INFRASTRUCTURE COMMITTEE MEETING
6:00 P.M.
Monday, March 28, 2016

HAMPDEN TOWN OFFICE

A G E N D A

1. MINUTES – 2/17/2016 Meeting
2. OLD BUSINESS
    a. Drumlin LLC report re Pine Tree Landfill
    b. Transfer station operations (requested by Councilor McAvoy)
    c. Sewer Ordinance – sewer connection fees and protocols – referral from October 26, 2015 meeting – Sean Currier, DPW Director
    d. Fees Ordinance – sewer connection fees and protocols – referral from October 26, 2015 meeting – Sean Currier, DPW Director
    e. Update on recent RSU-22 Building Committee meeting re McGraw-Weatherbee
3. NEW BUSINESS
    a. Solarize Greater Bangor – presentation by Karen Marysdaughter
    b. Proposal from Pemco to convert to LED Street Lights – Angus Jennings, Town Manager
    c. Street Light Petitions under Town of Hampden Policy on New Streetlights – recommendations by Chief Joe Rogers
        1) Penobscot Meadow Drive – petition of Nathan Milliken, Eastern Maine Processing & Distribution Center, 16 Penobscot Meadow Drive
        2) Crosby Way at Route 202 (driveway to Calvary Apostolic Church and Ammo Park) – petition of Tracy Thibodeau on behalf of Maine Ground Developers
    d. Draft revisions to Hampden Driveway/Entrance Culvert policy – Sean Currier, DPW Director
    e. Draft New Ordinance: Street Opening/Utility Connection Ordinance – Sean Currier, DPW Director
    f. Draft Amendments to Town Ways Ordinance – Sean Currier, DPW Director
    g. Outstanding retainage invoice, T. Buck Construction for Route 1A Sewer – Angus Jennings, Town Manager
    h. Discussion: potential addition of sewer to MDOT Route 1A project – Sean Currier, DPW Director
4. PUBLIC COMMENTS
5. COMMITTEE MEMBER COMMENTS

INFRASTRUCTURE COMMITTEE MEETING
Wednesday, February 17, 2016

MEETING MINUTES – DRAFT

Attending:

Councilor Dennis Marble, Chair
Mayor David Ryder
Councilor Terry McAvoy
Councilor Greg Sirois (arrived 6:15)
Councilor Stephen Wilde
Councilor Ivan McPike
Councilor Mark Cormier
Town Manager Angus Jennings
Rich Armstrong, Goodwill Riders Snowmobile Club

Chairman Marble called the meeting to order at 6 PM.

1. **MINUTES – 1/13/2016 Meeting** – *Motion by Councilor McAvoy, seconded by Councilor McPike to approve the January 13, 2016 minutes. Unanimous (6-0) vote in favor.*

2. **OLD BUSINESS**
   a. **Penobscot HVAC proposal for Redlink thermostat** – *Manager Jennings provided background regarding the bids provided to allow for remote control of the Town Building HVAC systems in coordination with work, previously approved, to improve the air handling system. Councilor McPike asked about staffing responsibility to manage the system. Manager Jennings said that the DPW Director is the Facilities Manager, and that other staff who will be trained on the system will include the Manager, the IT Specialist, and Rozemary Bezanson. Manager Jennings reported that this work would be funded out of the Municipal Building Reserve Account. Motion by Councilor Wilde, seconded by Mayor Ryder to refer the proposal to Finance Committee with a recommendation for approval. Approved 6-0.*

      Councilor McPike said he'd like to see an operational list showing staffing responsibility for HVAC operations.

3. **NEW BUSINESS**

   a. **Goodwill Riders Snowmobile Club request for increased funding** – *Rich Armstrong made a request that the Town provide more funding to support their work to maintain and improve the Town's snowmobile trails. He noted that the Town receives $6.63 per snowmobile registration, and over time has provided $1,000 to the Club annually. He'd like to see a greater share of that revenue in order to offset their costs, noting that*

they've built 5 bridges, put a roof on an out building, and completed regular trails maintenance. Councilor Marble asked whether the Town incurs costs associated with snowmobile registration. Manager Jennings said that the amount of fees retained by the Town would offset the costs of staff time to process registrations. The total amount received in FY15 was $2,654 of which $1,000 was paid to the Club.

(Councilor Sirois arrived).

Councilor Marble suggested that an increase to $2,000 this year may be appropriate. Motion by Councilor Wilde, seconded by Councilor McAvoy to recommend that the Finance Committee increase this year's payment to $2,000. Approved 7-0. Mayor Ryder suggested that this expense should be included in the Town's Buildings and Grounds budget.

b. **DEP memo, MS4 Plan Year 2 Annual Report; update on Town response (due 3/1)** – *Manager Jennings summarized the work by the Town's Stormwater Working Group to prepare the response to DEP's questions regarding the Town's Year 2 MS4 (stormwater management) Annual Report.*

c. **Update on condition of sewer lines at Ammo Park, meetings with Maine Ground Developers** – *Manager Jennings reported on the results of recent inspections and test borings which showed that a privately installed sewer line at Ammo Park was not built to specification and would need to be replaced in order to be considered for public acceptance. DPW is continuing to work with the landowner toward resolution of this issue.*

d. **Inclusion of industrial flows toward Hampden's purchased capacity of 1.5 MGD at Bangor WWTP** – *Manager Jennings reported that DPW Director Currier has received an opinion from the Bangor Wastewater Treatment Plant that the flows generated by industrial uses such as what is proposed by MRC/Fiberight will count toward the Town's purchased capacity of 1.5 million gallons per day under the terms of the Interlocal Agreement. Infiltration and inflow into the sewer system also contributes to the overall sewer flows that are recorded at the municipal boundary, which factors into the treatment charges the Sewer Fund is responsible for. DPW will continue to track sewer flows on an ongoing basis.*

e. **DPW front-end loader, request to purchase vehicle at end of current lease** – *The Committee discussed the DPW Director's recommendation, included in the meeting packet, to sign a lease for a new front-end loader and to include a grapple bucket to expand capacity to manage construction debris at the Transfer Station. There was discussion about the configuration of the Transfer Station, and how this could assist with internal circulation. Councilor Cormier asked if the same equipment could*

be leased for less money. Mayor Ryder said that the same quality John Deere machine would have comparable costs elsewhere. Motion by Councilor Wilde, seconded by Councilor Sirois, to support the lease and to include these payments and the cost of the grapple bucket in future budgeting.

4. **PUBLIC COMMENTS** – *None*.

5. **COMMITTEE MEMBER COMMENTS** – *Councilor Wilde asked whether estimates were available for the cost of culvert replacements at Sucker Brook in the vicinity of Triangle Road and Old County Road. He said they have rusted through, and Mayor Ryder agreed that DPW will look at what needs to be done.*

There being no further business, the meeting was adjourned at 7:28 PM.

Respectfully submitted –
Angus Jennings, Town Manager

Drumlin LLC report re Pine Tree Landfill

Town of Hampden
106 Western Avenue
Hampden, Maine 04444

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

TO: Infrastructure Committee

FROM: Angus Jennings, Town Manager

DATE: March 24, 2016

RE: Pine Tree post-closure monitoring

In December, the Council voted to authorize work by Drumlin, LLC relative to the Pine Tree landfill. Their report is enclosed.

The second proposed scope item in Drumlin's initial proposal included presentation of their findings at a public meeting. The Council deferred action on this portion of the scope pending receipt of the report.

At Monday's meeting, I'll ask for direction regarding whether to invite Drumlin to attend a meeting to present their findings. If recommended, this would be brought to Finance Committee and Council for authorization and a meeting would be scheduled later this spring.

	Drumlin Environmental, LLC *Hydrogeologic and Engineering Consultants* **Soil Metrics, LLC**	

MEMORANDUM

To: Angus West & Hampden Town Council
From: Matt Reynolds & Steve Rabasca
Date: March 15, 2016
Subject: Pine Tree Landfill –Post-Closure Monitoring Review & Update

This memorandum has been prepared to provide the Town with an overview of recent monitoring data and associated corrective actions and post-closure conditions at the Pine Tree Landfill (PTL). The review is based on data provided in the 2014 Annual Report, 2015 water quality data, and 2015 and 2016 memoranda prepared by Richard Heath of the Maine Department of Environmental Protection (MDEP). The 2015 Annual Report has not yet been issued by PTL, so the statistical analysis of 2015 data was not available at the time this review was conducted. However 2015 data were reviewed when available and are reflected in the assessment of site conditions to the extent possible.

The goal of this memorandum is to provide the Town with a general overview of conditions associated with the landfill since closure in 2010. The memorandum does not include detailed graphs and figures, however, we would be glad to prepare these if it would assist the Town and/or address specific questions.

Figure 1-1 from Attachment C of the 2014 Annual Report (prepared by Sevee & Maher Engineers) is attached to this memorandum for reference and shows the configuration of the landfill and location of the monitoring points and other site features.

I. Landfill Closure Status

In accordance with the October 2006 Schedule of Compliance agreed to by the Maine Department of Environmental Protection (MDEP) and the Town of Hampden, PTL completed closure of the landfill in 2010. Since that time, monitoring of water quality, gas, settlement, etc. has continued in accordance with the Environmental Monitoring Plan (EMP) for the site. Landfill gas containing methane has also been collected and used to fuel the Landfill Gas to Energy (GTE) facility constructed in 2007. Additionally, some of the leachate collected by the leachate collection system and groundwater extracted from wells at the perimeter of the landfill is being recirculated into the landfill with the approval of the MDEP.

II. Corrective Action Summary

Prior to closure, a number of corrective actions were implemented to mitigate impacts from the PTL facility. Corrective actions systems that control and/or mitigate impacts to groundwater and surface water include the following.

- Gas collection systems were installed in the Conventional Landfill and Secure Landfills to collect a portion of the landfill gas generated by decomposition of waste. Both gas collection systems are connected to the GTE plant.
- The Secure landfill liner system functions as a cover for the Conventional Landfill and the cover system for the Secure Landfills was completed in 2010;
- The perimeter drain borders the west, south and east sides of the Conventional Landfill and intercepts some shallow groundwater;
- Six groundwater extraction wells have been installed near the edge of the landfill (shown on Figure 1-1). Wells EW-2R and EW-3R are located adjacent to the southeast corner of the landfill. Wells EW-5R, EW-6R, EW-101 and EW-102 are located adjacent to the northeast corner of the landfill. There is also a perimeter drain (PDPS) located along the perimeter of the Conventional Landfill that intercepts leachate and groundwater. The gallons of leachate and groundwater extracted by these wells and drain during 2013 and 2014 are summarized below.

Year	Northeast (EW-5R, -6R, -101, -102)	South (EW-2R, -3R)	PDPS	Total (gallons)
2013	2,687,000	1,121,000	3,721,000	7,529,000
2014	1,857,000	506,000	3,802,000	6,165,000

- PTL began constructing an active gas collection system along the edge of the landfill in 2009 to collect landfill gas (e.g., methane and carbon dioxide) that was migrating away from the landfill. This external landfill gas (LFG) collection system consists of 6 gas collection wells and a passive gas collection trench. The gas extracted from the collection wells (shown n Figure 1-1) during 2013 and 2014 is summarized below.

Year	PTGW08-1 (MMSCF/Tons)	PTGW08-11 (MMSCF/Tons)	PTGW08-12 (MMSCF/Tons)	PTGW08-13 (MMSCF/Tons)
2013	20.8/218	2.0/17	0.5/2	0.6/4
2014	19.7/220	2.6/22	0.1/0.3	0.4/6

Notes: 1. MMSCF = Million Standard Cubic Feet. Tons = Tons of Methane Extracted
2. Estimate of Tons is Based on Volume Extracted and Percent Methane
3. No Gas Was Extracted from PTGW08-3, -9 During 2013 or 2014 Due to Low Gas & Methane

Based on the water quality data collected at the site, these corrective actions appear to be improving the groundwater quality in certain areas around the landfill.

III. Water Quality Target Criteria

The MDEP Closure Order identified 5 specific criteria for determining "successful corrective action" at PTL under the MDEP Solid Waste Regulations. These criteria incorporate the state Maximum Exposure Guideline (MEG) values and the federal Maximum Contaminant Level (MCL) and Ambient Water Quality Criteria (AWQC) values.

These criteria are as follows.

- Groundwater Quality on PTL Property:
  - Specific Conductance must be less than 500 umhos/cm

- Groundwater Quality off of PTL Property:
  - Groundwater must be below the applicable MCLs and MEGs;
  - Specific Conductance must be less than 400 umhos/cm
  - Dissolved Methane must be below 700 ug/L

- Surface Water Quality:
  - Surface water quality must existing water quality classification standards

These criteria must be met at the PTL monitoring locations during the 30 year post-closure period in order for the MDEP to determine that corrective actions have been successful. The 30-year post-closure period began in 2010, so it is premature to expect that monitoring locations will meet these criteria currently. However, tracking data against these criteria will allow PTL, the MDEP and the Town to judge whether the existing corrective actions will be sufficient to meet these criteria over time, or whether supplemental corrective actions may be necessary in the future.

IV. Water Quality Overview

In accordance with the Post-Closure Environmental Monitoring Plan, water quality is monitored two or three times each year at a network of sampling locations around PTL. These monitoring points are located in different regions around the landfill and include groundwater monitoring wells, residential wells and surface water, as summarized in Table 1.

An overview of the data is reflected in Table 1 and discussed below.

Discussion of Water Quality Monitoring. As noted in Table 1, the majority of monitoring locations have improved (i.e., a downward trend) since 2008, although the improvements have generally been gradual.

Table 1
PTL 2014 & 2015 Water Quality Monitoring Summary

Monitoring Pt	Analysis[1] (Frequency/yr)	Specific Cond. Range[2] (umhos/cm)	Predominant Trend Since 2008[3]
South/Southeast			
200*	F, L (3)	472 - 691	Down
641	F, L (3), M (2)	922 – 1,368	Down
MW-906B*	F, L (3), M (2)	451 - 513	Down
MW02-801A	F, L (3), M (2)	>3000	Down
MW02-801B	F (3)	2000 - >3000	None**
MW03-802A	F, L (3), M (2)	612 – 837	Down
MW03-802B	F (3), M (1)	1077 – 1323	Up
MW03-803A	F (3), M (1)	1264 – 1343	Up
MW-03-803B	F, L (3), M (2)	1157 - 1423	Up
West & North			
MW03-804A	F (3)	682 - 845	Down***
P-914A	F, L (3)	683 – 783	Down
P-914B	F (3)	589 – 691	None
516B-B	F, L (3)	981 - 1100	Down
Northeast & East			
MW98-601A	F (2)	>2000	None
MW96-601B	F (2)	476 – 1730	None
MW01-602B*	F (2)	259 - 493	Down
MW97-123	F, L (3)	866 – 1414	None**
509A	F (3)	841 – 1144	None
509B	F, L (3), M (2)	827 – 1120	None
P-911B	F (3)	768 – 959	Down
916*	F, L (3), M (2)	257 – 616	Down
917	F, L (3), M (2)	354 – 1007	Down**
Residential			
DW04-109****	F (3), L (1), M (3)	215 - 793	
DW-103	F (3), L (1), M (3)	409 - 433	
DW-111	F (3), L (1), M (3)	Not Accessible	
Surface Water			
SW-A	F, L (3)	89 – 126	
SW-C	F, L (3)	66 – 145	
SW-D	F, L (3)	197 – 788	
SW-E	F, L (3)	241 – 914	

Notes: 1. Analyses: F=Field Parameters, L=Laboratory Parameters, M= Methane
2. SC Range Reflects 2014 & 2015 Data
3. Trend Identification Reflects Statistical Analysis in 2014 Annual Report and Review by Richard Heath of the MDEP, Independent evaluation was not conducted for this review.
4. Wells in **BOLD*** are close to or below Corrective Action Criteria.
5. ** = Decrease in 2015 Specific Conductance
6. *** = Increase in 2015 Specific Conductance
7. **** = DW08-109 2015 Specific Conductance was below Off-Site Criteria:400 umho/cm

Comparison to of 2014 & 2015 Data to the Target Criteria

- Groundwater at MW-200 was below the 500 umhos/cm target criteria for all three sampling events during 2014 and one event in 2015. Groundwater at MW-906B and MW-01-602B was below 500 umhos/cm at all sampling events in 2015. Prior to 2013, all groundwater was above the 500 umhos/cm criteria.

- Groundwater at DW09-109 was below the 400 umhos/cm target criteria during the 3 sampling rounds in 2015.

- Groundwater exceeds several MCL and/or MEG values at off-site monitoring points. Compounds that exceed MCL or MEG values include arsenic (at MW-916, MW-917 & DW-103), sodium (DW-103), manganese (MW-916 & MW-917) and iron (MW-917).

- Groundwater was below the 700 ug/L methane target criteria for off-site wells at DW-103, MW-916 and MW-917 in 2014 and 2015. Methane concentrations have been below the 700 ug/L criteria in DW04-109 since the September 2014 sampling event.

- Surface water meets the applicable classification criteria and AWQC standards.

As noted above, there has been a gradual improving trend in specific conductance and related cations and anions in many of the locations included in the monitoring network at the PTL site. There are several locations where significant improvements have been observed as a result of specific actions.

- Groundwater quality improved significantly at MW01-602B near the northeast corner of the landfill after repairs were made to the leachate collection system in this area in 2008 and 2009.

- Groundwater quality related to migration of landfill gas has improved significantly in several wells east of the landfill (e.g. MW-916, MW-917, DW04-109) since PTL began operation of external gas extraction wells, particularly PTGW08-1, in this area.

- The overall trend in water quality at well MW97-123 in the northeast corner of the landfill rose from 2008 through 2011. Since 2012, the specific conductance in MW97-123 has declined from approximately 1700 umhos/cm to a low of 866 umhos/cm in July 2015. In the 2014 Annual Report, Sevee & Maher Engineers suggests that the changed in this well are related to the repair of the leachate collection system in the vicinity of MW01-602 in 2008 and 2009.

There are also several locations noted in Table 1 where the rising trends have been observed. A review of data at these locations is discussed below.

- MW03-802B, -803A, -803B: These monitoring wells are along the south side of the landfill and have generally shown elevated increasing concentrations of specific conductivity and other parameters since the wells were installed in 2003. During 2012, PTL began operation of 2 gas extraction wells PTGW08-12 and -13 in the vicinity of the 802 and 803 wells. In response to the gas extraction, the methane concentrations in these wells have decreased, however the specific conductance have continued to increase. This suggests the potential for leachate migration in this area that is influencing the rising trend in these wells.

Discussion of Arsenic in Groundwater. The 2014 Annual Report identified that the concentration of arsenic exhibited a 3-year increasing trend in 9 of the 12 on-site locations where arsenic is analyzed. The increase was attributed to a combination of factors related to closure (e.g., completing the cover, decreasing recharge to the waste mass, etc.). During 2015, arsenic concentrations continued to increase in 4 wells, decreased in 2 wells and the rest of the wells remained in the same (elevated) range as was measured in 2014.

In response to this trend, the MDEP requested and PTL agreed to conduct a residential well sampling event in 2014 to gather data on the concentration of arsenic off-site wells around the landfill. Twenty-one sampling locations were identified and access was obtained to wells at 14 of these locations. The June 2014 arsenic concentrations were below the detection limit at all off-site wells except DW-103, where the concentration was 0.012 mg/L, slightly above the MCL and MEG concentrations for arsenic of 0.010 mg/L. Arsenic was detected at concentrations below the MCL & MEG at the PTL office well and the well at the Gas to Energy plant.

After reviewing the data, the MDEP concluded that the arsenic sampling program "did not suggest widespread impact of the closed landfill on water quality of the surrounding residential wells included in the investigation". To provide further confirmation of this initial conclusion, the MDEP requested and PTL agree to include the historically sampled residential wells in the three rounds of sampling planned for 2015. Wells identified as DW-103 and DW04-109 (east), DW-104 (south) and DW-105 (west) were sampled and analyzed for arsenic in April, July and October 2015. The 2015 data were as follows.

- Arsenic was detected in the 0.014 to 0.019 mg/L range in DW-103, which is above the MCL/MEG value of 0.010 mg/L but within the historical range for this well.

- Arsenic was detected in the 3 sampling events in DW04-109 at concentrations of 0.005 to 0.006 mg/L, which his below the MCL/MEG and below concentrations of 0.036 to 0.042 mg/L detected in 2013 and 2014.

- Arsenic was detected in the 3 sampling events in DW-104 at concentrations of 0.005 to 0.007 mg/L, which is below the MCL/MEG and below concentrations of 0.011 to 0.012 mg/L detected in 2010 and 2011.

- Arsenic was detected in July and October in DW-105 at 0.006 mg/L, which is below the MCL/MEG and below concentrations of 0.011 to 0.015 mg/L detected in 2010 and 2011.

The 2014 and 2015 data from off-site residential wells do not appear to indicate that the landfill is causing elevated arsenic concentrations off-site.

Water Quality Monitoring - 2016 to 2020. In March 2016, Sevee & Maher Engineers (SME) on behalf of PTL sent an e-mail to the MDEP with suggested changes to the on-going Environmental Monitoring Plan (EMP) for 2016 to 2020. The MDEP has not yet provide their review of the requested changes to SME or PTL.

Suggested changes that we believe should be discussed further with PTL and the MDEP include:

- Timing of the 2 sampling events (event #2 in the fall versus the summer);
- Reducing the sampling of dissolved methane to one time per year in monitoring wells;
- Eliminating off-site well DW-111 (which has not be accessible during 2014 and 2015 sampling events) unless this well has been sealed and would not be reused in the future.

V. Geotechnical Monitoring

The geotechnical monitoring program for the landfill is summarized in a report prepared by Dr. Richard Wardwell, PE, who has been involved with the geotechnical monitoring at that site for many years. The observational approach is utilized in the monitoring, based primarily on topographic surveying of the surface and surveying of multiple survey monuments that were embedded in the surface of the landfill cover system. The primary purposes of the geotechnical monitoring are to assess if the internal waste mass and foundation soils are stable, and to assess if the cover system is performing as-designed.

Internal and Waste Mass Stability: The internal and waste mass stability is assessed by an evaluation of the horizontal and vertical deformation of four displacement monuments at the toe of the landfill along the east side. The horizontal and vertical movements measured do not indicate that there are any detrimental large-scale movements occurring that would be indicative of large-scale waste-mass or foundation soil movements. There is a significant amount of scatter in the data, but the overall trends indicate that the foundation soils and waste mass are not undergoing detrimental displacements. There was some settlement measured in three of the four monuments in the last survey date, but there was no unusual horizontal movement associated with this reading. The cause of the settlement is being investigated, but since there was no unusual horizontal movement, these settlement readings were not thought to be related to instabilities. It is also noted that if there were instabilities, the most likely movement would have been heave at these locations, not settle.

Cover system Monitoring: The performance of the cover system is also assessed using survey measurements of embedded displacement monitors. Several monuments are installed in each phase of the closure, and horizontal and vertical measurements have been made at least quarterly since those phases were closed. The report includes the plots of horizontal and vertical deformation.

- The horizontal deformation plots for all phases do not indicate any trends that would be indicative of large scale movements that would be detrimental to the cover system integrity. The data are scattered, and some general downslope creep is evident but this is expected given the overall large deformation of the waste mass due to secondary settlement.
- The vertical displacement plots all indicate that the rate settlement is diminishing with time. This is also expected especially since waste loading has stopped and the landfill is now covered. These vertical displacement plots are also used to calculate strain that has likely occurred in the liner. Excessive strain could result in a rupture of the primary geomembrane liner, therefore these periodic assessments of liner strain are important to demonstrate that the movements that are occurring are within those originally predicted during the design phase. The strain calculations are summarized in a table and indicate that the likely strain incurred to date is well within the allowable strain for this type of membrane. The current rate of strain is also extrapolated over the 30 year closure period and those extrapolations are also well within the allowable strain for the liner.

Topographic and Drainage Swale Surveying: Topographic surveying of the landfill is also performed on a regular basis. The results of these surveys do not show any unusual features on the topographic surface that would indicate large scale movements. The drainage ditch invert elevations were recently surveyed for baseline elevations. These surveys indicate that overall the drainage swales are draining in a positive direction and shedding surface and water that has infiltrated through the surficial cover soils. The survey did show some localized low spots, which are highlighted for surveillance and if necessary, remedial repairs in the future to restore positive drainage. One additional point that was not indicated, is that the overall side slopes of the landfill are becoming flatter. The side slopes were designed originally at a 2.5H:1V slope angle. As the waste mass consolidates, these side slopes have gradually flattened and s will continue to flatten. The flatter slopes will result in an overall increase in the factor of safety from that calculated after construction, provided the drainage system in the cover system remains functional as-designed.

VI. Closing

Overall, the water quality monitoring data from PTL reflected in the 2014 Annual Report and 2015 data indicates that there has been gradual improvement at many monitoring locations. There are several on-site locations that are close to or meet the corrective action criteria, compared to 2013 when no locations met these criteria. However, groundwater in several wells south and southwest of the landfill has exhibited increasing concentration trends.

Operation of the corrective action systems (groundwater extraction and external gas extraction) should be continued to maintain the improvement and PTL should be encouraged to look for opportunities to improve and enhance the correction action systems to accelerate the rate of improvement in the future.

The geotechnical monitoring at the landfill indicates that the cover system is performing as designed, and that there are no indications of large-scale waste mass of foundation instabilities.

We hope that the information summarized in this memorandum is helpful to the Town. If there are any questions or a more detailed review would be appropriate, please give me a call at your convenience.

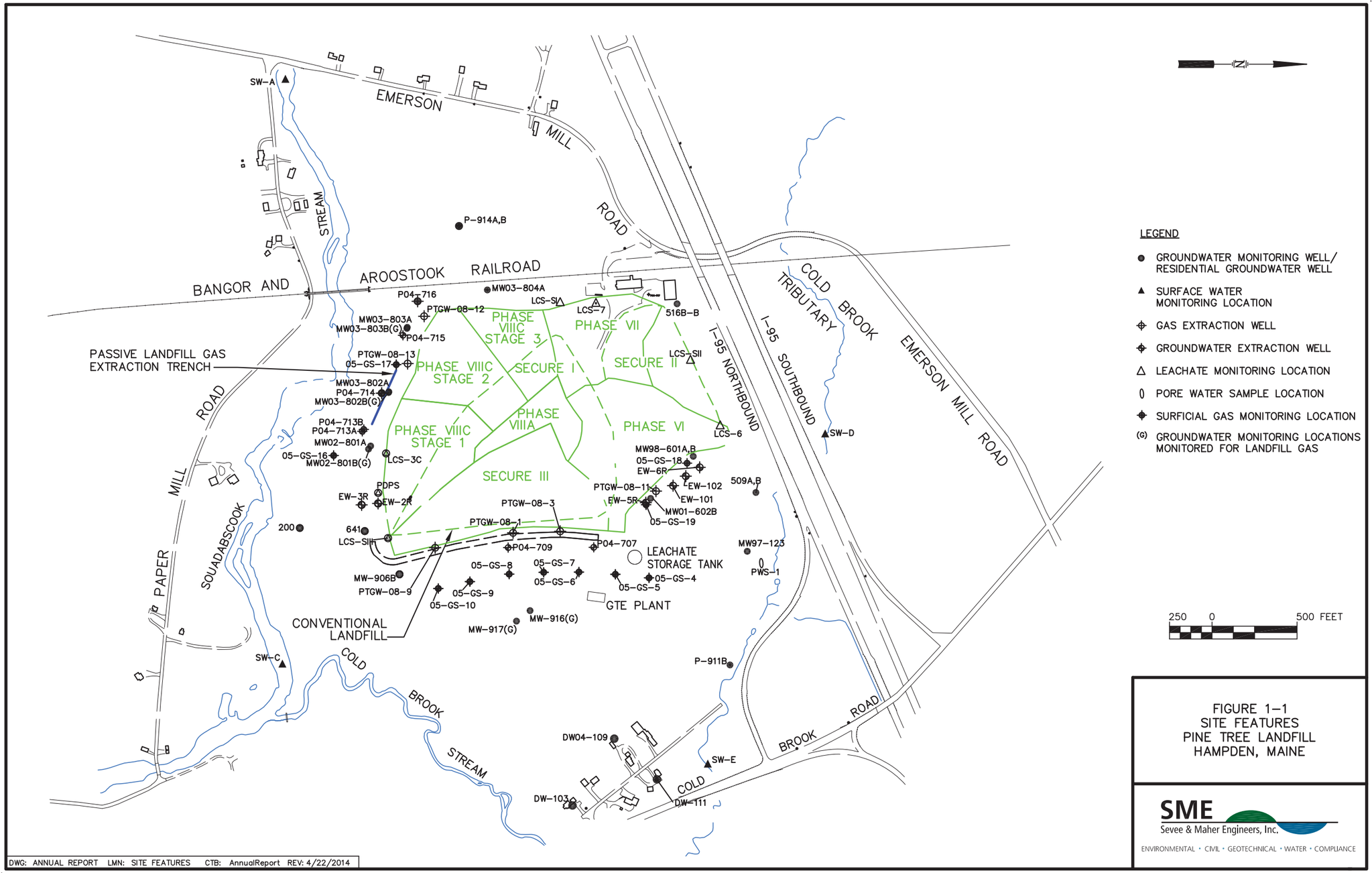

FIGURE 1–1
SITE FEATURES
PINE TREE LANDFILL
HAMPDEN, MAINE

SME
Sevee & Maher Engineers, Inc.
ENVIRONMENTAL • CIVIL • GEOTECHNICAL • WATER • COMPLIANCE

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Transfer station operations (requested by Councilor McAvoy)

Sewer Ordinance – sewer connection fees and protocols – referral from October 26, 2015 meeting – Sean Currier, DPW Director

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: March 24, 2016

RE: Update to Sewer Ordinance and Fees Ordinance

At the October 26, 2015 meeting of the Infrastructure Committee, DPW Director Currier recommended that the Hampden Sewer incorporate connection fees and protocols (i.e. inspections, etc.) based on those in effect in Bangor, both because these represent better procedures and more reasonable fees, and because our sewer discharges to Bangor.

