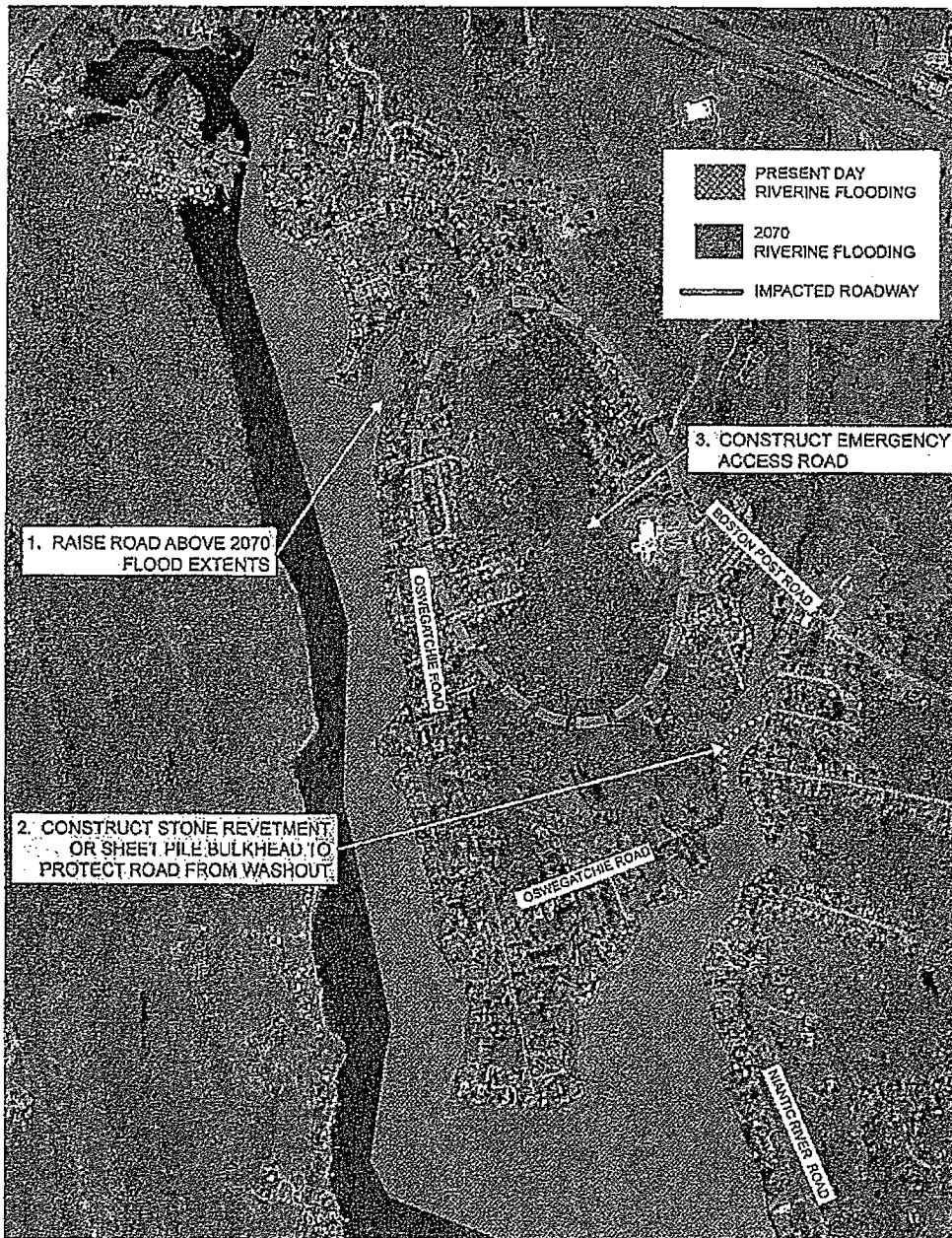


Figure 30 - Proposed Conceptual Road Improvements at Oswegatchie Road – 2070, 100-Year Riverine Flood Scenario

Adaptation Strategy – Rope Ferry Road / Avery Lane / Great Neck Road

The intersection of Rope Ferry Road, Avery Lane and Great Neck Road currently floods from riverine flooding during 100-year storms in the present, 2030 and 2070 timeframes. This is an important intersection in Waterford, and ideally should be protected from flooding. This will help to minimize damage to the roadway infrastructure, including underground and overhead utilities. The proposed strategy described below, will offer protection for a 100-year riverine flood in 2070.

