

INFRASTRUCTURE COMMITTEE MEETING

Monday, January 30, 2017

6:00 P.M.

HAMPDEN TOWN OFFICE

AGENDA

1. MINUTES – December 27, 2016 Meeting
2. CORRESPONDENCE
 - a. Review of Town of Hampden grant application submitted to DEP on 1/16/17 regarding Old County Road culvert
 - b. Review of outgoing correspondence to Environmental Trust Committee regarding potential funding for FY17 stormwater management expenses; and regarding potential reimbursement of eligible costs incurred in previous fiscal years
 - c. Review of cost estimate for force main across Souadabscook (associated with MDOT bridge replacement)
3. OLD BUSINESS
 - a. Sewer rates - review of anticipated FY18 expense budget and evaluation of potential rate increase - referral to Town Council for sewer rates public hearing
 - b. Transfer station sticker policy
 - c. Update on use of GPS units in DPW vehicles
3. NEW BUSINESS
4. PUBLIC AND STAFF COMMENTS
5. COMMITTEE MEMBER COMMENTS

INFRASTRUCTURE COMMITTEE MEETING

Tuesday, December 27, 2016

MINUTES – DRAFT

Attending:

Councilor Dennis Marble, Chair

Councilor Ivan McPike

Mayor David Ryder

Councilor Terry McAvoy

Councilor Mark Cormier

Councilor Stephen Wilde – late arrival

Town Manager Angus Jennings

DPW Director Sean Currier

Rosemary Bezanson (staff)

Chairman Marble called the meeting to order at 6 PM.

1. MINUTES – 11/28/2016 Meeting, The November 28, 2016 minutes. 5-0 vote in favor.

2. CORRESPONDENCE

a. Update on DPW winter projects complete or continued to spring – DPW Director

A list of projects was included in the Infrastructure packet, most of the items have been completed. PWD Director Currier stated that the Old County Road culvert would be complete the week of January 4th, 2017. Some of the projects are on-going like the flushing of sewer, and trimming of brush as time allows. The Holiday Lighting needs to be re-addressed regarding how this will be handled next year.

b. Review of DEP response to Town of Hampden MS4 Plan Year 3 report, timeline for Town response

MS4 – ongoing Plan Year 1 to Play Year 4, and stormwater were discussed. This was just informational only.

c. Review of DEP letter to Town of Hampden regarding 2016 CSO (combined Sewer Overflow) annual report, timeline for Town response

Town Manager Jennings stated this was informational only.

3. OLD BUSINESS

a. Discussion of preparation for February 2017 public hearing regarding sewer rates to budget for borrowing authorized by

local ballot questions, and notice from Bangor WWTP regarding unbudgeted sewer repairs - Angus Jennings, Town Manager

Town Manager Jennings discussed the sewer rates and the timeline for pay back to the general fund based on expenses currently budgeted.

It was discussed that sewer revenue is now covering sewer costs on a current basis. However the deficit from prior years remains. Future budgeting will need to adequately provide for maintenance, upgrades, and whether calibration of meter pit at city line is accurate. Additional review by contract engineer is necessary.

Foundation drains were discussed and if they are tied into the sewer system.

The Town sewer rates and where they stand with surrounding areas was briefly touched on.

Does the Town want to shorten the payback period to the general fund or set aside monies for projects? Ongoing discussion during budget process needed.

Infiltration amounts were discussed and whether monies to closed-circuit TV the whole system should be used.

Keeping the public informed as to sewer rates is essential to process.

b. Update on today's (December 27) working meeting regarding route and financing for water supply to Fiberright/MRC and Coldbrook Road area- Angus Jennings, Town Manager

Town Manager Jennings informed the Committee that this meeting was postponed to next week.

c. Proposed amendments to Sewer Ordinance – abatement policy, summer meters, testing standards etc. (continued from November meeting) – DPW Director Currier

At a previous meeting Director Currier asked that comments be submitted in writing to Town Manager Jennings, or to Director Currier. Comments received were incorporated into the current draft before the Committee, and the Committee reviewed the proposed revisions.

This was referred to Council by Councilor McAvoy, seconded by Mayor Ryder. The vote was unanimous.

d. Authorization of landfill monitoring work scope items 2 and 3 by Drumlin LLC- recommendation to Town Council

It was discussed that it is important that the Town have a third party reviewer to help understand the DEP and Casella reports and advise the Town.

Councilor McPike, made the referral for task 2 and 3 to Drumlin LLC, this was seconded by Council McAvoy. The vote was unanimous.

e. Update on use of GPS units in DPW vehicles – request of Councilor McPike

There have been issues with the GPS equipment, and the vendor that supplies them, not giving accurate information. Inquiries have been sent to the vendor and we are still awaiting their response, and whether they can correct the errors.

The GPS units were installed to gather the information on how much time and equipment cost to the Town, maintaining roads, equipment and mowing.

Town Manager Jennings stated that there are 2 options, 1) we work with the vendor we have, trying to get the most information possible, 2) contract a different vendor that would give the information the Town is looking for.

DPW Director Currier was directed to gather as much information as possible on the current contract with current vendor, when the contract expires, etc., also gathering information on a cost to run the plow equipment, what is the cost to the Town to plow, sand and salt the roads in the winter. (equipment costs)

4. NEW BUSINESS

a. Review of interest rate bids for borrowing to repay overdue Bangor sewer charges – recommendation to Town Council

Town Manager Jennings asked the Committee about the terms they think would work. The Committee suggested the seven (7) year at 2.61 percent interest would work the best.

Councilor McPike made a motion to recommend the bid received from The First for a seven (7) year term to Council, this was seconded by Councilor Wilde. The vote was unanimous.

**b. Discussion of potential amendments to Transfer Station policy --
Angus Jennings, Town Manager**

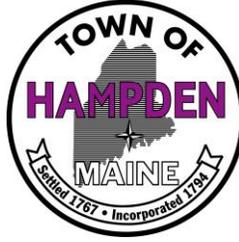
Manager Jennings requested a working meeting with Councilors to discuss the transfer station sticker policy. Councilors McAvoy, McPike and Marble volunteered to participate, and Manager Jennings said he would contact them to schedule a time to review the policy in detail.

5. PUBLIC COMMENTS – None.

6. COMMITTEE MEMBER COMMENTS

Motion to adjourn 8:20 PM

Town of Hampden
106 Western Avenue
Hampden, Maine 04444



Phone: (207) 862-3034
Fax: (207) 862-5067
Email:
townmanager@hampdenmaine.gov

January 16, 2017

Division of Purchases
Burton M. Cross Building, 4th Floor
111 Sewall Street
9 State House Station
Augusta, ME 04333-0009

Re: RFP #201610193 - 2017 Grants for Stream Crossing Public Infrastructure Improvements

Dear Grant Review Team:

The Town of Hampden is pleased to submit the following proposal for Stream Crossing Public Infrastructure Improvements. This submission has been prepared in accordance with the requirements of RFP #201610193, as issued by the Maine Department of Environmental Protection (MDEP) on October 14th, 2016.

For this application, the Town is proposing to improve the existing Old County Road culvert at the Sucker Brook crossing. This culvert was chosen for the following reasons:

- **Sucker Brook Impairment** – Sampling conducted by MDEP in 2002, 2004, and 2012 demonstrated that Sucker Brook (Class B designated water) was only meeting Class C designated water requirements for dissolved oxygen and aquatic life use and was therefore added to the 303(d) list of impaired waters. As of the writing of this proposal, a watershed management plan has not yet been created. The MDEP released a TMDL Assessment Summary (2012) which states that *“specific sources of stormwater runoff in the watershed should be considered during the development of a watershed management plan”*, which included:
 - Address existing stormwater problems in Sucker Brook watershed by installing structural and applying non-structural best management practices (BMPs).
- **Culvert Condition** – The existing ten-foot diameter corrugated metal pipe culvert was installed prior to the mid 1970’s. Portions of the bottom of the culvert have failed and also portions of the sidewalls at the normal flow water line. Heavy flows have also damaged the inlet portion of the culvert, which had to be repaired by Town Public Works. Significant erosion has occurred at the inlet due to lack of armoring of the adjacent side slopes, which must be addressed to avoid excessive sediment loading to the Brook. Channel scour beneath the culvert bottom failure also has the potential to undermine the structure. Without the proposed improvement described in the application, we estimate that the culvert will need to be replaced within an approximate five to ten year period.

- **Fish Passage** – The culvert crossing has been identified on the Maine Stream Habitat Viewer as a potential barrier to fish passage. This may be a result of flows occurring at the site, but has been exacerbated by the culvert bottom failure.
- **Sucker Brook Stream Corridor and Watershed Survey** – The Town of Hampden and the City of Bangor (along with FB Environmental Associates) completed the survey in October 2014 as a precursor to developing a Watershed Management Plan. One of the key findings of the survey was to identify the stream corridor reach containing the Old County Road culvert as the section of the Brook in poorest condition.

The Town looks forward to the opportunity to complete this project in order to limit further pollutant discharges in the stream caused by the failing culvert, as part of ongoing municipal efforts to address potential impairments to Sucker Brook. We thank you for considering our request.

If you have any questions regarding the contents of our proposal or require additional information, please feel free to contact Angus Jennings, Town Manager for the Town of Hampden at (207) 862-3034.

Sincerely,

A handwritten signature in black ink, appearing to read "Angus Jennings". The signature is fluid and cursive, with the first name being more prominent.

Angus Jennings, Town Manager

APPENDIX 1

NOTE: Please refer to the full RFP instructions before completing this application. Specific details and explanations are included on pages 7 thru 9 of the application.

Maine Department of Environmental Protection Request for Proposals for Stream Crossing Public Infrastructure Improvement Projects Proposal Application Form - 2017 RFP#201610193			
I. Applicant Information			
Applicant Name			
Applicant Mailing Address	City	State	Zip
Applicant Phone #	Applicant Email Address		
II. Agent/Consultant Information, if applicable			
Agent Name			
Agent Mailing Address	City	State	Zip
Agent Phone #	Agent Email Address		
III. Culvert/Stream Crossing Location (please attach a map(s) of the project location and a photo(s) of the existing culvert/crossing to this application as described in Section III):			
Municipality or Unorganized territory where project will take place:	GPS Location in Digital Format: _____ - _____ (Available on google maps by clicking the location on the map)		
Culvert/crossing location. Name of the road on which the culvert/crossing is located and distances to the nearest road intersections.			
Watershed Location: List the name of the stream, brook, or the water body the culvert is located on, and the downstream, brooks streams, rivers, lakes, ponds, bays, etc.			
Required Maps and Photos: Include the following photos and maps (in color if possible). <input type="checkbox"/> Map marking culvert/crossing location and showing road names. <input type="checkbox"/> Map showing satellite view with culvert/crossing location marked. <input type="checkbox"/> Optional - Map showing culvert/crossing location and its HUC 12 subwatershed on Maine Stream Habitat Viewer. Note – All photos should be <u>dated</u> . <input type="checkbox"/> Photo(s) showing condition of culvert/crossing. <input type="checkbox"/> Photo(s) showing downstream side of culvert/crossing (including water level at end of culvert). <input type="checkbox"/> Photo(s) showing inlet side of culvert/crossing (including water level at end of culvert/crossing). <input type="checkbox"/> Photo(s) showing safety conditions such as sinkholes, collapsing structures, erosion undermining, etc. <input type="checkbox"/> Photo(s) showing downstream erosion impacts, if any.			

IV. Scoring Criteria for Public Infrastructure Information: (25 Points total):

Has the culvert/crossing washed out, flooded, overtopped the road, or failed in the past 20 years due to storm events? If yes, please describe how often, and the approximate dates of culvert/crossing failure. (Include pictures if available.)

What is the current condition of the culvert/crossing?

Discuss current safety concerns of the existing culvert/crossing?

In how many years from now do you estimate the culvert/crossing would likely have a complete failure, a complete collapse, or total washout?

1 year 3 years 5 years 10 years 15 years 20 years 25 years

Has the culvert/crossing been inspected by the Maine Department of Transportation? If so, what is the date of the last inspection and condition classification by Maine DOT?

Discuss what sort of impacts would occur if the culvert/crossing were to fail? For instance, are there critical public services (fire or police station, hospital, school, public works facility) located on this road that would be cutoff or required to detour?

If the culvert/crossing fails, how many homes, businesses, or infrastructure would be cut off?

- #Cut off: _____ year round homes
- #Cut off: _____ seasonal homes
- #Cut off: _____ businesses (list type and size)
- #Cut off: _____ infrastructure (list type)
- #Cut off: _____ other (list)

How many homes, businesses, or infrastructure would be required to detour and how many miles would they need to travel?

- # _____ year round homes required to detour _____ miles
- # _____ seasonal homes required to detour _____ miles
- # _____ businesses (list type and size) required to detour _____ miles
- # _____ infrastructure (list type) required to detour _____ miles
- # _____ other (list) required to detour _____ miles

Private roads only: If the culvert or crossing is located on a private road and directly impacts a lake or pond, is public access to the lake or pond prohibited or highly restricted to foot access or carry in only?

What is the annual maintenance fee per landowner per year for the private road?

V. Scoring Criteria for Proposed Culvert/Crossing Cost & Budget Information (25 Points total):

Existing culvert/crossing material: Circle One (Plastic pipe, concrete pipe, corrugated metal pipe, concrete box culvert, stone/granite culvert, pipe arch, bridge, or Other type (describe): CMP

Length:	Diameter:	Width:	Height:	Approximate Age:
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Proposed culvert/crossing material: Circle One (Plastic pipe, concrete pipe, corrugated metal pipe, concrete box culvert, stone/granite culvert, pipe arch, bridge, or Other type (describe): Proposed culvert improvement is a sliplining to repair bottom and sidewall failures.				
Length:	Diameter:	Width:	Height:	Amount Requested:
Population of town, group or association funding project:			Total cost of project (including in kind costs):	
Discuss approximate funds spent on physical repairs within the last 10 years on the culvert/crossing (exclude normal maintenance costs such as painting).				
What are the estimated construction costs for the culvert/crossing replacement? Include estimated items for mobilization of equipment, erosion control and stream diversion, existing culvert removal, installation of the new culvert, permanent stabilization, and engineering design costs.				
Do you have engineered design plans and construction specifications for the replacement culvert/crossing? If yes, describe who designed the plans, and when the plans were completed.				
If you are a municipality and the new crossing will be over 20 feet in width, are you planning to request that the Maine Department of Transportation (MDOT) take responsibility for the structure? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, have you had the design reviewed by John Buxton or Ben Foster, or their designees, of the MDOT's Bridge Maintenance Program? <input type="checkbox"/> Yes <input type="checkbox"/> No N/A				
What is the estimated construction schedule for the proposed project? Include estimated start and completion dates, and include any time of year restrictions from state or federal permitting agencies. Do you have permits? Yes, No, or Application Submitted				
VI. Environmental Scoring Criteria for Proposed Culvert/Crossing Information (50 Points total): (See Section V.B. on pages 10-11 for more detail.)				
Climate Resiliency (25 Points) Explain how the new culvert/crossing has been sized appropriately for the watershed. Discuss any watershed studies or hydrology studies that have been conducted, if any.				
Please describe what provisions for addressing climate resiliency were used/will be used in designing the replacement culvert/crossing. Will the design meet the 100 year flood criteria data, if not explain the rationale for not meeting this criteria. Discuss any watershed studies or hydrology studies that have been conducted, if any.				
Habitat (25 Points) If the existing culvert/crossing was to be replaced, how much habitat (i.e., miles of stream, or acres of wetland habitat) would be opened up to fish passage and other aquatic life?				
List the type of fish, aquatic life, or wildlife affected by the project. <input type="checkbox"/> Brook Trout <input type="checkbox"/> Brown Trout <input type="checkbox"/> Rainbow Trout <input type="checkbox"/> Landlocked Atlantic Salmon <input type="checkbox"/> Atlantic Salmon (present today) <input type="checkbox"/> Atlantic Salmon (potential modeled habitat) <input type="checkbox"/> Rainbow Smelt <input type="checkbox"/> Alewives <input type="checkbox"/> Other: _____ <input type="checkbox"/> American Eel <input type="checkbox"/> Sea-run Brook Trout <input type="checkbox"/> Sea-run Brown Trout				
Has the presence of these fish been confirmed by Maine IF&W, Maine DMR, or US FWS? <input type="checkbox"/> Yes <input type="checkbox"/> No Please list agency confirming and the species they have identified: See attached RHA results				