It has taken some time to take the Bangor documents and weave them in to our Ordinance structure. The drafts enclosed seek to integrate these practices in a way that makes sense.

At Monday's meeting, we'll ask the Committee to refer these proposed Ordinances to the Council. It is our hope that, at the April 4 meeting, these Ordinances can be referred to public hearing. Our goal is to open a public hearing on April 18.

TOWN OF HAMPDEN

Draft

The Town of Hampden Hereby Ordains
Proposed Amendments to the Fees Ordinance

Deletions are ~~Strikethrough~~ Additions Double Underlined

TOWN OF HAMPDEN, MAINE
SEWER ORDINANCE

ADOPTED by Hampden Town Council, December 5, 2011
Effective Date: January 4, 2012

AMENDED: Hampden Town Council April 4, 2016
Effective: May 4, 2016

CERTIFIED BY: **Paula Scott**
Name

Deleted: Denise Hodsdon

Town Clerk
Title Affix Seal

TOWN OF HAMPDEN, MAINE
SEWER ORDINANCE

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Waste haulers must dispose of hauled wastewater at the designated receiving structure only during such days and times as designated by the Town. Waste haulers using trucks having a volume gauge or sight glass will be charged at the applicable rate per 1,000 gallons of wastewater discharged. Trucks lacking such a volumetric measuring device or other means satisfactory to the Town to measure the volume of wastewater discharged will be presumed full and will be charged accordingly.

Any person who discharges hauled wastewater at any other location in the Town or at the designated receiving structure at other than the times allowed shall be subject to applicable civil and criminal penalties, including those prescribed at 30-A M.R.S.A. § 4452 and 38 M.R.S.A. §§ 349 and 1319-T.

A suitable odor-control chemical approved by the Town shall be introduced to the hauled wastewater prior to its transportation to the designated receiving structure. Sufficient quantities of such chemical shall be used by the waste hauler to adequately control odors emanating from the hauled wastewater.

If at any time, in the opinion of the Town, the discharge of hauled wastewater is placing an excessive burden on the POTW's treatment process or is otherwise causing a nuisance, the Town can refuse to accept such wastewater for treatment in the POTW.

ARTICLE 4
BUILDING SEWERS AND CONNECTIONS TO PUBLIC SEWERS

Section 4.1. State Plumbing Code: The provisions of this article shall be deemed to supplement provisions of the State Plumbing Code with respect to building sewers and connections thereof to public sewers. In event of conflicts between this article and the state plumbing code, the provisions of this article shall be deemed to apply. Permits and fees stipulated hereunder are additional to any permits or fees, or both, required under the State Plumbing Code.

Section 4.2. Connection to Public Sewers: No person shall uncover, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written Street Opening/Utility Connection permit from the Town. Any person proposing a new discharge into the system or a substantial change in the volume or character of pollutants that are being discharged into the system shall notify the Town at least 45 days prior to the proposed change or connection and pay applicable sewer connection fees.

4.2.1. Street Opening/Utility Connection Permit: Said Permit shall specify whether the connection is for residential or commercial service or for service to establishments producing or handling industrial wastes. In either case, the owner or his or her agent shall make application on a special form furnished by the Town. The permit application shall be accompanied by any plans, specifications, or other information required in accordance with the provisions in the Street Opening/Utility Connection Ordinance. The fee for the Street Opening/Utility connection permit is established in the Town of Hampden Fees Ordinance.

4.2.2. Except on an emergency basis to serve existing structures only (e.g. following a failure of an existing private septic system), no street opening/utility connection permit shall be issued authorizing connection to any public or private sewer line or sewer extension which is found by the Town to be inadequate, by reason of its design, condition or lack of hydraulic capacity, to accommodate the additional volume or flow or types of wastes to be discharged from the premises concerned; or which by reason of its design, condition or hydraulic capacity, causes or materially contributes to upsets, surcharges, slug loads or untreated outfalls at any downstream or other location. All permits issued on an emergency basis under this subsection shall bear the designation of "emergency permit" and shall be subject to annual review by the Public Works Director and/or the Town Manager. Any emergency permit shall be deemed terminated upon correction of the condition that led to its issuance.

4.2.3. Except for the purpose of correcting the violation concerned, no new street opening/utility connection permit shall be issued to any person who has been cited by the Public Works

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Director or the Town Manager for violations of this ordinance if such violation remains uncorrected at the time of application.

4.2.4. Backwater Valves Required: To protect from the possibility of backflow of sewage, backwater valves shall be required for all new connections to public sewers and shall also be required when existing sewer services are excavated.

1. Material. All bearing parts of backwater valves shall be of corrosion-resistant material. Backwater valves shall comply with ASME A112.14.1, CSA B181.1 or CSA B181.2.

2. Seal. Backwater valves shall be so constructed as to provide a mechanical seal against backflow.

3. Diameter. Backwater valves, when fully opened, shall have a capacity not less than that of the pipes in which they are installed.

4, Access. Backwater valves shall be installed so that access is provided to the working parts for service and repair.

Section 4.3. Permits and Connection Fees: There shall be two (2) classes of building sewer connection permits/fees:

1. residential service, and
2. commercial, industrial, and other nonresidential service.

In either case, the owner or owner's agent shall make application on a special form furnished by the Town. The permit application shall be supplemented by any plans, specifications, or other information considered pertinent to the judgment of the Town. A permit and inspection fee at the rate prevailing at the date of application shall be paid to the Town at the time an application is filed. The Town Council shall fix a permit and inspection fee for each commercial, industrial, or other non-residential building, after recommendation of the Town Manager based on the size and nature of the operation proposed in such commercial, industrial, or other non-residential building as compared to the demands of a residential structure. The permit (or sewer connection fee) is calculated based on a form (Sewer Connection Fee Worksheet) provided by the Town. No sewer connection fee will be required for repair of an existing sewer service, although a Street Opening/Utility Connection Permit will be required as applicable.

Section 4.4. Shared Building Sewers: A separate and independent building sewer shall be provided for every building except where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, in which case the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer. Separate clean outs shall be provided for both buildings. Existing building sewers may be used in connection with new buildings only when they are demonstrated by examination to be in full conformance with all requirements of this ordinance.

Section 4.5. Quality and Weight of Materials: The building sewer shall be cast iron soil pipe, PVC pipe or other suitable materials approved by the Town and meeting current State Plumbing Code. The quality and weight of materials shall conform to the specifications of the State Plumbing Code. All joints shall be gastight and watertight. Where the building sewer is exposed to damage by tree roots or is installed in filled or unstable ground, the Town shall have the authority to stipulate such special pipe materials or installation provisions as it deems necessary for the circumstances. Testing of the building sewer installation shall be done at no cost to the Town, in the presence of the Town Representative and using a Town approved method.

Section 4.6. Size and Slope of Sewer: The size and slope of the building sewer shall be regulated by the State Plumbing Code, but in no event shall the diameter be less than 4 inches. The slope of a 4 inch pipe shall not be less than one-quarter inch per foot. The slope of a six-inch pipe shall not be less than one-eighth inch per foot.

Section 4.7. Elevation and Location of Sewer: Whenever possible, the building sewer shall be

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brought to the building at an elevation below the basement floor. No building sewer shall be laid parallel to or within three (3) feet of any bearing wall which might thereby be weakened. The depth shall be sufficient to afford protection from frost. If frost protection depth of (5ft. min) is not attainable due to ledge or other circumstances, rigid styrofoam insulation may be used at the rate of 1 inch per 12 inches of soil depth required. The building sewer shall be laid at uniform grade and in straight alignment insofar as possible. Changes in direction shall be made only with approved pipe and fittings.

Section 4.8. Building Drains: In all buildings in which any building drain is too low to permit gravity flow to the public sewer, sanitary sewage carried by such drain shall be lifted by approved artificial means and discharged to the building sewer.

Section 4.9. Excavations and Backfilling: All excavations required for the installation of a building sewer shall be open trench work unless otherwise approved by the Town. Pipe laying and backfill shall be performed in accordance with ASTM Specification C12 except that no backfill shall be placed until the work has been inspected by the Town. Refer to Section VI of the Street Opening/Utility Connection Ordinance for additional requirements.

Section 4.10. Joints and Connections:

4.10.1. Cast Iron Pipe: Cast iron pipe joints shall be of the push-on type and conform to ASTM 0564-70 (Rubber Gaskets) and ANSI (A21.11). Fittings shall be of the type specifically manufactured for the cast iron pipe used. Cast iron pipe, joints, and fittings shall be cement lined and double asphalt coated inside and bituminous coated outside. Lubricants shall be suitable for lubricating the gasket to facilitate assembly of the pipe joint. The lubricant shall be non-toxic, shall not support the growth of bacteria and shall have no deteriorating affects on the gasket material.

4.10.2. Plastic Pipe:

4.10.2.1. ABS pipe fittings and connection shall conform to ASTM (D1527) for Schedule 40, 80, 120 or ASTM (2661) for DMV Schedule 40.

4.10.2.2. Schedule 40 PVC fittings and connections shall conform to ASTM (D2665) for DMV Schedule 40 or ASTM (D1785) for Schedule 40, 80, 120 PVC. Fittings and connections shall be installed in accordance with the manufacturer's written instructions.

4.10.2.3. SDR 35 pipe fittings and accessories shall be as manufactured and furnished by the pipe supplier or approved equal and have a bell and/or spigot configuration compatible with SDR 35 PVC. Joints shall meet the requirements of ASTM (D3212) "Joints for Drain and Sewer Plastic Pipe Using Elastomeric Seals".

4.10.3. Joints: All Joints shall be sealed with gaskets of rubber, or other approved elastomeric material, as provided by the manufacturer of the pipe being installed. Joints shall be made up in conformance with the manufacturer's written installation instructions. Copies of the installation instructions shall be submitted to the Town a minimum of one week prior to the construction.

4.10.4. Alternate Materials and Methods: Alternate jointing materials and methods may be used only if of standard manufacture for the pipe and fittings being installed and submitted for approval to the Town.

Section 4.11. Connections: Connections of a building sewer into a public sewer shall be made, at a location determined by the Town.

4.11.1. Connections at Manholes: Tapping of pre-cast manholes shall be done with core drill or other approved method. A flexible pipe to manhole connector shall be employed in the connection of service lines to pre-cast manholes. The connector shall be the sole element relied on to assure a flexible watertight seal of the pipe to the manhole. No adhesives or lubricants shall be employed in the installation of the connector into the manhole. The rubber for the connector shall comply with

ASTM C443 and ASTM C923 and consist of EPDM and elastomer designed to be resistant to ozone, weather elements, chemicals, including acids, alkalis, animal and vegetable fats, oils and petroleum products from spills.

All stainless steel elements of the connector shall be totally non-magnetic Series 304 Stainless, excluding the worm screw for tightening the steel band around the pipe which shall be Series 305 Stainless. The worm screw for tightening the steel band shall be torqued by a break-away torque wrench available from the pre-cast manhole supplier, and set 60 - 70 inch/lbs.

The connector shall be installed in the manhole wall by activating the expanding mechanism in strict accordance with the recommendation of the connector manufacturer.

The connector shall be of a size specifically designed for the pipe material and size being utilized on the project.

The contractor shall furnish evidence that materials meet or exceed the requirements given in ASTM Specification C923-84, which covers rubber seals used in concrete sewer pipe and culvert Joints.

	PHYSICAL PROPERTIES	**ASTM C-023**	**ACTUAL**
I.	Chemical Resistance		
	1 N Sulfuric Acid	No weight loss	No weight loss
	1 N Hydrochloric Acid	No weight loss	No weight loss
II.	Tensile, psi, min	1,200 psi	1,550 psi
	Elongation at break	350% min	450% min
	Hardness	+ 5 from the manufacturer's specified hardness	44 + 5
III.	Accelerated Oven Aging: 96 hrs @ l58°F		
	Tensile Change, % max	15	10.4
	Elongation Change, % max	20	14.0
IV.	Comp.Set, % max	25	19.6
V.	Water Absorption: 48 hrs @158°F Weight increase, % max	10	3.5
VI.	Ozone Resistance 120 Hrs @ 100° + 02°F	0	0
VII.	Low-temperature brittle point Fracture @ -40°C	None	None
VIII.	Tear Resistance	200 lbf/in	200 lbf/in

On completion of the installation, the Contractor shall patch all cracks, gaps or other damage to the manhole with non-shrink epoxy grout or other approved material. Following installation the contractor shall pneumatically test the service per Article 5 - Section 5.4.2 of this Ordinance.

4.11.2. Connections at Wye Branches: When connecting a 4 or 6 inch building sewer to a public sewer, an inline wye branch fitting or tapped gasketed saddle connection shall be used. The fitting shall be of the proper design for the public sewer pipe materials. Any building sewer greater than 6 inch diameter shall be connected to the public sewer at a manhole. If a manhole is not available within the project limits, the developer and/or owner shall install one at a location determined by the Town.

The tap shall be made with a hole saw and all rough edges sanded smooth. The tap location shall be centered horizontally on the pipe spring line. The service shall extend horizontally from the public sewer a distance not less than 2 feet.

The wye-saddle gasket shall be rubber or elastomeric material of section designed to effect a water

tight seal without transfer of significant stress to the sewer pipe. The wye-saddle shall be securely clamped in place with a minimum of two each 3/4 inch wide, Type 304 stainless steel bonds.

4.11.3. Service Marker: Electronic markers shall be provided at the terminus points of all new services or point of reconnection for all existing services. Marker disks shall be placed directly over the point of termination at least 6 inches above the pipe. Depth of marker burial shall not be less than 4 feet or more than 6 feet. Markers shall be laid in a level position and hand backfilled to 1 foot above the disk to prevent movement or damage.

Markers disks shall consist of a passive waterproof device capable of reflecting a specifically designated repulse frequency turned to the utility being installed. Marker disks shall be color coded green (for Sanitary) in accordance with AWPA Utility Location and Coordinating Council Standards. Markers shall be of the brand and style specified by the Town.

4.11.4. Swing Ties: Swing ties locating the terminus points of all new services or point of reconnection for all existing services shall be provided to the Town. Ties shall consist of measurements to permanent structures tabulated on reproducible record drawings submitted to the Town at completion of construction.

Section 4.12. Inspection and Connection to Public Sewers: The applicant for the building sewer permit shall notify the Town when the building sewer is ready for inspection and connection to the public sewer. No public sewer shall be disturbed except under the supervision of the Town. The Town shall be available to supervise and inspect the connection within 48 hours of notification of readiness.

4.12.1. Guarding of Excavations: All excavations for building sewer installations shall be adequately guarded with barricades and lights so as to protect the public from hazard.

4.12.2. Restoration of Public Property: Streets, sidewalks, parkways, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the Town.

Section 4.13. Building Sewers Requiring Frequent Maintenance: Maintenance of the building sewer, as defined in section 1.0 of this Ordinance, shall be the responsibility of the property owner. Any building sewer serving a school, hospital, or similar institution or public building, or serving a complex of commercial or industrial buildings, or which, in the opinion of the Town, will receive sewage or industrial wastes of such volume or character that frequent maintenance of said building sewer is anticipated, then such building sewer shall be connected to the public sewer through a manhole. If required, a new manhole shall be installed in the public sewer and the location of this manhole and the building sewer connection to it or to any existing manhole shall be as specified by the Town.

4.13.1 Interceptors and Traps: Grease oil and sand interceptors or traps shall be provided when, in the opinion of the Town, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand and other harmful ingredients; (except that such interceptors shall be required for private living quarters or dwelling units). All interceptors shall be of a type and capacity approved by the Town and shall be located so as to be readily and easily accessible for cleaning and inspection. Grease and oil interceptors or traps shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be of substantial construction, watertight, and equipped with easily removable covers which, when bolted in place, shall be gastight and watertight.

Section 4.14. Infiltration: The maximum acceptable infiltration rate for all sewers constructed after enactment of this amendment shall be 100 gpd/in-mile of extent including service connection to the building foundation.

The maximum acceptable infiltration rate for all existing private sewers shall be 1,000 gpd/in-mile of

extent, including service connection to the building foundation.

Infiltration rate measurements shall be made using manufacturer calibrated insert weirs and sound engineering practices. Infiltration measurements shall be reported in tabular form, showing all reaches monitored, antecedent precipitation, and groundwater conditions, and signed by a professional engineer registered in the State of Maine. A current manufacturer's calibration certificate for the weirs used to take the infiltration measurements shall he included with the report.

Section 4.15. Costs and Expenses Borne by the Owner: All costs and expense incident to the installation, connection and maintenance of the building sewer shall be borne by the owner. The owner shall indemnify the Town from any loss or damage that may directly or indirectly be occasioned by the installation, maintenance, or failure of the building sewer.

ARTICLE 5
SEWER EXTENSIONS

Section 5.1. Sewer Extensions Constructed by the Town: Public sewer extensions may be constructed by the Town under public contract if, in the opinion of the Town Council, the number of properties to be served by such extension warrants its cost. Property owners may propose such sewer extensions within the Town by drafting a written petition signed by a majority of the benefited property owners, and filing it with the Town Council. The cost of such extensions may be assessed to the benefited property owners in any lawful manner determined by the town council. Under this arrangement the property owner shall pay for and install the building sewer from the public sewer to the property to be served in accordance with the requirements of Article 4.

Section 5.2. Sewer Extensions Constructed by Private Developer: If the Town does not elect to construct a sewer extension under public contract, the property owner, builder, or developer may construct the necessary sewer extension, if such extension is approved by the Town Council and constructed in accordance with the requirements of Section 5.3. The cost of sewer extensions thus made, including all building sewers, shall be absorbed by the developers or property owners. Each building sewer must be installed and inspected as previously required and the inspection fees shall be paid therefore. Design of sewers shall be as specified in Section 5.3. and Section 5.3.1. The installation of the sewer extension shall be subject to inspection by the Town and the expenses for this inspection shall be paid for by the owner, builder or developer. The Town's decision shall be final in matters of quality and methods of construction. Before it may be used, the sewer as-constructed must pass the inspection test(s) specified under Section 5.4.

To the maximum extent practicable all sewerage extension shall be constructed within approved street right-of-ways. Otherwise, sewerage extensions shall be constructed centered in a 20 foot wide right-of-way deeded to the Town.

Section 5.3. Requirements for Extending Sanitary Sewer Systems: All extensions to the sanitary sewer system shall be properly designed in accordance with this Ordinance and the most recent edition of the Recommended Standards for Sewage Works, as adopted by the Great Lakes Upper Mississippi River Board of State Sanitary Engineers. All design computations, plans and specifications shall be stamped and signed by a professional engineer, currently registered in the State of Maine. Plans and specifications and computations for sewer extension shall be submitted to and approval obtained from the Town before construction may proceed. Plans and profiles of proposed sewerline construction shall be a scale of 1 inch equals 40 feet horizontal and 1 inch equals 4 feet vertical. Topographic base mapping shall be controlled with minimum 2 foot contour intervals. All mapping shall be based on MSL (Mean Sea Level) and Digital Data of GEO referenced plans as described below:
Submission of digital data/preparation of geo-referenced plans: The digital submission should include all applicable sewer features (pipes, junctions, pumps, etc), topography, property lines, wetlands, or any other applicable features as would be shown on a printed plan. Features are to be GPS located using at least sub-meter accuracy GPS units. Plans are to be geographically referenced using no less than four non-linear (dispersed across the area) projected control points of at least sub-meter accuracy and shall

be submitted in one of two acceptable formats: 1) Universal Transverse Mercator (UTM) Zone 19 meters, or 2) US State Plan Coordinate System Maine Zone East 1983 feet. Accepted file types are MapInfo .tab and associated files, ESRI .shp and associated files, AutoCAD .dwg files. AutoCAD files must be purged of all empty layers and presented with model space objects only. All files are to be submitted with clear layer names, such as "Sewer-Line-8inch", that obviously describe each layer (for example, "gp-pl-0" is not acceptable). Metadata should be included if available. If not available, a text file should be included with the following: surveyor or engineer name and license number, phone number, mailing address, email address, projection and datum used, date of preparation of data, description of equipment used to collect data (make, model, manufacturer's reported accuracy level), any disclaimers, limitations, or other notes. Files should be submitted on a CD or DVD.

5.3.1. All extensions of the sanitary sewer system constructed under Section 5.2 shall be designed to provide gravity collection and flow from the development to the point of connection with the existing public sewer system. Pump stations shall not be incorporated in the design of sewer systems in any proposed development within the Town of Hampden, Maine except under the following conditions:

5.3.1.1 Lift stations serving individual single-family homes are exempt from the foregoing requirements of Section 5.3.1, unless said homes are part of a common scheme of development, such as a subdivision or group development.

5.3.1.2 The parcel of land on which the development is to be located shall be no more than 500 feet from an existing public gravity sewer line.

5.3.1.3 No force main shall exceed 2,000 feet in length unless prior approval has been obtained from the Town Council upon their finding that such increased length is the only practicable option to service the subject property, and upon their finding that any increased operations and maintenance costs that would result from such increased length over the life of the infrastructure will be offset by sewer fees to be paid by the user or users of the force main.

5.3.1.4 A gravity sewer is not feasible. For example: Although a 2" force main sewer might be less expensive to install than an 8" gravity sewer, the gravity sewer must be not feasible, not simply more expensive.

5.3.1.5 The private pump stations and sewer extensions must be maintained in perpetuity by either a single private entity or a maintenance association.

5.3.1.6 Any private pump stations and sewer extension must be designed and stamped by a duly licensed and qualified professional engineer, registered in the State of Maine.

5.3.1.7 The private pump station design, and the construction thereof, must include a redundant sewage lift pump, backup electrical generator and approved alarm system to provide warning in case of mechanical failure.

The Planning Board shall not approve any development or subdivision that includes private pump stations or private sewer extensions unless the design thereof and the legal documents showing evidence of their perpetual maintenance have been reviewed and approved by the Town Council with written recommendation of the Town Manager, Town Attorney and Town engineering consultant.

5.3.2. Materials, Joints and Connection to Building Sewers: Gravity sewer pipe and fittings shall be Ductile Iron (DI) or Po1yvinyl Chloride (PVC) unless otherwise approved by the Town.

Minimum internal pipe diameter shall be 8 inches. DI pipe shall be a minimum of Class 51 conforming to the requirements of ANSI A21.5 and ANSI A21.11 push on joints. Pipe shall be cement lined and double asphalt seal coated inside and bituminous coated outside. PVC sewer pipe and fittings 15

inches or less in diameter shall conform to the requirements of ASTM D3034 or ASTM F789, sizes 18 inches through 27 inches shall conform to ASTM P679. Pipe wall thickness shall be sized in accordance with ASTM D2412.

Pipe joining shall be bell and spigot with elastomeric gaskets. Pipe will be furnished in standard lengths. PVC to be installed at a depth greater than 14 feet shall meet the requirements of AWWA C900 (PVC Pressure Pipe). All Class 100 pipe shall meet the requirements or DR 25, Class 150 pipe shall meet the requirements of DR 18 and Class 200 shall meet the requirements of DR 14.

Wye branch fittings shall be installed for connections to building sewers in accordance with Section 4.10.

5.3.3. Excavation: Excavation for pipe lines shall be true to line and grade and shall be carried to the bottom of the pipe or to 6 inches below the bottom of the pipe. The Town may require additional excavation and backfill with granular material if unstable soil conditions are encountered.

For pipe diameters 12 inches and less the trench width - two pipe diameters above the pipe invert - shall be 36 inches. The trench width for diameters in excess of 12 inches - two pipe diameters above the pipe invert - shall be the pipe outside diameter "0" plus 2 feet. The trench width for parallel pipes in the same trench shall be 4 feet 6 inches, two pipe diameters above the highest pipe invert. The trench width shall not exceed the above limits unless authorized by the Town.

All Excavated areas shall be properly shored and braced so that earth will not slide or settle and so that all surrounding property and structures of any kind will be duly protected from damage. Work shall be performed in accordance with all existing State and Federal safety requirements. If in the opinion of the Town the work area and procedures are unsafe, the Town representative shall have the right to notify the proper authorities. (i.e. OSHA)

5.3.4. Bedding Material: Pipe bedding shall consist of a foundation, side-fill to the pipe spring line, and as appropriate, fill from the spring to the top of the pipe embedment zone (12" min. over top of pipe.

PVC pipe shall be bedded in accordance with UNI B-5 Class I Bedding Conditions.

Backfill in the embedment zone for PVC pipe shall be machine placed bedding material, placed in 6 inch layers and compacted to 90% of relative density as determined by ASTM-D2049. Bedding material shall be crushed stone or gravel similar to MDOT Specification 703.06A Aggregate Base, conforming to following gradation:

Sieve Size	**Percent Passing**
1 1/2"	100
1/2	45-70
1/4"	30-55
No. 4	5-20
No. 200	0-5

Crushed stone without fine grained material will be allowed. Bedding Material – If crushed stone material is used for pipe bedding in roadway areas, filter fabric shall be placed over the full trench width and length just above the stone cover prior to placing backfill material.
Samples and a sieve analysis of the bedding material may be requested by the Town for approval prior to use.

Additionally, sieve analyses of randomly drawn samples of placed bedding material at a frequency of 1 per 2000 LF of pipe shall be provided if in the judgment of the Town, there is an apparent change in consistency of bedding material. All sampling and analyses specified herein shall be performed at no cost to the Town.

5.3.5. Pipe Thickness and Field Strength: Pipe thickness and field strength shall be calculated on the

Fees Ordinance – sewer connection fees and protocols – referral from October 26, 2015 meeting – Sean Currier, DPW Director

TOWN OF HAMPDEN

Draft

The Town of Hampden Hereby Ordains
Proposed Amendments to the Fees Ordinance

Deletions are ~~Strikethrough~~ Additions Double Underlined

ARTICLE 5
PUBLIC WORKS
Amended 11-17-03

5.1. Additional Fees

5.1.1.	Public Works Dept. Labor After 3:00 PM	$25.00/hour
5.1.2.	Street Opening/Utility Connection Permit	$50.00
5.1.3.	Sewer Connection	Determined based on proposed use and flow in accordance with Sewer Connection Fee Calculation Worksheet and Sewer Connection Fee Schedule.

5.2. Solid Waste Fees

5.2.1.	Business Companies Hauling Trash	$200.00/annually
5.2.2.	Business Hauling directly to Pine Tree Landfill or to the transfer station	$25.00/annually
5.2.3.	Non-resident Business working on Hampden Project (temp permit)	$25.00/annually
5.2.4.	Resident Transfer Station Sticker	$10.00

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Town of Hampden
Sewer Connection Fee Calculation Worksheet

Date: _____

Sewer Connection Location: _____
Address: _____

Contractor Name & Address

Name: _____
Address: _____
_____
Phone: _____

Paid:
Check Number:
Eng Receipt:
Date:

Owner Name & Address

Name: _____
Address: _____
_____
Phone: _____

Property Use: If applicable

Food Service Provided	Y	N
Grease Interceptor	Y	N
Oil/Sand Separator	Y	N

Area 1:		**gpd/unit**	**$/gpd**	**Fee**	**Category**
	Square feet		1.06	$	
	Units		1.06	$	
	Seats		1.06	$	
	Beds		1.06	$	
	Other		1.06	$	

Area 2:		**gpd/unit**	**$/gpd**	**Fee**
	Square Feet		1.06	$
	Units		1.06	$
	Seats		1.06	$
	Beds		1.06	$
	Other		1.06	$

Area 3:		**gpd/unit**	**$/gpd**	**Fee**
	Square Feet		1.06	$
	Units		1.06	$
	Seats		1.06	$
	Beds		1.06	$
	Other		1.06	$

Total Connection Fee: **$_____**
(minimum Fee for Sewer Connection $50.00)

Town of Hampden
Sewer Connection Fee Schedule

Amusement Park	Determined by Public Works Director	
Apartment Building	185	gpd/unit
Auto Body Shop	0.05	gpd/ft²
Auto Sales Garage	0.05	gpd/ft²
Bakery	0.15	gpd/ft²
Bank	0.1	gpd/ft²
Barber Shop	0.35	gpd/ft²
Beauty Salon	0.75	gpd/ft²
Boarding House	50	gpd/bed
Bowling Alley	75	gpd/lane
Car Wash	Determined by Public Works Director	
Church (sanctuary)	185	gpd
Day Care	10	gpd/child
Dry Cleaners	0.15	gpd/ft²
Duplex, any Combination	270	gpd/unit
Fast Food Restaurant (no table service)	20	gpd/seat
Funeral Home	0.05	gpd/ft²
Government Building	0.1	gpd/ft²
Health Club	0.15	gpd/ft²
Hospitals	150	gpd/bed
Hotels/Motels	100	gpd/unit
Industrial (process flow)	Determined by Public Works Director	
Laundry	2.0	gpd/20lb machine
Lodge	0.25	gpd/ft²
Medical/Dental	0.15	gpd/ft²
Mobile Homes	270	gpd
Nursing	100	gpd/bed
Offices	0.06	gpd/ft²
Restaurant	35	gpd/seat
Retail	0.05	gpd/ft²
Retirement	120	gpd/unit
Schools	10	gpd/student
Senior Housing Facility	65	gpd/island
Single Family Homes	270	gpd
Supermarket	0.05	gpd/ft²
Taverns, Bars, Lounges	0.09	gpd/ft²
Theater	3	gpd/seat
Train/Bus Stations	0.075	gpd/ft²
Utilities	0.01	gpd/ft²
Veterinarians	0.65	gpd/ft²
Warehouse	0.05	gpd/ft²

TOWN OF HAMPDEN

COMMERCIAL/INDUSTRIAL SEWER CONNECTION APPLICATION

***INSPECTIONS REQUIRED** *See Notes*

FEE: Fee derived from the Sewer Connection Fee Calculation Worksheet

Application Date: _____

Property Information:

Owner: _____

Location: _____

Map and Lot: _____

Mailing Address: _____

All new discharges, increases in discharge volume or change in the character of commercial or industrial wastewater shall require the completion of a pre-treatment survey.