Adaptation Strategy – Raise Elevation of Intersection - Estimated Range of Construction Costs: \$2,079,000 - \$3,466,000

As illustrated in Figure 31, this strategy proposes to raise the elevation of the intersection a maximum of 4.50 feet to a Design Flood Elevation of 16.50 corresponding to the 2070 (riverine) flood elevation with no additional freeboard. The proposed lengths of road modification are estimated to be as follows:

- Rope Ferry Road: 990 feet
- Avery Lane: 420 feet
- Great Neck Road: 320 feet

Please note that these lengths of road are estimates suitable for long-term planning purposes based on engineering judgement. No roadway geometry, engineering, traffic or environmental studies or utility investigations were conducted as part of this project to determine actual geometry and code-related issues that will affect the length of work and associated costs.

A number of driveways serving adjacent properties would also need to be adjusted to accommodate the raised roadway.

CLIMATE CHANGE RISK VULNERABILITY, RISK ASSESSMENT AND ADAPTATION STUDY
WATERFORD, CT

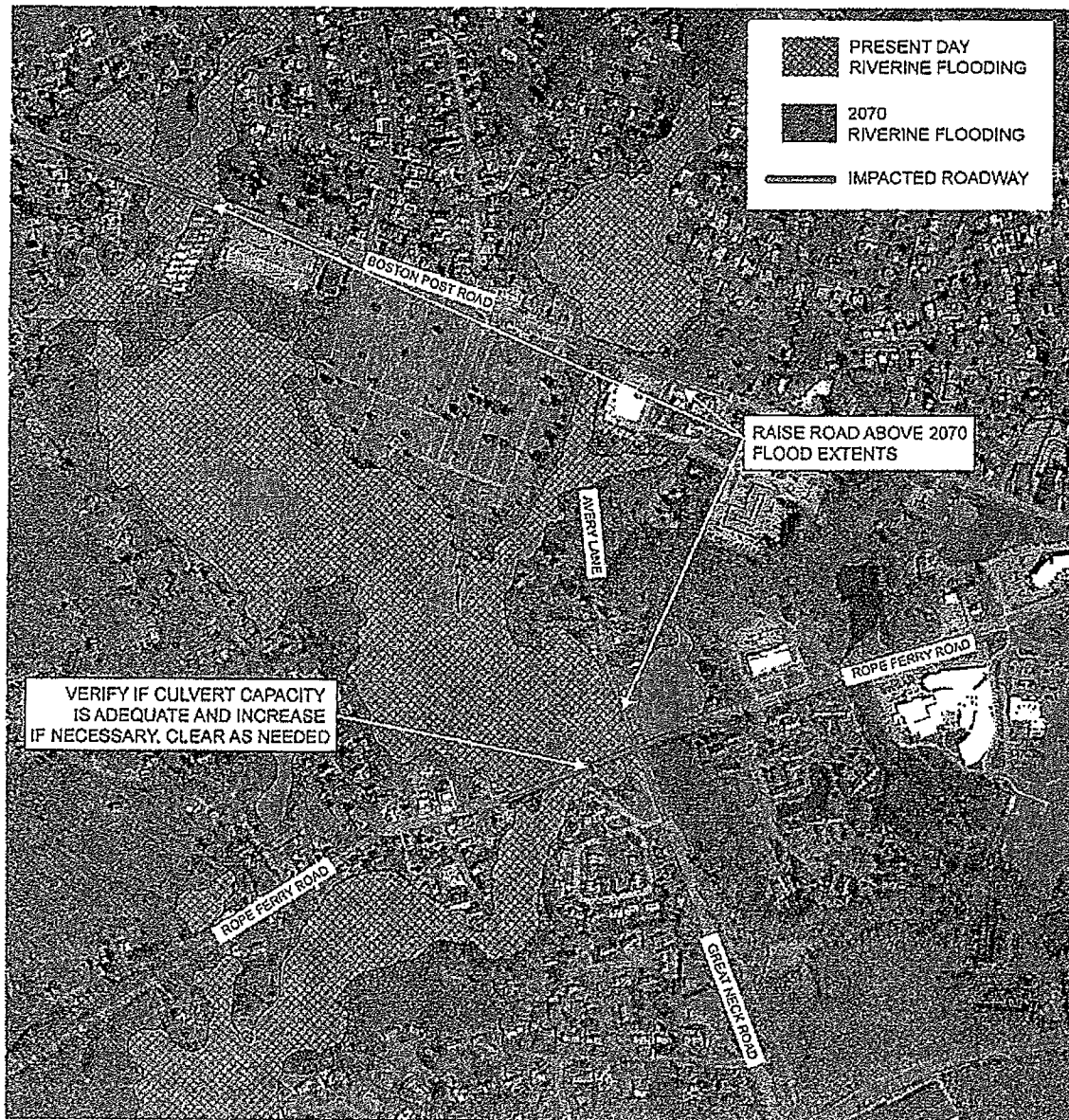


Figure 31 - Proposed Conceptual Road Improvements at Rope Ferry/Avery Lane/Great Neck Road – 2070, 100-Year Riverine Flood Scenario Shown

Adaptation Strategy – Niantic River Road

Adaptation Strategy – Reinforce Roadway Embankments- Estimated Range of Construction Costs:
\$187,000 - \$311,000

Much of Niantic River Road is shown to flood for a present day 1% storm event for both coastal (El. 10.03) and riverine (El. 12.0) storms. For the 2070 timeframe, the predicted water elevations for a 1% storm event are El. 13.27 and El. 13.2 for coastal and riverine storms, respectively. The lowest road elevation is El. 3.30 with several other low spots averaging closer to El. 6.0.

Niantic River Road is a relatively long road subject to flooding with numerous homes and driveways directly adjacent to the road. Therefore, raising the road, even to only meet present-day flood levels, is not practically feasible.

It is also not practical to install permanent flood walls or other flood prevention devices because the height would effectively block most water views from the roadway as well as many of the homes. There would also need to be too many openings in the wall required for access to driveways that would be difficult to seal up in advance of a major storm.