Is the existing habitat active spawning habitat today? If so, discuss.			
Is the culvert identified by the Maine Stream Habitat Viewer or by an Agency as a Barrier? <input type="checkbox"/> Yes <input type="checkbox"/> No	Barrier Identification #	Type of Barrier	Estimate how many months per year is Barrier a Full Barrier preventing any fish passage? Unknown, if any.
Is the Culvert undersized? <input type="checkbox"/> Yes <input type="checkbox"/> No	Width of Culvert:	Width of natural stream (not pool at culvert): 13.4 Feet	
Is the new crossing/culvert 1.2 times the stream bed (bank full) width? If not, please explain the rationale for a smaller size.			
How many miles would open <u>upstream</u> to the next Barrier?		How many miles <u>downstream</u> to the next Barrier?	
Connectivity: Describe significant adjacent fisheries or habitats such as heritage ponds impacted by this project. Include distances from the project to these other areas.			
Please provide other information about the proposed project that you believe is important:			

SUPPLEMENTAL NARRATIVE FOR APPLICATION QUESTIONS ABOVE

Estimated Project Costs:

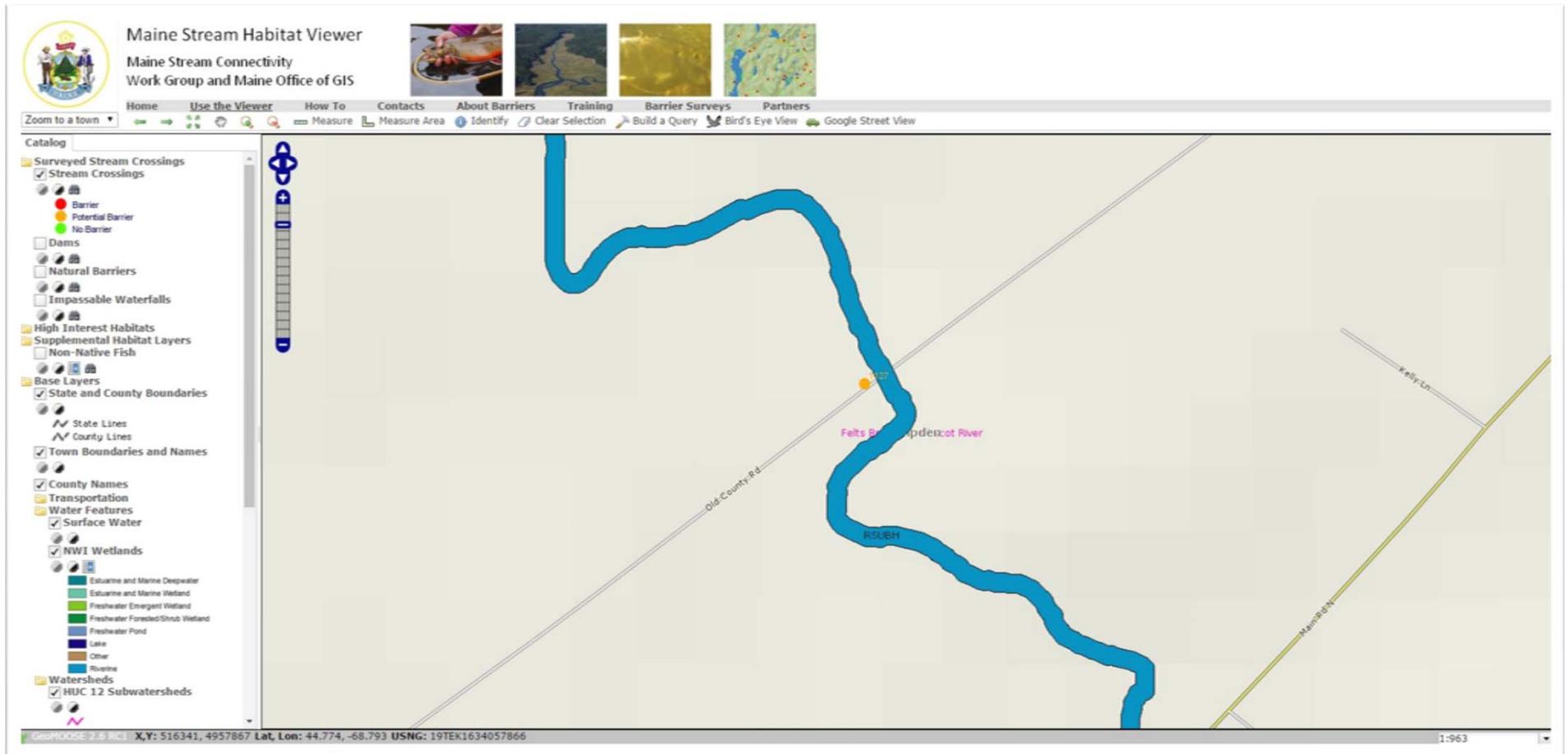
<i>Mobilization</i>	\$5,000
<i>Erosion Control and Stream Diversion</i>	\$6,000
<i>Existing Culvert Improvement Permanent</i>	\$97,000
<i>Stabilization</i>	\$25,000
<i>Engineering, Design, and On-Site Inspection</i>	\$10,500

**In-Kind Services Provided by Town Staff* ~\$1,000

Preliminary design plans attached for this application were prepared by Oscar Emerson, P.E., and Philip Ruck, P.E. Construction specifications and final design plans will be completed upon award of grant funding for this project. Anticipated project start to occur during lowest likely brook flow conditions in July or August, 2017. All necessary permits will be obtained prior to commencement of any culvert improvement work for the project.

Due to recent road repavement and repair in 2016 of Old County Road, the Town's preferred option for this culvert project is to repair the existing CMP prior to further degradation and failure. The combination of proposed sliplining and bank stabilization and armoring will substantially improve the culvert's ability to withstand heavy flows for purposes of climate change resiliency.

A comprehensive Stream Corridor and Watershed Survey of Sucker Brook was completed in October 2014. The collaborative effort included Hampden and Bangor staff as well as MDEP, and FB Environmental. The survey included both Rapid Habitat Assessment (RHA) and Rapid Geomorphic Assessment (RGA). RHA results indicated fish species present in the reach in and around the Old County Road culvert, with further assessment recommended to identify specific species. The survey results indicated that Stream Reach Condition Ranking was lowest (Ranked Poor) in the project vicinity. See the link for full survey results: http://www.bangormaine.gov/filestorage/318/338/935/Final_Suckerbrook_Survey.pdf



Maine Stream Habitat Viewer Information:
 HUC12 Watershed: Felts Brook Penobscot River
 Stream Crossing: Potential Barrier #1127
 NWI Wetlands: Riverine R5UBH



Old County Floodzones/Contours

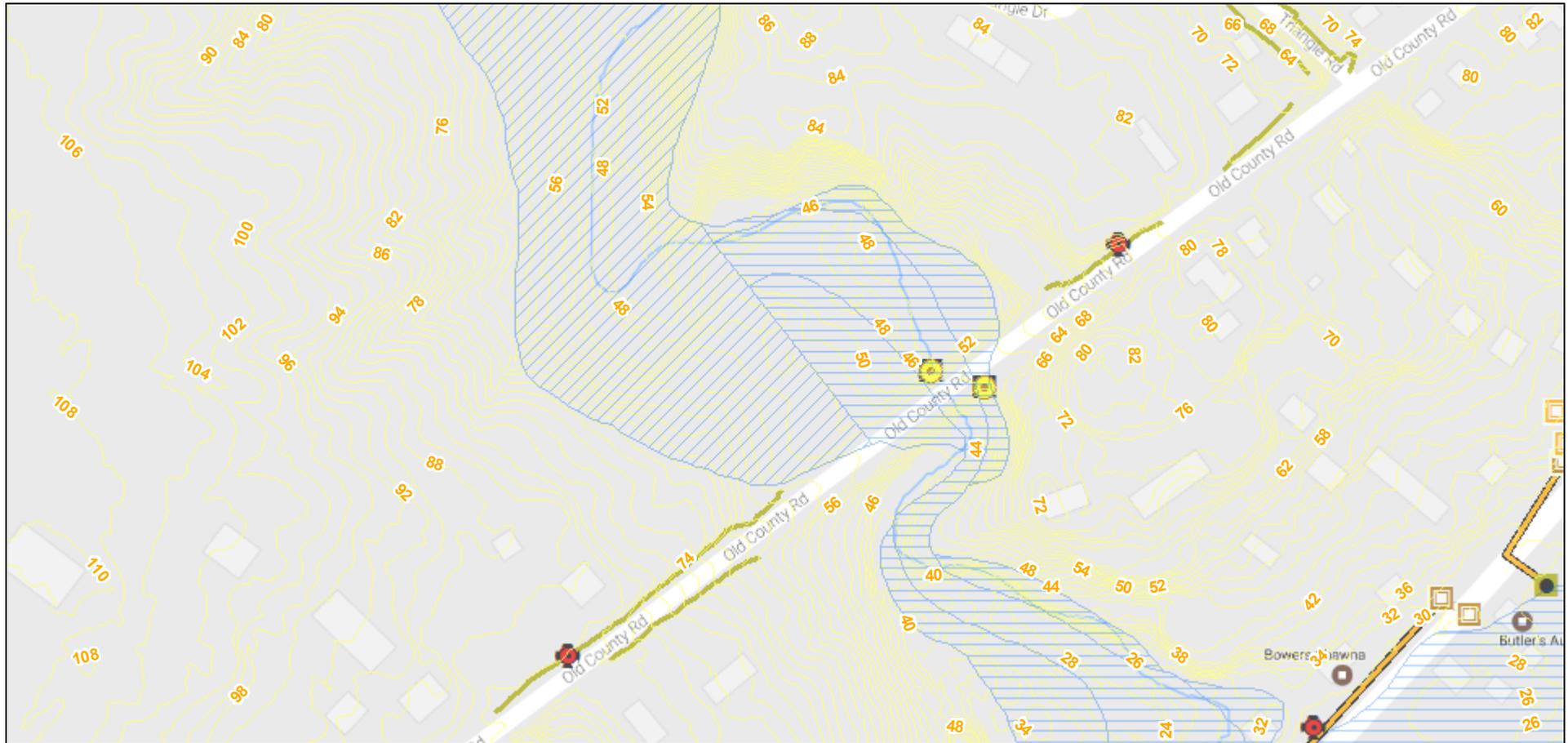
Hampden, Maine



January 10, 2017

1 inch = 200 Feet

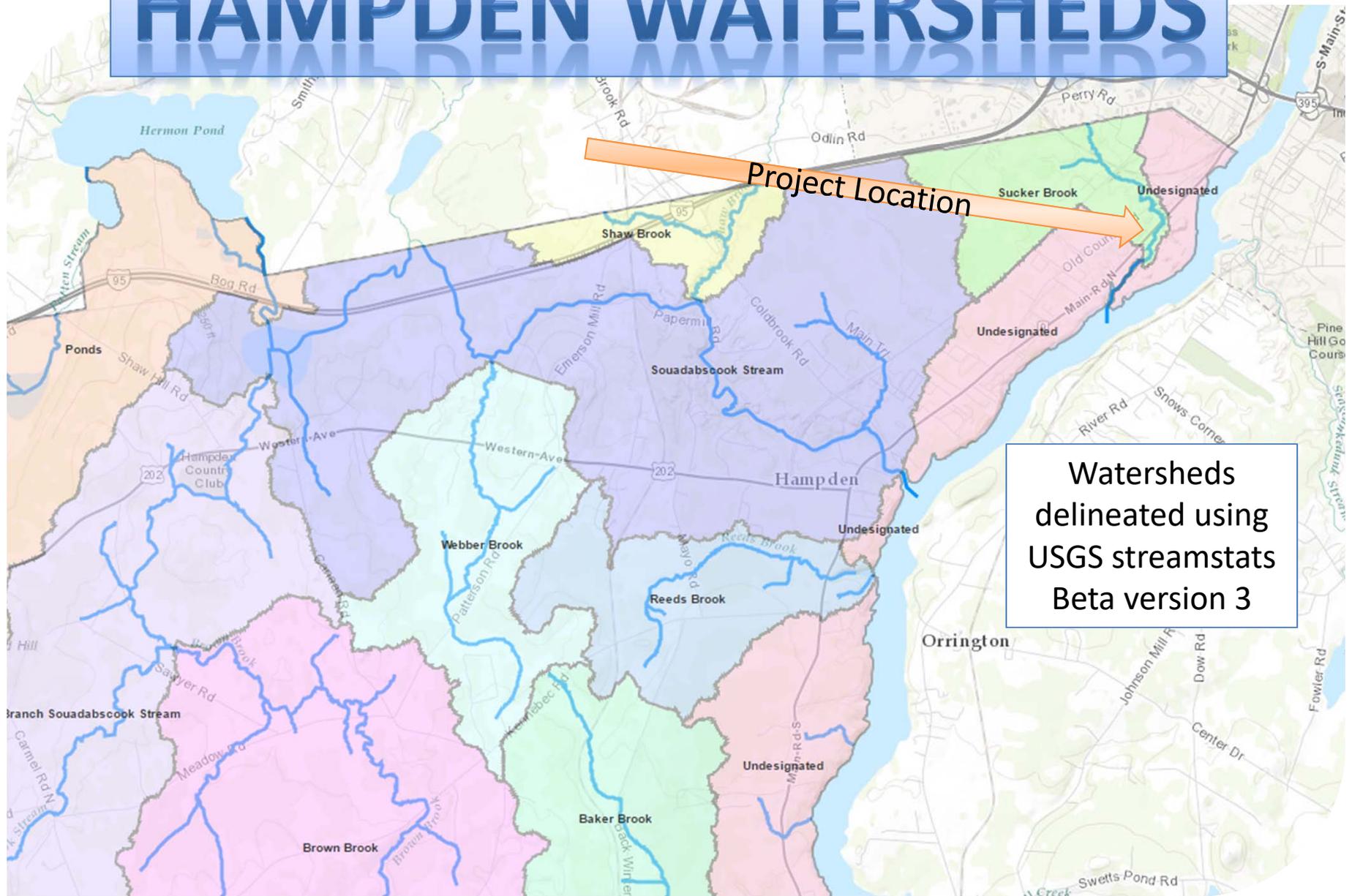
www.cai-tech.com



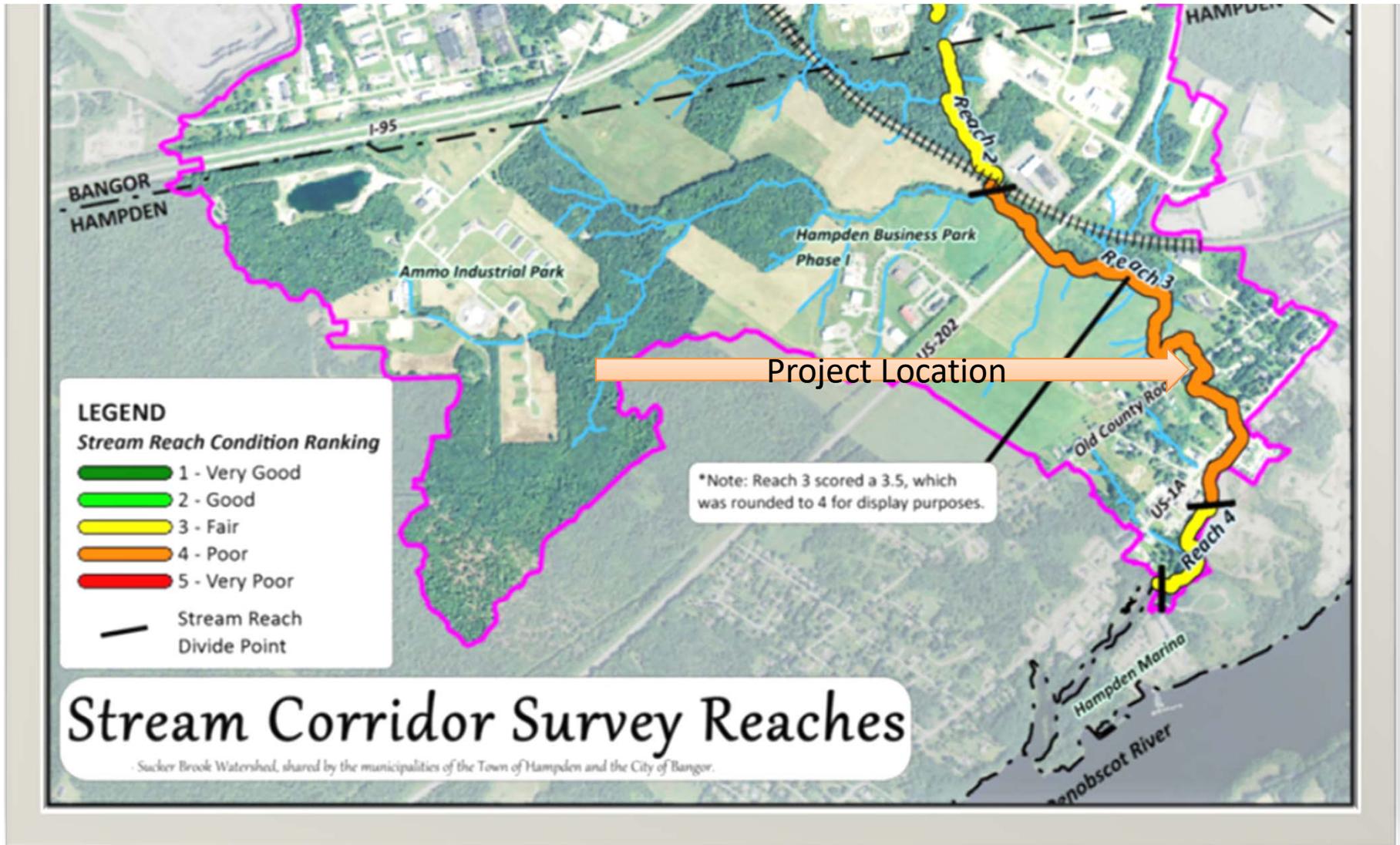
	100 yr - Zone A		Outfalls (MS4) Inspections 2014		Catch Basins(MDOT)
	100 yr - Zone AE		Catch Basins		Outfalls(MDOT)
	4 - 124		Outfalls		Drain Lines(MDOT)
	Fire Hydrant		Ditches		

Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

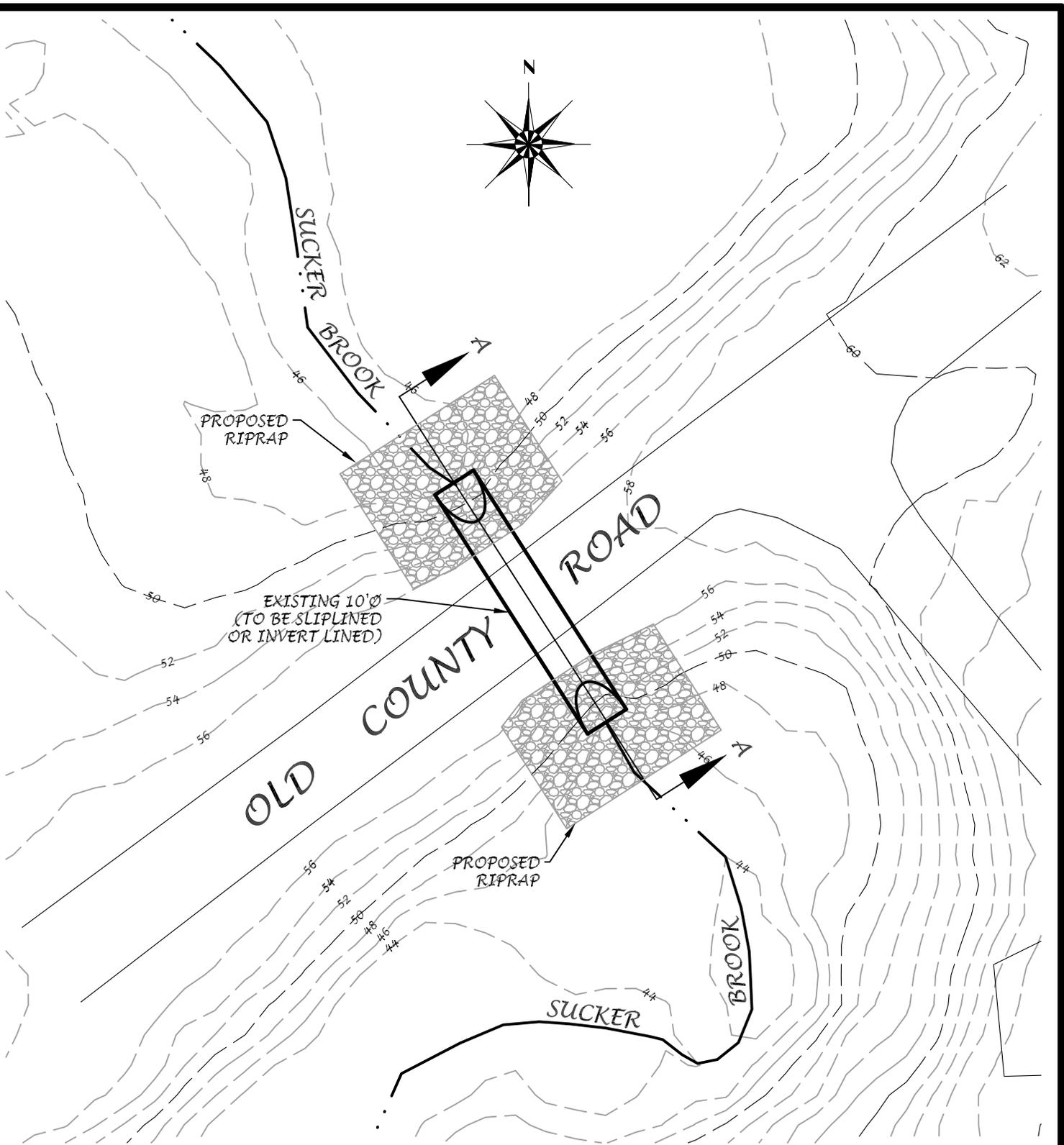
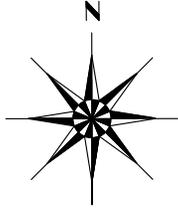
HAMPDEN WATERSHEDS



Watersheds delineated using USGS streamstats Beta version 3



Source: FB Environmental Sucker Brook Stream Corridor & Watershed Survey, 2014



PROPOSED
RIPRAP

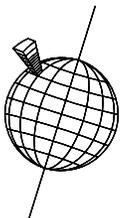
EXISTING 10'Ø
(TO BE SLIPLINED
OR INVERT LINED)

PROPOSED
RIPRAP

SITE PLAN

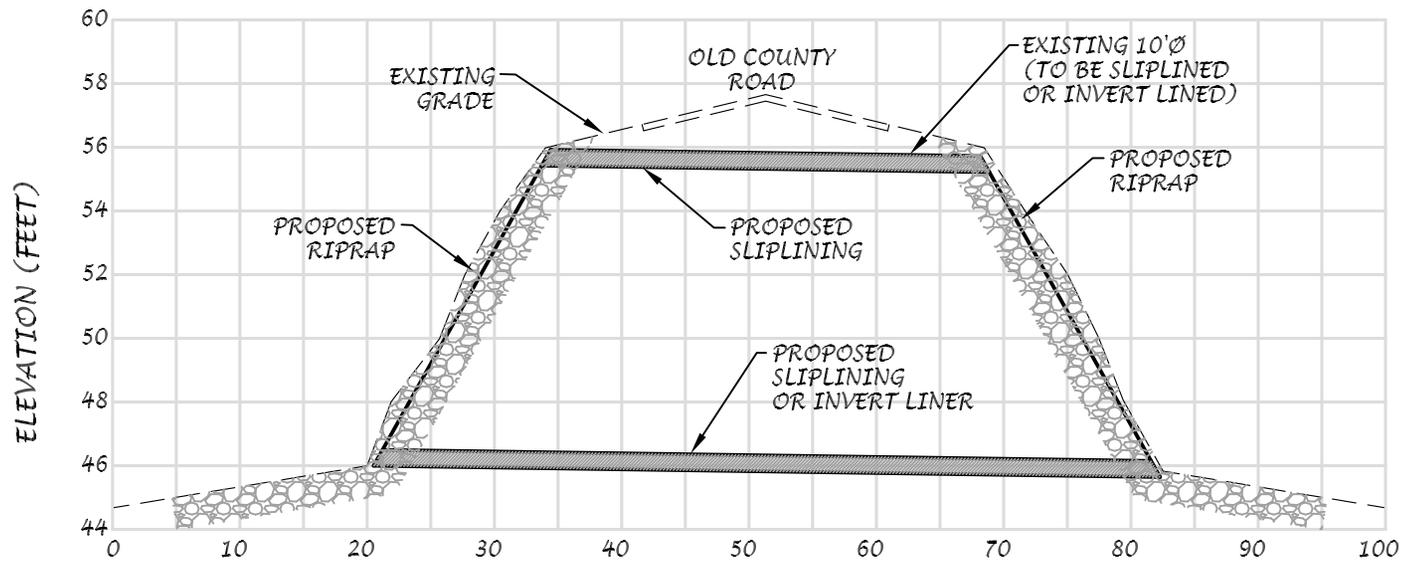
OF

SUCKER BROOK CULVERT REHABILITATION HAMPDEN, MAINE



DOWN to EARTH
PROFESSIONAL LAND SERVICES, INC.
P.O. BOX 443
BRADLEY, MAINE 04411-0443
TEL. 207-827-6733

DATE: JANUARY 2017 SCALE 1"=30'



CROSS SECTION "A-A"

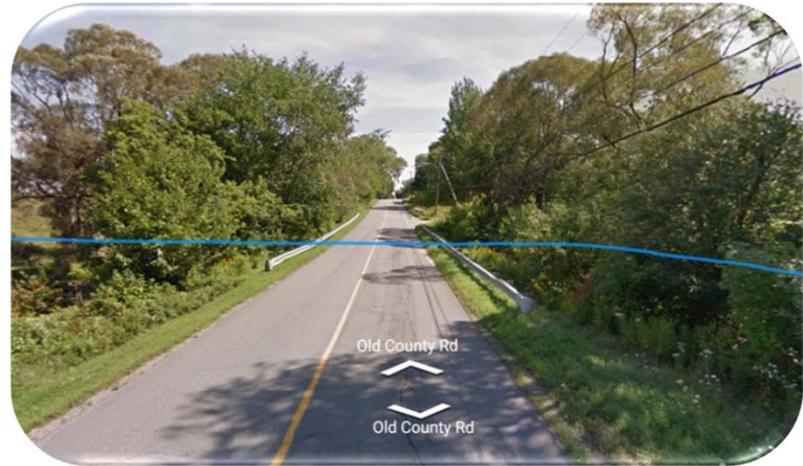
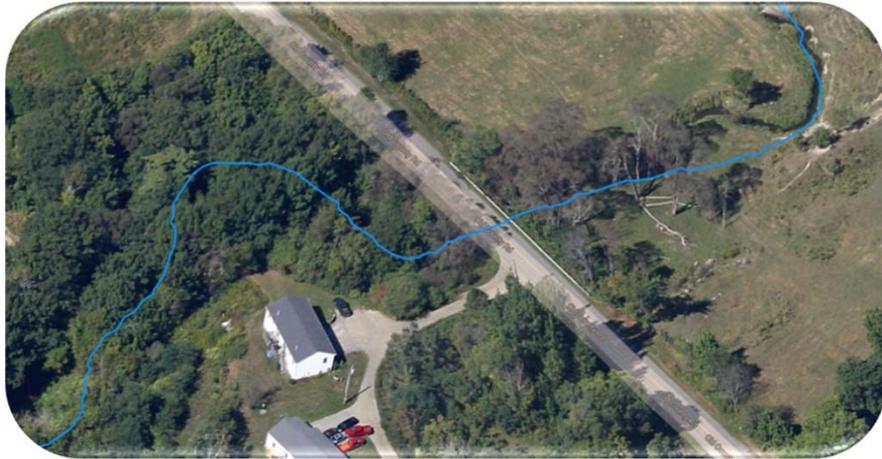
SCALE: 1"=15' (HORIZ)
SCALE: 1"=6' (VERT)



DOWN to EARTH
PROFESSIONAL LAND SERVICES, INC.
P.O. BOX 443
BRADLEY, MAINE 04411-0443
TEL. 207-827-8733

CROSS SECTION
OF
SUCKER BROOK CULVERT
REHABILITATION
HAMPDEN, MAINE

DATE: JANUARY 2017



Maps
showing
aerial views

Stream data
from USGS
National
Hydrography
Dataset
(NHD)

Penobscot River



Culvert Condition Photos



Photo 1 - View of upstream culvert damage. Photo Date: 7-14-15.



Photo 2 - View of deteriorated culvert bottom, facing downstream. Photo Date: 7-14-15.



Photo 3 - Detail view of failing culvert sidewalls. Photo Date: 1-10-17.

Downstream Culvert Photos



Photo 4 - View of downstream end of culvert. Winter conditions showing water/ice level at outlet of culvert. Photo Date: 1-10-17.



Photo 5 - View of downstream end of culvert. Showing water level at outlet of culvert. Photo Date: 7-30-07, courtesy of Maine Stream Habitat Viewer.

Inlet Culvert Photos



Photo 6 - View of culvert inlet. Winter conditions showing water/ice level at inlet of culvert. Also note eroded side slopes adjacent to inlet. Photo Date: 1-10-17.



Photo 7 - View of culvert inlet conditions showing water level at inlet. Photo Date: 7-30-07, courtesy of Maine Habitat Viewer.

Safety Conditions and Downstream Erosion Photos



Photo 8 - View of high flows causing significant culvert damage. Note sidewalls folded inward, which had to be repaired. Photo Date: 9-23-16.



Photo 9 - View of downstream bank erosion caused by high velocity flows. Photo Date: 7-30-07, courtesy of Maine Stream Habitat Viewer.



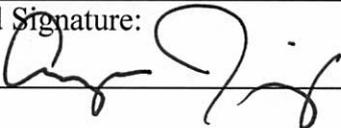
Photo 10 - View of bank erosion near culvert outlet. Photo Date: 1-10-17.

State of Maine
Department of Environmental Protection
Bureau of Land Resources
DEBARMENT, PERFORMANCE and NON-COLLUSION CERTIFICATION
RFP#201610193
2017 Grants for Stream Crossing Public Infrastructure Improvements

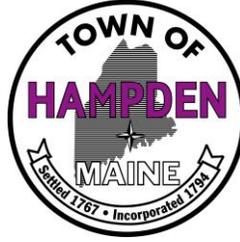
By signing this document I certify to the best of my knowledge and belief that the aforementioned organization, its principals, and any subcontractors named in this proposal:

- a. Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from bidding or working on contracts issued by any governmental agency.*
- b. Have not within three years of submitting the proposal for this contract been convicted of or had a civil judgment rendered against them for:*
 - i. fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government transaction or contract.*
 - ii. violating Federal or State antitrust statutes or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
 - iii. are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and*
 - iv. have not within a three (3) year period preceding this proposal had one or more federal, state or local government transactions terminated for cause or default.*
- c. Have not entered into a prior understanding, agreement, or connection with any corporation, firm, or person submitting a response for the same materials, supplies, equipment, or services and this proposal is in all respects fair and without collusion or fraud. The above mentioned entities understand and agree that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

Failure to provide this certification may result in the disqualification of the Bidder's proposal, at the discretion of the Department.

Name: <i>Angus Jennings</i>	Title: <i>Town Manager</i>
Authorized Signature: 	Date: <i>1/10/17</i>

Town of Hampden
106 Western Avenue
Hampden, Maine 04444



Phone: (207) 862-3034
Fax: (207) 862-5067
Email:
townmanager@hampdenmaine.gov

TO: Infrastructure Committee
FROM: Angus Jennings, Town Manager
DATE: January 27, 2017
RE: Cost offsets proposed to Environmental Trust

As you know this year's budget projects revenue of \$120,000 from the Environmental Trust. This number is based on the approved stormwater management budget for the following four line items:

<u>Acct.</u>	<u>Budgeted</u>
10-10-22-01	\$8,280
10-10-22-05	\$12,850
10-10-22-20	\$100,000
10-10-30-80	\$1,500
TOTAL (excl. Supplies)	\$122,630

The Trust Committee has been made aware that these expenses will be proposed for payment (or reimbursement) from the Trust, and my attached memo was reviewed at their October meeting. The memo outlines categories of expenses I intend to propose to the Committee for potential funding. Since that time, I have made progress documenting expenses paid out of the Host Community Benefit account since the last time the Trust was active and processing expenses (circa 2009). The attached workbook itemizes these expenses.

If the Committee agrees that this is on the right track so far, additional detail can be added to the "Purpose" column; this information is less complete in the database prior to my tenure, but this detail can be pulled out of our Trio accounting software for prior years. However, I want to be sure this effort is justified before getting staff to dig into it further. Also, I'd like to know whether it's worth pulling the actual invoices and documentation for items for potential reimbursement (from Env. Trust to HCB). We are happy to get this done, but don't want to send staff into the archived files unnecessarily. This will be discussed at the Trust Committee's next meeting, then I/staff can proceed based on the Committee's direction at that time.

At the next meeting of the Environmental Trust Committee, information will also be presented to the Committee regarding the overall FY17 stormwater budget, with backup/documentation for each of the line items. Sean's related memo is attached.

Upon Committee authorization this would be referred to the Town Council, and upon Council approval the funds can be transferred from the Trust to the General Fund.