Notes:

1. A backwater valve is required for all new sewer connections and existing system excavations. (*Hampden Sewer Ordinance, Article 4.2.4, Backwater Valves Required.* "To protect from the possibility of backflow of sewage backwater valves shall be required for all new connections to public sewers and shall also be required when existing sewer services are excavated… Backwater valves shall comply with ASME A112.14.1, CSA B181.1 or CSA B181.2.) "

2. No basement drains, roof drains or sump pumps may be connected to the Town of Hampden Sewer System.

3. No town way or street shall be opened for the purposes of installing or repairing sewer, water or gas lines or for any other purposes unless the individual obtains the proper approval (Street Opening/Utility Connection Permit) from the Public Works Director.

4. Sewer line installations from the connection at the main to within 2' of the building must be inspected by the Public Works Director or his or her designee (862-3337) prior to backfilling.

5. For connection inspection within 2' of the building to the interior, please call the Local Plumbing Inspector (862-4500).

Signature: _____ **date** _____

****

OFFICE USE ONLY

Permit #_____ **Account #**_____ **Date Permit Issued:** _____

Amount Collected: _____ **Permit Issued by:** _____

NOTES:_____

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Deleted: Road

Deleted: beyond the right of way (street)

Deleted: Code Enforcement Officer

Deleted: 4500

Deleted: If connection is made directly to sewer in right-of-way (street); Please call Public Works (862-3337) for hook-on

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TOWN OF HAMPDEN

RESIDENTIAL
SEWER CONNECTION APPLICATION
*INSPECTIONS REQUIRED *See Notes*

FEE: Fee derived from the Sewer Connection Fee Calculation Worksheet

Application Date: _____

Property Information:

Owner: _____

Location: _____

Map and Lot: _____

Mailing Address: _____

Estimated Start Date: _____

Notes:

1. A backwater valve is required for all new sewer connections and existing system excavations.
   (*Hampden Sewer Ordinance, Article 4.2.4, Backwater Valves Required.* "To protect from the possibility of backflow of sewage backwater valves shall be required for all new connections to public sewers and shall also be required when existing sewer services are excavated… Backwater valves shall comply with ASME A112.14.1, CSA B181.1 or CSA B181.2.) "

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5. For connection inspection within 2' of the building to the interior, please call the Local Plumbing Inspector (862-4500).

Signature: _____ **Date** _____

****

OFFICE USE ONLY

Permit #_____ **Account #**_____ **Date Permit Issued:** _____

Amount Collected: _____ **Permit Issued by:** _____

NOTES:_____

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PUBLIC WORKS DEPARTMENT &¶
CODE ENFORCEMENT OFFICE

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Deleted: $200.00

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Deleted: is made directly to sewer in right-of-way (street); Please call Public Works (862-3337) for hook-on

Update on recent RSU-22 Building Committee meeting re McGraw-Weatherbee

Regional School Unit #22
Superintendent's Office
24 Main Road North
Hampden, ME 04444

Tel. 207-862-3255 **Fax 207-862-2789**

TO: Building Committee

FROM: Emil Genest, Assistant Superintendent

DATE: March 15, 2016

SUBJECT: **Building Committee Meeting**
Tuesday, March 22, 2016
6:30 p.m. at Weatherbee Library

AGENDA

1. Introductions
2. Continued discussion on the McGraw/Weatherbee building project
3. Next steps
4. Adjourn

cc: Board of Directors

March 21, 2016

Project:
Weatherbee and McGraw Site Improvements – SD

Project Understanding:
We understand that this project is being undertaken to address upgrades needed to the existing school buildings and site infrastructure to improve site circulation, traffic congestion, parking, bus and vehicular arrival for the two schools. Also included with this project is the relocation of the bus parking and associated maintenance building.

Project Scope:

Task A – Schematic Design

- Review concept site sketch (option 1B) approved by the School Board in December 2015.
- Review possible limited conceptual revisions to the existing school building entrances due to the new bus and parent drop off areas based on the concept site sketch (1B).
- Prepare suitable "draft" schematic documents (SD) for the site improvements based in the approved concept sketch (1B). The suitable documents to include the following plans for the site improvements: site removals, site layout, site grading, site utility and site details, as well as, a schematic design narrative in CSI (master spec 2004) format.
- Prepare suitable "draft" schematic documents (SD) for limited building entrance improvements based on the approved concept site sketch (1B). The suitable documents to include the following plans for the building entrance revisions: floor plan (existing and proposed), as well as, a schematic design narrative in CSI (master spec 2004) format.
- Provide a statement of probable cost (SOPC) for the proposed site improvements and limited building entrance revisions based on the "draft" SD documents.
- Attend a Building Committee meeting to review the "draft" SD documents listed above, which includes the SOPC. Obtain comments from the Committee to incorporate in "final" SD documents.
- Prepare a colored site rendering of the proposed improvements to be used as part of presentation to the School Board and public visioning sessions (Task C).
- Attend a Building Committee meeting to review the "final" documents listed above and obtain a recommendation from this Committee to conduct a presentation to the School Board.
- Attend one (1) School Board meeting to present the "final" SD documents, which is anticipated to be in October prior to the anticipated local referendum vote.

WBRC
ARCHITECTS • ENGINEERS

Task B – Regulatory Meetings

- WBRC will attend preliminary meetings, along with RSU #22 representatives, with the Maine Department of Environmental Protection (MDEP), Maine Department of Transportation (MDOT) and the Town of Hampden to review the proposed site and building improvements as related to the approved concept site sketch (1B).
- WBRC will incorporate any review comments or concerns discussed during these preliminary meetings into the "draft" SD documents.
- WBRC will prepare meeting agenda and prepare meeting minutes. Our fee includes one (1) meeting with each of the regulatory agencies listed above.

Task C – Public Visioning Meetings

- WBRC will assist, along with RSU #22 representatives, in conducting two (2) public vision meetings to present and obtain feedback from the public related to the proposed site and limited building entrance improvements, which would be detailed in the "draft" SD documents.
- It is anticipated that the two meetings will be held in September and October 2016 in Hampden, Maine.

Project Schedule

We anticipate that the scope of work outlined can be accomplished by the middle of November 2016 prior to the local referendum. Task A and B is anticipated to be completed prior to June 2016 and Task C to be completed by end of October 2016.

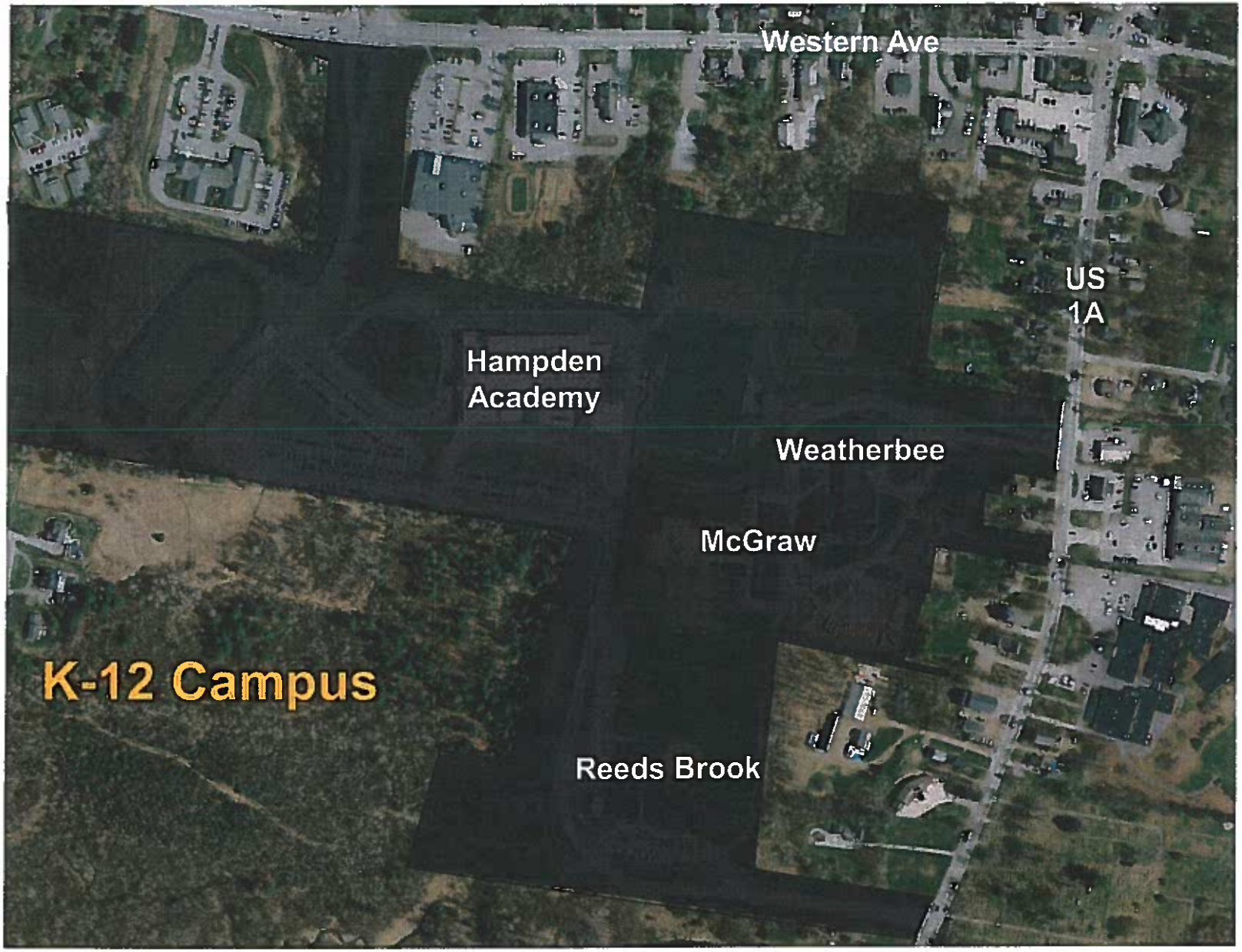
Regional School Unit 22

Hampden, Newburgh, Winterport, Frankfort

Site Plan Options Update

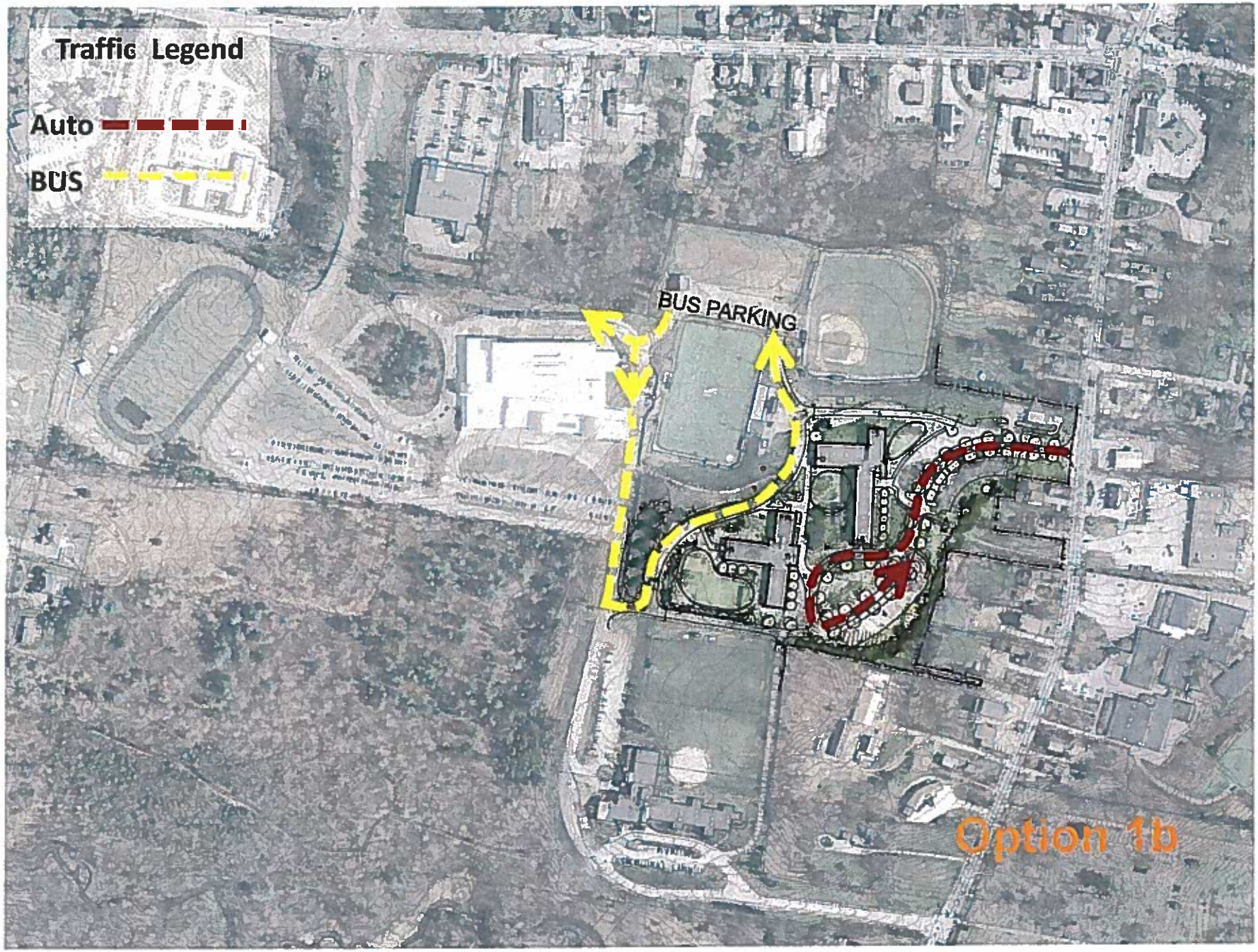
March 22, 2016

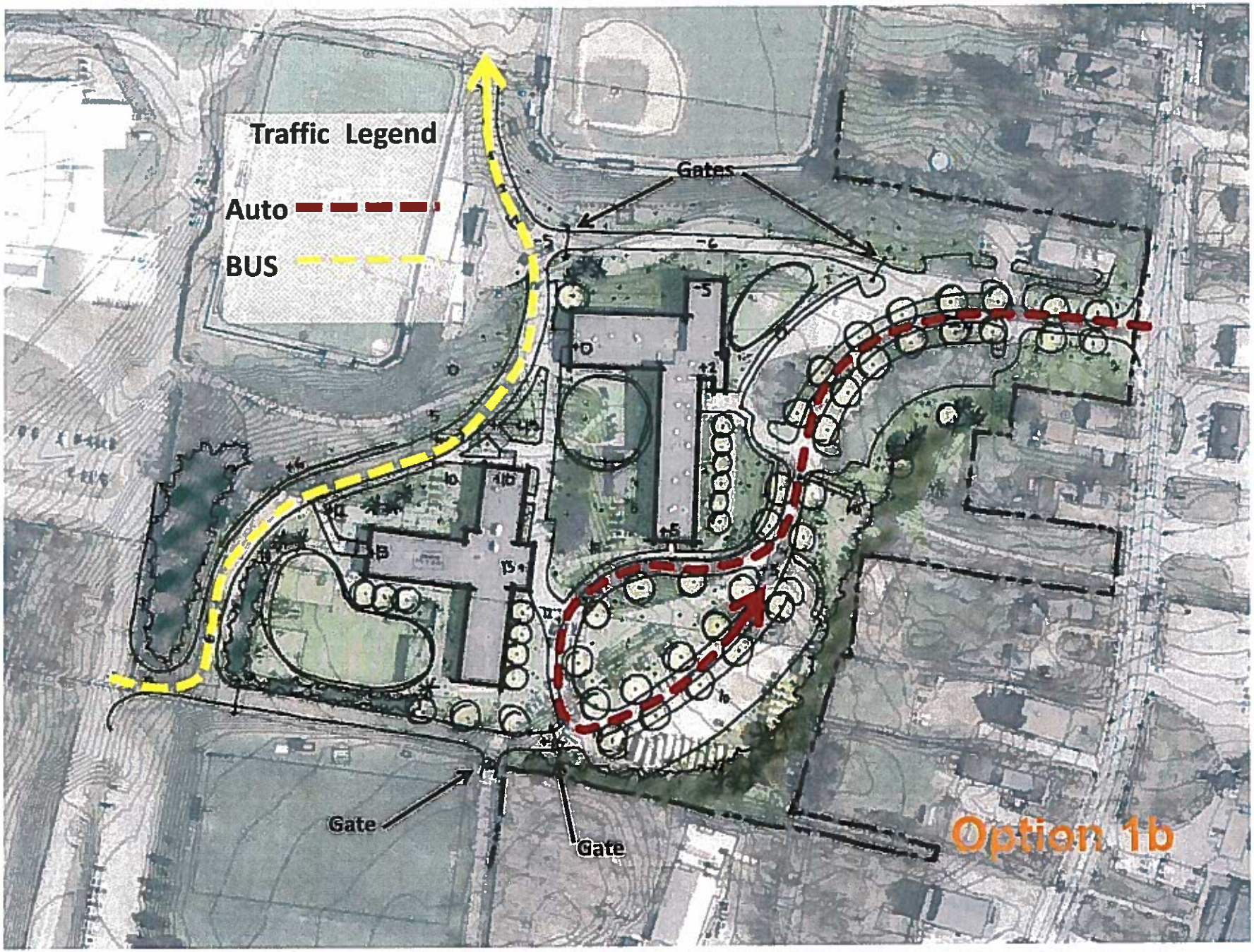
WBRC
ARCHITECTS • ENGINEERS

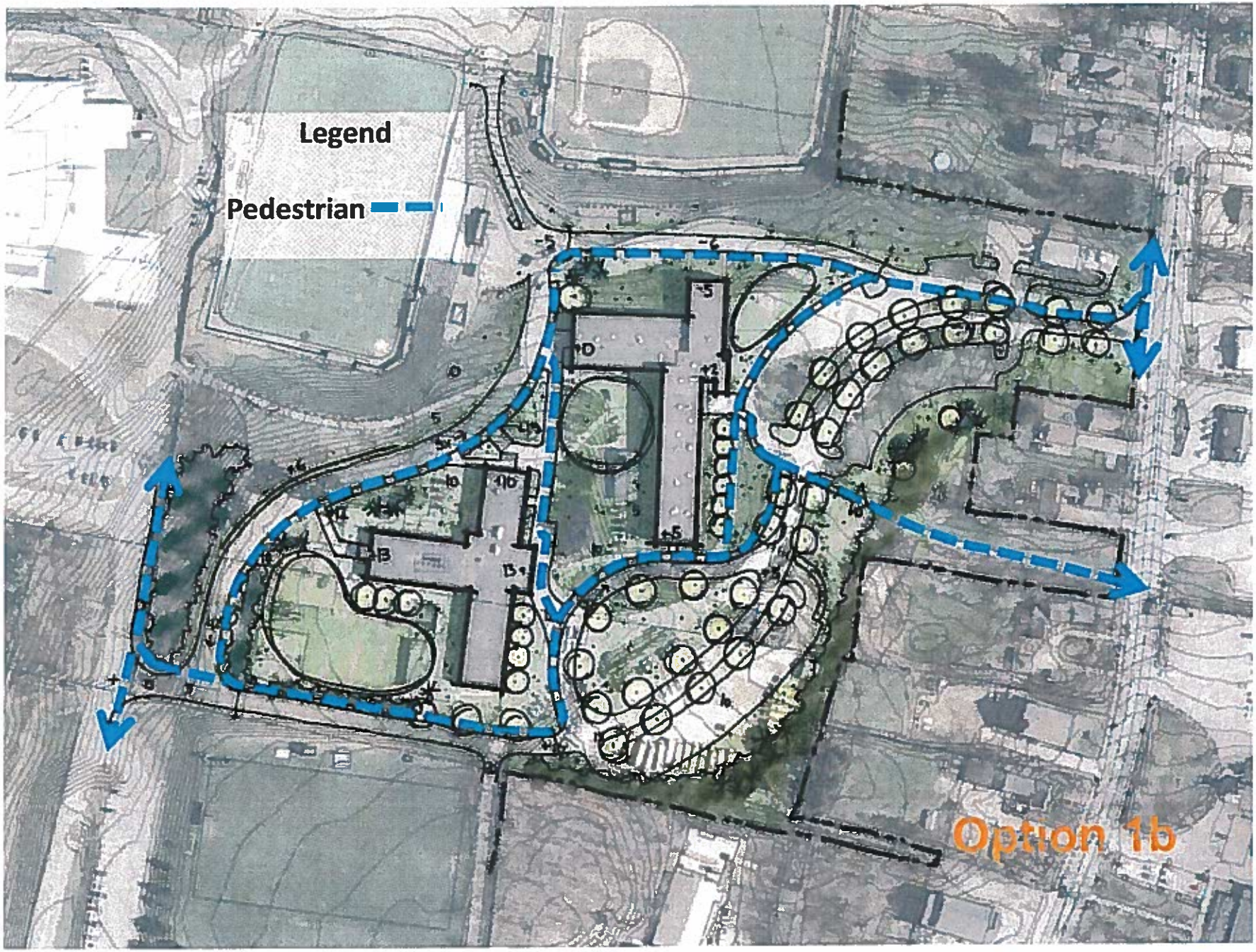


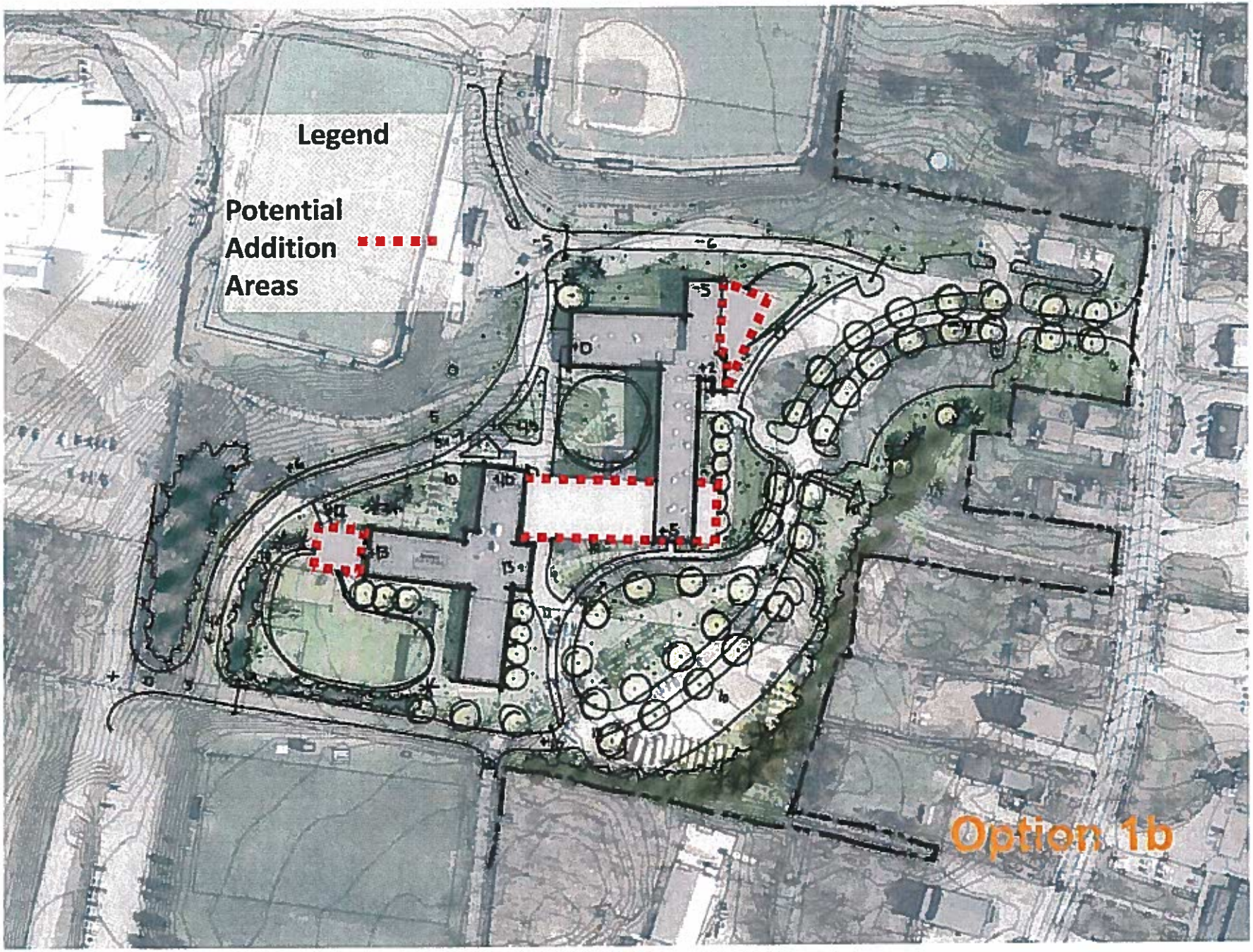
WBRC
ARCHITECTS • ENGINEERS

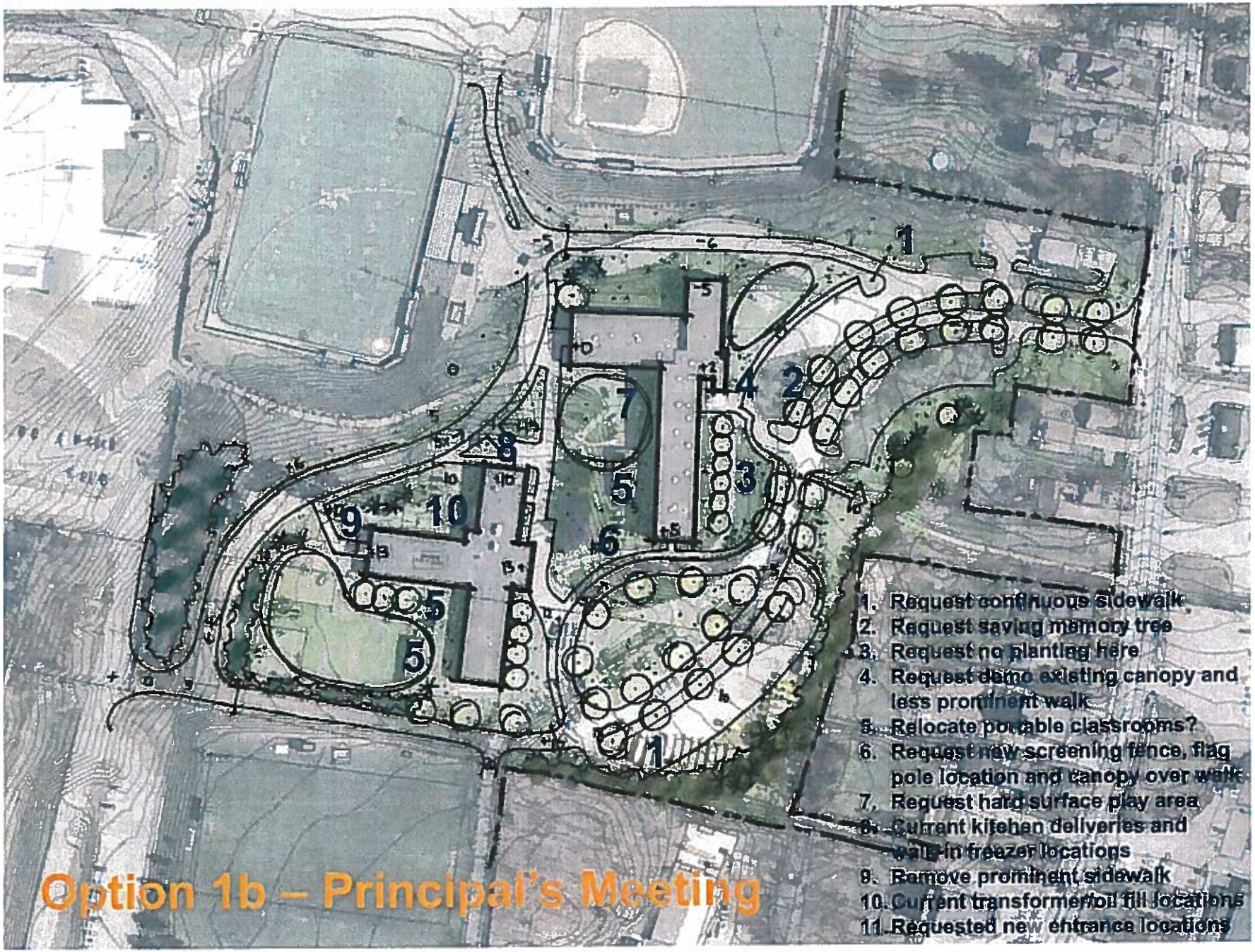
WBRC
ARCHITECTS • ENGINEERS


Traffic Legend
Auto
BUS
BUS PARKING
Option 1b


Traffic Legend
Auto
BUS
Gates
Gate
Gate
Option 1b


Legend
Pedestrian
Option 1b

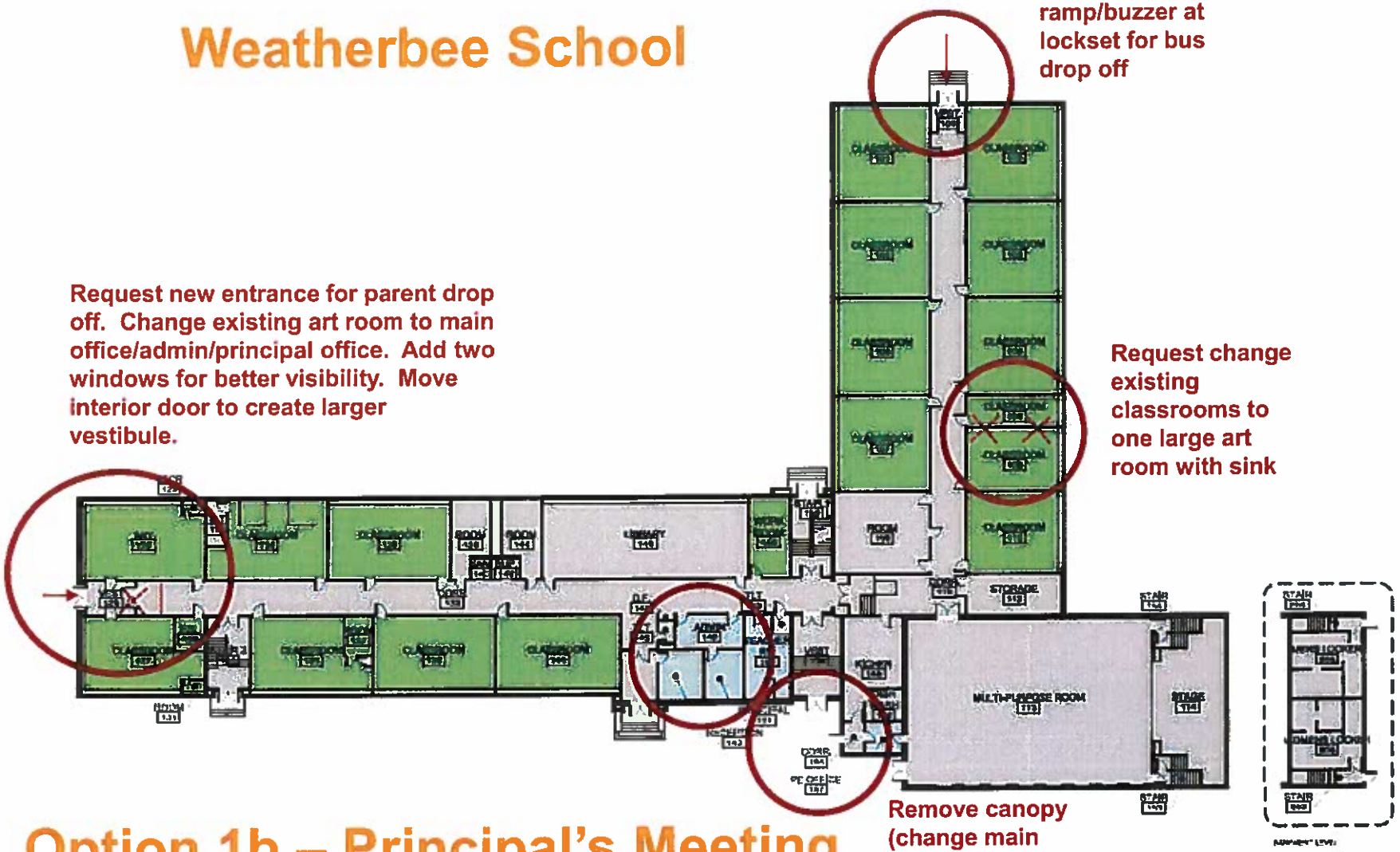

Legend
Potential Addition Areas
Option 1b


1. Request continuous sidewalk
2. Request saving memory tree
3. Request no planting here
4. Request demo existing canopy and less prominent walk
5. Relocate portable classrooms?
6. Request new screening fence, flag pole location and canopy over walk
7. Request hard surface play area
8. Current kitchen deliveries and walk-in freezer locations
9. Remove prominent sidewalk
10. Current transformer/oil fill locations
11. Requested new entrance locations
Option 1b – Principal's Meeting