Therefore, we do not believe that it is reasonably feasible to prevent flooding of Niantic River Road. Instead we recommend that the embankments of two of the lowest sections of road directly adjacent to the water be reinforced with additional stone revetment or sheet pile cut-off walls to prevent erosion of the road embankment during a major storm. Although the road would be out of service during a major flood, the goal is to return it to service as quickly as possible after the water recedes. If sections of the road collapse, reopening the road would be greatly delayed. The total length of revetment reinforcement is estimated to be 540 feet. The total estimated cost to construct this revetment reinforcement is in the range of \$187,000 to \$311,000.

Adaptation Strategy – Evacuation

As mentioned above, there are many roads in Waterford that will flood in a major flood event. It would be cost prohibitive to raise all affected roads. Another strategy is for the Town to purchase an amphibious vehicle to assist with evacuations in the event that neighborhoods become isolated due to severe flooding. Figure 32 shows two examples of such vehicles. One is similar to the "Duck Boat Tour" boats in Boston. These amphibious vehicles can drive on roads, but when the roads are flooded they can drive into the water and turn into boats. They seat about 20 people, which would make them an excellent rescue vehicle. Another option is a large-wheeled ex-military type vehicle.

The cost to purchase these type of vehicles is difficult to predict. A good source of amphibious vehicles is from surplus military equipment, which is often auctioned off through the Department of Homeland Security or made available to Public Safety Departments under various grants. A budgetary estimate would be in the range of \$75,000 to \$100,000. In addition, to the capital purchase cost, the cost of annual maintenance and storage should be factored in.



Figure 32 - Examples of Potential Rescue Vehicles

Adaptation Strategy -- Waterproofing Wastewater Manholes

The Town of Waterford has already waterproofed all wastewater manholes located within the current FEMA 100-year mapped floodplain. The purpose for waterproofing the wastewater manholes is to prevent surcharging and flooding wastewater pump stations from floodwater entering leaking manholes. However, based on the flood mapping generated by this project, the floodplain will likely expand beyond the current FEMA 100-year floodplain in the future.