Expenses Paid from HCB Account, Potentially Eligible for Environmental Trust Reimbursement

<u>Date</u>	<u>Vendor</u>	<u>Purpose</u>	<u>Expense</u>	<u>Category</u>			
				Landfill Post-Closure Monitoring	Stormwater Management	Rain Garden	Category
12/27/2016	00134 DRUMLIN ENVI	Landfill peer review report	\$ 4,870.00	\$ 4,870.00			Landfill post-closure monitoring
9/28/2016	00626 STILLWATER E	Stormwater consultant	\$ 436.72		\$ 436.72		Stormwater management
9/21/2016	00626 STILLWATER E	Stormwater consultant	\$ 11,152.99		\$ 11,152.99		Stormwater management
5/11/2016	00134 DRUMLIN ENVI	GEOTECHNICAL REVIEW	\$ 2,005.00	\$ 2,005.00			Landfill post-closure monitoring
1/28/2016	00626 STILLWATER E	ENGINEERING MS4 SERV	\$ 1,966.00		\$ 1,966.00		Stormwater management
12/9/2015	00626 STILLWATER E	ENG.CONSULTING SERV 10/31	\$ 3,961.04		\$ 3,961.04		Stormwater management
9/23/2015	00626 STILLWATER E	ENGINEERING SERV	\$ 3,512.50		\$ 3,512.50		Stormwater management
9/9/2015	00040 BANGOR DAILY	MEMO OF AGREEMENT/LEGAL	\$ 525.00		\$ 525.00		Stormwater management
8/26/2015	00626 STILLWATER E	CONSULT ENG SERV	\$ 2,656.10		\$ 2,656.10		Stormwater management
8/19/2015	00661 TREASURER, S	License	\$ 180.00		\$ 180.00		Stormwater management
7/15/2015	00626 STILLWATER E	ENG CONSULT.SERVICES	\$ 5,280.20		\$ 5,280.20		Stormwater management
7/15/2015	00055 BASWG	MEMBERSHIP SHARE FY16	\$ 4,000.00		\$ 4,000.00		Stormwater management
6/3/2015	Stillwater Environ		\$ 2,838.20		\$ 2,838.20		Stormwater management
5/13/2015	Robert Osborne		\$ 326.82		\$ 326.82		Stormwater management
4/15/2015	Stillwater Environ		\$ 475.00		\$ 475.00		Stormwater management
4/15/2015	Stillwater Environ		\$ 2,577.40		\$ 2,577.40		Stormwater management
2/18/2015	Stillwater Environ		\$ 1,246.70		\$ 1,246.70		Stormwater management
1/28/2015	Stillwater Environ		\$ 1,448.40		\$ 1,448.40		Stormwater management
1/7/2015	US Postal Service		\$ 155.33		\$ 155.33		Stormwater management
12/17/2014	Stillwater Environ		\$ 2,200.00		\$ 2,200.00		Stormwater management
12/17/2014	Stillwater Environ		\$ 2,421.60		\$ 2,421.60		Stormwater management
10/22/2014	Stillwater Environ		\$ 2,720.00		\$ 2,720.00		Stormwater management
9/24/2014	Drumlin Env		\$ 1,615.00	\$ 1,615.00			Landfill post-closure monitoring
8/13/2014	BASWG		\$ 4,000.00		\$ 4,000.00		Stormwater management
8/6/2014	Stillwater Environ		\$ 3,216.00		\$ 3,216.00		Stormwater management
7/31/2014	Beg Bal Adj		\$ 105.00		\$ 105.00		Stormwater management
7/16/2014	Farrell, Ros. Russ		\$ 105.00		\$ 105.00		Stormwater management
6/25/2014	Stillwater Env.		\$ 3,232.50		\$ 3,232.50		Stormwater management
6/11/2014	State of Maine		\$ 176.00		\$ 176.00		Stormwater management
5/7/2014	Drumlin Environ		\$ 1,190.00	\$ 1,190.00			Landfill post-closure monitoring

Expenses Paid from HCB Account, Potentially Eligible for Environmental Trust Reimbursement							
Date	Vendor	Purpose	Expense	Category			
				Landfill Post-Closure Monitoring	Stormwater Management	Rain Garden	Category
5/7/2014	Robert Osborne		\$ 216.90		\$ 216.90		Stormwater management
5/7/2014	Drumlin Environ		\$ 1,350.00	\$ 1,350.00			Landfill post-closure monitoring
4/16/2014	Stillwater Env.		\$ 900.00		\$ 900.00		Stormwater management
1/8/2014	Stillwater Env.		\$ 1,250.00		\$ 1,250.00		Stormwater management
12/11/2013	Stillwater Env.		\$ 1,750.00		\$ 1,750.00		Stormwater management
11/27/2013	CES		\$ 451.25		\$ 451.25		Stormwater management
11/20/2013	Stillwater Env.		\$ 1,250.00		\$ 1,250.00		Stormwater management
10/23/2013	Clean Harbors		\$ 5,110.08		\$ 5,110.08		Stormwater management
10/23/2013	CES		\$ 650.48		\$ 650.48		Stormwater management
10/9/2013	Stillwater Env.		\$ 500.00		\$ 500.00		Stormwater management
8/14/2013	Bangor SW Group		\$ 4,177.03		\$ 4,177.03		Stormwater management
7/25/2013	CES		\$ 812.43		\$ 812.43		Stormwater management
7/17/2013	State of Maine		\$ 750.00		\$ 750.00		Stormwater management
7/3/2013	State of Maine		\$ 172.00		\$ 172.00		Stormwater management
5/29/2013	CES		\$ 641.60		\$ 641.60		Stormwater management
5/8/2013	Bob Osborne		\$ 169.28		\$ 169.28		Stormwater management
5/1/2013	CES		\$ 575.00		\$ 575.00		Stormwater management
3/26/2013	CES		\$ 648.10		\$ 648.10		Stormwater management
2/17/2013	CES		\$ 650.63		\$ 650.63		Stormwater management
12/26/2012	CES		\$ 746.85		\$ 746.85		Stormwater management
11/28/2012	CES		\$ 800.00		\$ 800.00		Stormwater management
11/7/2012	CES		\$ 815.63		\$ 815.63		Stormwater management
10/3/2012	CES		\$ 618.75		\$ 618.75		Stormwater management
8/22/2012	State of Maine		\$ 426.86		\$ 426.86		Stormwater management
8/8/2012	State of Maine		\$ 168.35		\$ 168.35		Stormwater management
8/1/2012	CES		\$ 1,842.55		\$ 1,842.55		Stormwater management
7/24/2012	BASWG		\$ 3,872.55		\$ 3,872.55		Stormwater management
6/27/2012	CES		\$ 1,016.05		\$ 1,016.05		Stormwater management
6/6/2012	Osborne, Robert		\$ 209.13		\$ 209.13		Stormwater management
5/30/2012	CES		\$ 1,398.10		\$ 1,398.10		Stormwater management

Expenses Paid from HCB Account, Potentially Eligible for Environmental Trust Reimbursement

<u>Date</u>	<u>Vendor</u>	<u>Purpose</u>	<u>Expense</u>	<u>Category</u>			
				Landfill Post-Closure Monitoring	Stormwater Management	Rain Garden	Category
5/2/2012	CES		\$ 988.10		\$ 988.10		Stormwater management
3/28/2012	CES		\$ 861.85		\$ 861.85		Stormwater management
3/7/2012	CES		\$ 1,045.90		\$ 1,045.90		Stormwater management
2/1/2012	CES		\$ 1,548.75		\$ 1,548.75		Stormwater management
1/4/2012	CES		\$ 1,994.70		\$ 1,994.70		Stormwater management
1/4/2012	CES		\$ 2,356.00			\$ 2,356.00	Rain garden
12/21/2011	CES		\$ 1,058.50		\$ 1,058.50		Stormwater management
12/14/2011	Drumlin LLC		\$ 1,061.53	\$ 1,061.53			Landfill post-closure monitoring
11/16/2011	CES		\$ 220.00			\$ 220.00	Rain garden
11/9/2011	ME Savings CC		\$ 26.88		\$ 26.88		Stormwater management
11/9/2011	ME Savings CC		\$ 209.04			\$ 209.04	Rain garden
9/14/2011	Drumlin LLC		\$ 2,259.00	\$ 2,259.00			Landfill post-closure monitoring
8/31/2011	CES		\$ 935.50		\$ 935.50		Stormwater management
8/10/2011	Treasurer of State		\$ 134.00		\$ 134.00		Stormwater management
8/3/2011	CES		\$ 1,140.60		\$ 1,140.60		Stormwater management
7/27/2011	BASWG Dues		\$ 3,670.15		\$ 3,670.15		Stormwater management
7/13/2011	Pinnacle Software		\$ 262.50		\$ 262.50		Stormwater management
6/30/2011	Civil Engineering		\$ 1,724.95		\$ 1,724.95		Stormwater management
6/1/2011	Civil Engineering		\$ 902.50		\$ 902.50		Stormwater management
5/25/2011	Drumlin		\$ 2,761.00	\$ 2,761.00			Landfill post-closure monitoring
5/4/2011	Civil Engineering		\$ 1,258.45		\$ 1,258.45		Stormwater management
3/30/2011	Civil Engineering		\$ 767.90		\$ 767.90		Stormwater management
3/9/2011	Drumlin		\$ 5,726.00	\$ 5,726.00			Landfill post-closure monitoring
3/2/2011	Civil Engineering		\$ 1,609.85		\$ 1,609.85		Stormwater management
2/9/2011	Civil Engineering		\$ 954.50		\$ 954.50		Stormwater management
1/5/2011	Civil Engineering		\$ 1,027.70		\$ 1,027.70		Stormwater management
12/1/2010	Civil Engineering		\$ 1,656.85		\$ 1,656.85		Stormwater management
11/24/2010	Drumlin		\$ 9,636.00	\$ 9,636.00			Landfill post-closure monitoring
11/3/2010	Civil Engineering		\$ 1,354.83		\$ 1,354.83		Stormwater management
9/22/2010	Civil Engineering		\$ 1,245.75		\$ 1,245.75		Stormwater management

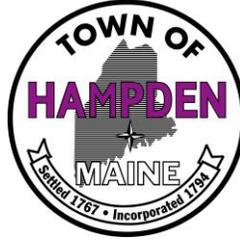
Expenses Paid from HCB Account, Potentially Eligible for Environmental Trust Reimbursement							
Date	Vendor	Purpose	Expense	Category			
				Landfill Post-Closure Monitoring	Stormwater Management	Rain Garden	Category
9/8/2010	Drumlin		\$ 7,510.00	\$ 7,510.00			Landfill post-closure monitoring
9/1/2010	Civil Engineering		\$ 1,843.00		\$ 1,843.00		Stormwater management
8/4/2010	Civil Engineering		\$ 3,670.15		\$ 3,670.15		Stormwater management
8/4/2010	Civil Engineering		\$ 1,529.45		\$ 1,529.45		Stormwater management
6/30/2010	CES		\$ 1,037.95		\$ 1,037.95		Stormwater management
6/30/2010	Treasurer/Maine		\$ 132.00		\$ 132.00		Stormwater management
6/30/2010	CES		\$ 750.00		\$ 750.00		Stormwater management
6/3/2010	CES		\$ 1,833.10		\$ 1,833.10		Stormwater management
6/3/2010	Drumlin		\$ 14,498.00	\$ 14,498.00			Landfill post-closure monitoring
5/19/2010	Hemlock		\$ 321.00			\$ 321.00	Rain garden
5/19/2010	Stenciling		\$ 156.90		\$ 156.90		Stormwater management
5/5/2010	CES		\$ 960.60		\$ 960.60		Stormwater management
3/24/2010	CES		\$ 885.50		\$ 885.50		Stormwater management
3/4/2010	Drumlin		\$ 2,964.00	\$ 2,964.00			Landfill post-closure monitoring
3/4/2010	CES		\$ 754.50		\$ 754.50		Stormwater management
2/11/2010	CES		\$ 4,114.95		\$ 4,114.95		Stormwater management
2/11/2010	Drumlin		\$ 4,745.25	\$ 4,745.25			Landfill post-closure monitoring
1/27/2010	CES		\$ 711.10		\$ 711.10		Stormwater management
12/29/2009	CES		\$ 892.50		\$ 892.50		Stormwater management
12/2/2009	CES		\$ 2,103.90		\$ 2,103.90		Stormwater management
11/12/2009	CES		\$ 491.45		\$ 491.45		Stormwater management
10/28/2009	CES		\$ 1,411.90		\$ 1,411.90		Stormwater management
10/28/2009	BASWG		\$ 264.00		\$ 264.00		Stormwater management
9/23/2009	CES		\$ 978.10		\$ 978.10		Stormwater management
9/23/2009	Drumlin		\$ 9,437.00	\$ 9,437.00			Landfill post-closure monitoring
9/10/2009	Farrell, Rosenblatt		\$ 513.00		\$ 513.00		Stormwater management
9/2/2009	CES		\$ 1,214.80		\$ 1,214.80		Stormwater management
7/30/2009	MS4 Services		\$ 905.75		\$ 905.75		Stormwater management
7/15/2009	State of Maine		\$ 132.00		\$ 132.00		Stormwater management
7/15/2009	New Eng. Organics		\$ 840.00		\$ 840.00		Rain garden

Expenses Paid from HCB Account, Potentially Eligible for Environmental Trust Reimbursement

<u>Date</u>	<u>Vendor</u>	<u>Purpose</u>	<u>Expense</u>	<u>Category</u>			
				Landfill Post-Closure Monitoring	Stormwater Management	Rain Garden	Category
7/9/2009	Pinnacle		\$ 1,312.50		\$ 1,312.50		Stormwater management
7/9/2009	BASWG		\$ 3,670.15		\$ 3,670.15		Stormwater management
6/30/2009	CES		\$ 1,700.20		\$ 1,700.20		Stormwater management
6/30/2009	Plants		\$ 814.05			\$ 814.05	Rain garden
6/24/2009	Plants		\$ 76.36			\$ 76.36	Rain garden
6/17/2009	Truck Rental		\$ 200.00			\$ 200.00	Rain garden
6/17/2009	Bark		\$ 710.00			\$ 710.00	Rain garden
6/10/2009	CES		\$ 1,146.90		\$ 1,146.90		Stormwater management
6/10/2009	Risers		\$ 80.00			\$ 80.00	Rain garden
5/13/2009	CES		\$ 1,438.35		\$ 1,438.35		Stormwater management
4/9/2009	CES		\$ 617.50		\$ 617.50		Stormwater management
3/18/2009	CES		\$ 538.10		\$ 538.10		Stormwater management
3/11/2009	Drumlin		\$ 9,099.28	\$ 9,099.28			Landfill post-closure monitoring
3/11/2009	Payment		\$ 1,651.06		\$ 1,651.06		Stormwater management
2/11/2009	CES		\$ 95.00		\$ 95.00		Stormwater management
2/11/2009	CES		\$ 665.00		\$ 665.00		Stormwater management
1/21/2009	CES		\$ 1,559.90		\$ 1,559.90		Stormwater management
1/8/2009	State of Maine		\$ 125.00		\$ 125.00		Stormwater management
12/17/2008	CES		\$ 1,087.93		\$ 1,087.93		Stormwater management
11/5/2008	Drumlin		\$ 10,249.00	\$ 10,249.00			Landfill post-closure monitoring
10/29/2008	CES		\$ 590.65		\$ 590.65		Stormwater management
10/29/2008	Rain Garden		\$ 511.25			\$ 511.25	Rain garden
9/4/2008	CES		\$ 725.50		\$ 725.50		Stormwater management
8/6/2008	CES		\$ 1,041.60		\$ 1,041.60		Stormwater management
8/6/2008	CES		\$ 97.50		\$ 97.50		Stormwater management
7/9/2008	Drumlin		\$ 8,519.00	\$ 8,519.00			Landfill post-closure monitoring
			\$ 270,857.01	\$ 99,495.06	\$ 165,864.25	\$ 5,497.70	

Data Sources: Susan Lessard (prior to 8/24/15); Angus Jennings (8/24/15 to present).

Town of Hampden
 106 Western Avenue
 Hampden, Maine 04444



Phone: (207) 862-3034
Fax: (207) 862-5067
Email:
 townmanager@hampdenmaine.gov

TO: Environmental Trust Committee
 FROM: Angus Jennings, Town Manager
 DATE: October 18, 2016
 RE: Potential eligible expenses for Environmental Trust

The Trust Indenture, Hampden Environmental Trust establishes eligible expenses for Trust Income and Principal, as follows:

Eligible Uses, TIF and Environmental Trust	Current balance	As of
Environmental Trust, Principal	\$2,918,019.92	9/7/2016
In vicinity of the Landfill, Air and Water Quality Protection defined as "(A) any measure to provide alternate domestic water supply, air or ground water quality protection or improvement, or protection or improvement of surface waters in the area of Emerson Mill Road, Paper Mill Road, Old Cold Brook Road, Cold Brook Road, or Souadabscook Stream; and (B) the costs of administrative and personnel expenses of the Town in monitoring and overseeing significant environmental issues affecting the Town."		
Environmental Trust, Income	\$1,138,710.43	9/7/2016
Eligible for use "to preserve and protect the environment in the Town of Hampden, including funding such environmental study, testing, protection, preservation, and remediation measures as the Individual Trustees, in their discretion, direct."		