Weatherbee School

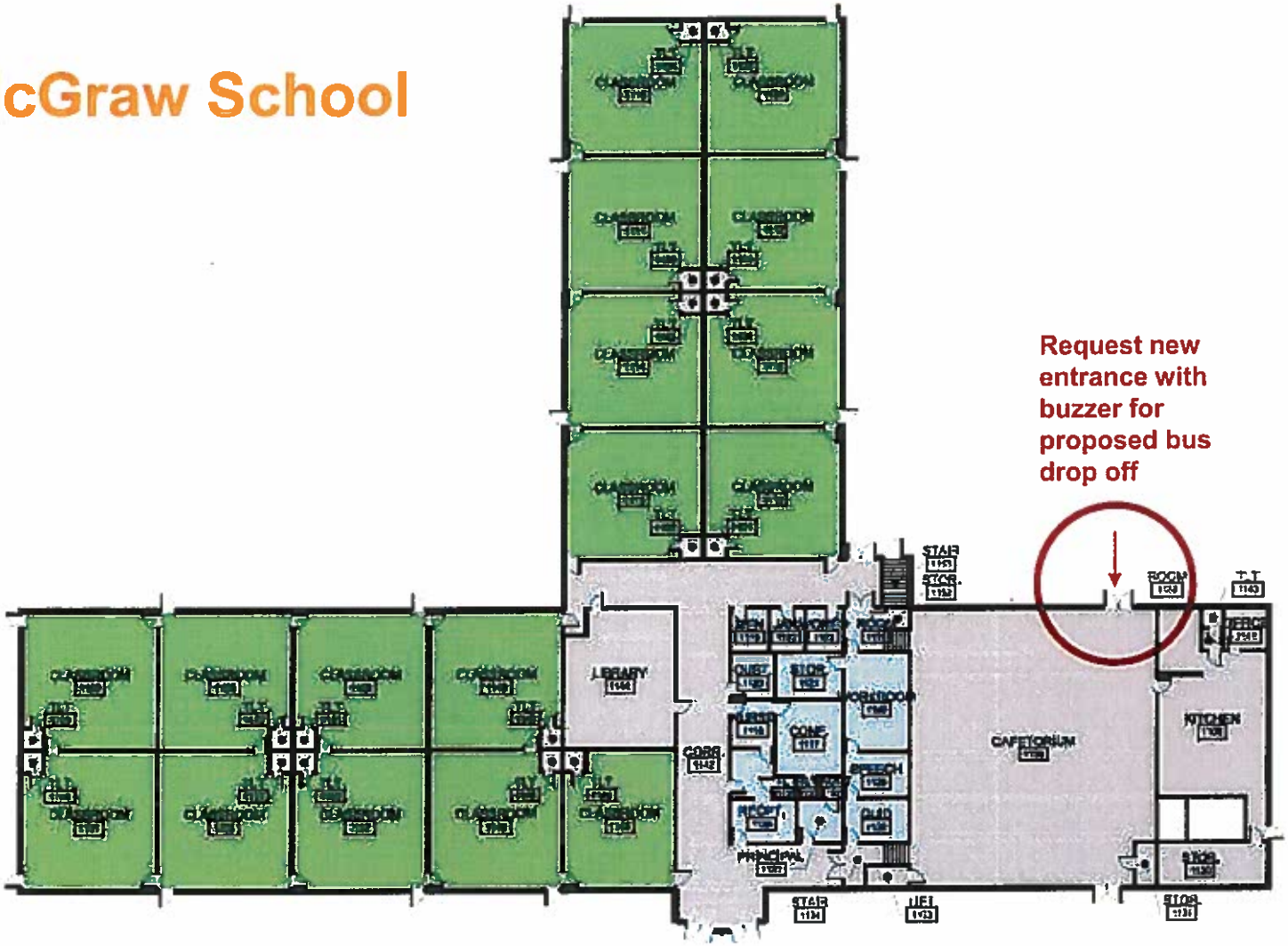
Request new entrance with ramp/buzzer at lockset for bus drop off

Request new entrance for parent drop off. Change existing art room to main office/admin/principal office. Add two windows for better visibility. Move interior door to create larger vestibule.



Option 1b – Principal's Meeting

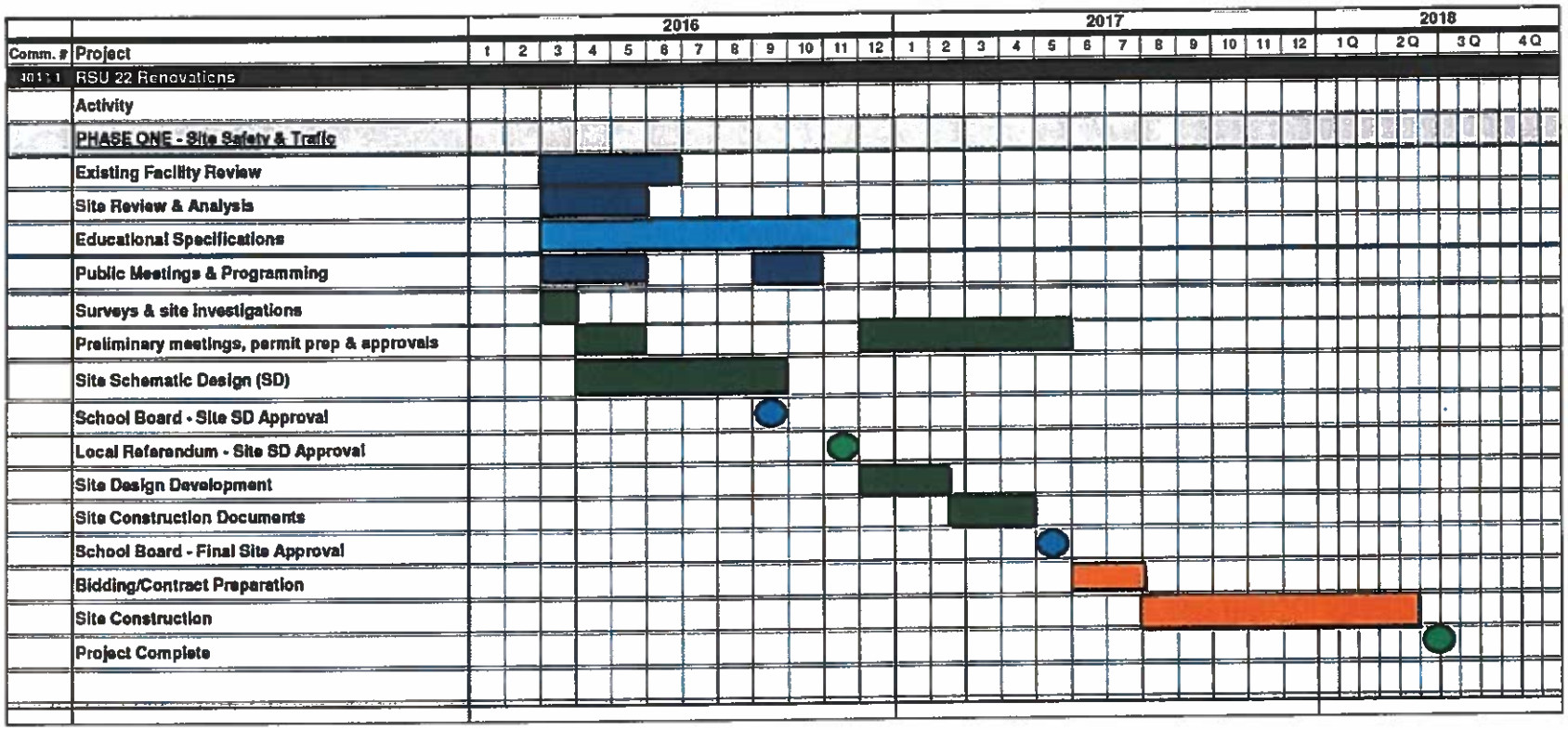
McGraw School



Option 1b – Principal's Meeting

Preliminary Schedule – Phase 1

RSU 22 - Weatherbee / McGraw
PRELIMINARY SCHEDULE
March 22, 2016 *draft*



Thank You

WBRC
ARCHITECTS • ENGINEERS

Solarize Greater Bangor – presentation by Karen Marysdaughter

Greater Bangor
Solarize

March 28, 2016

To the Members of the Hampden Infrastructure Committee,

Solarize is a collective purchasing program for homes, small businesses, farms, and community solar projects that was Initiated in Portland, Oregon in 2009. The Solarize process has spread across the country - currently in Maine there are projects in Freeport, Mid Maine, and Midcoast Maine.

The idea for a Solarize project for the Bangor area grew out of a "Solar Powering your Community" workshop sponsored by the cities of Bangor and Brewer and the Bangor Region Chamber of Commerce, held at the Cross Center in May of 2015. Dennis Marble was one of the attendees.

The goal of Solarize is to promote the installation of distributed solar power by bringing together interested home and business owners to contract for solar installation at a reduced rate. Purchasers have been shown to save up to 10% of their installation costs. Coupled with the 30% federal tax credit and other possible financing options, solar can become very affordable.

I am available to coordinate the project as a volunteer. I work part time at the Peace & Justice Center of Eastern Maine, and have experience as a community organizer (references listed in attached document). Three community members are currently serving as Advisors to the project: Josh Plourde of the Bangor City Council, Sharon Klein of the Economics Department at U Maine, and Rick Reardon, Chair of the Electrical & Automation Department at EMCC.

Municipal, regional, & state government entities have primarily lead the way on Solarize projects in other areas, including Maine. I believe a collaboration between a few local municipalities and the Eastern Maine Development District (EMDC) would be ideal for the Greater Bangor area.

On March 21, I presented Solarize to the Bangor City Finance Committee, which was very receptive. They will discuss it again at their next meeting in early April. I also met with Jeff Whelan of EMDC who is likely to come on board. I am in conversation with Mark Leonard, Town Manager of Veazie, and Geoff Gordon, town councillor in Orono.

The role of municipalities in the Solarize process would be to:

- Provide the community with a trusted emissary by adding their name as a partner.
- Assist with outreach to potential solar purchasers through established municipal networks and outreach tools.

We expect this project would easily piggyback on already existing municipal activities, and therefore not require much staff time. We are not requesting any funds.

I hope the Town of Hampden will join this effort to promote locally produced clean energy, installed by local workers, which will be of benefit to all ratepayers.

Sincerely,

Karen Marysdaughter
karenmd@myfairpoint.net
262-3706 (home) 930-5440 (cell)

Note: The state legislature and the PUC are currently considering changes to solar policy in Maine. I am following the process closely to see if and how it might affect a Solarize project in the area. I am attaching a white paper developed by the Public Advocates office on the matter.

Greater Bangor Solarize

Additional Information for Municipalities, March, 2016
Submitted by Karen Marysdaughter

Greater Bangor Solarize Advisors (a few others may be added - suggestions welcome!):
Josh Plourde, Bangor City Council, Sharon Klein, University of Maine Department of Economics, & Rick Reardon, EMCC Electrical Technology program.

National Solarize Support: Department of Energy SunShot Initiative, Solarize Guidebook
Regional Solarize Support: Clean Energy States Alliance, CESA Solarize Guide

Potential partners:

- Bangor, Brewer, Hampden, Veazie, Orono municipalities
- Eastern Maine Development Corporation

References for my community organizing experience:
Malcolm Burson, Public Policy Advisor at the Conservation Law Foundation and former Maine DEP Associate Policy Director - mburson@clf.org
Dan Dixon, University of Maine Sustainability Coordinator - daniel.dixon@maine.edu
Vaughan Woodruff, owner, InSource Renewables, member ME Association of Building Energy Professionals, and Chair of their Committee on Renewable Energy - vwoodruff@insourcerenewables.com

Contacts for Maine Solarize projects that I have talked with, and are willing to talk to municipal contacts:
Solarize Freeport - Donna Larson, Town Planner, dlarson@freeportmaine.com
Solarize MidMaine - John Reuthe, consultant for City of Waterville, jreuthe@waterville-me.gov
Solarize Midcoast Maine - Jeff Kobrock & Bill Najpauer, Eastern Maine Development District, jkobrock@mceddme.org & bnajpauer@mceddme.org

Sample Solarize documents, including RFP's:
Available through SunShot Initiative, CESA, and the other Maine Solarize projects.

Draft timeline:
March - April, 2016 - Recruit partners
May - September - Do outreach and create list of interested home & business owners
(Note: I am in conversation with Bangor Greendrinks about featuring Solarize at one of their summer events, and with Bangor Rotary about doing a presentation at one of their Breakfasts)
Mid May - Send out RFP
Late June - Select installer(s)
July - mid September - Solar 101 informational session(s)
September 30 - Deadline to enter into contract with Greater Bangor Solarize project

Karen Marysdaughter
21 Mt. Desert Dr.
Bangor, ME 04401
karenmd@myfairpoint.net
262-3706 (home)
930-5440 (cell)

State of Maine
Office of the Public Advocate

STRATEGEN
STRATEGIES FOR CLEAN ENERGY

A Ratepayer Focused Strategy for Distributed Solar in Maine

1. Introduction

This white paper offers a framework for sustainable growth in Maine's distributed solar energy sector that maximizes and fairly allocates benefits for all ratepayers. This approach builds on the Public Utilities Commission's recent "value of solar" study as well as lessons learned from other states. The policy proposed is specifically tailored to the state of Maine and offers innovative program design features intended to capitalize on the latest technological advances in the solar industry. The goals guiding this policy are the following:

- **Maximization of ratepayer benefits**: Establish competitive market structures that take advantage of advances in technology and declining costs to the benefit of all ratepayers.
- **Transparent allocation of costs and benefits:** Clearly link actual system benefits to transparent compensation mechanisms.
- **Opportunity for participation across all solar market segments:** Allow every market segment the opportunity to participate in the program on fair terms, from retail customer-paired residential solar, commercial and industrial resources, to standalone distribution-connected wholesale resources.
- **Market-based encouragement of technological innovation:** Allow data-based value adders to encourage technologies, combinations of technologies, and resource dispatch behaviors that are beneficial to the grid.
- **A fair balancing of stakeholder interests:** Each key stakeholder group receives equal consideration with a focus on win-win approaches (*e.g.* no one group left as a clear loser or winner).

While designed to present a coherent and holistic policy framework for state-wide adoption, this whitepaper is also intended to solicit stakeholder feedback.

1.1 High-level Policy Overview

This framework uses market forces to maximize value to all ratepayers, while fairly compensating solar adopters. The core attributes of the policy are as follows:

1. A cost-conscious alternative option to the current net metering based system.
2. Long-term compensation structures with a levelized cost of energy cap set initially at a level based on a value of solar analysis and above the current level of compensation offered by net metering.
3. Competitive bidding and capacity based step downs to drive actual program costs well below this initial level.

4. The potential (if the market can reach aggressive pricing targets) for 300 MWs of total new solar capacity by 2025, divided between three market segments – wholesale (150 MW), residential/commercial (100 MW), and industrial/community (50 MW).
5. Aggregation and procurement of solar resources to capture and monetize the value of solar generation in the relevant markets.

This whitepaper is divided into four sections, including this introduction (Section1). Section 2 provides an overview of Maine's existing net metering policy, its advantages and its shortcomings. Section 3 describes the results of the Maine Public Utilities Commission's value of solar study. Section 4 describes an alternative solar policy, rooted in the Commission's value of solar analysis and the goals described above. The Appendix include lessons learned in three states, California, Arizona, and Minnesota that informed the policy approach set forth here.

2. Overview of Net Energy Policy in Maine

Net metering, or net energy billing (NEM), is a billing mechanism that allows customers to receive credit for energy produced on-site that is sent back to the grid at the variable retail electricity rate. In Maine, this is currently the primary incentive available for distributed solar generation. Maine's two investor-owned utilities (IOUs) must offer net energy billing to their customers.

Net metering is popular with both customers and the solar industry. The primary benefit of net metering is its simplicity: to rate payers, developers, investors, and regulators.

However, the falling costs of solar, paired with rising retail electricity costs have driven increased adoption that has revealed revealing certain issues with the net metering platform. While it is not an issue yet in Maine, the scalability of NEM is under review in a number of states. At high penetrations of solar, the retail rates underpinning NEM may not send timely or appropriate price signals to solar adopters—in short, these customers might be compensated at rates that either do not reflect the value of the resource or the continuing decline in the installed cost of solar. While this may result in higher levels of solar installation, at increased penetration rates these issues may undermine the scalability of the policy.

Other issues inherent in the net metering incentive structure include:

- There is no certainty for net metering customers, whose rates may change in response to variations in wholesale prices and rate design. This lack of certainty can raise consumer protection concerns and may also impact the costs of financing.
- The economics of the underlying rate design may not make sense for larger commercial and industrial customers because their costs are largely recovered through demand charges.
- High rates of rapid adoption can lead to significant cost shifts to non-net metered customers. In other words, as net metered customers invest in self generation and reduce their electricity bills, non-net metered customers might pick up a greater share of the overall costs to deliver energy.
- There is little transparency regarding the relative costs/benefits and cost shifts.

- Discussion of rate design changes affecting all customers may be disproportionately impacted by a small, subset of solar customers and supporters.

For many of the reasons stated above, some states are revisiting traditional net metering or, at least, the underlying rate designs upon which it rests. In Maine, a Commission imposed check-in point of NEM occurs when 1% of peak system load is reached by NEM based systems. This target is on the verge of being reached for Central Maine Power in 2015.

3. The Maine Distributed Solar Valuation Study

Pursuant to the "Act to Support Solar Energy Development in Maine" (P.L Chapter 562; codified at 35-A M.R.S. §§ 3471-3473) ("Act"), the Maine Public Utilities Commission ("Commission") was required to develop a methodology for determining the value of distributed solar energy generation in the State. In March of 2015, after robust stakeholder input on all aspects of the methodology, the Commission published the "Maine Distributed Solar Valuation Study." The Study contained three major findings: (1) a methodology for estimating the cost and benefits of solar, (2) values for each cost and benefit (expressed as dollars per kilowatt hour) for the three utility territories, and (3) implementation options for encouraging solar adoption within the State's existing utility framework.

2.2 Methodology for Quantifying Costs and Benefits of Solar PV

The Public Utilities Commission and their consultants, with direction from the Legislature, identified ten categories of benefits and costs that provide a reasonable estimate of what distributed solar energy can provide to the state of Maine. Given the broad variation in output and location of solar facilities and the complexities of Maine's competitive market structure, the study made a number of sensible simplifying assumptions. One of the benefits of the policy proposal outlined below is the opportunity to refine these values based on changes in the relevant markets and data based on actual output of solar facilities in Maine. Figure 1 below highlights the elements considered in the cost/benefit calculation performed in the Commission's study.

Figure 1. Identified Cost and Benefits from Maine Distributed Solar Valuation Study

Component	Benefit/Cost Basis
Avoided Energy Cost	Hourly avoided wholesale market procurements, based on ISO New England day ahead locational marginal prices for the Maine Load Zone.
Avoided Generation Capacity and Reserve Capacity Costs	ISO New England Forward Capacity Market (FCM) auction clearing prices, followed by forecasted capacity prices by the ISO's consultant. For reserves, the ISO's reserve planning margin is applied.
Avoided Natural Gas Pipeline Costs	Not included, but left as a future placeholder if the cost of building future pipeline capacity is built into electricity prices.

Component	Benefit/Cost Basis
Solar Integration Costs	Operating reserves required to handle fluctuations in solar output, based on the New England Wind Integration Study (NEWIS) results.
Avoided Transmission Capacity Cost	ISO New England Regional Network Service (RNS) cost reductions caused by coincident solar peak load reduction.
Avoided Distribution Capacity Cost	Not included, but left as a future placeholder if the peak distribution loads begin to grow (requiring new capacity).
Voltage Regulation	Not included, but left as a future placeholder if new interconnections standards come into existence allowing inverters to control voltage and provide voltage ride-through to support the grid.
Net Social Cost of Carbon, SO2, and NOx	EPA estimates of social costs, reduced by compliance costs embedded in wholesale electricity prices.
Market Price Response	The temporary reduction in electricity and capacity prices resulting from reduced demand, based on the Avoided Energy Supply Costs in New England (AESC) study.
Avoided Fuel Price Uncertainty	The cost to eliminate long term price uncertainty in natural gas fuel displaced by solar.

Source: Adapted from Table ES-1. Benefit/Cost Bases from Maine Distributed Solar Valuation Study. Pg. 3. http://www.nrcm.org/wp-content/uploads/2015/03/MPUCValueofSolarReport.pdf

Specific monetary values for providing the benefits listed above were aggregated to each of the three utility service territories (*i.e.*, Central Maine Power – CMP; Bangor Hydro District - BHD, and Maine Public District - MPD). As shown in Figure 2 below, the 25-year levelized cost[1] of distributed solar in CMP's service territory was approximately $0.337/kWh. This estimate is broadly broken out by "Avoided Market Costs" and "Societal Benefits," valued at $0.138/kWh and $0.199/kWh respectively.

[1] Levelized cost represents the average total cost to build and operate the power-generating asset over its lifetime divided by the total power output of the asset over that lifetime. It is a metric often used to compare the price competitiveness of different generating technologies.

Figure 2. CMP Distributed Value – 25 Year Levelized ($ per kWh)

25 Year Levelized		Gross Value A ($/kWh)	× Load Match Factor B (%)	× Loss Savings Factor (1+C) (%)	= Distr. PV Value D ($/kWh)	
Energy Supply	Avoided Energy Cost	$0.076		6.2%	$0.081	Avoided Market Costs $0.138
	Avoided Gen. Capacity Cost	$0.068	54.4%	9.3%	$0.040	
	Avoided Res. Gen. Capacity Cost	$0.009	54.4%	9.3%	$0.005	
	Avoided NG Pipeline Cost					
	Solar Integration Cost	($0.005)		6.2%	($0.005)	
Transmission Delivery Service	Avoided Trans. Capacity Cost	$0.063	23.9%	9.3%	$0.016	
Distribution Delivery Service	Avoided Dist. Capacity Cost					
	Voltage Regulation					
Environmental	Net Social Cost of Carbon	$0.020		6.2%	$0.021	Societal Benefits $0.199
	Net Social Cost of SO_2	$0.058		6.2%	$0.062	
	Net Social Cost of NO_x	$0.012		6.2%	$0.013	
Other	Market Price Response	$0.062		6.2%	$0.066	
	Avoided Fuel Price Uncertainty	$0.035		6.2%	$0.037	
					$0.337	

Source: Norris, Benjamin; Grace, Robert; Perez, Dr. Richard; Rabago, Karl. Maine Distributed Solar Valuation Study. Prepared for the Maine Public Utilities Commission. Revised April 14, 2015. Pg. 50.
http://www.nrcm.org/wp-content/uploads/2015/03/MPUCValueofSolarReport.pdf

2.3 Avoided Market Costs and Societal Costs

The costs and benefits identified by the Commission fall into two primary categories: avoided market costs, and societal costs.

Avoided Market Costs
Avoided Market Costs are values that most directly affect electricity customer bills. These include the costs and benefits related to capital expenditures and operating expenses normally recouped by the utility in a customer's electricity bill. Distributed solar can offer ratepayer benefits by allowing for avoided costs including avoided energy purchases, avoided capacity purchases and avoided transmission upgrades. The system-wide reduction in electricity and capacity prices due to an overall reduction in energy demand (stemming from distributed solar generation) is a direct benefit as well; however, it applies to all ratepayers and is not directly monetizable. From a cost perspective, having more intermittent generation can lead to additional outlays associated with integration and voltage regulation.

Societal Costs
Societal benefits include environmental benefits in the form of avoided air pollution (CO_2, NO_x, SO_2) and avoidance of long-term fuel price uncertainty. These values are typically not included in the utility's ratemaking process or the supply portion of a customer's bill.

Relevant and Direct Values to Ratepayers
Projecting market-based costs and benefits out many years is not without some uncertainty but quantifying societal considerations presents a more challenging undertaking. To be clear, these benefits do exist and can be meaningful; however, the ultimate value may be harder to quantify, much less allocate. Establishing a compensation rate that is initially above direct market cost is one way of recognizing the environmental benefits of solar while not using ratepayer dollars to pay directly for non-market values that may be difficult to quantify. Alternatively if the cost-benefit analysis is clearly justified based upon the avoided market costs, and sufficiently compensates solar generators, the goal of maximizing ratepayer benefits can be achieved without paying directly for societal benefits.

4. A New Program Design

The policy presented here is based on the premise that there are now better ways than net metering to encourage solar adoption that send the right signals to developers and consumers, drive technological innovation, and allow utilities to more easily manage the increase in intermittent generation. This paper presents policy concepts for two important distributed solar market segments in Maine:

- **Customer-sited** (systems installed for residential and small commercial/industrial customers)
- **Wholesale** (systems installed on the utility side of the meter within the distribution system)

An aggregation entity, or "Solar Standard Buyer" (SSB) would interface with the customer sited market segment. Under the existing net metering construct, this role is currently assumed by the Standard Offer Provider or a customer's competitive electricity provider. Centralizing procurement with the SSB would

allow for a more efficient aggregation and sale of the different attributes solar energy can provide. The SSB would aggregate the energy, RECs, capacity value, and ancillary services potential and monetize these in the applicable markets. As stated previously, the underlying goal of the policy structure is to allow Maine ratepayers to capture the benefits of distributed solar energy while minimizing the costs and inequities experienced in other states.

For the wholesale market, the Commission would solicit competitive bids with the ultimate purchaser for these contracts being the Standard Solar Buyer. The amounts purchased would "prime the pump" for the Standard Solar Buyer's solar portfolio to ensure that the portfolio is of sufficient scale to efficiently monetize the benefits described above.