As discussed with the Working Group, we recommend that wastewater manholes located within the current FEMA 500-year floodplain be waterproofed with gasketed, bolted-down manhole covers with sealed rims to help minimize infiltration of flood water into the wastewater pump stations during a major flood.

Using the GIS layer of manhole locations provide by Town staff, we estimate that there are 229 manholes in the zone between the 100-year and 500-year flood plains that should be waterproofed. Table 7 shows the distribution of these manholes by pump station area, and Figure 33 shows the distribution graphically. At an estimated cost of \$2,500 per manhole, the estimated cost to waterproof 229 manholes is approximately \$573,000. We recommend prioritizing the waterproofing of wastewater manholes based on the same risk-prioritization of the pump stations to which the manholes drain to.

**CLIMATE CHANGE RISK VULNERABILITY, RISK ASSESSMENT AND ADAPTATION STUDY
WATERFORD, CT**

Table 7 - Recommended Wastewater Manholes to be Waterproofed

Sewer Drainage Area	No. of Manholes Between Current 100-Year and 500-Year FEMA Floodplains
Maple Road	1
Niantic River Road	1
Old Mill Road	1
Gardiners Wood Road	15
Quaker Hill	5
Seaside	14
Shore Road	8
Stony Brook	5
Bolles Court	1
Dock Road	19
East Neck Road	14
Gross Road	12
Evergreen	17
Harvey Ave / Blue Hills	13
Oswegatchie Road	1
Richards Grove	1
Ridgewood	18
Total	229

LEGEND

	High Priority
	Medium Priority
	Lower Priority
	Low Priority

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME Traffic Signal Replacement	DEPARTMENT PRIORITY _____

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 on Route 85 and Millstone Road with Route 1.							
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)							
None							
7	COST/FUNDING SOURCE						
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	0	0	0

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY Public Works	CONTACT PERSON Gary J. Schneider
PROJECT NAME Guide Rail Replacements	DEPARTMENT PRIORITY _____

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) Roadside barriers or guide rails are longitudinal barriers used to prevent a vehicle from leaving the roadway and striking a fixed object or terrain feature that is considered more hazardous than the barrier itself. Many of our existing systems do not meet current standards and may even cause more damage than what they are intended to prevent.	
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2	PROJECT STATUS IF IN PROGRESS
	Inventory of existing barriers was completed July 2020.

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)
	See attached expanded narrative and inventory. Quote of a previous location installation. Locations within the Town.

7		COST/FUNDING SOURCE					
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	0	0	0

1-Jul-20

Guardrail Locations...

Street	Location	Type	Footage
Gallows La	Between Hse # 85 and the water tank	Posts and cable	120
Gallows La	By pole #323E4	5 Posts NO cable	25
Gallows La	By the N.L. Town Line	Posts and cable	155
Bloomingtondale Rd	Between pole # 2965 and Pole # 2961	Posts and cable	547
Burlake Rd	In the Cul-de-sac	Posts and cable	51
Sunshine Rd	Near Pole #8122 to Hse #9	Posts and cable	138
Sunshine Rd	Near Pole # 8663 to near Hse #25	Posts and cable	284
Old Mill Rd	From the Bridge to the area of Hse #16	Posts and cable	425
Old Mill Rd	From Hse #12 to by Pole #3353	Posts and cable	330
Old Norwich Rd	Area of Pole # 3416 to the area of Pole 3417	Posts and cable	250
Old Norwich Rd	Hse #119	Posts and cable	50
Old Norwich Rd	Hse 151	Posts and cable	80
College Ct	At the Dead End by the drop	Only 2 of the posts are left	30
Vauxhall St			
NORTHBOUND			
	Flexbeam by the I-95 Overpass (overlapping Flexbeam) to Hse # 587	Posts and cable	1,247
	By Hse # 708 to by Hse # 718	Steel I-Beam and cable	450
	By Hse # 729 to near entrance to Leary Park	Steel I-Beam and cable	354
SOUTHBOUND			
	By Hse #836 Way back off the road LENGTH IS APPROXIMATE	Posts and cable	350
	By Hse 237 to Pole #8239	Posts and cable	139
	Hse # 818 to Hse # 812	Steel I-Beam and cable	157
	Intersect. Of Vauxhall St by F.W. Webb to Flex-Beam by I-95 Bridge	Posts and cable	900
xxx			
Briarwood Dr	By the Pump Station	3 Posts NO cable	25
Kenyon Rd	By Hse #15 to by Pole #7896	5 Posts NO cable	56
Harvey Av by Rt 85 Eastbound	By Pole #4145 to Pole #4143	Posts and cable	268
Harvey Av by Rt 85 Westbound	From Pump Station Driveway to by Pole # 4145	Posts and cable	200