Leading up to the Town Council's re-appointment of an Environmental Trust Committee, it set out two categories of expenses for potential funding from the Trust.

The first category is approved FY17 budget expenses that would appear to be eligible expenses for payment from the Trust, including:

Stormwater Management

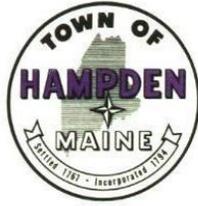
<i>Account</i>	<i>Amount</i>	<i>Purpose</i>
Maintenance / Repair	\$8,280	Culverts/pipes: Patterson Road, Canoe Club Rd, Constitution Ave; Precast concrete catch basins (Coldbrook, Frances, Ruth, Lindsey, Spare); Frames/Grates.
Compliance Documentation (DEP)	\$12,850	DEP compliance consultant; BASWG membership; IDDE testing.
Contracted Services	\$100,000	Clean catch basins (80 @ \$50/each); repairs to storm sewer system (North Road Culvert in-house cost offset \$7,000; Old County Road Culverts \$35,000; Sidney Blvd \$54,000).
Prof. Services, Travel, Training	\$1,500	Stormwater pollution training
TOTAL	\$122,630	

Some portion of personnel and administrative costs would also be eligible, but these have not been itemized.

The adopted budget projects that the approved expenses will be offset by \$120,000 from Environmental Trust – Income. In the coming months, I therefore intend to propose to the Committee either reimbursement or advance approval of \$120,000 of budgeted, eligible expenses for payment from the Trust – Income.

The second category of eligible expenses the Council has considered includes expenses that the Town has incurred in the years since the Environmental Trust Committee was last active (in 2009). If the Trust and Council approve reimbursement of these incurred expenses from the Trust, it would restore the Town's Host Community Benefit Fund (which has been the source of most or all of these expenses) to a healthier financial condition.

If the Committee agrees with this general approach, I will continue work to document these prior expenses for presentation to the Committee at a future meeting.



TOWN OF HAMPDEN

DEPARTMENT OF PUBLIC WORKS

106 WESTERN AVE.
HAMPDEN, ME 04444

TEL 862-3337

FAX 862-5067

January 27, 2017

To: Angus Jennings
From: Sean Currier
Subject: 2017 Storm Water Budgeting

During the FY17 budget preparation, Hampden staff along with support from an environmental consultant, put forth a budget incorporating storm water maintenance and improvements for the Town of Hampden. Hampden is currently in permit year (4) four of a (5) five year permit cycle for our Municipal Separate Storm Sewer System (MS4). This is a permit regulated by MeDEP for improving water quality, with State and Federal legal implications.

There are (6) six minimum control measures which must be met annually to achieve permit compliance. These control measures ensure that the Town is improving the environment with measurable annual results. Some of the required measures are public outreach, illicit discharge detection and elimination, construction and post construction monitoring and pollution prevention. Hampden is taking a very proactive role in improving the water quality of our streams and environment as a whole.

Items budgeted for this year, not only help us achieve permit requirements, they help improve the ecosystem inside and outside of the regulated area by reducing pollution in streams, removing contaminants from storm water, eliminating sewage from entering waterways, preventing sediment and erosion of stream and drainage banks and improving fish passage.

The storm water budget is essentially an unfunded mandate upon MS4 communities that are striving to find funding sources to accomplish responsible upkeep of existing, aging storm water systems. Prior to FY17, the storm water repairs, maintenance, improvements and the substantial MS4 compliance directives required expenditures that were unfunded and came from a reserve account (Host Community Benefit). This reserve account has been essentially depleted due to the regulated nature of the MS4 permit and the need for recurring annual expenses as well as ongoing capital improvement planning.

In order to contain the extent of tax increase needed for FY17 (much of which resulted from internalizing expenses such as stormwater which had previously been paid with one-time revenues), the approved FY17 projected \$120,000 in revenue from the Environmental Trust in order to offset eligible costs for environmental improvements and compliance mandates.

This year, the storm water budget includes (4) four accounts that directly help to improve the environment.

10-10-22-01 Maintenance/Repair: Budget=\$8,280.00, Current Spending=\$908.70, **Balance=\$7,371.30**. The reason the account balance is still high is that we used our existing pipe stock pile to replace culverts on Patterson Road, Canoe Club Road and structures on Frances, Daisy and Ruth. The remaining balance of the account will be utilized to replenish our stockpile of pipe, frames and grates.

10-10-22-05 Compliance Documentation: Budget=\$12,850.00, Current Spending=\$8,230.19, **Balance=\$4,619.81**. Additional consultant work, already under contract, will be necessary this spring for outfall inspections, monitoring, MS4 required reporting, etc. It is forecasted that entire budget will be utilized.

10-10-22-20 Contracted Services: Budget=\$100,000.00 Current Spending=\$26,191.10, **Balance=\$45,255.16 (see explanation)**. The Sidney Boulevard project was under budget at \$26,495.00. 2% retainage will be due after one year from completion date of project which equals \$529.90. An additional \$28,023.84 is pending payment this week due to the completion of the Old County Road culvert sliplining project. With those items included, the account balance of \$45,255.16 should remain.

We still have catch basins to clean, the North Road culvert to replace, a culvert to slipline or replace on Old County Rd (42" cmp where the road was previously patched) and a 10 foot diameter culvert for Sucker Brook under Old County Road to repair or replace. This account is expected to be utilized in its entirety.

10-10-22-20 Prof. Services/Training/Travel: Budget=\$1,500.00 Current Spending=\$0, **Balance=\$1,500.00**. The expected storm water training class this past fall was canceled due to lack of attendees. We are currently looking for a replacement to the training and forecast this budget will be utilized.

Thank you for your consideration of funding these improvements through the Environmental Trust fund.

Sincerely,



Sean Currier

January 5, 2017



Sean Currier, Public Works Director
Town of Hampden
106 Western Avenue
Hampden, ME 04444

Re: Souadabscook Sewer Pump Station and Force Main Review

Dear Sean:

The following is our summary review of the Souadabscook Sewer Pump Station (PS-2) and force main review per Task Order #13. We reviewed potential impacts from the upcoming Maine Department of Transportation (MDOT) Grist Mill Bridge replacement, including force main replacement and effects on pump station operation. The Grist Mill Bridge project is currently on the 2017/2018 MDOT Work Plan, along with a road rehabilitation project extending from Western Avenue to Mountainview Drive. The following tasks were included in the review:

1. Research PS and force main as-built drawings, pump model and flow curve, operational records;
2. Confirm existing conditions via site visit;
3. Perform hydraulic calculations to evaluate force main replacement;
4. Review necessity for pumping modifications if applicable;
5. Produce summary memo with findings; and
6. Develop budgetary cost estimate for force main replacement.

On June 1, 2016, Woodard & Curran (W&C) visited the Souadabscook Sewer Pump Station, located at the Hampden Water District office on Main Road North. We collected equipment information and other site-specific information.

We consulted with the Bangor Wastewater Department, who provides sewer pump station maintenance services for the Town, and Sargent Corporation, who installed the replacement force main in 2006. We also consulted with the MDOT and their bridge design consultant, T.Y. Lin International Group, regarding the new Grist Mill Bridge design and potential impacts on the utilities.

This is not intended to be a comprehensive review of the Souadabscook Sewer Pump Station for planning purposes or preliminary engineering for pump station upgrades. We have provided recommendations regarding a comprehensive pump station review later in this report.

Background

The force main crossing the Grist Mill Bridge was originally installed around 1982 as part of Interceptor Sewer Contract 1 and extends from the Souadabscook PS to the vicinity of Chickadee Lane and Sunrise Lane, where it discharges to a 20-inch ductile iron gravity sewer main. The overall length is approximately 4,040 feet based on the As-Built drawings. The Contract 1 As-Built drawings, dated February 1983, detail the original pipe as 8-inch diameter Permastran, which was an epoxy-fiberglass wrapped plastic pipe. It is not clear if the entire length of this main was Permastran, ductile iron, or other typical pressure pipe material.



The force main was partially replaced in 2006 by Sargent Corporation in conjunction with a gravity sewer replacement project, with replacement extending from the intersection of Dudley Road north to the gravity sewer transition. Per the Sargent project manager, Sean Milligan, the replacement section consisted of 12-inch diameter pressure-rated PVC (AWWA C900 pipe trademarked as Blue Brute by JM Eagle). This replacement section length is approximately 3,600 feet and did not include the section between the pump station and Dudley Road intersection. We do not have drawings for the replacement project and have relied on Town and Contractor information.

The connection point between the new 12-inch diameter pressure PVC pipe and the original force main in the Dudley Road intersection consists of a valved pipe manifold that was used to connect both the replacement force main and bypass piping to the remaining 8-inch diameter force main. Per Sargent Corporation, the valved manifold is thought to remain in place with the bypass piping end capped and gate valve operators buried.

The 8-inch diameter force main crosses the Grist Mill Bridge as a buried installation between the road surface and the concrete structure with foam board insulation above and below the pipe, although exact construction details were not available on the As-Built drawings. Discussions with the MDOT indicate that there is 3-7 feet of soil over the existing bridge concrete beam. The force main otherwise appears to be typical of buried pipe installation practices.

A 12-inch diameter PVC gravity sewer main also crosses the bridge parallel to the force main, connecting the sewer service area along Coldbrook Road and Main Road North to the Souadabscook Pump Station. Installation of this pipe appears to be similar to the force main, running approximately 155 feet between manholes with a slope of 0.024.

The pump station consists of two Fairbanks-Morse 5400 series vertically mounted split case solids handling pumps. A pump data sheet obtained from Fairbanks-Morse is attached for reference. One pump is active and controlled by the single variable frequency drive (VFD) with constant level control, but can also be operated as a start/stop pump station based on high and low wet well level. The pumps are rotated in operation, but the VFD cannot be taken offline.

Table 1: Existing Pump Data

Manufacturer	Fairbanks Morse
Installation Year	1983
Model/Size	B5434 4x8 inch
Stages/RPM	Single stage 1770 rpm
Impeller	13.65 inch
Rated Flow	800 gpm @ 188 ft TDH
Motor	75 HP



Evaluation

We were able to conduct a preliminary review of the hydraulic conditions using the information referenced previously. However, we were not able to directly assess the pump or force main hydraulic performance due to the lack of suction and discharge pressure gauges. The gauge taps for Pump #2 appear to have broken off and have not been repaired. Properly functioning pressure gauges and maintenance records of their readings allow an assessment of pumping conditions, particularly regarding changes in pump performance and force main flows.

At the time of the site visit, the Pump #2 speed was approximately 72% and cycling on and off based on wet well level. Based on the assumption that the pump is operating according to its published pump curve, the resulting flow rate is approximately 250-300 gpm, which is near the minimum allowable flow for that pump model. The calculated pumping capacity for the current pump arrangement and piping configuration (8-inch pipe and 12-inch pipe) is 1,600 gpm, although the actual capacity is likely limited by the motor horsepower as well as pump and pipe condition. The installed pump motor is rated for 75 HP and the full capacity of the pump exceeds that value. The capacity prior to force main replacement was approximately 980 gpm.

Force main sizing is generally dictated by minimum and maximum flow velocities to ensure that flows are adequate to maintain solids in suspension while not requiring excessive pump horsepower and power consumption. Generally, raw wastewater force mains should maintain a pipe velocity of 2 feet/second, provided that the pumping system generates a peak velocity of at least 3.5 feet/second each day to suspend settled material. The table below summarizes the current flow conditions and design parameters for the existing force main.

Table 2: Force Main Summary

Parameter	Typical Design Velocity	Estimated Flow	Estimated Forcemain Condition	
			8-inch	12-inch
Minimum	2 ft/sec	250 gpm*	1.6 ft/sec	0.8 ft/sec
Daily Maximum	3.5 ft/sec		Not recorded 700 gpm required	Not recorded 1,230 gpm required
Peak	8 ft/sec	1,600**	9.2 ft/sec	5.1 ft/sec

* Estimated from current model pump curve.

**Estimated capacity using hydraulic calculations, not field-verified.

As the table illustrates, the minimum velocity in both force main sections are below typical design values, although the velocity in the 12-inch section is less than one half the typical design condition. It is unclear if the Daily Maximum Velocity condition is achieved for either pipe section on a daily basis.

Force mains are typically designed with peak velocities up to 8 feet per second to limit headloss and power consumption. We estimated that the velocity at peak pump capacity in the 8-inch pipe exceeds this value, while the 12-inch pipe remains well below.

We evaluated using 12-inch diameter pipe for the full length of the force main and a small increase in capacity from 1,600 gpm to approximately 1,700 gpm was calculated. The relatively short length of 8-inch main has a minimal effect on overall headloss and pump power consumption.



A 20-inch diameter ductile iron gravity sewer conveys flow from the pump station force main north toward the Bangor Wastewater Treatment Plant. The minimum slope of this line is 0.0006 feet/feet per the 1983 As-Built drawings. We estimated the capacity of this 20-inch sewer main as approximately 1,400 gpm. It appears that the existing pump station capacity exceeds the capacity of the 20-inch diameter receiving gravity sewer. Any increases to the pump station capacity are likely to require additional gravity sewer capacity.

The following is a list of other observations and conditions noted at the time of our visit:

1. Pump installation date of 1983 indicates 33 years of use. The typical guidance for replacing pumping equipment is 20 years unless regular maintenance and rehabilitation allows otherwise. Similarly, valves, piping, and electrical equipment may also require replacement due to age or to meet current code requirements.
2. Pump #2 exhibited noticeable vibration during operation, indicative of an out-of-balance condition, motor bearing issue, or other mechanical problem. The Bangor Wastewater staff were asked about this vibration and they stated that it has been ongoing for a significant amount of time without noticeably affecting operation.
3. The piping and concrete support in the stilling well installed in 1996 is severely corroded. This piping serves to contain effluent in the structure and prevent air entrainment from affecting the pump suction lines.
4. Water level in the upstream manhole (located in the grass swale adjacent to Main Road North) was near the pipe crown during relatively dry conditions. This appears to be primarily a result of backwater effect upstream of the grinder station, but does presents a risk of clogging in the gravity line due to inadequate velocity.
5. The access hatch to the north wet well has a failed hinge and did not operate properly.
6. There do not appear to be any wet well tank vents. Any vents should be equipped with odor control canisters.

Recommendations

We recommend that the Town replace the existing force main from the Souadabscook PS to Dudley Road in conjunction with the MDOT bridge project and that the pipe remain 8-inch diameter for the following reasons:

- The pumping capacity is consistent with that required of an 8-inch diameter force main.
- The receiving gravity sewer is limited to near the current estimated pumping capacity.
- The Town's permitted discharge volume and peak rate are limited.
- A larger size diameter results in low pipe velocity and risk of solids deposition and clogging.
- The additional pumping capacity and reduction in power consumption resulting from using a larger diameter force main are minor.

The replacement of the existing 12" PVC gravity sewer main will also be required as the bridge design will not allow the current installation method.

Due to the presence of ledge and pipe elevation requirements, it does not appear feasible to attempt to install the sewer utility piping to the immediate north or south of the bridge as buried piping. The Hampden



Water District has buried water main river cross to the north of the bridge, although this piping is not subject to the requirements of pressure or gravity sewer installation.

The MDOT and their design consultant have indicated that the bridge will be a traditional steel or concrete beam design without any soil cover over the bridge deck. This requires a specialized type of pipe utility installation using pipe supports, insulation, expansion joints, and heat-tracing to prevent freezing of the pipe contents. The replacement bridge span will be longer than the existing span, with approximately 115 feet compared to the existing approximately 50 feet.

The bridge is intended to be replaced in its entirety in one operation, which means that the existing bridge and utilities will be completely removed to accommodate construction of the new bridge. The MDOT intends to request a road closure for this work, extending from 30-90 days during the summer, therefore no temporary bridge structure is planned. This method of construction will require bypass sewage pumping for the gravity sewer main and a temporary sewer force main installation during this outage, and until the new utilities are installed and ready for use.

A budgetary cost estimate has been provided as an attachment. The estimate assumes the following:

- Replacement of full length of 8-inch force main between pump station and Dudley Road intersection.
- Replacement of 12-inch gravity sewer main between manholes spanning the bridge (approximately 155-feet based on As-Built drawings).
- Temporary bypass pumping is required for the gravity sewer.
- Temporary piping is required for the sewer force main.
- Town is responsible for trench width pavement repair only where it affects driveways due to concurrent MDOT road rehabilitation project.
- Town is not responsible for roadway concrete base repair.
- Installation requires a supported bridge crossing design (i.e. supported from the bridge structure and not buried).