These policies combine the values of distributed solar calculated in the Commission's Study with the lessons and experience from other states. The idea is to set Maine on a course that allows the distributed solar market to grow and thrive and for incentives to align with market maturity. If successful, this policy could provide a platform for future innovation and development for all types distributed resources. Below is a more detailed discussion of each program and market specifics.

4.1 Customer-sited Solar Contract

For the customer-sited market segment, the compensation structure must be straight forward for the customer and subject to reasonable financing. [2] The core of the policy is the Customer-sited Solar Contract ("CSC"), a fixed-price, 20-year contract between the customer and the solar aggregator. Twenty years is a common term for solar equipment financing and well within adopter payback. The compensation rate for all market segments would be capped initially at the sum of the direct market derived values found in the Distributed Solar Valuation Study (see below). While societal values will not be compensated directly (for reasons stated above), if the solar industry thrives below the value cap then all Maine residents reap the financial and environmental benefits of solar. The following is the value stack associated with a 20-year levelized assessment:[3]

[2] Experience in other states shows that the ability to obtain reasonable financing for customer-sited solar is essential to ensuring access to customers across a range of income levels.

[3] Several potential market-based values were not included in the value stack presented by the Commission valuation study. These include avoided natural gas pipeline cost, avoided distribution capacity cost, and ancillary service benefits. These values can either be hard to quantity, de minimis, and/or highly locational. The CSC structure should not neglect solar's possible value in these areas and when appropriate, the compensation rate should reflect locational specific benefits. Nevertheless, the quantification of these benefits for compensation will have to be based on further study and market data from actual deployment or established on a project/location specific basis.

Figure 3. Levelized Value Stack (20 years) for Customer-sited Solar Contract - CMP

Value Component	CMP 20 Year LCOE ($/kWh)
Avoided Energy Cost	$0.078
Avoided Generation Capacity Cost	$0.039
Avoided Residential Generation Capacity Cost	$0.005
Solar Integration Cost	-$0.004
Avoided Trans. Capacity Cost	$0.016
Market Price Response	$0.069
Total	**$0.20**

Under the CSC, a solar aggregator would enter in a long-term, fixed contract with residential and small business customers that choose to host solar energy. The "payment" would be based on a per kWh rate that would appear as a monthly bill credit on the customer's bill (similar to Maine's existing NEM structure). The level of compensation would be capped at $0.20/kWh.

As stated above, centralizing procurement with the Solar Standard Buyer would allow for a more efficient aggregation and selling of the different attributes solar energy can provide. The role of the solar aggregator is also central to this policy framework. The solar aggregator, which could be a distribution utility or a Commission-designated third party, will be the counterparty for each CSC, and will be responsible for aggregating and monetizing the value of the different attributes Maine's solar generation fleet provides.

Both the payments to customers under a CSC and the revenues received through this aggregation and sale would be credited to all customers through T&D utilities' existing stranded cost mechanisms. The near-term premium, the difference between the amount recovered by the solar aggregator and the amount paid under a CSC, would be covered in the stranded cost adjustor on each customer's bill. Likewise, this would be the same account that would be credited when wholesale prices increase above the solar contract.

While the near-term compensation level for a CSC is higher than current retail and wholesale rates, non-participating customers will be better off than under net metering, because they will capture, monetize and retain substantially more of the benefits associated with distributed solar generation. Non-participating customers may even realize benefits over time if the revenue received from monetizing the benefits described above overtakes the fixed price of the solar contract. Because the first year level of compensation is capped based on the avoided market costs calculated in the Commission's value of solar, customers will not pay more than the best available estimate of the likely benefits to them, even if all of these benefits are not directly monetized by the Solar Buyer.

4.2 Market Based Step Downs

Common practice for large scale resource procurement is bilateral competitive bidding. For small PV systems on rooftops this is administratively burdensome and impractical for a variety of reasons. Nonetheless, there must be some mechanism to deliver ratepayer benefit as the solar industry scales and the technology matures. The appendix of this whitepaper contains two case studies of states that successfully implemented a capacity-based step down. This policy adopts that approach.

For residential and commercial customers, a declining trigger mechanism based on installed capacity would be established to automatically decrease the level of compensation for new customers entering into CSCs (not existing CSC customers). The capacity-based step down approach would reduce the CSC contract price by $0.01/kWh at each step until the incentive reaches wholesale electricity rates. As shown in Figures 4 and 5, the number of MWs available at each step increases with each consecutive step.

Figure 4. Incentive levels for a Capacity-based step down Approach

Step	MW in Step	Cumulative Installed Capacity	Step-specific Incentive Level (¢/kWh)
1	5	5	20
2	6	12	19
3	7	19	18
4	8	27	17
5	9	36	16
6	10	46	15
7	11	57	14
8	12	69	13
9	14	83	12
10	17	100	11 (or fixed wholesale rate)

The design of the program attempts to glide the industry to scale in a cost effective manner to 2025. The average compensation decline rate through the various steps is approximately 6.5%. This was designed to correlate to the average declines in solar energy system costs over the past 15 years.[4] The declines also more than cover the diminishing returns associated with increase solar penetration.

It is important to note that the rates above are for standard PV systems without locational adders or additional benefits that can be realized when combining PV with other technologies like controllable water heaters, energy storage, or with demand response programs. The Commission could create future

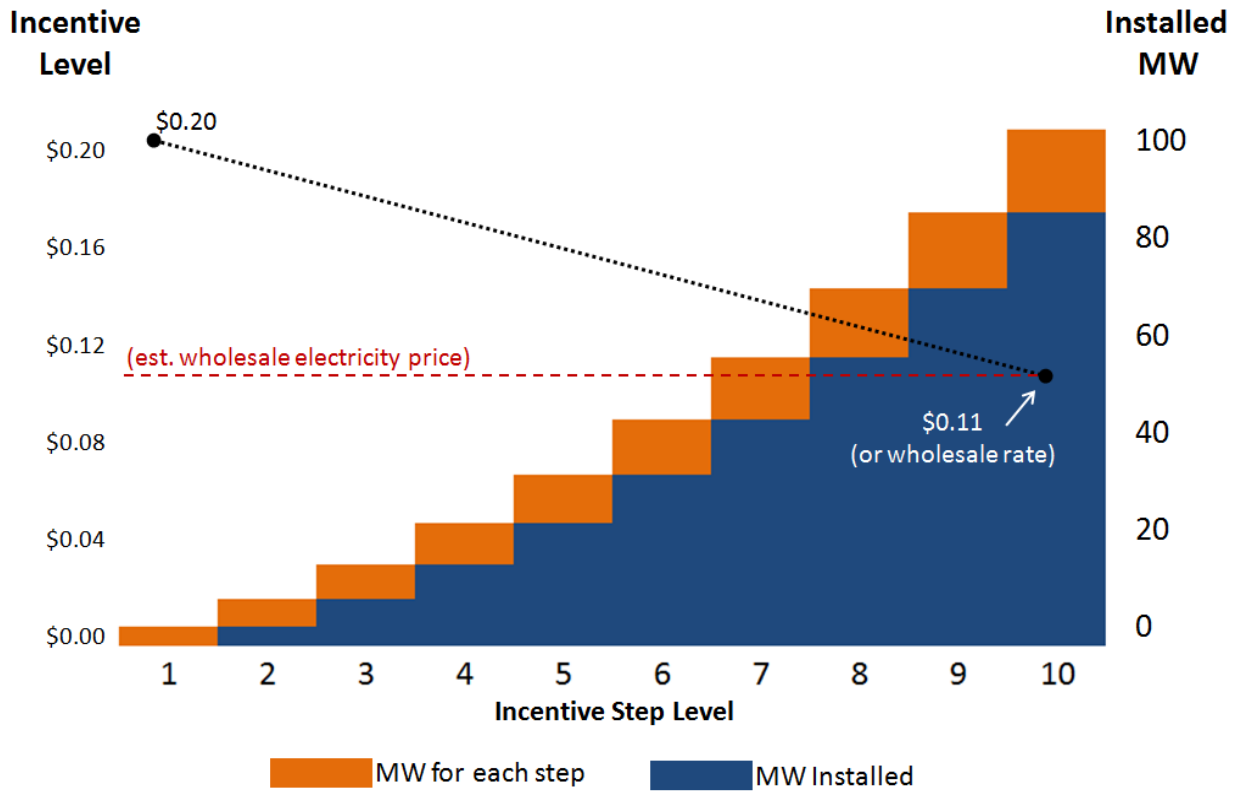
[4] Reported system prices of residential and commercial PV systems declined 6%–7% per year, on average, from 1998– 2013, and by 12%–15% from 2012–2013, depending on system size. Photovoltaic System Pricing Trends, 2014 Edition, US DOE SunShot: http://www.nrel.gov/docs/fy14osti/62558.pdf

set asides with higher compensation depending on market condition, capacity value, and other state objectives.

A 50 MW carve-out would be created for large commercial and industrial customers as well as community-based solar installations. The Commission would conduct a quarterly reverse auction for a specified level of installed capacity, where only the lowest project bids would be accepted. As with residential CSCs, the output of the facilities would be purchased by the solar aggregator. The cap of the compensation would be equivalent to the corresponding cap of the residential program at that time, though we anticipate that these bids would be considerably lower. This would allow large commercial and industrial customers, and residential customers without access to suitable locations on their own property, to participate in the distributed solar market, while using market-based mechanisms that capture the economies of scale associated with larger installations to drive down costs to all ratepayers.

Once the capacity-based step down mechanism is in place, on an annual basis, the Commission can revisit and adjust value of solar (VOS) levels according to changes in the energy market (*e.g.*, spikes in natural gas prices) or include adders to stimulate more adoption. Any potential changes in the VOS would not affect customers with existing long-term contracts. As such, there will be minimal impacts to the ability to finance projects. In the event that the Commission decreases the VOS below an existing step, the revised value will remain unchanged until a subsequent step is triggered with a lower value. If the Commission increases the VOS, it will need to stipulate how it declines by step.

Figure 5. Overview of Step-level Changes



4.3 Wholesale Distributed Generation Program

While the value of solar study informs a maximum cap of $0.20/kWh, the lower the compensation rate paid to solar generation facilities under this "value of solar" cap, the greater the benefits to Maine's non-participating ratepayers. Fortunately, the economies of scale that solar energy possesses can bring the price per kWh down quickly. Therefore, utility side of the meter wholesale solar within the distribution system may bring all the benefits of customer sited solar energy but at much lower cost. The output of these larger facilities would also serve to provide a critical mass of solar output to make aggregation and sale of the output from residential solar by the Solar Buyer more cost-effective.

Similar to the arrangement described above in Figure 5, developers of these 1-5 MW scale installations would be compensated at a fixed rate. Bi-annual competitive procurement by the transmission and distribution utilities would attempt to find the lowest priced but most impactful projects. The mechanism would be similar to that currently used by the Commission under 35-A M.R.S. § 3210-C to purchase energy and capacity from grid scale renewables.

4.4 Program Size

The program size for Maine was determined by studying California's CSI program (see Appendix) and Arizona's distributed generation set asides as a proxy. When California's CSI program started in 2007, the goal was to install approximately 1,940 MW of new solar generation for homes and small businesses. At the time, this represented about 3% of their total installed capacity.[5] Arizona's RPS based program set a DG solar target of 4.5% of load by 2025.[6] Maine's current generation capacity is approximately 4,500 MW.[7] In 2014, Maine's retail electricity load for its investor-owned T&D utilities was approximately 10,500 GWh. A 2025 DG target of 3.3% is between CA and AZ's target (trending more towards California) and would result in approximately 150 MW of new solar capacity. This would be complimented by 150 MWs for wholesale programs over five years. This establishes a total potential program size of 300 MW if the market succeeds on compensation rates closer to wholesale. By comparison, recent legislative proposals in Maine advanced by solar advocates targeted 200 MW of new solar installations by 2021.

A total of nearly 5% of load served by customer sited and wholesale solar resources is reasonable given the maturing state of the solar technology, especially if the program envisioned fully utilizes advanced inverters, optimal locations, and coupling with other technologies. Moreover, if the full 300 MW is deployed, a large portion of those MWs will be compensated at or near the future wholesale rate of energy. If this occurs, it would present a significant amount of benefits to ratepayers for years to come. A sensitivity analysis conducted in the Maine Distributed Solar Valuation Study for exactly 300 MW of distributed solar shows solar retains value even at higher penetrations.

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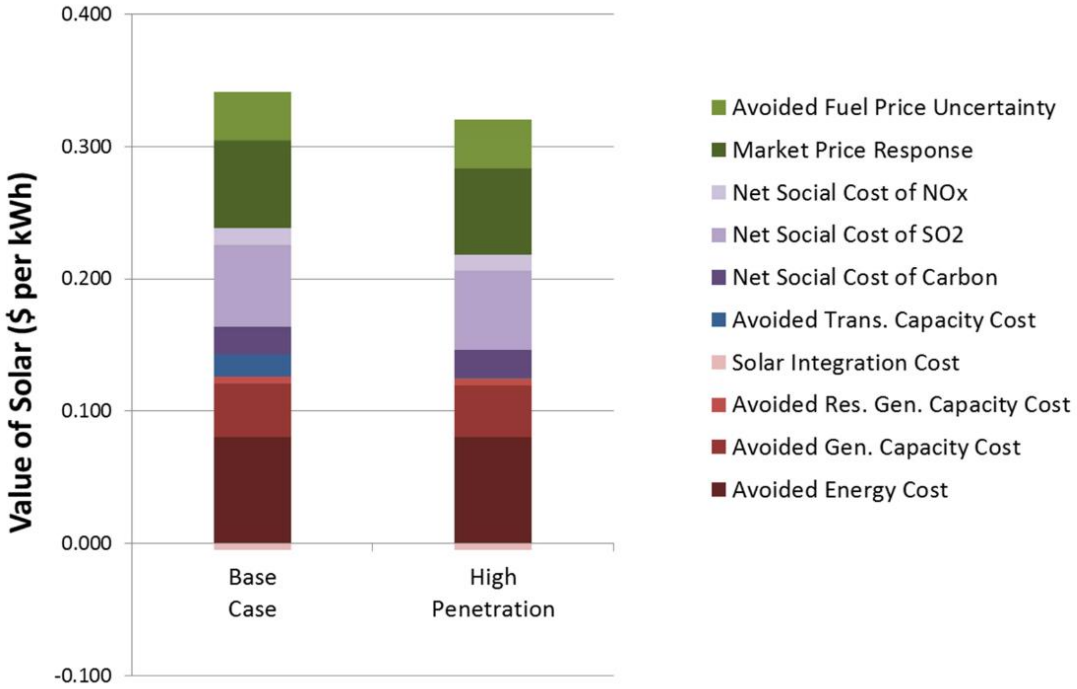
[5] California Energy Commission. Installed in-state Electric Generation Capacity by Fuel Type (MW). Energy Almanac. http://energyalmanac.ca.gov/electricity/electric_generation_capacity.html

[6] 2006, the Commission approved the Renewable Energy Standard and Tariff http://www.azcc.gov/divisions/utilities/electric/res.pdf?d=97

[7] U.S. Energy Information Administration. Maine Electricity Profile, 2012. http://www.eia.gov/electricity/state/maine/

Figure 7. 300 MW Sensitivity (CMP)[8]



4.5 Additional Program Features

Very few resources are able to be deployed in a modular fashion within the distribution system and on customer premises. Clearly, the various attributes of solar energy bring challenges and opportunities. However, correctly structured programs can balance the tradeoffs. Significant flexibility could be in built into both programs to allow for such things as locational adders, advanced inverters, renewable energy credit transfer, and differentiated rates based upon on-peak performance. The following list includes some additional features of the proposed solar programs:

Renewable Energy Credit ("REC") Transfer – With a portion of Maine's renewable resources able to deliver to other states and the unknown impact of the EPA Clean Power Plan, RECs can be valuable to the state. As such, program participants would be required to assign their RECs over to the distribution utility.

Advanced Inverters – New inverters have the capability to provide grid services and remotely update new software parameters to meet future needs. Program participants would be required to obtain advanced inverters. Further, if in the future the distribution utility seeks to control certain inverter functions remotely, they could do so as long as the impact on system production was less than 5%. The potential of having an aggregated fleet of distributed resources could yield many benefits to Maine's ratepayers.

[8] Norris, Benjamin; Grace, Robert; Perez, Dr. Richard; Rabago, Karl. Maine Distributed Solar Valuation Study. Prepared for the Maine Public Utilities Commission

Role for Other Technologies - This VOS program puts in place the infrastructure for other resources like combined heat and power (CHP), energy storage, and small-scale hydro to take advantage of once their respective benefits are studied. The general framework of market competition and long-term contracts can easily be swapped to different technologies. More importantly, the greater the diversity of resources, the better it is from a grid balancing perspective. The unique attributes of the different technologies available today bring system wide diversity and resiliency to the system.

Obligation of the Solar Standard Buyer and Distribution Utility – The Solar Standard Buyer plays a key role in these programs. It must actively seek ways to maximize the value of the solar resource and facilitate market adoption within the confines of the program. Likewise, distribution utilities have a responsibility to drive down the soft costs of distributed energy resources through streamlined interconnection and constructive participation in procurement programs. Subject to reasonable limitations, there could be a role for utility participation in the wholesale distributed generation program.

Yearly Program Revision – The Commission must have a yearly update and review process to ensure correct compensation and offer new ones to maximize solar's value. This can include price signals to encourage different production profiles, dispatchablity by encouraging pairing with onsite storage, or location-specific targeting. Again, new rates would only impact new subscribers. The market based step downs should alleviate any concern of over compensation, but a regular review may be needed, particularly in response to new occurrences in the market (e.g. gas prices volatility and new regulations).

Switching for Existing NEM Customers – Those customers that want to switch to the CSC program can do so as long as they separately meter their installation, assign over their RECs, and commit to installing an advanced inverter when replacement of their current inverter is needed. These customers would have no impact on the total program cap or step downs but a limited window would exist for switching. Those NEM customers who choose not to switch would continue in that program.

Tax Implications – The non-wholesale PV systems under this program would still be on the customer side of the meter and the kWh based compensation would not be a legal sale of energy. It would be a non-taxable bill credit. As under the current program, any excess credits at year end would be forfeited to the distribution utility.

Federal Policy Considerations – If the 30% Federal Investment Tax Credit sunsets, the current rate of CSC compensation for new sign-ups increases proportionally to make up for the loss as long as compensation rate is still below the $20 cent/kWh cap. The same treatment applies to any new tax implications that may arise for the proposed compensation structure.

End of Term Conditions – For all market segments, after the term of the contract is completed, the solar host would be paid at a different rate based on either a wholesale derivative or the then current value of solar rate.

4.6 Comparison to NEM

Figure 6 highlights the existing retail rates in Maine. The capacity-based step down approach would compensate the customer at rates that initially exceed retail rates. Not until Step 8 or 9 does the

estimated payment match current retail rates. A customer's preference at that point depends on future rates and rate design as well as risk tolerance. The CSC provides a fixed predictable rate with adders to encourage technology coupling. Net metering under a traditional rate design does not offer those features even if it is initially at a higher rate than the CSC.

Figure 6. Standard Offer Rates for Maine IOUs

(All values in expressed as ¢/kWh)

Investor-owned Utility	Delivery Rates	Residential /Small Commercial	Total*
CMP	4.19	6.45	10.73
Emera - Bangor Hydro Division	6.63	6.64	13.13
Emera - Maine Public Division	6.31	8.49	14.80
Average		**7.19**	**12.89**

Source: http://maine.gov/mpuc/electricity/standard_offer_rates/index.html
*The average retail rate for Medium Non-residential customers is approximately the same as residential (12.90 ¢) through the end of 2015.

Figure 7. Highlights the differences between the existing net metering framework and proposed program design

Existing NEM Structure	New CSC Program Design
Non transparent payment that can be either above or below the true market cost	Fully transparent compensation rate with customers being paid for the actual values they provide to the grid
More difficult for utility to manage grid as intermittent generation increases	Smart inverters are required.
Lack of easily updateable price signals	Transparent setting of prices on a regular basis
Non locational and technology coupling adders	Able to reward systems in beneficial locations and/or pairing with other technologies
Uncertain economics due to future rate changes	A 20-year contract at a fixed price makes solar financing easier and does not leave customers with unmet expectations if anticipated cost increases do not materialize.

Figure 8. Representative Utility Bill with Value of Solar Credit

CENTRAL MAINE POWER

Your CMP account number:
211-000-0000-001

Central Maine Power
customer assistance line
1-800-750-4000
To report a power outage: 1-800-696-1000

J.Q. CUSTOMER
12 ANYWHERE RD
ANYTOWN STATE
Service location

Billing date: 09/08/14 **Read cycle:** 09 **Page:** 001 of 003

Customer Meter Summary

Meter Number	Read Date	Prior Read date	Number of Days	Meter Reading	Prior Meter Reading	Total KWH
AB0000000000	09/04/14	08/07/14	30	81907	81169	738

Account Summary

Prior balance			$103.32
Payments received through 09/08/14 - thank you		$103.32-	
Balance forward			$0.00
New charges			
Electricity Delivery:	**Central Maine Power (see details below)**	$54.18	
Electricity Supply:	**Standard Offer Service**	$55.79	
Value of Solar Credit:	**300 KWH @ $0.20/KWH**		**($60.00)**
Total new charges			$49.97
Current Account Balance:			$49.97
You have agreed to pay before 10/04/14			**$49.97**

Central Maine Power Delivery Service Account Detail

Prior balance for Central Maine Power delivery					$40.85
Payments received - thank you				$40.85-	
Balance forward					$0.00
Current delivery charges					
Delivery Charges: Residential					
Delivery Service:	738 KWH				
	Up to	**50 KWH @**	$10.65	$43.53+	
	Other	**50 KWH @**	$0.063264		
Total current delivery charges	$43.53				
Central Maine Power account balance:					$43.53

Please see back page for important information

	Your electricity usage (in kilowatt hours)												
	09/14	08/14	07/14	06/14	05/14	04/14	03/14	02/14	01/14	12/13	11/13	10/13	09/13
Daily	25	23	24	25	23	22	23	21	19	28	25	23	21
Monthly	738	700	740	701	680	663	774	583	608	617	808	678	599

Please return this stub with payment to CMP. If applicable, supply payments are forwarded to the appropriate energy provider. Do not send cash or coins, and do not return with staples or paper clips. Refer to back to fill in information for mail address changes or to sign up for the Automatic Payment Option plan.

00018D

J.Q. CUSTOMER
12 ANYWHERE RD
ANYTOWN STATE

Central Maine Power Co.
P.O. Box 847810
Boston, MA 02284-7810

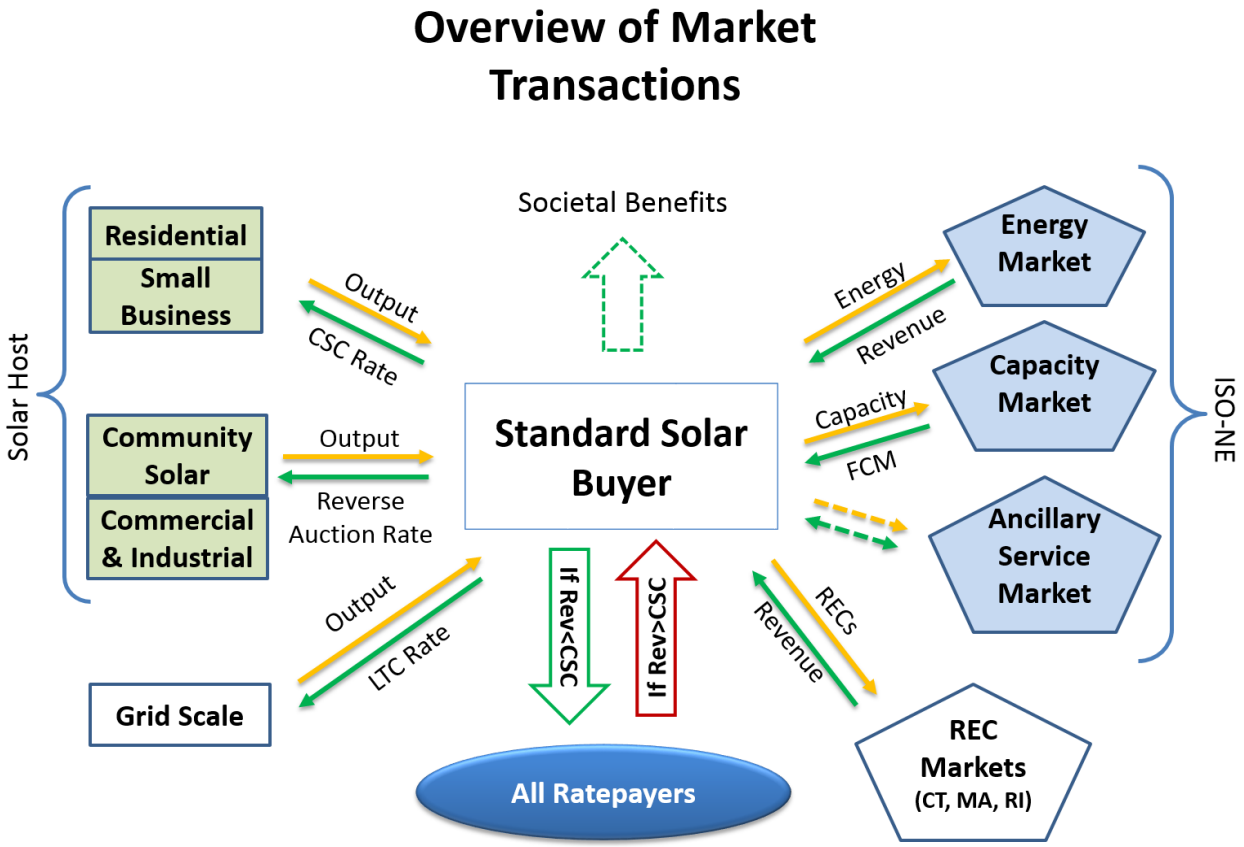
Your CMP account number:
211-000-0000-001

Please pay this amount:
$49.97
before 10/04/14 so you can avoid late charges

Please write amount paid:
$ _____
Thank you!

Please do not write below this line

Figure 9. Market Overview



5. Conclusion

This whitepaper proposes an alternative (not a replacement) to the existing net-metering program that supports the installation of additional solar while prioritizing ratepayer benefits and encouraging fairness, transparency, and market principles. Moreover, it proposes the opening of a new market segment, wholesale DG, which can deliver nearly the same benefits of rooftop solar but with significant discounts in cost. The policy vision presented here seeks to strike a balance between diverse stakeholder interests with a unique focus on producing benefits for all of Maine's ratepayers.

While many details will need to be defined, it is our hope that all parties can agree on the general goal of maximizing benefits while mitigating costs, and that this common guiding principle can foster further dialogue on strategic and sustainable solar deployment in Maine. Rather than simply adopt the policy conventions of other states, Maine can establish a policy tailored to its specific needs, goals, and market structure. Maine can build on the innovative, collaborative work in its Value of Solar Study to be the first restructured market to adopt a value of solar based compensation structure. It can also be one of the first states to aggregate DG resources to the benefit of all ratepayers. This approach also supports building a sustainable solar industry while benefiting all ratepayers. Finally, Maine can both recognize the value and benefits that distributed solar provides, while not necessarily paying for each and every

value. Instead, ratepayers can and should obtain these values at the lowest price possible, while still maintaining resource diversity and customer sited options. For this concept specifically, Maine can show a path forward that balances cost-based resource acquisition with value-based compensation in a way that is efficient, transparent, and fair.

Appendix

Lessons learned: California

In 2007, California launched the California Solar Initiative ("CSI") with the goal of installing 1,940 megawatts (MW) of solar in the three IOU service territories by the end of 2016 and transition the industry to a point where it can thrive without state subsidies. As of the April, 2015 the program has incentivized 1,893 MW of solar, nearly reaching its statutory goal 1.5 years ahead of schedule. The program is ratepayer funded and incentivizes residential and non-residential system between 1 kW and 1,000 kW and is widely regarded as one of the most successful solar incentive programs in the world. It has a unique structure that has allowed it to avoid the boom-bust cycles of other incentive programs that have cooled off or disappeared after feed-in tariffs were retroactively rolled back, incentive programs changed, or renewable energy credit markets collapsed. As the CSI program draws to a close, the market is not cooling off – developers are installing projects in record numbers.