Gilead Rd	Cul-de-sac	Posts and cable	145
Harbour View	At the 90 degree turn back into the yard of Hse #22	4 Posts NO cable. Some missing	70
Cross Rd Southbound	Around Pole #9266 to Pole #9262	Posts and cable	750
Cross Rd Northbound	Around Pole #9262 to around Pole #9266	Posts and cable	765
<u>Wtfd. Pkwy. North - East of Cross Rd</u>			
<u>EASTBOUND</u>			
	By the I-95 South Exit Ramp to by Pole # 4065	Posts and cable	460
	By Pole 4060 to by Pole # 4055	Posts and cable	475
<u>WESTBOUND</u>			
	Area of Pole #4062 to just past the traffic light	Posts and cable	876
<u>Wtfd. Pkwy. North - West of Cross Rd</u>			
<u>WESTBOUND</u>			
	Area of Pole #4015 to the area of Pole #4006	Posts and cable	1,762
	Area of Pole # 3999 to the area of Pole #3997	Posts and cable	324
	Area of Pole # 3994 to the area of Pole #3992	Posts and cable	370
<u>EASTBOUND</u>			
	Area of Pole #3992 to the area of Pole #3999	Posts and cable	1,435
	Area of Pole #4002 to the area of Pole #4004	Posts and cable	340
	Area of Pole #4005 to the area of Pole #4009	Posts and cable	819
	Area of Pole #3184 to Pole #3181	Posts and cable	560
<u>Wtfd. Pkwy. South - East of Cross Rd</u>			
<u>EASTBOUND</u>			
	By Pole #4164	Posts and cable	130
	By Pole #4163	Posts and cable	111
	Area of Pole #4162 to the area of Pole #4160	Posts and cable	316
	Area of Pole #4151 to bt the driveway to CocaCola	Posts and cable	150
	Area of Pole #4149 to the area of Pole #4148	Posts and cable	200
	Near the end of the road NO landmark	Posts and cable	135
<u>WESTBOUND</u>			
	Near the end of the road NO landmark	Posts and cable	117
	By Pole #4148	Posts and cable	172
	Area of Pole #4150 to the area of Pole #4152	Posts and cable	315

From the Weigh Scale Entrance to Beechwood Dr	Posts and cable	930
Area of Pole #4160 to the area of Pole #4162	Posts and cable	316
The Old Cemetery to the area of Pole #4164	Posts and cable	140

Wtfd. Pkwy. South - West of Cross Rd

WESTBOUND

Area of Pole #7723 to the area of Pole #7719	Posts and cable	875
Area of Pole #7718 to the area of Pole #7717	Posts and cable	340
Area of Pole #7716 to the area of Pole #7714	Posts and cable	350
Area of Pole #3322 5K to the area of Pole #7734	Posts and cable	190

EASTBOUND

Area of Pole #7734 to the area of Pole #3322 5K	Posts and cable	150
By the entrance to I-95 near Gilead Rd to the area of Pole #7716	Posts and cable	430
Area of Pole 7717 to the area of Pole # 7719	Posts and cable	310
Area of Pole # 7725 to the Flex-beam	Posts and cable	155

xxx

xxx

Gurley Rd Westbound	Pole #3459	Posts and cable	78
Gurley Rd Eastbound	Near Wtfd Pkwy South	8 Posts NO cable	70
Oil Mill Northbound	South of the Rt 395 Overpass unmaintained	6 Posts NO cable	36
Oil Mill Rd Southbound	North of the Rt 395 overpass	4 Posts NO cable	20
Oswegatchie Rd by Wilcox Ct	Area of Pole #826	Posts and cable	75