There is a significant amount of variability in the cost of a supported bridge crossing system, depending a great deal on the bridge configuration and materials of construction. We have prepared the attached estimated project cost breakdown using costs associated with recent steel I-beam and concrete beam bridge crossing construction methods. The estimated project cost resulting from the use of a suspended bridge crossing, including engineering, construction administration, part time inspection, and contingency, is approximately \$493,500 to \$777,000, depending on the type of design and support system requirements.

As noted previously, we recommend a comprehensive pump station evaluation be conducted as part of a Preliminary Engineering Design prior to the implementation of any significant pump station modifications. The following is an example of Preliminary Engineering scope items related to long-term planning for the pump station, capacity, and sewer collection system impacts:

1. Assess current wastewater flows using available records.
2. Identify potential for infiltration/inflow removal and impacts on pump station operation.



3. Assess pump design, capacity, operation strategy, wet well configuration, electrical system, and control system.
4. Assess the hydraulic profile of the existing pump station and modify to reduce pipe surcharging.
5. Present upgrade options for review and evaluation.
6. Identify permitting requirements.
7. Prepare Design Basis Memorandum identifying the intended scope of upgrades and preliminary cost estimate for final design, construction, and contingency costs.
8. It is understood that infiltration and inflow (I/I) continue to affect the entire collection system. In addition to the current program of sewer main replacement, we recommend that the Town consider additional efforts at identifying and eliminating I/I.

We recommend that the Town allow for a Preliminary Engineering Design budget of \$15,000 based on the scope presented. We can provide a detailed scope and budget for this work at your request.

We trust the information provided within this letter is useful to the Town for budget planning. We would be happy to continue our work with Town to prioritize the improvements discussed in this letter and to assist with implementation. If you have any questions or concerns, please don't hesitate to contact me at 207-945-5105 or via email at kcorbeil@woodardcurran.com.

Sincerely,

WOODARD & CURRAN

A handwritten signature in blue ink, appearing to read 'Kyle Corbeil'.

Kyle Corbeil, P.E.
Project Engineer

KMC/eap

cc: Jim Wilson, P.E. – Woodard & Curran

PN: 213302.00 013

0.2 MILES NEAL

Colt Industries Pump Division

SEE PAGE 2 FOR TEST BEFORE IMPELLER TRIM

4.5 Motor, B2110855

DATE ENTERED 4-19-82 DATE PROMISED 153 DATE SHIPPED 5-26-83 MOTOR S/N 9302556-662 PUMP SERIAL NO. K3JI-060314
 CUSTOMER'S NAME BRECIA CONSTRUCTION CO. (HAMPDEN, MAINE) CUSTOMER P.O. 22110636 LETTER 4-9-82 CHECKER THRY
 BUILD 2 PUMPS ON THIS ORDER AND 0 OTHER PUMPS ON THIS ORDER SEC. WRITER R. YANKIRK 1-6-83 SPECIAL INSTRUCTIONS K3JI-060314-1

PUMP DESCRIPTION		GENERAL		OPERATING CONDITIONS		CERTIFIED CURVES	
SIZE	DIS. POS. #	SUCTION PROJ.	GPM	TDH	YES	NO	NO
4 X 8	13		800	188	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FIGURE NO. B5434	ROTATION CCW	DISCH. PROJ.	SUCTION LIFT		CURVES APPRO'D. BEFORE SHIPMT. <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
PUMP FITTING IF		TUBE PROJ.	SUCTION HEAD		WITNESS TEST <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
CURVE NO. K3JI-060314	GUARANTEE (YES) 61%	SUCTION SIZE 8"	PUMP RPM 1770 (F/L)	MTR. S.F. 1.15	HYDRO TEST 150 PSI <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
SHIP ASSEMBLED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		DISCH. SIZE 4"	MTR. HP 75	MTR. TYPE RV-9	DATE PUMP TESTED		
DRIVER MOUNTED BY FACTORY CUSTOMER		MIN. END PLAY	IMPELLER T4DIAG	DIA. OR "B" DIM. 14.03M	TESTED BY		
SETTING PLAN SK3JI-060314			SOLD OVERLOAD SP GRAVITY YES NO		SPECIAL AND VARIABLE PARTS ON THIS ORDER		

300-350 BHN SLEEVE, BRONZE SEAL
 HOUSING & GLAND, SS IMP. & CAS RINGS,
 SS IMP. CAPSCREW & WASHER, MECH SEAL
 FILTER, SS GLAND BOLTS, THERMOSWITCH
 MOUNTED ON VOLUME
 NOTE: SEE SPECIAL INSTR. PAGE 2
 SPARE PARTS PAGE 8
 Ref: TADIB
 DYN BAL & POLISH & COAT IMP.

QUANTITY	SYMBOL	MATERIAL	LEVEL CODE	PRODUCT CODE	DESCRIPTION	REFERENCE	LINE
2	993	9906	F		FENWALL THERMOSWITCH SERIES 32400	"A" STATE	
2 (SETS)	993	9906	F		MINIATURE CONTROLS (TO MOUNT ON VOLUME) RONNINGEN & PETER ISO-RING PRESSURE INSTRUMENT PROTECTORS W/ASHCROFT #1379		
2	993	9906	F		4 1/2 0-60 PSI GAGES. (1 SET INCLUDES (1) 4" SUCT. & (1) 8" DISCH PROTECTOR W/GAGE) U.S. ELECTRIC 75HP 1800RPM 3/60 460 VOLT WP-1 VCC CORROSION PROTECTION, ALL SS SHAFT, WINDING THERMOSTATS, W/HYDZD2 SHAFT EXTENSIONS		
1	993	9906	F		ROBICON VFD CONTROL SYSTEM INCLUDES FR & STARTUP / TRAINING OF 1 TRIP NOT TO EXCEED 5 DAYS	"B" STATE	



COMMITMENT & INTEGRITY
DRIVE RESULTS

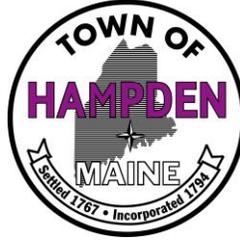
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TOWN OF HAMPDEN
SOUADABSCOOK SEWER PUMP STATION FORCEMAIN AND SEWER REPLACEMENT
PRELIMINARY COST ESTIMATE
PROJECT NO. 213302
December 28, 2016

Preliminary Estimate							
				Steel I-beam Bridge Design		Concrete Beam Bridge Design	
No.	Description	Unit	Estimated Quantity	Unit Price	Value	Unit Price	Value
1	Administrative (5% of Subtotal)	LS	1	\$15,000.00	\$15,000.00	\$25,000.00	\$25,000.00
2	Rock Excavation*	CY	10	\$200.00	\$2,000.00	\$200.00	\$2,000.00
3	Excavation Below Normal Grade*	CY	25	\$30.00	\$750.00	\$30.00	\$750.00
4	Select Backfill*	CY	25	\$30.00	\$750.00	\$30.00	\$750.00
5	Provide 8" Class 52 Ductile Iron Forcemain	LF	335	\$100.00	\$33,500.00	\$100.00	\$33,500.00
6	Provide Forcemain Bridge Crossing	LS	1	\$80,000.00	\$80,000.00	\$180,000.00	\$180,000.00
7	Provide 12" SDR 35 Gravity Sewer Pipe	LF	50	\$140.00	\$7,000.00	\$140.00	\$7,000.00
8	Provide Gravity Sewer Bridge Crossing	LS	1	\$100,000.00	\$100,000.00	\$200,000.00	\$200,000.00
9	Provide 2" Rigid Insulation	LF	200	\$5.00	\$1,000.00	\$5.00	\$1,000.00
10	Bituminous Pavement Repair	SY	25	\$140.00	\$3,500.00	\$140.00	\$3,500.00
11	Test Pits	EA	2	\$1,000.00	\$2,000.00	\$1,000.00	\$2,000.00
12	Testing Allowance	ALLOW	1	\$2,000.00	\$2,000.00	\$2,000.00	\$2,000.00
13	Temporary Bypass Pumping	LS	1	\$50,000.00	\$50,000.00	\$50,000.00	\$50,000.00
14	Temporary Forcemain Piping	LS	1	\$25,000.00	\$25,000.00	\$25,000.00	\$25,000.00
CONSTRUCTION SUBTOTAL					\$322,500.00		\$532,500.00
ENGINEERING, CONSTRUCTION ADMIN, PART TIME INSPECTION, CONTINGENCY (35%)					\$112,900.00		\$186,400.00
TOTAL					\$435,400.00		\$718,900.00

Town of Hampden
106 Western Avenue
Hampden, Maine 04444



Phone: (207) 862-3034
Fax: (207) 862-5067
Email:
townmanager@hampdenmaine.gov

TO: Infrastructure Committee

FROM: Angus Jennings, Town Manager

DATE: January 27, 2017

RE: Update on DPW use of GPS reports

Since the December meeting, our vendor responded to our inquiries and was able to both correct the problem that prevented accurate data, and backfill information to allow for GPS-based reporting dating back to last summer when we created map polygons for specific Town locations.

We are working toward what would become a standing monthly report from the GPS. The attached report covers one recent storm event.

The report on page 1 is a total distance summary for the time period of the storm that day. Vehicle information, route map, and speed vs time graph is also displayed for each vehicle.

Location detail reports (regarding time spent at specific locations) are also possible for the twelve locations set up in our system but those reports take a long time to run so we'd like to get direction from the Committee about how best to focus reporting. Both Sean and Kyle will be in attendance for this portion of Monday's meeting.

12/17/16 Storm Event

BLACK TEXT=PLOW TRUCKS		RED TEXT=SIDEWALKS, SNOW REMOVAL, SUPPORT EFFORTS						PRECIP: TR= TRACE AMT S=SNOW R=RAIN		GIS				
DATE	DAY	TREATMENT	PRECIP	AVE TEMP	START	STOP	REG HRS	OT HRS	NOTES	MUNI BLDG	POOL	LIBRARY	SKEHAN	WESTBK
12/17/2016	SATURDAY	SAND/SALT	3.3" S	3	8:00AM	9:00PM			SAND/SALTE D ALL ROADS					



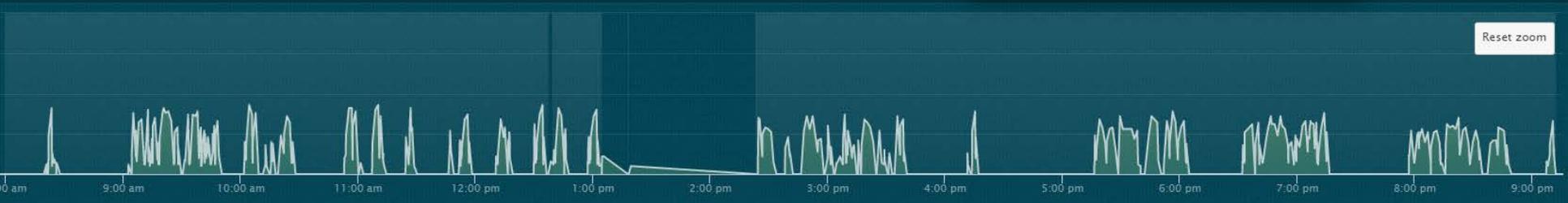
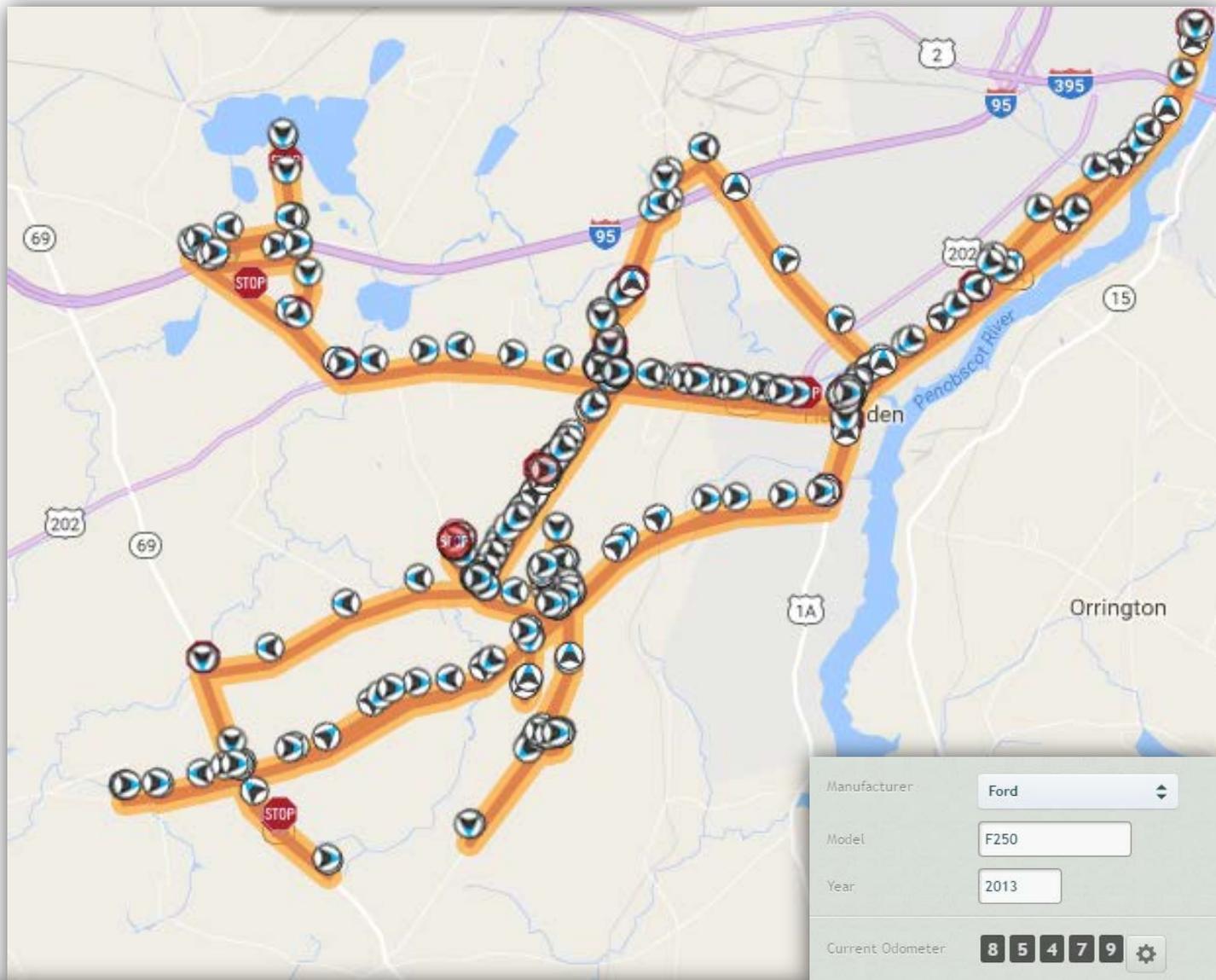
Distance Summary

Facility: Town Of Hampden Maine
 Date Range: 12/17/2016-12/17/2016
 Time: 8:00 am- 9:00 pm