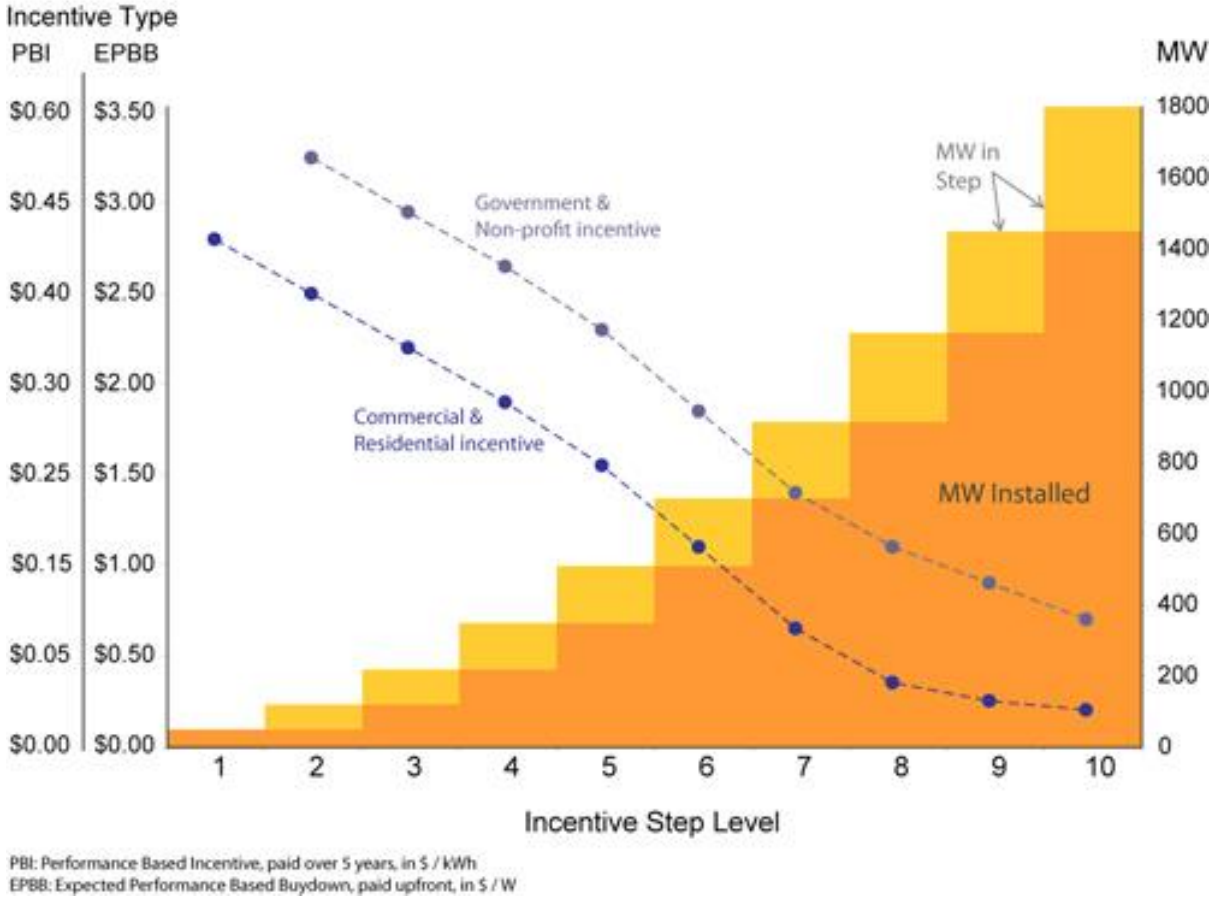
Much of the success of the CSI program can be attributed to its capacity-based declinations in incentive levels. As installed capacity targets are reached, incentive levels drop down accordingly. Under this approach, instead of relying on legislators or having funding allocated based on calendar year or some other arbitrary time frame, the market dictates incentive levels. In addition, competition prevents developers from artificially increasing their rates in order to capture a portion of the incentive –virtually all of it gets passed through to the customer.[9]

The CSI pays solar customers through two types of incentives, (1) Expected Performance-Based Buydown ("EPBB") and (2) a Performance-Based Incentive ("PBI"). The EPBB is an upfront incentive available only for systems <50 kW and is paid on a $/W basis. The PBI is applied to systems >50 kW and pays customers based on actual measured performance of over 5 years. The incentive is paid on a fixed dollar per kilowatt-hour ($/kWh) of generation.

Figure **A-1** highlights how CSI incentives step down as capacity increases. Once the capacity for a given step (shown in yellow) is reached, the program simply transitions to the next step and incentives shift accordingly. With every sequential step, the capacity has a larger. Systems for government or non-profit customers are on a separate track.

[9] Dong, C.G.; Wiser, R.; Rai, V. 2014. Incentive Pass-through for Residential Solar Systems in California. Berkeley, CA: Lawrence Berkeley National Laboratory. http://emp.lbl.gov/sites/all/files/lbnl-6927e.pdf

Figure A-1. The CSI Capacity-based Incentive Step Down



Lessons learned: Minnesota

In March, 2014, Minnesota became the first state in the nation to approve a Value of Solar tariff. The legislation allowed the utilities to voluntarily implement the policy - in lieu of the existing net metering program. Below are key characteristics of MN VOS policy[10,11]:

- **Size limitations**: <1MW (and limited to 120% of the customer's load)
- **Compensation decoupled from retail electricity price:** The customer is billed for total electricity usage at the retail rate. Their bill is credited at the VOS rate based on their solar system's production.
- **Value:**

[10] Minnesota Value of Solar: Methodology. Minnesota Department of Commerce, Division of Energy Resources. April, 2014. http://mn.gov/commerce/energy/images/DRAFT-MN-VOS-Methodology-111913.pdf
[11] Cory, Karlynn. Minnesota Values Solar Generation with New "Value of Solar" Tariff. October 3, 2014. NREL (blog). https://www.nrel.gov/tech_deployment/state_local_governments/blog/vos-series_minnesota

  - The VOS is expressed as the levelized value over 25 year, expressed in $/kWh.
  - Reflects values to the utility, its customers, and to society.
  - VOS rate is updated annually, using transparent inputs and calculations.
- **Tariff**: Intended to reflect the displacement of existing values - it is not an incentive.

The VOS rate, established by the MN Department of Commerce, is currently higher than retail electricity costs. Therefore, no MN utility has adopted the policy. However, as retail prices increase – or as the VOS decreases - and ultimately eclipses the VOS rate, it is likely that the utilities will opt to apply to the MN Public Utilities Commission to enact the VOS in the place of net metering. By establishing a transparent market price, the VOS addresses concerns about having non-solar customers subsidizing solar customers. It remains to be seen, however, whether the VOS is compatible with 3rd party business models.

Lessons Learned: Arizona

In 2012 the Arizona Corporation Commission instated a quarterly trigger decline mechanism for residential PV incentives. This was in response to boom and bust cycles of incentives that hurt the industry and led to ratepayers over paying for incentives. Perhaps the most intricate of any state step down, the exact amount of the incentive decline related to how soon a capacity target was reached. This produced a gradual step down sensitive to panel prices and financial innovation.

Figure A-2. Rules for Arizona's Quarterly Declination Mechanism

Date of Trigger	Reservations to Activate Trigger	Rules for Incentive Reductions
On or before March 31, 2012	25%	If the trigger is activated there will be a $0.15/Watt incentive decline.
On or before June 30, 2012	50%	If the trigger is activated within 30 days of the last trigger activation there will be a $0.20/Watt incentive decline, 31-60 days a $0.10/Watt incentive decline, over 60 days a $0.05/Watt incentive decline.
On or before September 30, 2012	75%	If the trigger is activated within 30 days of the last trigger activation there will be a $0.20/Watt incentive decline, 31-60 days a $0.10/Watt incentive decline, over 60 days a $0.05/Watt incentive decline.
On or before November 1, 2012	90%	If the existing incentive is greater than $0.35 per Watt, the incentive will reduce to $0.20 per Watt. If the existing incentive is less than or equal to $0.35 the incentive will decline to $0.10 per Watt.

Due to this structure, 2012 saw a record year for residential installs in Arizona compared to years past. The rooftop solar industry was able to scale and ratepayers saved money. This set the stage for the industry to move off of direct incentives the following year. NREL in a report on "value of solar tariffs stated the following:

> "It is only within the last two years that solar in portions of certain states (e.g., Hawaii, California, and Arizona) has moved from pre-economic to grid-competitive, allowing for the reduction or elimination of state and utility incentives while still maintaining high solar growth rates. Utilities in those three states account for 65% of the national distributed solar market capacity in MW (Makhyoun et al. 2014)."[12]

[12] "Value of Solar: Program Design and Implementation Considerations" National Renewable Energy Laboratory (NREL) http://www.nrel.gov/docs/fy15osti/62361.pdf

Proposal from Pemco to convert to LED Street Lights – Angus Jennings, Town Manager

Pemco

Fully Financed, Turnkey Municipal Street Lighting

For many Maine cities and towns, energy efficiency improvement projects, and in particular street light retrofits, remain one of the most attractive and accessible means of reducing municipal costs and maintenance activities, while enhancing public safety.

Pemco & Co., a Maine LLC is an energy project investor with a solid track record of enabling municipalities to accomplish their energy cost reduction goals with no capital outlay.

We offer turnkey, off-balance-sheet solutions that reduce operating costs and transfers risk with 3rd party ownership for terms defined by the municipality.

Pemco can partner with you to accomplish your street light retrofit objectives and:

- Conserve capital budgets for other mission-critical projects
- Reduce energy and related maintenance costs
- Improve public safety and quality of life for residents

Read about Pemco's recently completed LED street lighting project at the former Naval Air Station in Brunswick, ME.

Contact Kim Bershin at 207-808-0560 or email her at kbershin@pemcocapital.com to learn more about Pemco's energy efficiency solutions.

Street Lighting Service Proposal

Summary of Indicative Terms and Conditions

Pemco & Co., LLC. ("Pemco") is pleased to provide the Town of Hampden, ME ("Client") this summary term sheet (the "Term Sheet") outlining proposed terms and conditions for a turnkey street lighting upgrade program. This Term Sheet does not include all the terms and conditions of the proposed transaction described herein (herein referred to as the "Transaction"). The indicative terms are preliminary, non-binding and subject to, among other things, completion of due diligence and the execution of a mutually acceptable agreement (the "Agreement"). This Term Sheet does not constitute a commitment to arrange or provide financing of any kind or to enter into the Transactions, on the terms described herein or otherwise. Any such commitment, if forthcoming, would be evidenced by a separate written agreement, executed and delivered by the applicable Pemco entity. This Term Sheet was prepared for the sole benefit of Client and shall not be relied upon or shared with any other person or entity.

Summary	Pemco proposes to perform all services required to upgrade the existing street lighting equipment with a new LED street lighting system identified in Exhibit A – Project Description. Pemco will provide Client with street lighting service to include the following: a) Purchase existing light fixtures from CMP, b) Design, specify, and bid the new LED street light system, c) Safely remove and dispose of existing equipment, d) Finance 100% of project cost e) Install and commission the new LED street light system f) 24/7 service system, including operation, monitoring and predictive maintenance - responding to calls within 48 hours. Upon completion of the installation, Client will pay Pemco a fixed amount per type of fixture as shown in Exhibit A – Project Description. Pemco provides predictive maintenance via radio frequency (rf) controls on each fixture and responsive maintenance within 48 hours of call from customers. Client has the option to purchase the project during and upon expiration of the term.
Client	Town of Hampden, ME ("Client")
Investor / Pemco	Pemco & Co., LLC and/or an affiliate thereof ("Pemco")
Contractor	Enterprise Electric, Inc. of Lisbon Falls, ME ("Contractor")
Project Description	The safe removal and disposal of 366 +/- existing light fixtures currently owned and operated by Client and/or Client's utility and the design, specification, procurement, financing, utility acquisition, installation and commissioning of 366 +/- LED luminaires and a rf control/monitoring system (the "Equipment") and all maintenance, monitoring, and reporting activities during the term (collectively, the "Project").

Street Lighting Service Proposal

Summary of Indicative Terms and Conditions

Equipment	Equipment listed in *Exhibit A - Equipment Schedule*, and all adapters, replacements, repairs, restorations, improvements to such Equipment
Agreement	Pemco and Client will enter into a concession agreement ("Agreement") whereby Pemco will provide Street Lighting Service to Client under a concession granted by Client subject to certain standards of operation including hours of operation and lumen output ("Operating Standards") to be mutually agreed upon by Pemco and Client.
Term	The Agreement will provide for two periods: 1. Construction Period: Beginning with the date that all agreements are executed and continuing until the sooner of a) the Delivery Date, or B) six (6) months. 2. Operating Period: Beginning on the Delivery Date and continuing for a period of one hundred and twenty (120) months (the "Operating Term").
Expiration of Operating Term	Upon the expiration of the Operating Term, Client will have the option to: a) Take full ownership of the Equipment, or b) Negotiate an extension of the term and require Pemco to make additional upgrades to the Equipment, or c) Take ownership and extend the maintenance portion of the Agreement.
Early Purchase	Client will have the option to purchase the Equipment at any time during the term at predetermined prices to be set forth in the Agreement.

Payment for Services

Construction Period Payments	During the Construction Period, Pemco will invoice Client monthly for equipment that has been installed on a per unit/per day basis.
Operating Period Payments	Client will be invoiced on a monthly basis as shown in *Exhibit A.* Payments will escalate three (3%) percent annually.

Summary of Services

General	Pemco will be responsible for providing the following services during the term of the Agreement subject to mutually agreed upon standards ("Operating Standards").
Audit	The inventory of fixtures will be confirmed and plotted on a GIS map with the attributes of each existing fixture recorded
Design / Engineering	The project will be designed by a qualified engineer and include the development of the GIS map with a photometric overlay to ensure the project meets the agreed upon roadway lighting code.

Street Lighting Service Proposal

Summary of Indicative Terms and Conditions

Financing	Pemco will pay for all costs associated with the Project including charges paid to the utility provider to purchase the existing fixtures, acquisition of the System, all design/engineering, labor and other costs.
Procurement	Pemco will bid and procure the Equipment to ensure competitive pricing.
Installation	Pemco's subcontractor will install the equipment subject to an installation plan mutually agreed upon by Client and Pemco.
Ownership	Pemco will own the Equipment for the term of the Agreement.
Operations and Maintenance	Pemco's subcontractor will operate and maintain ("O&M") the equipment subject to the agreed upon Operating Standards. Residents will be given a phone number to call and a smartphone application to report any issues with the Equipment and subcontractor will respond within 48 hours.
Performance Reports	Client will receive an Annual Performance Report within thirty (30) days of each Commencement Date Anniversary to report GIS logistics, Luminaire Type, Wattage Rating, Service Details, Energy Savings, Maintenance Savings, and environmental benefits of the project.
Additional Terms	
Change to Terms	Upon full completion of Pemco's due diligence and underwriting process, Pemco will confirm these proposed terms or may modify the proposed terms as appropriate.
Legal / Compliance	Client understands and agrees that neither Pemco nor any of its affiliates and/or assigns has acted or is acting as its municipal advisor, swap advisor, financial advisor or in any other advisory, agency or fiduciary capacity with respect to the Transaction (whether or not Pemco or any of its affiliates has provided or is currently providing other services to Client on related or other matters). In addition, Client acknowledges that it has determined, without reliance upon Pemco or any of its affiliates, the financial and economic risks and merits, as well as the legal, tax and accounting characterizations and consequences, of the Transaction and it is capable of assuming such risks.

EXHIBIT A
Equipment & Payments

Existing Fixture Type	# Units	LED Watts	Cost p/ Month	Total p/ Month	Total p/ Year
50w HPS	56	25	$ 8.48	$ 474.61	$ 5,695.34
70w HPS	243	25	$ 8.19	$ 1,990.38	$23,884.51
100w HPS	25	38	$ 9.54	$ 238.43	$ 2,861.22
150w HPS	6	70	$ 12.88	$ 77.28	$ 927.31
250w HPS	12	101	$ 17.82	$ 213.83	$ 2,565.97
100w MV	1	38	$ 9.54	$ 9.54	$ 114.45
175w MV	4	70	$ 12.88	$ 51.52	$ 618.21
400w MV	5	167	$ 24.01	$ 120.07	$ 1,440.84
105w Incandescent	14	38	$ 9.54	$ 133.52	$ 1,602.28
	366				$39,710.12
Monthly Payment				$ 3,309.18	
Estimated Existing Cost					$54,740.26
Estimated Savings				27%	$15,030.14

Assumptions/Notes

HPS	High pressure sodium		
MV	Mercury Vapor		
Average usage hrs p/day		11.5	hours
Agreement Term		120	months
kWh Rate for new system	$	0.12	p/kWh. Rate to be finalized by PUC and will be subject to change.
Average NAV	$	87.00	Average of NAV values provided by CMP, Emera, and MSLG. This is the purchase price to be paid for each existing fixture that represents the unamortized value due to the utility. For purposes of this proposal all existing fixtures were assumed to be 1/2 way through their depreciable life. This methodology and corresponding amounts have not been finalized by the PUC and may increase or decrease Pemco's price per unit per month.

-

Street Light Petitions under Town of Hampden Policy on New Streetlights – recommendations by Chief Joe Rogers

Penobscot Meadow Drive – petition of Nathan Milliken, Eastern Maine Processing & Distribution Center, 16 Penobscot Meadow Drive

Crosby Way at Route 202 (driveway to Calvary Apostolic Church and Ammo Park) – petition of Tracy Thibodeau on behalf of Maine Ground Developers

Hampden Public Safety

Emergency Services Working Together

106 Western Avenue
Hampden, ME 04444

Phone: 207-862-4000
Email: publicsafety@hampdenmaine.gov

http://www.hampdenmaine.gov/
https://www.facebook.com/hampdenpublicsafety

TO: Angus Jennings, Town Manager
FROM: Joe Rogers, Public Safety Director
RE: Streetlight Requests
DATE: March 24, 2016

As of this date, I have received two requests for streetlight installation at the following locations:

1. Crosby Way and Route 202

   At the present time, Crosby Way is classified as a private drive and has not been accepted as a Town of Hampden road. If the road were to be accepted as a Town of Hampden road, I would recommend that a streetlight be installed at the intersection of Crosby Way and Route 202. Since it is considered a private drive, the Public Safety Department's recommendation is that we not install lighting at this location; and any lighting installed should be done at the owner's expense.

2. Penobscot Meadow Drive by the US Postal Collection Boxes

   The US Postal Collection boxes are presently located approximately 30 yards from our existing streetlight. In prior correspondence the DPW Director recommended that relocation of the collection boxes may be a good solution.

   I spoke with USPS plant manager, Lloyd Keast, who stated that the facility has no immediate plans to relocate the mailbox on Penobscot Meadow Drive. Given that information, I would recommend that a light be installed closer to the boxes.

Angus Jennings <townmanager@hampdenmaine.gov>

Street Light Request

1 message

Dean Bennett <economicdevelopment@hampdenmaine.gov> Wed, Mar 2, 2016 at 1:22 PM
To: Tracy Thibodeau <tthibodeau@post.freightlinerofmaine.com>, Tom Channell <mainedist@juno.com>, Jonathan Channell <unclejonny04@yahoo.com>, Oscar Emerson <oemerson48829@roadrunner.com>
Cc: Angus Jennings <townmanager@hampdenmaine.gov>

Good Afternoon,

Chief Rogers has reviewed the application for street lights per the Street Light Policy and has made the following recommendation with regard to Crosby Way/Route 202.

1. Crosby Way and Route 202

   At the present time, Crosby Way is classified as a private drive and has not been accepted as a Town of Hampden road. If the road were to be accepted as a Town of Hampden road, I would recommend that a streetlight be installed at the intersection of Crosby Way and Route 202. Since it is considered a private drive, the Public Safety Department's recommendation is that we not install lighting at this location; and any lighting installed should be done at the owner's expense.

Manager Jennings will be presenting the Chiefs recommendations to the Council's Infrastructure Committee on March 28th, and then the Infrastructure Committee will refer its recommendation to the Town Council in April.

If you would like to appear before the Infrastructure Committee or the Town Council, please let me know and I will let Manager Jennings know of your desire to do so.

Thank You,
Dean

Dean L. Bennett
Director of Community and Economic Development
106 Western Avenue
Hampden, Maine 04444
207-862-3034

Angus Jennings <townmanager@hampdenmaine.gov>

Re: Lighting

1 message

Angus Jennings <townmanager@hampdenmaine.gov> Wed, Feb 24, 2016 at 2:25 PM
To: tthibodeau <tthibodeau@post.freightlinerofmaine.com>
Cc: Dean Bennett <economicdevelopment@hampdenmaine.gov>, Joe Rogers <jlrogers@hampdenmaine.gov>

Tracy,
Following on Dean's email, it's correct that the Council's consideration of a request to take on responsibility for a new street light would be in the context of the Street Light Policy.
There are already two petitions on file this winter, and Public Safety Director Rogers (copied on this email) is working on his evaluation and recommendation (pursuant to that policy) of each petition by March 1. If you'd like yours to be considered you'll need to submit it soon. Since the deadline was last month and March 1 is Tuesday I can't guarantee Chief Rogers will be able to process it timely even if we receive the request today or tomorrow. I suggest working through Dean or with the Chief directly to be sure he receives whatever he needs to have on file to understand the request for purposes of his evaluation under the policy.

Thanks,
Angus

On Mon, Feb 22, 2016 at 8:08 AM, Dean Bennett <economicdevelopment@hampdenmaine.gov> wrote:

> Tracy,
>
> The town has a street lighting policy. I have included a link for your convenience. I spoke with Manager Jennings and he advised that you can petition the Town Council per the policy. I believe the deadline is in January, however, we are considering two others at the moment, so he suggested you could submit and he would include your petition with the other two.
>
> http://www.hampdenmaine.gov/vertical/sites/%7B1FCAF0C4-5C5E-476D-A92E-1BED5B1F9E05%7D/uploads/Street_Light_Policy.pdf
>
> Regards,
> Dean
>
> Dean L. Bennett
> Director of Community and Economic Development
> 106 Western Avenue
> Hampden, Maine 04444
> 207-862-3034
>
> **A reasonable effort will be made to respond to all emails received in a timely manner. Please note that all emails sent from or coming to this address are considered a public document and are subject to the State of Maine Freedom of Access Law.**
>
> On Fri, Feb 19, 2016 at 9:58 AM, tthibodeau <tthibodeau@post.freightlinerofmaine.com> wrote:
>
> > Hi Dean, I understand the pole has been set at the entrance of Crosby Way. The next step is the lighting order to have Emera install the light. This needs to be ordered by the party that will pay the billing. I had always been under the understanding that it would be the town in this case. Is that your understanding? Let me know. Thanks Tracy

Tracy Thibodeau

Chief Financial Officer

Freightliner of Maine, Inc

422 Perry Road

Bangor, ME 04401

Dir line 207-217-6935 fax 207-947-6557

--

Angus Jennings
Town Manager

Town of Hampden
106 Western Avenue
Hampden, ME 04444
(207)-862-3034
townmanager@hampdenmaine.gov

Angus Jennings <townmanager@hampdenmaine.gov>

RE: Street Light

1 message

Milliken, Nathan L - Hampden, ME <Nathan.L.Milliken@usps.gov> Thu, Jan 14, 2016 at 4:33 PM
To: Angus Jennings <townmanager@hampdenmaine.gov>

Thanks. I think this email will be sufficient.

From: Angus Jennings [mailto:townmanager@hampdenmaine.gov]
Sent: Wednesday, January 13, 2016 4:23 PM
To: Milliken, Nathan L - Hampden, ME
Cc: Denise Hodsdon; Sean Currier
Subject: Re: Street Light

Hello,

I left a phone message for Mr. Mitchell this afternoon. When we connect we'll talk over whether changes to lighting and/or box locations is the better option.

For purposes of the town streetlight policy, we'll consider your email to be a "petition" timely filed before the Jan. 15 deadline - unless you do have an actual petition with signatures, in which case we'll be happy to accept this.

Depending on how things turn out with Mr. Mitchell, I'd guess that this streetlight request would be added to a meeting agenda in February. We'll let you know.

Thanks,

Angus

On Wed, Dec 30, 2015 at 6:54 PM, Milliken, Nathan L - Hampden, ME <Nathan.L.Milliken@usps.gov> wrote:

The person you should speak to about this is Mike Mitchell, the Plant Manager here. We actually do the collection on the boxes right outside the gate, not Hampden Post Office. Mike Mitchell is also a much higher level (Level 24) I think Hampden PO is only an level 18. His phone number is 941-2004.

I would agree with aligning it better with traffic flow except that the box is collected at night on foot by an employee here. The further you move the boxes the more walking, in the dark, has to be done.

Nathan L. Milliken, SMO, Tour 3

Eastern Maine Processing & Distribution Center| 16 Penobscot Meadow Dr | Hampden, ME 04444-7097

Work Phone (207) 941-2042 | Fax (207) 941-2023 | Cell (207) 356-3965

From: Angus Jennings [mailto:townmanager@hampdenmaine.gov]
Sent: Wednesday, December 30, 2015 6:36 PM
To: Milliken, Nathan L - Hampden, ME
Cc: Denise Hodsdon; Sean Currier; Joe Rogers
Subject: Re: Street Light

Mr. Milliken,

On the advice of our Public Works Director, we plan to speak with the Postmaster about whether the mailboxes can be relocated to better align with traffic flow. Let us know if you've already pursued this route; otherwise we'll look into this next week.

You may wish to proceed with a petition under the Street Light Policy in the event this hasn't been resolved before January 15. There is no specific petition form; I would suggest drafting a simple petition statement then gathering signatures, including name and address, on the form. The spirit of the policy is to gather input from those affected, so we would welcome petitions signed by people who work in Hampden. The inclusion of addresses will help the Council understand how many signers are residents and how many are employees.

Thanks,

Angus

On Wed, Dec 23, 2015 at 4:17 PM, Denise Hodsdon <clerk@hampdenmaine.gov> wrote:

---------- Forwarded message ----------
From: **Milliken, Nathan L - Hampden, ME** <Nathan.L.Milliken@usps.gov>
Date: Wed, Dec 23, 2015 at 4:03 PM
Subject: RE: Street Light
To: Denise Hodsdon <clerk@hampdenmaine.gov>

Good Afternoon,

Is there a specific petition form? Can people sign that work in Hampden or only residents?

Nathan L. Milliken, SMO, Tour 3

Eastern Maine Processing & Distribution Center| 16 Penobscot Meadow Dr | Hampden, ME 04444-7097

Work Phone (207) 941-2042 | Fax (207) 941-2023 | Cell (207) 356-3965

From: Denise Hodsdon [mailto:clerk@hampdenmaine.gov]
Sent: Wednesday, December 23, 2015 7:54 AM
To: Milliken, Nathan L - Hampden, ME
Cc: Angus Jennings; Joe Rogers
Subject: Re: Street Light

Good Morning Mr. Milliken,

The Town of Hampden has a Streetlight Policy that governs the process of requesting a streetlight. Pursuant to the policy, the deadline for submitting petitions requesting a streetlight is January 15th of each year.

I have included Town Manager Angus Jennings and Public Safety Director Joseph Rogers in this response and if you have any questions, please feel free to contact us.

Denise R. Hodsdon, CMC

Town Clerk

Town of Hampden

106 Western Avenue

Hampden, Maine 04444

Tel: (207) 862-3034

Fax: (207) 862-5067

On Tue, Dec 22, 2015 at 5:41 PM, Milliken, Nathan L - Hampden, ME <Nathan.L.Milliken@usps.gov> wrote:

To whom it may concern,

I work at Eastern Maine Mail Processing & Distribution Center, on 16 Penobscot Meadow Dr. I head the safety committee for the facility. Some of the employees were wondering if we could get a streetlight over the collection boxes by the entrance. Often time customers drive right past them and try to come inside the secure facility to drop of their mail because they don't see the collection boxes. Also there is a lot of activity by tractor trailers in this area and many people would feel safer with the increased visibility over the collection boxes.

Nathan L. Milliken, SMO, Tour 3

Angus Jennings <townmanager@hampdenmaine.gov>

Re: Street Light

1 message

Sean Currier <publicworks@hampdenmaine.gov> Wed, Dec 30, 2015 at 2:38 PM
To: Denise Hodsdon <clerk@hampdenmaine.gov>
Cc: Angus Jennings <townmanager@hampdenmaine.gov>, Dean Bennett <economicdevelopment@hampdenmaine.gov>, Joe Rogers <jlrogers@hampdenmaine.gov>

Angus, In lieu of the mailboxes at the post office causing a traffic hazard and a lighting issue, would this be a solution to get traffic to a safer path? It may be worth a look. Let me know if you would like to try to get the post office to change locations with the boxes.