Niantic River Rd

SOUTHBOUND

Starts by MissVans Ct and runs onto Oswegatchie Rd	Posts and cable	290
Start at Hse #274 and goes to the neighbor	Posts and cable	86
Area of Pole #6281 6K to the area of Pole #6285 30K	Posts and cable	380
Hse #222	Posts and cable	60
The Posts and wire at Hse #222 end with	4 Posts NO cable	20
Hse #190 to Hse #186	Posts and cable	247
Hse #178 to Hse #172	Posts and cable	357

NORTHBOUND

Hse 187 to the are of Pole #982	Posts and cable	375
Pole #6291	Posts and cable	76

Are of Hse # 241		Posts and cable	100
		xxx	
Mago Blvd	At the intersect. Of Wood St	Rails converted to a fence	4 Posts NO cable
Yorkshire Dr	Hse #50		Posts and cable
Kingfisher Way	Assembly goes onto Kestral La		Steel I-Beam and wire
Miner La	Area of the High School Driveway to the area of Pole #705		Posts NO cable
xx	Number of posts for Miner La is unknown so many are missing		
Jordan Cove Rd	Area of Pole #3721 to the area of Gardiners Wood		Steel I-Beam and cable
Jordan Cove Rd	Area of Gardiners Wood Rd to the area of Pole #3721		Steel I-Beam and cable
Millstone Rd East	Access gate to the Millstone Wildlife Sanctuary **Maybe private		7 Posts NO cable
Gardiners Wood Rd	Pole #8217		Posts and cable
Shore Rd	Area of Pole #1194 near Anita Av		Posts and cable
Windy Ridge Pl	There is low wooden fence that runs along the drop off		230

Feet 25,953
Mileage 4.9

TOWN OF WATERFORD CAPITAL PROJECT REQUEST FORM

DEPARTMENT/AGENCY	CONTACT PERSON
Public Works	Gary J. Schneider
PROJECT NAME	DEPARTMENT PRIORITY
Retaining Walls	

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project)						
	Oswegatchie Road is one of the several Town roads that have been identified as an evacuation route. There is a segment of the road near lot #166 where the embankment next to the road is held up by a dry stone retaining wall. The wall, if it fails, would block the means of egress. Failure of the wall would also impact the electrical circuit to that area. Funding is being programed for consulting engineer to inspect the structure and made recommendations for repairs to the retaining wall. Funding for construction would be proposed for the following years.						
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)						
	See attached expanded narrative. Picture of area in question.						
7	COST/FUNDING SOURCE						
	FUNDING SOURCE	APPROVED FUNDING TO DATE	FY2022	FY2023	FY2024	FY2025	FY2026
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						
7	Federal/State Grants (detail in section 5)						
8	Other Funding (detail in section 5 above)						
	TOTALS	0	0	0	0	0	0

**TOWN OF WATERFORD
CAPITAL PROJECT REQUEST FORM**

DEPARTMENT/AGENCY <u>Public Works</u>	CONTACT PERSON <u>Gary J. Schneider</u>
PROJECT NAME <u>Transfer Station (Scale, Scale House)</u>	DEPARTMENT PRIORITY <u>5</u>

1	DESCRIPTION AND JUSTIFICATION (describe the type, purpose & anticipated accomplishments of the project) This project will address several areas that support the transfer station at the Municipal Complex. The Transfer Station constructed in 2005. The first will replace the Transfer Station's office that is used as scale house and inspection point for incoming vehicles Second, the platform scale that is nearing its end of life will be replaced. This unit is 15 years old.																																																																													
2	PROJECT STATUS IF IN PROGRESS <u>None</u>																																																																													
3	LIST OTHER PROJECTS WITHIN YOUR DEPARTMENT OR ANOTHER DEPARTMENT THAT WILL BE IMPACTED BY THIS REQUEST <u>None</u>																																																																													
4	DESCRIBE THE IMPACT ON DEPARTMENT OPERATING BUDGET (include cost estimate if applicable) <u>None</u>																																																																													
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) <u>None</u>																																																																													
6	ATTACH PLAN ESTIMATE, SERVICE AREA MAP AND/OR OTHER SUPPORTING DOCUMENTATION (if none, simply state that in the area below) <u>See attached expanded narrative. Estimate of probable cost. Scale Quotation, Photo of scale and trailer.</u>																																																																													
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Project Scale Replacement