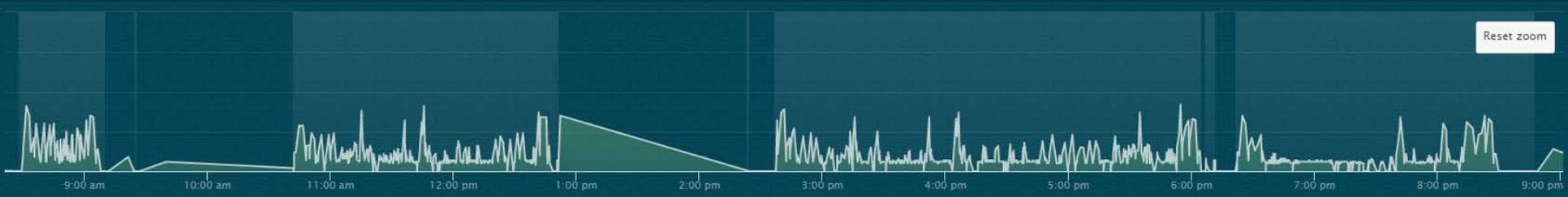
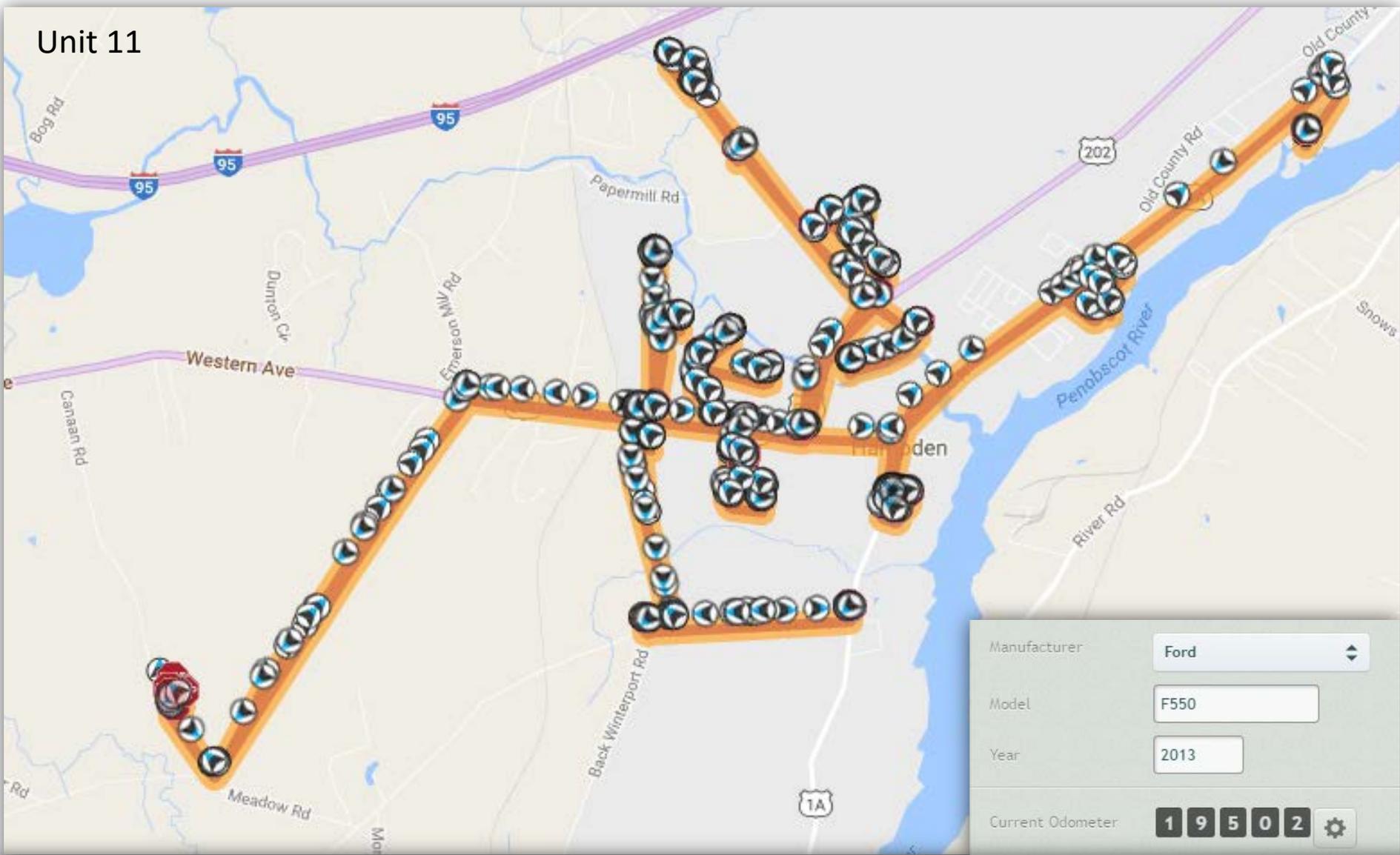
<u>Vehicle</u>	<u>Start: Date</u>	<u>Odometer</u>	<u>End: Date</u>	<u>Odometer</u>	<u>Distance</u>
10	12/17/2016	31,423.81	12/17/2016	31,423.81	137.31
11	12/17/2016	3,778.74	12/17/2016	3,778.74	107.70
13	12/17/2016	7,693.72	12/17/2016	7,693.72	111.45
14	12/17/2016	8,072.42	12/17/2016	8,072.42	96.20
15	12/17/2016	5,609.53	12/17/2016	5,609.53	117.38
18	12/17/2016	16,586.40	12/17/2016	16,586.40	107.96
19	12/17/2016	5,796.56	12/17/2016	5,796.56	60.47
20	12/17/2016	8,120.75	12/17/2016	8,120.75	110.62
32	12/17/2016	27,033.52	12/17/2016	27,033.52	2.63
35	12/17/2016	27,226.13	12/17/2016	27,226.13	101.27
Total					952.99

Total distance travelled: 952.99 miles

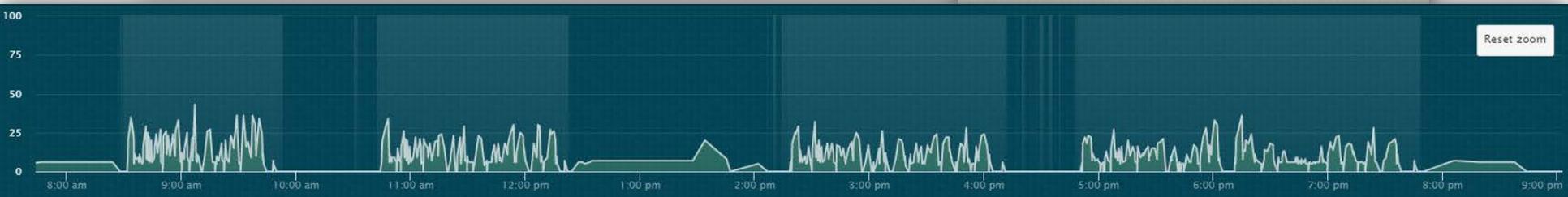
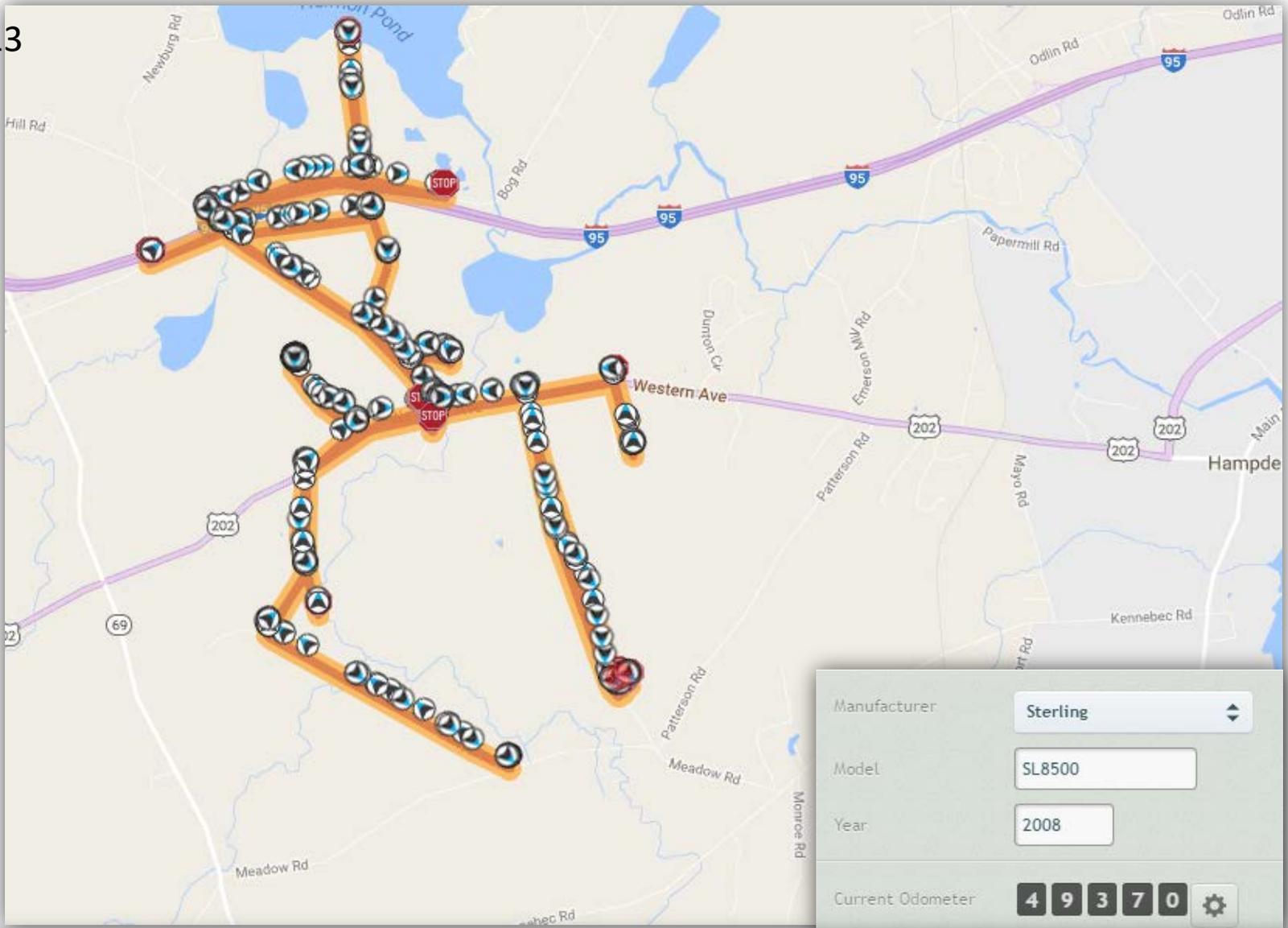
Unit 10



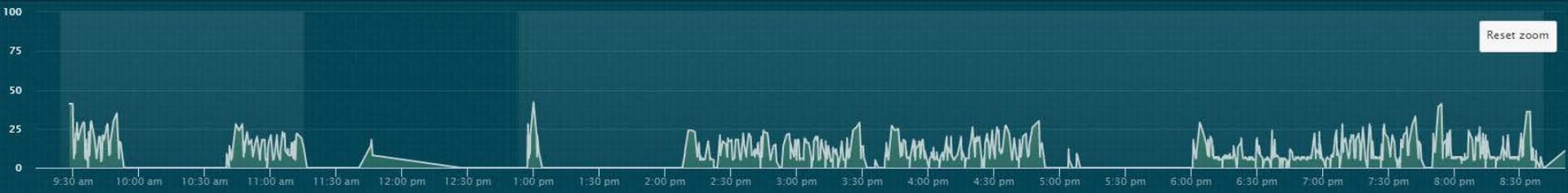
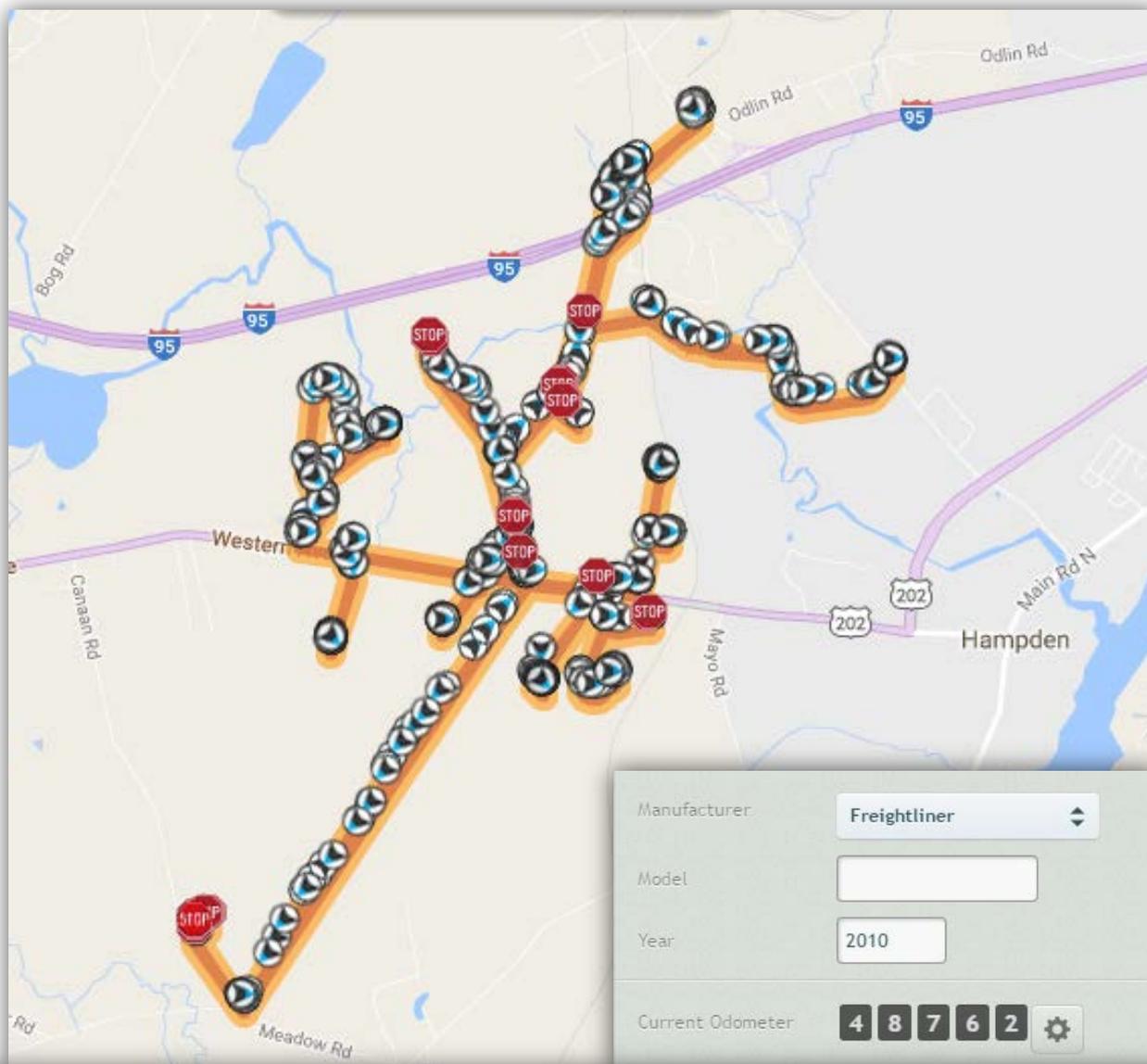
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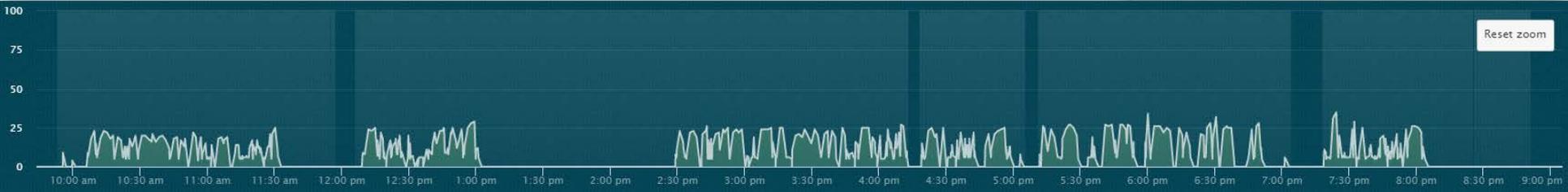
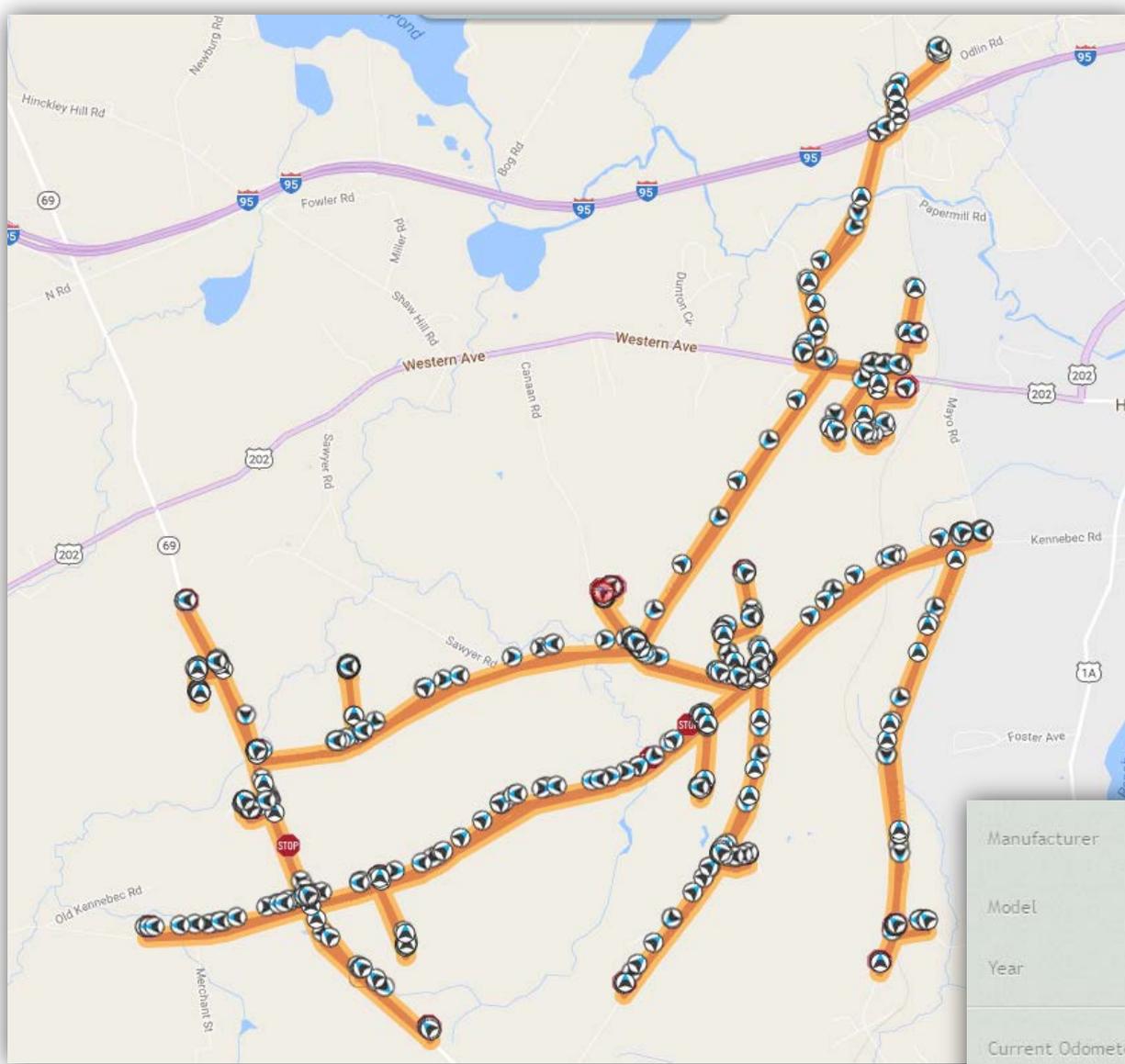
Unit 13