Thanks,
Sean

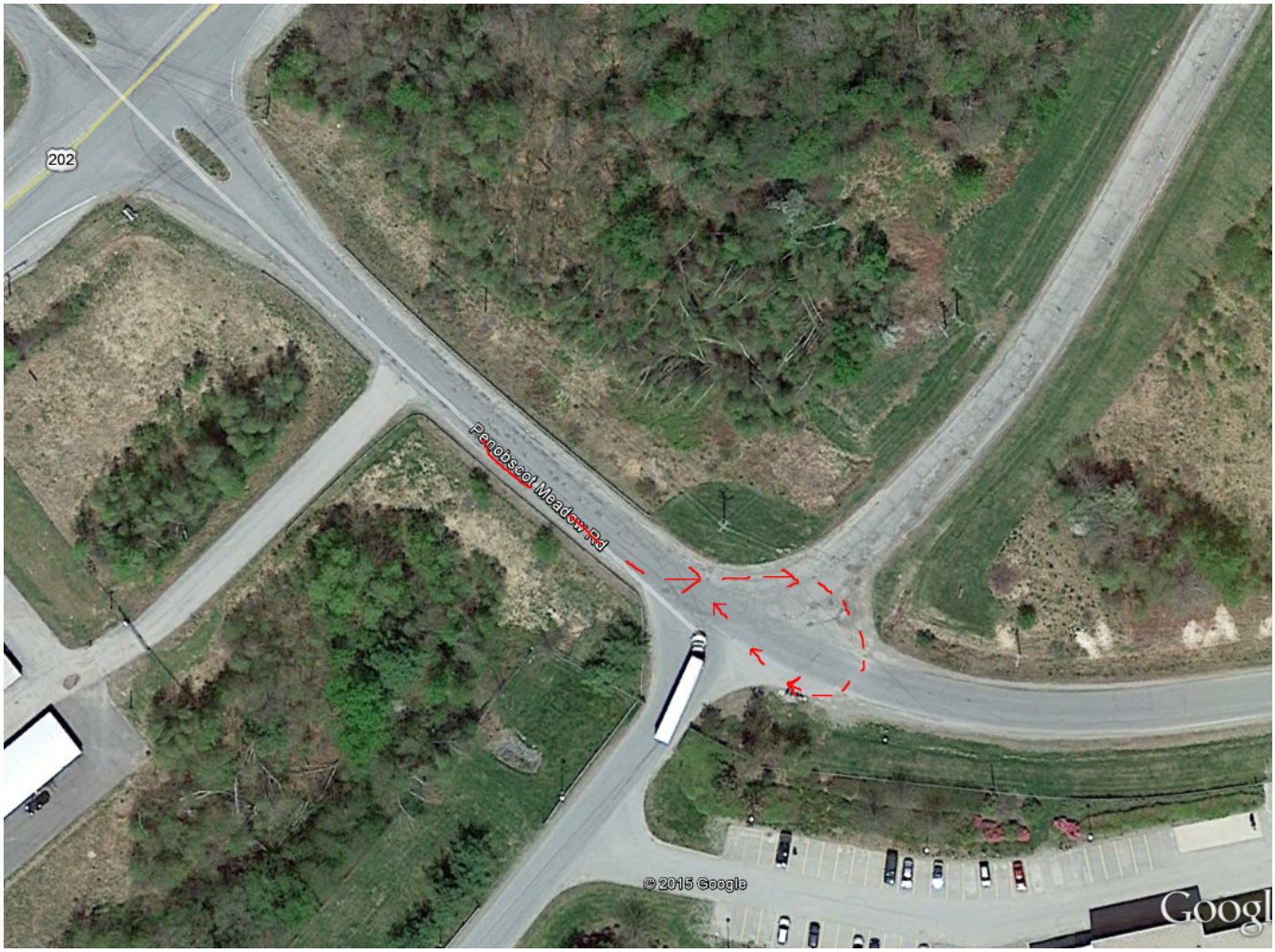
Proposed:

Existing:(wrong direction for traffic)

Sean Currier
Public Works Director
Town of Hampden
106 Western Avenue
Hampden, ME 04444
(207)862-3337

On Wed, Dec 23, 2015 at 10:21 AM, Sean Currier <publicworks@hampdenmaine.gov> wrote:

> Angus, The location of the mailboxes creates a significant road hazard. I would suggest requesting that they move the mailboxes to a location off the road. Currently, people pull a U-turn (the wrong direction) in the road to access the mailboxes and there is a significant increase of traffic now with Emera moved in. I suggest we make the post office revise the mailbox drop off. See below. Questions / Concerns / Comments ? Joe?
>
> Sean


202
Penobscot Meadow Rd
© 2015 Google

Sean Currier
Public Works Director
Town of Hampden
106 Western Avenue
Hampden, ME 04444
(207)862-3337

On Tue, Dec 22, 2015 at 5:54 PM, Denise Hodsdon <clerk@hampdenmaine.gov> wrote:

> Not sure who this request should be forwarded to...
>
> Denise R. Hodsdon, CMC
> Town Clerk
> Town of Hampden
> 106 Western Avenue
> Hampden, Maine 04444
> Tel: (207) 862-3034
> Fax: (207) 862-5067
>
> ---------- Forwarded message ----------
> From: **Milliken, Nathan L - Hampden, ME** <Nathan.L.Milliken@usps.gov>
> Date: Tue, Dec 22, 2015 at 5:41 PM
> Subject: Street Light
> To: "info@hampdenmaine.gov" <info@hampdenmaine.gov>
>
> To whom it may concern,

I work at Eastern Maine Mail Processing & Distribution Center, on 16 Penobscot Meadow Dr. I head the safety committee for the facility. Some of the employees were wondering if we could get a streetlight over the collection boxes by the entrance. Often time customers drive right past them and try to come inside the secure facility to drop of their mail because they don't see the collection boxes. Also there is a lot of activity by tractor trailers in this area and many people would feel safer with the increased visibility over the collection boxes.

Nathan L. Milliken, SMO, Tour 3

Eastern Maine Processing & Distribution Center| 16 Penobscot Meadow Dr | Hampden, ME 04444-7097

Work Phone (207) 941-2042 | Fax (207) 941-2023 | Cell (207) 356-3965

Draft revisions to Hampden Driveway/Entrance Culvert policy – Sean Currier, DPW Director

Angus Jennings <townmanager@hampdenmaine.gov>

Driveway Culvert/Entrance Policy

1 message

Sean Currier <publicworks@hampdenmaine.gov> Tue, Mar 1, 2016 at 12:23 PM
To: Angus Jennings <townmanager@hampdenmaine.gov>

Angus, I know the Town Council approved the acceptance of the Maine DOT policy as their own in August of 2009 but I thought it would be more appropriate to replace DOT with Town of Hampden and reference the DOT culvert policy where applicable. Please see the attached. Maybe the Council would like to adopt our own policy as created (attached) or at least review at the next Infrastructure meeting? If not, I will drop the matter, I just thought it would protect the Town and be cleaner if we had our own policy. I have attached MeDOT policy as well for reference.

Thanks,

Sean

Sean Currier
Public Works Director
Town of Hampden
106 Western Avenue
Hampden, ME 04444
(207)862-3337

2 attachments

DRIVEWAY CULVERTS.pdf
123K

Town of Hampden Culvert Policy.docx
15K

Town of Hampden

Driveway/Entrance Culvert Policy

Background:

Title 23SS 705 MRSA defines culvert responsibility with respect to driveway/entrance culverts. With consideration of this law and the various situations and complaints that have occurred around the state, this document has been prepared to more clearly define the specific responsibilities of Maine's taxpayers as a whole through MaineDOT, The Town of Hampden and the individual highway abutters.

A culvert is "a covered channel that carries water under a road, railway or through an embankment". In the case of a driveway or entrance culvert, it is the culvert's ability to effectively move water from one side of a driveway or entrance to the other side that is critical to protecting the Town's infrastructure (the public corridor to which the driveway or entrance connects). To the end, it is in the Town's interest to ensure that this conveyance of water is maintained. For additional information regarding State or State Aid roads, refer to the Maine Department of Transportation Driveway/Entrance Culvert Policy.

Policy:

Activities performed by the Town's Public Works crew with regard to driveway/entrance culverts and within the right-of-way of a Town Road shall include the following:

1) When a culvert has become plugged by natural causes, such as the gradual accumulation of debris or ice, or has failed to the point where water can no longer be effectively conveyed, the Town of Hampden is responsible for restoring adequate flow through the culvert.

2) When the Town of Hampden undertakes a capital or ditching project that requires the replacement or relocation of driveway/entrance culverts, the Town of Hampden is responsible for such culvert replacement/relocation and driveway/entrance restoration.

3) When a natural event causes regional or localized flooding and washouts, causing a culvert to fail and/or a driveway/entrance to washout, the Town of Hampden will reinstall or replace the culvert (at the Town of Hampden's option) and reestablish access to the abutting property.

Activities that are the responsibility of the owner/abutter, in accordance with Title 23 SS 705 MRSA, shall include the following:

1) Culvert replacement not covered above.

2) Driveway repairs of any type (excepting damage caused by natural events as described above in item 3). This includes such issues as: bumps or depressions that may develop over a culvert (usually due to seasonal freeze/thaw cycles), erosion of the driveway/entrance side slopes, and potholes that may develop as the result of a deteriorating pipe prior to replacement.

3) Restoring flow when the culvert is obstructed, either directly or indirectly, by the actions of the abutter or their agents (such as intentionally depositing leaves, debris or plowing snow into a ditch line).

When an abutter fails to uphold their responsibilities and damage to the highway corridor has occurred or is imminent, the Town of Hampden may address the issue and pursue compensation as necessary.

Town Clerk:

_____

APPROVED by majority of the Town Council:

_____

_____

_____

_____

_____

_____

Maine Department of Transportation
Driveway/Entrance Culvert Policy

Background:

Tile 23§705 MRSA defines culvert responsibility with respect to driveway/entrance culverts. With consideration of this law and the various situations and complaints that have occurred around the state, this document has been prepared to more clearly define the specific responsibilities of Maine's taxpayers as a whole (through MaineDOT) and the individual highway abutters.

A culvert is "a covered channel that carries water under a road or railway, or through an embankment". In the case of a driveway or entrance culvert, it is the culvert's ability to effectively move water from one side of a driveway or entrance to the other side that is critical to protecting the state's infrastructure (the public corridor to which the driveway or entrance connects). To that end, it is in the state's interest to ensure that this conveyance of water is maintained.

Policy:

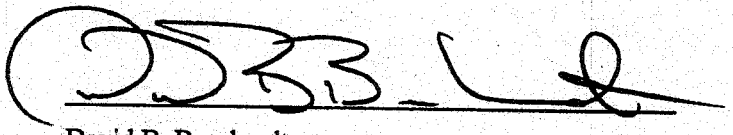
Activities performed by MaineDOT crews with regard to driveway/entrance culverts (in accordance with Tile 23§705 MRSA and within the right-of-way of a state or state-aid highway) shall include the following:

1) When a culvert has become plugged by natural causes, such as the gradual accumulation of debris or ice, or has failed to the point where water can no longer be effectively conveyed, MaineDOT is responsible for restoring adequate flow through the culvert.
2) When MaineDOT undertakes a capital or ditching project that requires the replacement or relocation of driveway/entrance culverts, MaineDOT is responsible for such culvert replacement/relocation and driveway/entrance restoration.
3) When a natural event causes regional or localized flooding and washouts, causing a culvert to fail and/or a driveway/entrance to washout, MaineDOT will reinstall or replace the culvert (at MaineDOT's option) and reestablish access to the abutting property.

Activities that are the responsibility of the owner/abutter, in accordance with Tile 23§705 MRSA, shall include the following:

1) Culvert replacement not covered above.
2) Driveway repairs of any type (excepting damage caused by natural events as described above in item 3). This includes such issues as: bumps or depressions that may develop over a culvert (usually due to seasonal freeze/thaw cycles), erosion of the driveway/entrance side slopes, and potholes that may develop as the result of a deteriorating pipe prior to replacement.
3) Restoring flow when the culvert is obstructed, either directly or indirectly, by the actions of the abutter or their agents (such as intentionally depositing leaves or other debris into a ditchline).

When an abutter fails to uphold their responsibilities and damage to the highway corridor has occurred or is imminent, MaineDOT may address the issue and pursue compensation as necessary.



5/22/09

David B. Bernhardt
Director
Bureau of Maintenance & Operations

Date

Draft New Ordinance: Street Opening/Utility Connection Ordinance – Sean Currier, DPW Director

TOWN OF HAMPDEN, MAINE
STREET OPENING/UTILITY CONNECTION ORDINANCE

Adopted: Hampden Town Council, 4/18/2016
Effective: 5/18/2016

DRAFT

CERTIFIED BY:

_____
Paula Scott, Town Clerk

Affix Seal

TOWN OF HAMPDEN, MAINE
STREET OPENING/UTILITY CONNECTION ORDINANCE
TABLE OF CONTENTS

TOWN OF HAMPDEN

STREET OPENING/UTILITY CONNECTION ORDINANCE

SECTION I
CONFLICTING ORDINANCES

1.1 Repeal Of Conflicting Ordinances or Resolves – All ordinances and resolves or parts thereof in conflict with this ordinance or inconsistent with the provisions of this ordinance are hereby repealed.

SECTION II
PERMITS REQUIRED

2.1 Street Opening Permit – It shall be unlawful for any person, firm or corporation to tunnel under or to make any excavation in any street, alley or other public place in the Town without first having obtained a street opening permit from the Hampden Public Works Department. All permits will be issued in accordance with the provisions of Title 23, Chapter 307, Subchapter II of the Maine Revised Statutes Annotated.

1) The permit will be issued by the Hampden Public Works Department.
2) A standard construction detail and instructions for the contractor will be issued with the permit. All work shall conform to the requirements of the standard detail and instructions to the contractor.
3) The permit must be obtained by the contractor or utility company doing the work.
4) Certain roads within the Town of Hampden also require a highway opening permit issued by the Maine Department of Transportation. The Public Works Department will maintain a listing of such streets.

2.2 Sewer and Storm drain Connection Permits - All new or replacement sanitary sewer or storm drain connections to town mains shall be subject to all of the regulations set forth hereinafter relative to private utility connections, except that prior to the issuance of said permit, the payment of any outstanding assessments for the town sewer construction will be required in addition to the permit fee.

2.3 Limitations

1) No street opening permit will be issued between December 1 in any one year and April 1 in the following year except for an emergency.
2) Permits will require the contractor to maintain temporary trench repair until such time as a permanent repair can be made.
3) The contractor shall perform any work requiring inspection by the town during normal weekday working hours (7:30 a.m. to 5:00 p.m.), unless an emergency situation requires otherwise. The town will bill the contractor for additional inspection costs for inspections outside these hours in accordance with the fee schedule herein.
4) The contractor shall schedule work within the street to avoid rush-hour traffic whenever possible.
5) Prior to obtaining a street opening permit from the Town, the contractor shall provide the Town with a dig-safe number. The contractor will also be responsible for contacting utilities not participating in the dig-safe program.

SECTION III
CONTRACTORS

3.1 Approved Contractors - All work in connection with the excavation and backfill of any opening in a public way shall be performed only by approved contractors or by the forces of the particular utility concerned. Adequate equipment shall be employed so as to expedite the completion of the work, and proper construction methods shall be used, as hereinafter described.

3.2 Insurance - The contractor doing the work shall show proof of adequate insurance coverage before a permit is issued.

3.3 Unsatisfactory Construction - Contractors with a work history of two unsatisfactory similar type street opening or utility connection projects within the previous 18 months, in the opinion of the Public Works Director, or having an outstanding balance related to a previous street opening permit, will not be issued a street opening or utility connection permit.

SECTION IV
INSPECTIONS

4.1 Inspections - All work in connection with street openings and utility connections will be subject to the inspection and approval of the Public Works Director (aka Director) or his or her authorized representative. The Director will decide as to the adequacy of the materials to be used, extra safety precautions which may be required to protect the public and the scheduling of the work to be performed. No backfilling operations shall be allowed prior to the examination of the work by the Director.

4.2 Notification - The contractor shall provide timely notification to the Town in order that inspection services can be scheduled for the appropriate time. The permit form will contain the necessary instructions to the contractor.

SECTION V
STREET OPENINGS; SCHEDULE OF CHARGES

5.1 Openings by Utility Companies

1) Utility companies will be required to obtain separate permits for each street opening within accepted public rights-of-way. The utility company shall be responsible for performing all backfill operations, including the replacement of roadway gravel, temporary patching of the surface, and the permanent surface pavement.
2) The Town reserves the right to inspect the work undertaken by utility companies and to charge an inspection fee according to the schedule of charges.

5.2 Openings by Private Entities - A contractor representing any person, firm or corporation desiring to open any portion of a public way for the purpose of installing, repairing, replacing, examining or attempting to locate any private utility connection must first obtain a permit from the Hampden Public Works Department. Prior to the issuance of said permit, the applicant shall pay to the Town of Hampden an amount to cover the cost of inspection services in accordance

with the schedule of charges contained herein. The applicant will be responsible for all work, including temporary pavement and the permanent paved surface. No backfilling shall be allowed without the prior examination of the work by the Public Works Director's representative. Trenches backfilled without the Engineer's approval will be subject to the corrective work outlined in **Section IX** herein.

5.3 Schedule of Charges

1) The amount to be paid for a street opening/utility connection permit will be based upon the following inspection fee schedule:

TYPE OF FEE	**FEE**
Standard Permit Fee	$50.00
Weekend Work Permit Fee	$210.00
After the Fact Permit Fee	$420.00
Additional Inspection Costs	Actual Labor Expense plus Town Overhead

2) The Director may waive the weekend work and after the fact permit fees for utilities that open streets in cases of emergencies without first obtaining a permit.

SECTION VI
EXCAVATING AND BACKFILLING

6.*1 Protective Measures*

1) It shall be the duty of every person cutting or making an excavation in or upon any public place to place and maintain barriers and warning devices necessary for the safety of the general public. The barriers and warning devices shall conform to the requirements of the latest edition of the Manual of Uniform Traffic Control Devices.
2) Appropriate measures shall be taken to assure that, during the performance of the excavation work, traffic conditions as normal as possible shall be maintained at all times so as to minimize inconvenience to the occupants of the adjoining property and to the general public. If it becomes necessary to close the street to traffic to permit the work, prior approval of said closing shall be obtained from the Director. The contractor shall be responsible for notifying the Hampden Police and Fire Departments concerning the closing.
3) The work shall be conducted in such a manner so as to prevent damage to adjacent property, and should such damage occur, the property shall be restored to its original condition, as directed by the Director. The excavated materials shall be placed in a location so as not to endanger those working in the trench, pedestrians or users of the street.
4) It shall be the contractor's responsibility to comply with the latest Occupational Safety and Health Administration (OSHA) requirements that may apply to the work.

6.*2 Excavating*

1) It shall be unlawful to make any such excavation or tunnel in any way contrary to or at variance with the terms of the permit.
2) Prior to any excavation work, all surface pavement shall be cut to full depth by an approved method.
3) Proper bracing or shoring shall be maintained to prevent the collapse of adjoining grounds, and the excavation shall not have anywhere below the surface any portion

which extends beyond the opening at the surface. Care shall be taken so as not to damage existing pipes, cables or conduits in the making of such excavations or tunnels, and notice shall be given to the persons maintaining any such pipes, cables or conduits, or to the city department or officer charged with the care thereof, which are or may be endangered or affected by the making of any such excavation or tunnel before such pipes, cables or conduits shall be disturbed. No unnecessary damage or injury shall be done to any tree or shrub or to the roots.

6.3 Backfilling

1) Whenever a permit has been issued for a street opening or utility connection and the excavation has been made, the trench or opening shall be backfilled in accordance with the details issued with the permit.
2) Flowable fill will be required for backfill of cross trenches and openings within the street zone of major streets, or as conditions may require, as determined by the Director when the permit is issued.
3) No organic material, pavement or stones greater than six inches in diameter shall be present in the backfill.
4) Replace to twenty-one-inch depth, or match existing base depth, whichever is greater, with gravel conforming to the latest Maine Department of Transportation specification for gravel base.
5) If a permit is issued during the freezing weather conditions, frozen backfill will not be allowed in the trench.
6) If the material excavated contains too much moisture for proper compaction, it shall be removed and replaced with suitable backfill material with similar characteristics of native soil excavated.

6.4 Compaction of Backfill Material

1) All backfill shall be thoroughly compacted by equipment designed specifically for that purpose.
2) The first six inches of fill over the structure or pipe in the trench shall be compacted. The balance of the backfill shall be placed in layers not exceeding 12 inches and thoroughly compacted.
3) All material excavated from the trench shall be replaced in the trench, except for the amount which may be displaced by the installation of gravel base, pipe/utility or crushed stone surround.
4) All backfill shall be compacted to meet at least 90% of total compaction as measured by the proctor test in grass areas and to 95% of total compaction in pavement areas.

SECTION VII
REPLACEMENT OF SURFACE MATERIAL

7.1 Bituminous Paving on Flexible Base

1) When a street opening permit is issued on a street which has been constructed for heavy traffic and has a bituminous surface without a cement concrete base, the same amount of gravel shall be replaced in the trench as is removed when the excavation is made where this material exceeds the twenty-one-inch depth as specified in Section 6.3.
2) After the gravel base has been placed and before the permanent bituminous wearing surface is placed, the existing bituminous surface shall be cut back an additional 12

inches on all sides with a pavement saw or milling machine, and the cut edges shall be painted with bituminous tack before the new bituminous paving is placed. Bituminous paving shall be performed in accordance with MDOT Standard Specifications for Highways and Bridges.

7.2 Temporary and Permanent Surfacing

1) The contractor to whom a street opening permit has been issued shall provide a temporary patch (coldpatch) of the street opening, generally within 24 hours after the trench has been backfilled and compacted according to the requirements contained in Section 6.3 and 6.4.
2) The temporary patch shall be made using premixed bituminous material (coldpatch), which shall remain in place until the permanent patch has been installed.
3) Within 30 calendar days from the date of trench backfill, but not later than November 1, the contractor shall provide permanent pavement replacement in accordance with Section 7.1 and the detail sheet provided with the permit. For emergency winter work, the permanent trench repair must be completed by June 15.

7.3 Restoration - The contractor shall restore all areas of disturbance, including stone curb, esplanades and gravel surfaces, including shoulders, sodded areas, shrubbery fencing, ditches, etc., to the condition prior to construction.

7.4 Warranty - The contractor or utility shall correct any deficiencies in the trench or pavement for a period of one year from completion of the work authorized by this permit.

SECTION VIII
UTILITY CONNECTIONS

8.1 Connections - All work relative to connecting a building drain or yard drain to a city main shall be performed by an approved contractor, only under the direct supervision of the Director or his or her authorized representative.

8.2 Damage - If the Town main is damaged or broken by the contractor, then the damaged or broken section of main will be removed and replaced at no cost to the Town by the contractor under the supervision of the Director.

8.3 Connection Devices - Any tap to a public sewer or storm drain shall be made and an approved connection device installed in the presence of the Public Works Director or his or her authorized representative

8.4 Connections to Manholes - Connections to manholes, wet wells or other structures shall be prohibited unless approved by a representative of the Director. If approval is given, the structure must be cored and a watertight boot installed at the location indicated by the Director as referred to in Article IV of the Sewer Ordinance.

SECTION IX
VIOLATIONS AND PENALTIES

9.1 Replacement of Defective Work

1) If any part of the work specified above relative to repairing or filling the trenches or excavations shall be unskillfully or improperly done, the Director or his or her representative may direct that the work be re-excavated and replaced in a proper manner or that other corrective action shall be taken to properly repair the trench and the pavement surface.
2) If the applicant does not repair the defective work within 24 hours of notice, then the Director will act to have the work performed by the Town, and the applicant shall pay a penalty equal to the whole of said expense incurred by the Town, with a surcharge of 50%. No additional permits will be issued to the contractor until this cost has been paid in full.
3) Thereafter, upon completion of the work and determination of the cost thereof, the Director shall issue no permit to the applicant until he or she shall receive, in addition to the fees provided, the amount of the penalty as by this section provided and determined.
4) The contractor shall be responsible for the work and shall hold the Town harmless from any claims resulting from the work.

9.2 Violations

1) Any person, firm or corporation who or which shall dig or make an excavation in any portion of the public way or make connection to a public sewer or storm drain without first obtaining a permit shall be required to pay an after the fact permit fee of $420.
2) Additionally, any person, firm or corporation who violates the provisions of this article may be punished, upon conviction, by a fine of not less than $100 for each offense. Each day shall constitute a separate offense. Such fine may be levied against the contractor.

Town of Hampden
Street Opening / Utility Connection Permit

Permit # _____
Date: _____
Phone: _____
Fax: _____

Dig-Safe Number: _____ Proof of Insurance: _____

Work Information

Street Address: _____ Requested Address: _____
Lot Location: _____ Type: _____
Type of Work: _____
Work Explanation: _____
Did-Safe Start Date: _____ Dig-Safe End Date: _____

Contractor Information

ID: _____ Company: _____ Phone: _____
Contact Person: _____ Emergency Phone: _____
Contractor Address: _____

Owner Information

Owner Name: _____ Phone: _____
Owner Address: _____

Signature: _____

By signing above, I acknowledge that I have read and understand the "Instructions for Contractor" Form and reviewed the backfill requirements diagram and acknowledge that I have read the Town Ways and Street Opening and Utility Connection Ordinance for the Town of Hampden.

Permit Issued By: _____ Fee: _____

Special Requirements

Engineer: _____

Comments: _____

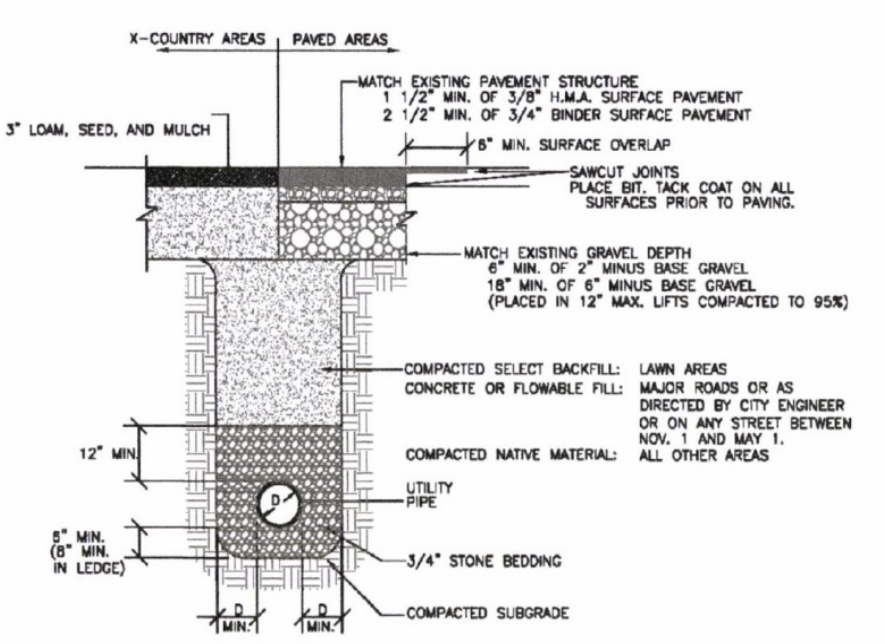
The standard permit fee is $ 50.00. A weekend work permit fee is $210.00. Any contractor who applies for a permit after the fact, will be charged a $420.00 fee. The permit is granted subject to the provisions of Title 23, Chapter 307, and Subchapter II of Maine Revised Statutes Annotated.

Instructions for Contractors & Backfill Requirements

1. No permit shall be issued without a Dig Safe number and proof of liability insurance. By signing this permit the contractor certifies that all utilities have been contacted and that the contractor is financially responsible for any and all utility disruptions. A copy of the permit must be available for inspection at the excavation site.
2. Contractor must comply with OSHA regulations, MUTCD work zone requirements and all applicable state, local and federal regulations.
3. Contractor must notify emergency responders prior to setting up lane closures or blocking any town road.
4. The Hampden Public Works is not responsible for locating or marking sewer or storm connections. Contractor shall not rely on any such town marking activities. Contractor is responsible for locating and marking such connections.
5. New sewer and drain connections must be made with approved connection devices and inspected by Hampden Public Works. Contact Hampden Public Works Department a minimum of 24 hours prior to excavation for approved connection devices and 24 hours prior to backfilling to schedule utility and backfill inspections.
6. Backfill shall consist of clean excavated material or clean material hauled onsite containing no frozen or perishable material and with no rocks greater than 6" in size. Material shall be approved by the Road Commissioner prior to commencing backfill.
7. Backfill shall be placed in 12" maximum lifts and compacted to 95% using proper compaction procedures.
8. Flowable fill shall be 1500 psi minimum or as directed by Hampden Public Works Director.
9. Provide 2" of rigid insulation for utilities buried less than 5' deep and 4" of rigid insulation for utilities buried less than 3'.
10. Trench shall have temporary or permanent pavement within 24 hours of being backfilled (48 hours maximum weekends and holidays).Finish pavement shall be placed within 30 calendar days.
11. Contractor shall be responsible for replacement of brick sidewalks, concrete sidewalks and curbing according to Hampden Public Works Director.
12. The Town of Hampden Street Opening/Utility Connection Permit is issued in accordance with Article II, section 2.12 of the Town Ways Ordinance and the Street Opening and Utility Connection Ordinance. Fees and construction requirements identified by the Hampden Water District or other independent utilities may also apply.

Contact Information

Dig Safe	PH: 811 (1-888-344-7233)	1-888-dig-safe
Public Works	PH: 207-862-3337 207-478-8396	FX: 207-862-5067
Water District	PH: 207-862-3490	FX: 207-862-3595
Police/Fire	PH: 207-862-4000	FX: 207-862-4588



TRENCH DETAIL

Draft Amendments to Town Ways Ordinance – Sean Currier, DPW Director

TOWN OF HAMPDEN, MAINE
TOWN WAYS ORDINANCE

Adopted: Hampden Town Council, 2/20/1979
Effective: 3/20/1979

Amended: 3/4/1991
Effective: 4/2/1991

Amended: 12/7/1987
Effective: 1/5/1988

Amended: 8/18/2003
Effective: 9/17/2003

Amended: 02/01/2010
Effective: 03/03/2010

Amended: 4/18/2016
Effective: 5/18/2016

Deleted: Hampden Town Council,
Deleted: 4
Deleted: 4
Deleted: 4

CERTIFIED BY:

Paula Scott, Town Clerk

Deleted: Denise Hodsdon

Affix Seal

TOWN OF HAMPDEN, MAINE
TOWN WAYS ORDINANCE
TABLE OF CONTENTS

TOWN OF HAMPDEN

TOWN WAYS ORDINANCE

ARTICLE I
GENERAL

1.1 Plan Required - Petitioner for acceptance of a town way shall submit a plan to the Road Commissioner of such a way prepared by or approved by a registered professional engineer. ***(Amended 02-01-10)***

1.2 Acceptance by Town Council – The acceptance of any street or road as a town way shall be subject to the approval of the Town Council. ***(Amended 02-01-10)***

1.2.1 The Town Council shall not consider the acceptance of a street or road as a town way unless and until the following conditions have been satisfied:

1. All outstanding application fees, inspection fees and other costs and expenses must be paid in full.

2. Submission of a sworn written statement from the owner/developer and/or owner's/ developer's engineer that all required improvements have been completed in strict compliance with all applicable construction standards and the approved subdivision plan, and that the owner/developer and/or engineer knows of no defects, from any cause, in the improvements.

3. Submission of a written statement from Town's Public Works Director that all site improvements, including paving and any drainage facilities, have been satisfactorily completed. The written statement shall also indicate if public water and power have been installed and accepted.