Item #	Item	Quantity and Unit Measures	Estimated Unit Price	Extended
1	Mobilization (Permits, Bonds, Insurance)	LS	\$ 3,000.00	\$ 3,000.00
2	E/S Controls	LS	\$ -	
3	Maintenance and Protection of Traffic	LS	\$ -	
4	Scale Removal and Installation	LS	\$ 69,053.00	\$ 69,053.00
Total Estimated Project Cost			\$	\$ 72,053.00
Contingencies (10%)			\$	\$ 7,205.30
Design (Plans for Permits)			\$	\$ 2,000.00
Grand Total			\$	\$ 81,258.30
4% Per year escalation			\$	\$ 84,508.63

Scale House Replacement

Item #	Item	Quantity and Unit Measures	Estimated Unit Price	Extended
1	Mobilization (Permits, Bonds, Insurance)	LS	\$ 3,000.00	\$ 3,000.00
2	E/S Controls	LS	\$ 2,000.00	\$ 2,000.00
3	Maintenance and Protection of Traffic	LS	\$ 500.00	\$ 500.00
4	Demolition	LS	\$ 1,500.00	\$ 1,500.00
5	Building (\$150/sf .	150	\$ 450.00	\$ 67,500.00
6	ADA Entrance		\$ 5,000.00	\$ 5,000.00

Total Estimated Project Cost

		\$	\$ 79,500.00
Contingencies (10%)		\$	\$ 7,950.00
Design (Plans for Permits)		\$	\$ 15,000.00
Grand Total		\$	\$ 102,450.00
4% Per year escalation		\$	\$ 106,548.00

Sandy Kenniston

From: Griffiths, Leanne <Leanne.Griffiths@willscot.com>
Sent: Thursday, October 24, 2019 3:37 PM
To: Sandy Kenniston
Subject: Budgetary MO248 wet purchase

Sandy,

Per our conversation, purchase price for a new office would be approximately \$125 per square foot, plus applicable taxes and delivery.

Lead time is typically 2-3 months.

Thank you, Leanne

Leanne Griffiths
ISR

Direct: 860-343-3740
Office: 203-699-2469 x38541
leanne.griffiths@willscot.com | willscot.com

WE REQUIRE A 30 DAY WRITTEN NOTICE FOR ALL RETURNS.

If you wish to stop receiving marketing related materials, including newsletters, event invites, information regarding products and service offerings, promotional campaigns ("Electronic Communications") please unsubscribe by sending an email to unsubscribe@willscot.com. Please note that communications regarding your account or current business transactions, including but not limited to invoices, payment requests, collection notices, and/or courtesy reminders may still be sent electronically.



Town of Waterford, CT
 Attn: Gary Schneider, Sandy Kenniston
 15 Rope Ferry Road
 Waterford, CT 06385
 Phone: 860 444 5864
gschneider@waterfordct.org
skenniston@waterfordct.org

Pete Dayotas
 Fairbanks Scales
 134 Mendon Street, Bellingham, MA 02019
 (cell) 508 561 7496
 (office) 800 232 0252
 (fax) 508 966 2137
pdayotas@fairbanks.com