Unit 14



Unit 15

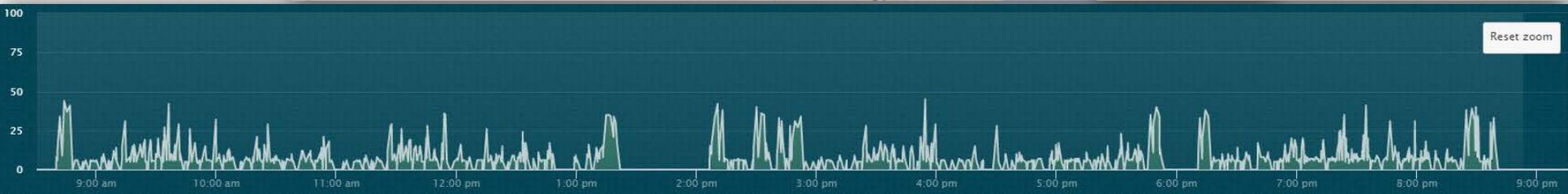
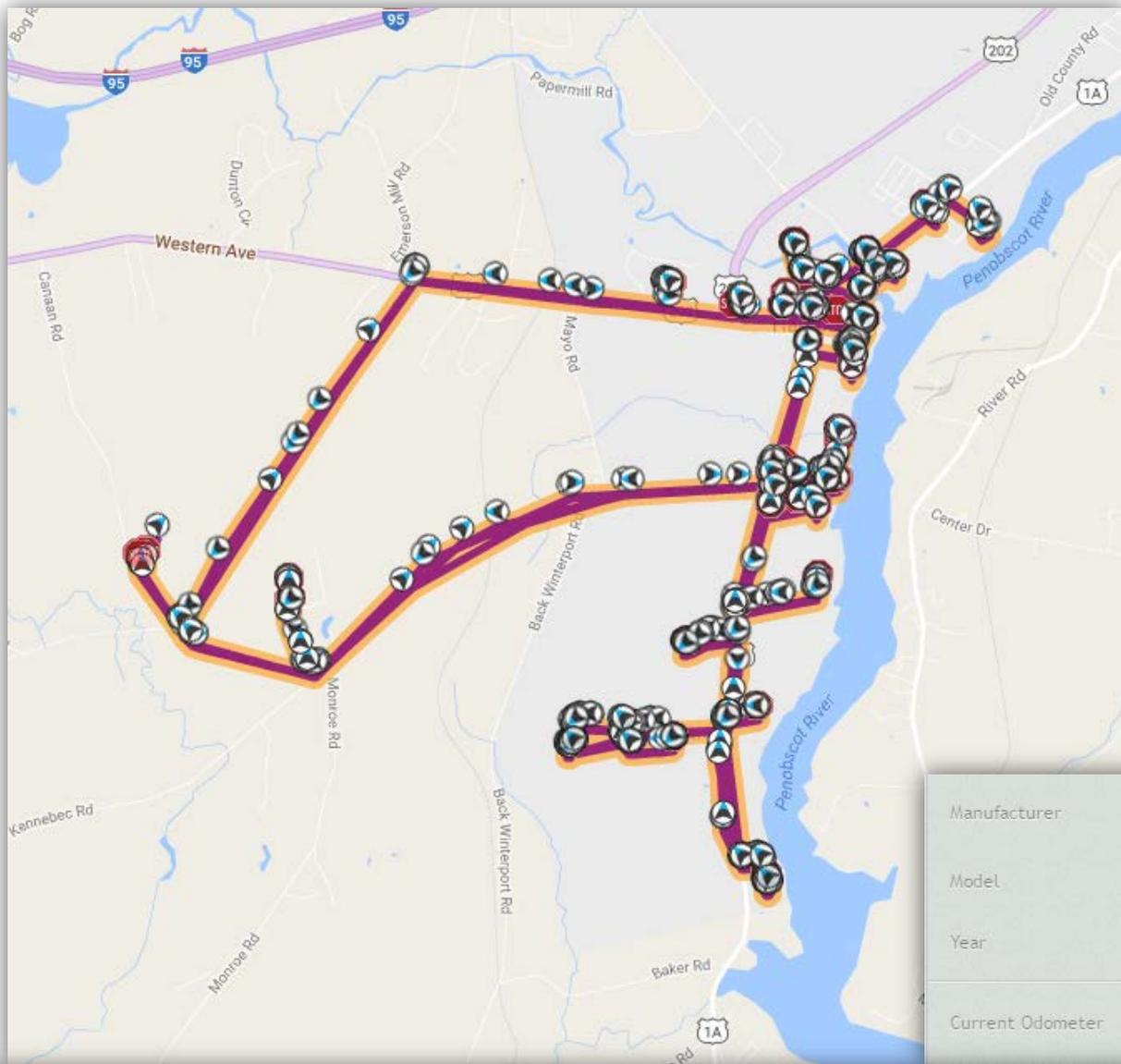


Unit 17

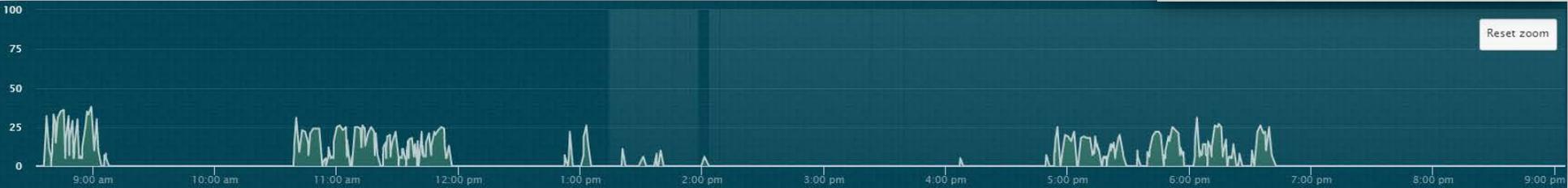
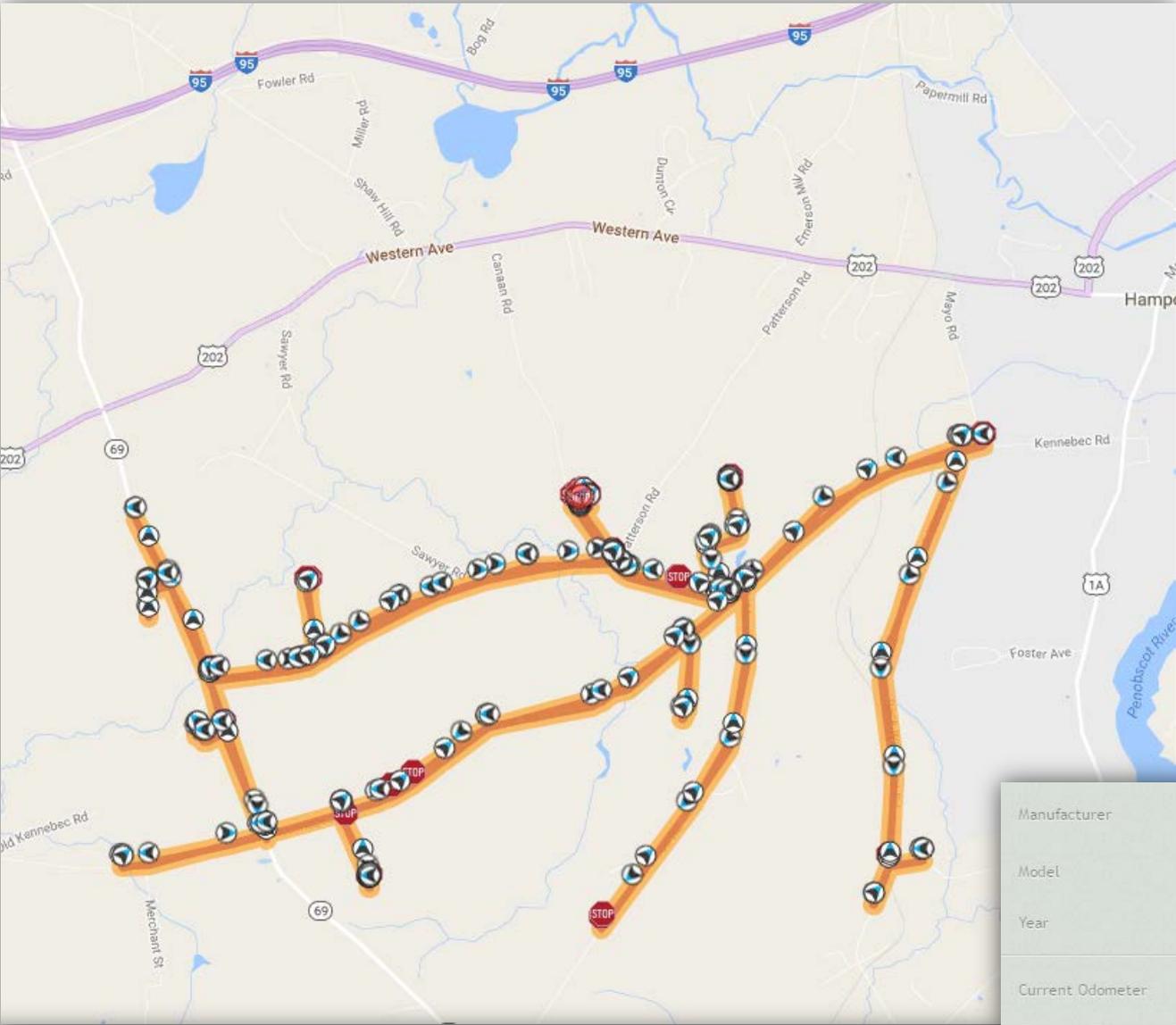
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Current Odometer	<input type="text" value="3 4 6 1 1"/> 

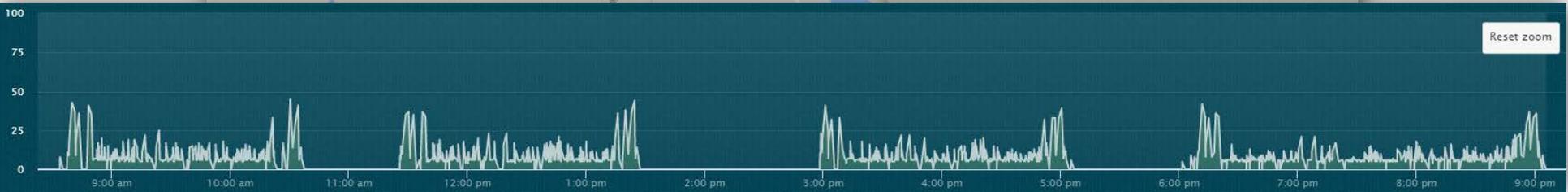
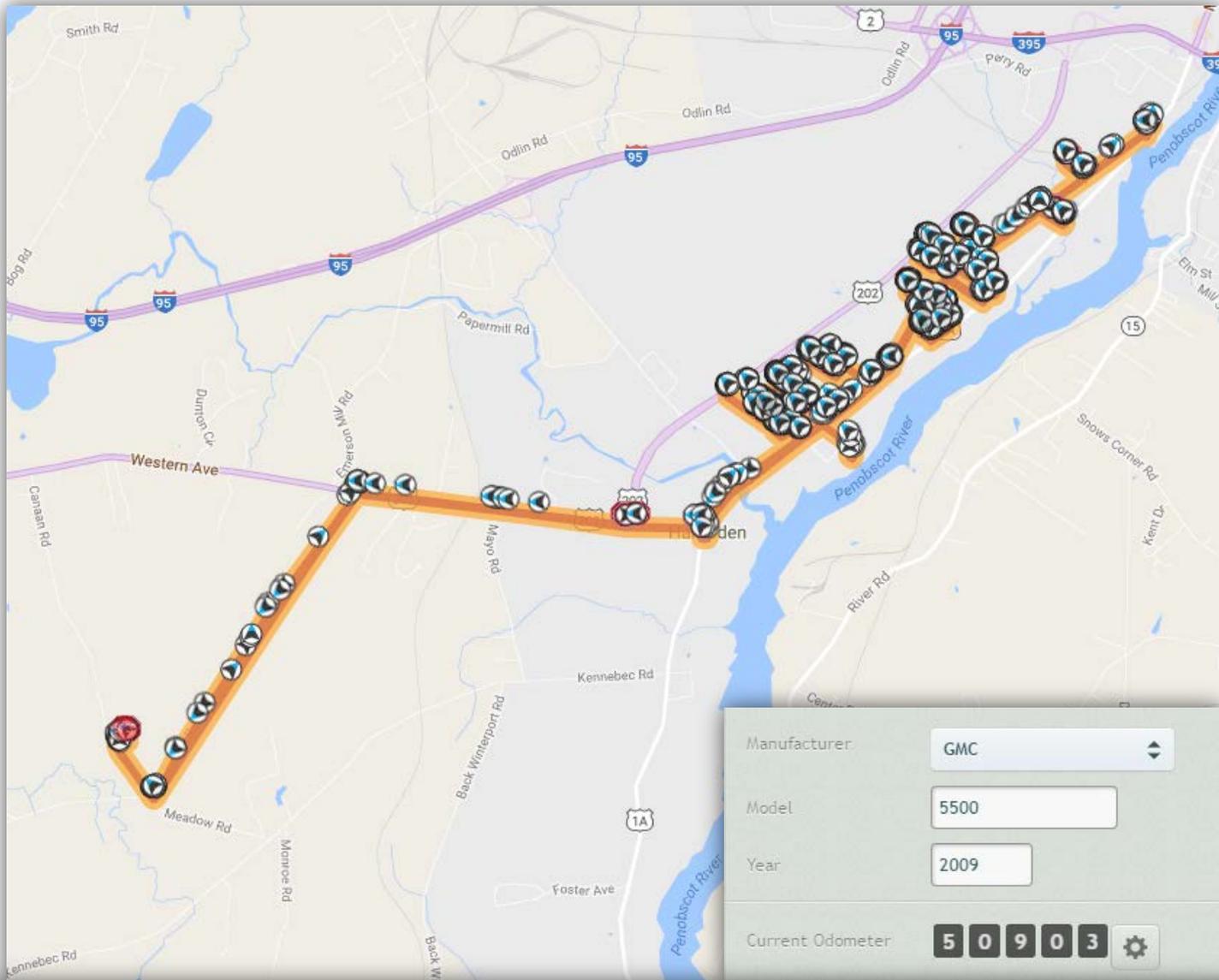
Unit 18



Unit 19



Unit 20



Unit 32

No Data

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Model	F350
Year	2012
Current Odometer	8 8 4 8 3 

Unit 35