Quotation 2020-62 – Replacement Fairbanks Pre-cast concrete deck vehicle scale

August 10th, 2020

Part	Name	Description	Quantity	Unit
5593-spl	70"x10' Trident pre-cast "retro-fit" scale	Fairbanks 70'X10' 100 ton capacity, Trident, pre-cast concrete deck scale. Scale is designed for installation in existing foundation. Scale includes eight, stainless steel, hermetically sealed, IP69k rated load cells. Scale includes 5 year weighbridge and 25 year load cell warranty including damage that may occur from lightning. Scale deck is 8000 psi concrete, pre-cast deck with controlled crown, steam cured, and constructed over eight 8" and two 10" I beams, poured over architectural foam with no bottom pan. Please see included literature. Scale to interact with existing Fairbanks instrumentation. Scale is shipped to be installed in existing foundation with 2-3 day installation.	1	\$49,315.00
5590-sp3	rub rails	One set of single pipe rub rails for new Fairbanks scale Price includes a set of 70'- 8" rub rails to run on each side of the scale.	1	\$4,355.00
98078	Scale removal and replacement and calibration to Handbook 44 standards	Removal of existing scale with disposal on site for recycling by town of Waterford, CT. Fairbanks Scales to Prepare existing piers for acceptance of new scale. Installation of new Fairbanks pre-cast scale to Handbook 44 standards with acceptance by State of Connecticut weights and measures. Installation during normal working hours Monday-Friday 730 AM – 430 PM by Non-union Fairbanks technicians. Scale replacement should not be greater than 3 days. Note: We would require aged scale to be available at noon to prep and block in preparation for crane next day.	1	\$6,903.00
98080	Crane	80 Ton crane to remove existing modules with disposal adjacent to cranes swing (or loaded on customer supplied flatbed or dumpster) and off-load new scale from truck and set for operation. New Trident scale weighs 43,400lbs (14,467 lbs each module). Two days of crane service carried in pricing	1	\$2,425.00
20200810D2	Freight	Freight for new scale modules from Fairbanks factory in Meriden, MS 39307 (3-4 week lead time).	1	\$6,055.00

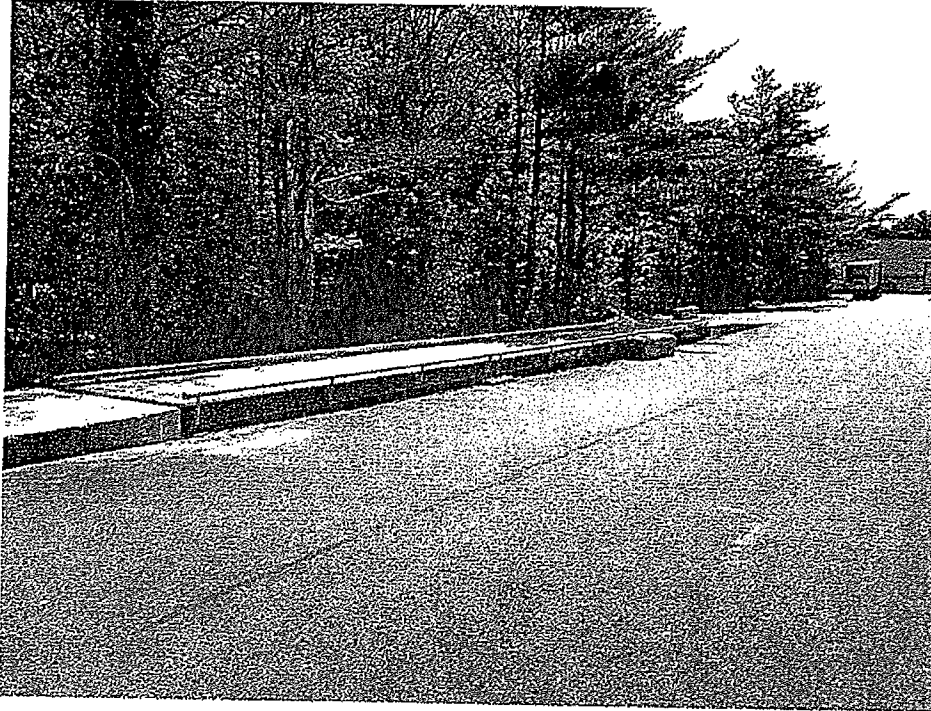
Total

\$69,053.00

Product – Net 30 days, balance upon completion – 4 week lead time Freight FOB, Meridian, MS 39307, St Johnsbury, VT 05819.
 Add applicable CT sales tax unless exemption certificate applies. Quote valid for 30 days.

Quotation by : *Pete Dayotas Jr.* 8/10/2020.

Accepted by: _____



Example of pre-cast deck scale in existing foundation. Scale replaced fatigued platform and was operational in under 2 days.