4. Deposit of sum of money or other suitable improvement guarantee equal to fifteen percent (15%) of the amount of the full improvement guarantee required by the Subdivision Ordinance with the Town Treasurer. Said money to be used by Town to correct any defects in design, materials, or workmanship that arise within one year from the date of acceptance of the improvements by the Town Council. Any money not used for such purpose by Town within two (2) years of acceptance shall be returned to the payor.

5. Submission of a written statement from owner's/developer's surveyor that all required property pins have been installed for the lots in the approved subdivision.

6. Submission to the Town Attorney of the document(s) conveying any land, improvements, and any easements to the Town. Owner/Developer shall cause the following documentation to be delivered to the Town Attorney at least three (3) weeks prior to the Town Council meeting at which acceptance is desired:

    a. Copy of recorded subdivision plan;

b. Copy of proposed Warranty Deed conveying the street(s) and improvement(s), as well as any easement(s) appurtenant thereto, to the Town;
c. Copy of proposed Warranty Deed conveying any dedicated open space and access easement(s) to the Town;
d. Title Opinion or Title Agent's Certificate of Title evidencing that the land, street(s), improvements, open space, and easement(s) are free and clear of any encumbrances, liens, mortgages, etc. If title is not free and clear, owner/developer shall furnish documentation demonstrating that the title matters will be resolved prior to acceptance by the Town; and
e. Owner's Affidavit to the effect that all contractors, subcontractors, and material providers have been paid in full, and that the property is not subject to a mechanic's/materialman's lien under Maine law.

7. Approval by the Town Attorney of the document(s) conveying any land, improvements, or easements to the Town.

8. Delivery of the duly executed Warranty Deed(s), Easements, Real Estate Tax Transfer Tax Declaration form(s), any documents necessary to provide free and clear title, and check payable to the Registry of Deeds in the amount of the recording fee(s) to the Town Manager.

9. Payment of Town's legal fees and expenses incurred in reviewing the documentation called for by this ordinance.

10. Letter from Bangor Hydro indicating that all power utilities have been accepted.

11. In cases where Public Water has been installed, a letter from the Hampden Water District Superintendant indicating that the water has been installed and tested to their satisfaction.

1.2.2. At the sole discretion of the Town Council, it may accept a street or road as a town way if all improvements have been satisfactorily completed, excepted for the final layer of paving, and the developer/owner has provided a performance bond, letter of credit, or some other form of guarantee acceptable to the Town Council and in an amount the Town Council determines to be adequate to ensure completion of the final paving.

1.3 Town Engineer Defined – Town engineer means any person licensed as a professional civil engineer by the State of Maine and employed or designated by the Town Manager.

1.4 Repeal Of Conflicting Ordinances or Resolves – All ordinances and resolves or parts thereof in conflict with this ordinance or inconsistent with the provisions of this ordinance are hereby repealed.

ARTICLE II
STANDARDS AND REQUIREMENTS

2.1 Connection With Existing Town Way – All streets or roads shall provide connection with existing Town approved town ways. ***(Amended 02-01-10)***

2.2 Intersections – Shall not be less than sixty (60) degrees.

2.3 Widths Of Town Ways – Except for industrial streets or roads, town ways shall have a right-of-way width of sixty-six (66) feet. Industrial roads shall have a right-of-way width of one hundred (100) feet. ***(Amended 02-01-10)***

2.4 Grades – Grade shall not have less than 0.5% nor more than 8 %. The roadway area of said way shall be graded to its full width of twenty-six (26) feet for the distance for which acceptance is requested and shall conform accurately to the grades and cross-sections shown on the plan and profile of said town way and as accepted by the Hampden Planning Board. All roads and streets shall be properly drained with suitable ditches and street culverts so that all storm water will be drained from the area. The Road Commissioner or the Hampden Planning Board may require loaming and seeding of slopes to help prevent erosion. ***(Amended 02-01-10)***

2.5 Clearing Of Stumps and Roots – Said way shall be cleared of all stumps, roots, brush, perishable material and all trees not intended for preservation. All loam, loamy material, clay, and other yielding material shall be removed from said way to at least subgrade depth, or as directed by the Road Commissioner or Public Works Dept.

2.6 Side Slopes — Petitioner shall provide the land necessary for cut or fill slopes beyond the limits of the street right-of-way.

2.7 Subgrade — With the exception of industrial ways, said way shall be graded to the subgrade of eighteen (18) to twenty-four (24) inches as specified by the Hampden Planning Board or Road Commissioner. Industrial ways shall be graded to a subgrade depth of not less than twenty-four (24) inches.

2.8 Gravel Base – The roadway area of said way shall be brought to the grade shown on the plan, profile, and cross-section of said way by suitable gravel or material approved by the Road Commissioner or Public Works Dept. The base gravel shall be brought to within four (4) inches of the finish grade, and the top four (4) inches shall be selected materials suitable for finish grade on gravel roads. All gravel shall be thoroughly compacted and rolled and the final surface left true to the established lines and grades.

2.9 Surface Treatment – After the fine gravel has been thoroughly rolled, the surface of the roadway shall be treated with a bituminous pavement. Pavement shall conform to the specifications currently specified by the Maine Department of Transportation for use on State Aid Roads and shall be placed in one-and-a-half inch thickness. Pavement width shall be not less than twenty (20) feet, except in industrial zones where it shall be not less than twenty-four (24) feet, and the roadway shall be provided with a three (3) inch crown from the center line to edge of pavement to insure runoff of water.

2.10 Cul-de-sac (Dead-end Street) - All permanent dead-end streets shall be provided with a turn-around with a minimum diameter of sixty (60) feet. In all other respects said turn-arounds shall be constructed in accordance with the same specifications as herein above specified for town ways. ***(Amended 02-01-10)***

2.11 Culverts - All driveway culverts shall be not less than twelve (12) inches in diameter of corrugated HDPE pipe and not less than twenty-four (24) feet in length. Said culverts shall be furnished and installed by the owner under the supervision of the Road Commissioner. The Road

Deleted: galvanized metal

Commissioner reserves the right to specify culvert diameter in excess of 12" where necessary to achieve drainage of projected volumes.

2.12 Opening Town Ways or Streets - No town way or street shall be opened for the purpose of installing or repairing sewers, water, gas, or for any other purpose, unless the individual or corporation wishing to make such an opening shall first obtain from the Road Commissioner a Street Opening/Utility Connection permit to do so and agree to pay the full cost of repairing the damage to the street caused by such opening. Refer to the Town of Hampden Street Opening/Utility Connection Ordinance for permit requirements.

2.13 Modified or Additional Standards - The Road Commissioner may modify or require additional standards due to local soil, physical, or topographical conditions, provided that modifications and variances secure substantially the objectives of the standard or requirement so varied or modified.

ARTICLE III
LIMITATION OF TRUCK TRAFFIC

3.1 Limitation/Prohibition of Truck Traffic - Upon designation by the Town Manager and approval of the Town Council truck traffic may be limited or prohibited on specified roads or streets passing through residential areas within the Town of Hampden. There shall be a sign posted at each end of the streets or portions of street so designated showing that the same is a residential street and that through heavy traffic is not allowed. A schedule of those streets or portions of streets so designated shall be maintained in the town office and be available for public inspection during regular business hours. ***(Amended: 12/7/87, 3/4/91)***

3.2 Enforcement - When any violation of any limitation or prohibition on truck traffic imposed under Section 1.1 shall be found to exist, any police officer of the Town of Hampden, or any law enforcement officer authorized to enforce traffic violations in the Town of Hampden, is hereby authorized to institute any and all actions and proceedings in the name of the Town of Hampden, either legal or equitable, that may be appropriate or necessary to enforce the provisions of this Ordinance. ***(Amended: 3/4/91)***

3.3 Civil Penalties - Whoever violates any limitation or prohibition on truck traffic imposed under Section 3.1 shall, upon conviction therefor, be liable for a civil penalty in the amount of $50.00 for the first offense and $100.00 for each subsequent offense. Each and every violation shall constitute a separate offense. All civil penalties shall inure to the benefit of the Town of Hampden. ***(Amended: 3/4/91)***

ARTICLE IV
USE OF ENGINE OR TRANSMISSION BRAKING DEVICES
(Adopted: 8/18/03)

4.1 Findings. The Town Council finds that the use of engine or transmission braking devices or methods (a/k/a "engine braking" or "dynamic braking") within the Town of Hampden creates unusual and excessive noise that unreasonably disturbs and annoys residents. The prohibition of such devices and methods is necessary to protect the health, safety and public welfare.

4.2 Prohibition. No person may slow a vehicle by a device, method, or practice known as engine or transmission braking (a/k/a "engine braking" or "dynamic braking") whereby rapid downshifting of a vehicle's engine or a compression release device is used in lieu of applying a

vehicle's wheel brakes, causing loud noises to emit from the vehicle's engine and/or exhaust system. Such braking by any motor vehicle on any public highway, street, or parking lot within the Town of Hampden is declared to be a public nuisance and is prohibited.

4.3 Enforcement. When any violation of any prohibition imposed under this Article is found to exist, any police officer of the Town of Hampden, or any law enforcement officer authorized to enforce traffic violations in the Town of Hampden, is hereby authorized to institute any and all actions and proceedings in the name of the Town of Hampden, either legal or equitable, that may be appropriate or necessary to enforce the provisions of this Article.

4.4 Civil Penalties. Whoever violates this Article shall, upon conviction therefor, be liable for a civil penalty in the amount of $100.00 for the first offense and $200.00 for each subsequent offense. Each and every violation shall constitute a separate offense. All civil penalties shall inure to the benefit of the Town of Hampden.

4.5 Emergency Vehicles. The provisions of this Article do not apply to emergency vehicles.

Outstanding retainage invoice, T. Buck Construction for Route 1A Sewer – Angus Jennings, Town Manager

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: March 24, 2016
RE: Invoice, T. Buck Construction for Route 1A Sewer Project

In late December, we became aware that an invoice would be sent this spring for the 5% retainage relative to the sewer main project on Route 1A. (This work was funded by Bond Series 2014 A in the amount of $902,050.) At that time, we were advised that the amount due would be just under $40,000 due to the contractor T. Buck Construction.

More recently, on February 29, we received the retainage invoice in the amount of $55,685.77.

Unfortunately, the General Ledger account established to hold the bond funds shows a zero balance.

I am presently working with DPW and Finance personnel, and with our engineering consultant Jim Wilson at Woodard & Curran, to resolve the following questions:

1. The original estimate of project costs, on which the bond amount was based, was $902,050. The total invoiced amount, including both the pending invoice and amounts already expended, is $812,566.98. Why, then, are there inadequate funds on hand to pay the retainage invoice?

   Upon reviewing the accounting records for the bond account, attached, a couple of items are immediately evident: on 10/1/14 and on 3/18/15, required payments on the bond were *paid out of the bond proceeds*. This is highly unusual, and certainly accounts for some of the shortage. However, the combined amount of these two payments was approximately $22,800. So while this surely is part of the answer, it is not the complete answer. Resolving this question will require additional time, and may at some point rely on outside support whether from Woodard & Curran, our Auditor, or both.

2. Why is the amount due $55,000 rather than the $40,000 that had originally been stated, both by Woodard & Curran and by an outside auditing firm (in the course of their audit of this project relative to T. Buck's records)? I am corresponding with W&C, and additional research will be needed to resolve this question.

3. Given the Sewer Fund's significant cash flow challenges, what source of funds can be drawn from to pay this invoice (once it is determined to be the appropriate amount)?

   Attached to this memo you'll find a summary analysis that I prepared regarding the financial health of the Sewer Fund. Key points are summarized as follows:

   - The current balance in the Sewer Fund is $127,982. We expect to receive an approximately $130,000 in additional revenues this April and May based on the first quarter billing. This results in total current and estimated revenues of $257,982. No additional revenues are expected until the 2nd quarter billings are paid in July and August. (The 2nd quarter billings will be the first cycle reflecting the amended sewer rates).
   - At present, $322,809 is due from the Sewer Fund to the City of Bangor. Of this amount, $200,000 is past due. The most recent invoice, including expenses incurred through February 2016, will be past due on April 10.
   - Between now and August 1, $132,000 in debt service payments must be made.
   - During this time period, an additional $121,000 in known expenses will come due (including the T. Buck invoice), as well as $105,000 in estimated expenses.
   - The total amount due or pending, summarized above and as detailed on the attached analysis, is approximately $681,000. This exceeds current and anticipated Sewer Fund assets by $423,000.
   - This shortfall amount does not include an additional $110,000 in interfund transfers from the General Fund to the Sewer Fund made in FY16.

   In short, the financial condition of the Sewer Fund is poor. While the recent rate changes will help to right the ship over time, the rates are only projected to generate $100,000/year above expenses so, assuming an interfund balance deficit in the neighborhood of $800,000 by year-end FY16, the payback period will be approximately 8 years without further increases (above those increases that will be necessary to keep pace with future operational cost increases).

   Because of pending improvements to the Bangor WWTP biotower media, capital costs will need to be incurred in order to meet Hampden's obligation to Bangor pursuant to our Interlocal Agreement. Our DPW Director has preliminarily recommended additional capital investments in Hampden's sewer infrastructure, and these recommendations can be expected to become more specific as time goes on and our understanding of the current system's deficiencies become better understood.

My purpose in bringing forward the T. Buck invoice to Monday's meeting is to make the Committee aware of this specific matter. This memo and related analysis is to advance our collective understanding of the bigger picture. As I work toward a solution to the T. Buck invoice I'll also continue to explore options to responsibly finance the Sewer Fund's cash flow needs.

Hampden Sewer Fund, Analysis of 3-23-16

Sewer Invoices from City of Bangor	Period of Service	Total Amount Due	Date Due	Date Paid	Amounts Past Due	Total Amounts Due
10/31/2014	Jan. to June 2014	$ 94,534.94	11/30/2014	12/2/2015	$ -	$ -
11/18/2014	July to Oct. 2014	$ 72,707.72	12/18/2014	12/16/2015	$ -	$ -
3/6/2015	Nov '14 to Feb '15	$ 126,695.57	4/5/2015	n/a	$ 126,695.57	$ 126,695.57
10/27/2015	March to June 2015	$ 73,304.43	11/26/2015	n/a	$ 73,304.43	$ 73,304.43
3/10/2016	July '15 to Feb '16	$ 122,809.73	4/9/2016	n/a	$ -	$ 122,809.73
					$ 200,000.00	$ 322,809.73

FY16 paid, year to date $ 167,242.66 *For service in FY14 and FY15*

Sewer Debt Service Payments Due

Bond	Series	Total Amount Due	Date Due	Date Paid	Amounts Past Due	Total Amounts Due	Maturity
2014 Sewer Project	2014 A	$ 12,010.80	5/1/2016	Warrant 3/23		$ 12,010.80	11/1/2034
1996 Sewer SRF	1997 A	$ 2,668.09	4/1/2016	Warrant 3/23	n/a	$ 2,668.09	10/1/2017
2006 Sewer Bond	2006 C	$ 16,440.85	5/1/2016			$ 16,440.85	11/1/2026
2010 Route 1A Sewer Bond		$ 101,121.81	7/29/2016			$ 101,121.81	7/29/2029
						$ 132,241.55	

Other Known Sewer Fund Amounts Due

Sewer Warrant 223 (funds sent not yet cleared)	$ 5,569.86	n/a	n/a		$ 5,569.86
Retainage invoice, Rte 1A project	$ 55,685.77	3/29/2016	n/a		$ 55,685.77
Transfer to General Fund (Rev. Acct 01-78)	$ 60,000.00	6/30/2016	n/a		$ 60,000.00
					$ 121,255.63

Total Amounts Due: $ 576,306.91

Other Estimated FY16 Sewer Fund Amounts Due

Cost	Amount (est.)	Basis
Bangor Treatment Charges, March to June 2016	$ 83,209.49	*FY15 invoiced amounts for March to June*
Bangor Pump Station Maintenance, March to June 2016	$ 14,186.08	*4 months at new rate of $3,546.52*
Bangor Pump Station Maintenance Extras, March to June	$ 7,304.82	*Est. based on per month cost YTD*
Other operational costs (electric, fuel, liens, postage, supplies)	?	*Not estimated*
	$ 104,700.39	

Total Amounts Due and Anticipated: $ 681,007.30

Sewer Fund balance:	$ 127,982.00	3/23/2016
Estimated revenue, 1Q bills:	$ 130,000.00	In May 2016
TOTAL, current and estimated:	$ 257,982.00	

Estimated shortfall: $ (423,025.30)

Interfund Transfers to Sewer Fund, FY16 YTD

Date	Amount
10/15/2015	$ 55,000.00
12/14/2015	$ 50,000.00
1/14/2016	$ 5,000.00
	$ 110,000.00

Angus Jennings <townmanager@hampdenmaine.gov>

T Buck Contract Items

1 message

Jim Wilson <jwilson@woodardcurran.com> Thu, Dec 31, 2015 at 10:04 AM
To: Angus Jennings <townmanager@hampdenmaine.gov>
Cc: Tammy Ewing <financehr@hampdenmaine.gov>, Sean Currier <publicworks@hampdenmaine.gov>, Charlie Smith <cesmith@woodardcurran.com>

Angus,

Attached you will find the only change order on the Main Road North Sewer Project so far which was an increase of $21,206.56. The addition was largely related to extra work that Chip incorporated into the project at the Souadabscook Pump Station that wasn't in the original scope.

Also attached is the last Pay Application submitted by T Buck which leaves a balance of $59,599.43. We know that there is still one more change order to balance the final quantities and we expect that will reduce the final balance due to $39,835.85. According to the contract, final retainage was due to be released 60 days after the substantial completion date (December 18, 2014). In this case however, we awarded Substantial Completion because the system was available to be used for its intended purpose but there was still punch list items to complete in the spring of 2015.

T Buck agreed to wait to process the change order and to invoice the Town for final payment until everything was complete in the spring/summer.

At this point, they are nearly done the work but have yet to produce Record Drawings. Their issue has been that the man that supervised the project for them no longer works for them and apparently he didn't leave them with anything to be able to produce record drawings. They've had to send a crew to survey the system so they can produce record drawings and based on our last discussions with them, we can expect those sometime soon. We will follow up to check on their progress.

As we discussed on the phone, Charlie Smith was our engineer on the project and he worked closely with Greg Nash who inspected the majority of the project. Charlie performed most of the admin tasks so he can be a resource to you in my absence if you need more info on contractual or construction issues. I've copied Charlie on this email and his cell phone is 603-913-4674. He is on a project in Orrington these days so he is close enough to support as needed.

Hope this helps.

James D. Wilson, P.E.

Senior Project Manager/SVP

Woodard & Curran

One Merchants Plaza

Bangor, ME 04401

Direct: 207-558-4225

Cell: 207-632-5078

3 attachments

213302.00 011 Change Order 1 Executed by Owner.pdf
433K

2015.01.30 Pay Application #5.pdf
1418K

2014.12.19 Substantial Completion EXECUTED.pdf
74K

Current Account Status

G 2-300-00 SEWER FUND / 1A & Pump St

0.00 = Beg Bal | -654,902.80 = YTD Net | -654,902.80 = Balance
0.00 = Adjust | 0.00 = YTD Enc

Per	Jrnl	Check	Date	Vendor---------		Description--------	RCB / Type		Debits	Credits
03	0674	3803	03/19/14	00539	WOODARD & CU	SEWER REPLACEMENT/PUMPSTA	R	AP	10,373.22	0.00
04	0799	3815	04/30/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	24.08	0.00
04	0799	3817	04/30/14	00000	TREASURER, S	HIGHWAY OPENING PERMIT	R	AP	300.00	0.00
04	0799	3818	04/30/14	00539	WOODARD & CU	DESIGN/BID SEWER REPLACE	R	AP	22,500.00	0.00
05	0843	3819	05/07/14	00040	BANGOR DAILY	LEGAL NOTICE	R	AP	174.00	0.00
05	0865	3821	05/14/14	00246	JORDAN EQUIP	PAINT MARK ORG	R	AP	62.04	0.00
05	0865	3822	05/14/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	17.36	0.00
05	0888	3823	05/21/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	14.00	0.00
05	0897		05/22/14			1A AND PUMP STATION	R	GJ	0.00	902,050.00
05	0906	3826	05/28/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	99.30	0.00
06	0924	3831	06/04/14	00725	T. BUCK CONS	SEWER MAIN REPLACEMENT	R	AP	44,839.03	0.00
06	0924	3828	06/04/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	110.03	0.00
06	0947	3834	06/11/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	119.20	0.00
06	0947	3835	06/11/14	00539	WOODARD & CU	SEWER REPLACEMENT WORK	R	AP	45,126.82	0.00
06	0972	3836	06/18/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	125.97	0.00
06	0972	3838	06/18/14	00725	T. BUCK CONS	SEWER MAIN REPLACEMENT	R	AP	116,541.13	0.00
06	0992	3840	06/25/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	124.01	0.00
06	1014	3848	07/16/14	00145	EATON PEABOD	WASTEWATER BOND SERVICES	R	AP	6,597.01	0.00
							Totals-		**247,147.20**	**902,050.00**

Monthly Summary

Month	--Regular Entries-- Debits	Credits	--Balance Entries-- Debits	Credits
March	10,373.22	0.00	0.00	0.00
April	22,824.08	0.00	0.00	0.00
May	366.70	902,050.00	0.00	0.00
June	213,583.20	0.00	0.00	0.00
Totals	**247,147.20**	**902,050.00**	**0.00**	**0.00**

Current Account Status

G 2-300-00 SEWER FUND / 1A & Pump St

-661,499.81 = Beg Bal
6,597.01 = Adjust
654,902.80 = YTD Net
0.00 = YTD Enc
0.00 = Balance

Per	Jrnl	Check	Date	Vendor---------		Description--------	RCB / Type		Debits	Credits
07	0021	3847	07/09/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	80.50	0.00
07	0047	3851	07/16/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	68.88	0.00
07	0047	3853	07/16/14	00725	T. BUCK CONS	SEWER MAIN REPLAC. PROJ	R	AP	256,918.55	0.00
07	0067	3856	07/23/14	00539	WOODARD & CU	SEWER REPLACE/PUMP STATIO	R	AP	5,000.00	0.00
07	0094		07/31/14			Beg Bal Adjustments	B	GJ	6,597.01	0.00
08	0149	3863	08/20/14	00941	WILSON'S LAW	line stripping	R	AP	750.00	0.00
08	0169	3867	08/27/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	25.76	0.00
10	0250	3880	10/01/14	00481	TOWN OF HAMP	TO MOVE G NASHS PAYROLL	R	AP	4,906.10	0.00
10	0250	3878	10/01/14	00605	U.S. BANK CO	2014 SERIES A BOND PMT	R	AP	10,691.21	0.00
10	0307	3883	10/15/14	00725	T. BUCK CONS	SEWER MAIN REPLACE PMT 4	R	AP	25,261.45	0.00
11	0388	3892	11/12/14	00452	SPRAGUE'S NU	6 HEMLOCKS PLANTING SERV.	R	AP	1,960.00	0.00
11	0405	3894	11/19/14	00188	NASH, GREGOR	MEALS	R	AP	14.09	0.00
11	0405	3894	11/19/14	00188	NASH, GREGOR	MILEAGE	R	AP	101.36	0.00
12	0426	3902	12/03/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	30.24	0.00
12	0426	3897	12/03/14	00188	NASH, GREGOR	TRAVEL EXPENSE	R	AP	110.04	0.00
12	0476	3905	12/10/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	86.24	0.00
12	0476	3905	12/10/14	00188	NASH, GREGOR	MEAL EXP	R	AP	31.33	0.00
12	0493	3907	12/17/14	00188	NASH, GREGOR	TRAVEL EXP	R	AP	93.18	0.00
12	0513	3910	12/23/14	00539	WOODARD & CU	PHASE 12 SEWER PROJECT	R	AP	6,452.89	0.00
01	0598	3918	01/28/15	00481	TOWN OF HAMP	TO MOVE G.NASH PYRL	R	AP	8,079.30	0.00
02	0637	3924	02/11/15	00725	T. BUCK CONS	CONTR.PROJ. NO# T-1411	R	AP	313,321.05	0.00
03	0695	3927	03/04/15	00539	WOODARD & CU	ENGINEERING SERV	R	AP	1,511.50	0.00
03	0724	3936	03/18/15	00605	U.S. BANK CO	BOND MMBB2014A SERIES A	R	AP	12,103.26	0.00
04	0821	3944	04/15/15	00539	WOODARD & CU	SEWER RPLCMNT PROJECT	R	AP	806.87	0.00
06	1083		12/10/15			AUDIT ENTRIES	R	GJ	11,944.91	0.00
06	1084		12/10/15			AUDIT ENTRIES	R	GJ	0.00	261,918.55
06	1085		12/10/15			AUDIT ENTRIES	R	GJ	0.00	22,015.72
06	1088		12/10/15			AUDIT ENTRIES	R	GJ	0.00	22,794.47
06	1089		12/10/15			AUDIT ENTRIES	R	GJ	0.00	353,619.97
06	1097		12/14/15			AUDIT ENTRIES	R	GJ	654,902.80	0.00
							Totals-		**1,321,848.52**	**660,348.71**

Monthly Summary

	--Regular Entries--		--Balance Entries--	
Month	Debits	Credits	Debits	Credits
July	262,067.93	0.00	6,597.01	0.00
August	775.76	0.00	0.00	0.00
October	40,858.76	0.00	0.00	0.00
November	2,075.45	0.00	0.00	0.00
December	6,803.92	0.00	0.00	0.00
January	8,079.30	0.00	0.00	0.00
February	313,321.05	0.00	0.00	0.00
March	13,614.76	0.00	0.00	0.00
April	806.87	0.00	0.00	0.00
June	666,847.71	660,348.71	0.00	0.00
Totals	**1,315,251.51**	**660,348.71**	**6,597.01**	**0.00**

Vendor Detail Report

ALL Months
Single Vendor

Per	Wrnt	Jrnl	Date	Account	Invoice	Description	RCB	Type	Check	Amount
00725	**T. BUCK CONSTRUCTION INC.**									
06	0233	0924	06/04/14	G 2-300-00	PROJ#213302.11	SEWER MAIN REPLACEM	R	A	3831	44,839.03
06	0235	0972	06/18/14	G 2-300-00	PROJ#T-1411	SEWER MAIN REPLACEM	R	A	3838	116,541.13
								AP Total		161,380.16
				Vendors Listed	**1**			**Final Total**		**161,380.16**

Vendor Detail Report

ALL Months
Single Vendor

Per	Wrnt	Jrnl	Date	Account	Invoice	Description	RCB	Type	Check	Amount
00725	**T. BUCK CONSTRUCTION INC.**									
07	0202	0047	07/16/14	G 2-300-00	PROJ#T-1411PMT	SEWER MAIN REPLAC. PI	R	A	3853	256,918.55
10	0211	0307	10/15/14	G 2-300-00	213302.11	SEWER MAIN REPLACE P	R	A	3883	25,261.45
02	0224	0637	02/11/15	G 2-300-00	SEWER MAIN PRC	CONTR.PROJ. NO# T-14	R	A	3924	313,321.05
								AP Total		595,501.05
				Vendors Listed	**1**			**Final Total**		**595,501.05**

COMMITMENT & INTEGRITY
DRIVE RESULTS

One Merchants Plaza | Suite 501
Bangor, Maine 04401
www.woodardcurran.com

T 800.564.2333
T 207.945.5105
F 207.945.5492

TRANSMITTAL

TO: Angus Jennings
Town of Hampden
106 Western Avenue
Hampden, ME 04444

DATE: February 29, 2016

PROJECT NAME: Hampden, Main Road North Sewer Replacement

PROJECT NUMBER: 213302.11

RE: Pay Application #6/Change Order #2

WE ARE SENDING:

☐ Quotation	☐ Drawing	☐ Bid Package	☐ CD/DVD
☐ Brochure	☐ Schedule	☐ Installation Package	☐ Report
☒ Change Order	☐ Manual	☒ Other (specify) Pay Application	

Qty	Doc. No.	Rev. No.	Dated	Description
1			2/12/2016	Pay Application #6
1			2/18/2016	Change Order #2

For Your:	Sent By:
☐ USE	☐ REGULAR MAIL
☒ APPROVAL	☒ UPS
☐ REVIEW / COMMENTS	☐ FEDERAL EXPRESS
☐ INFORMATION	☐ COURIER
☒ OTHER (Signature)	☐ OTHER

COMMENTS:

Angus, attached is Pay Application #6 and Change Order #2 for the Main Road North Sewer project. Pay App #6 is the final pay application for this project in includes all retainage. Change Order #2, is a Balancing Change Order. Please return two signed copies of each document to us. Please call if you have any questions. Thank you.

From: Jim Wilson, P.E., Project Manager

Contractor's Application For Payment No. 6

	Application Period: 2/12/16	Application Date: 2/12/16
To (Owner): Town of Hampden	From (Contractor): T Buck Construction, Inc.	Via (Engineer) Woodard & Curran
Project: Main Road North Sewer Main Replacement Project	Contract:	
Owner's Contract No.:	Contractor's Project No.: T-1411	Engineer's Project No.: 213302.11

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
1	21,206.56	
2		19,763.58
TOTALS	21,206.56	19,763.58
NET CHANGE BY CHANGE ORDERS	1,442.98	

1. ORIGINAL CONTRACT PRICE		$	811,124.00
2. Net change by Change Orders		$	1,442.98
3. CURRENT CONTRACT PRICE (Line 1 ± 2)		$	812,566.98
4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)		$	812,566.98
5. RETAINAGE:			
a. 0 % x $812,566.99	Work Completed	$	0.00
b. 0 % x $ 0.00	Stored Material	$	0.00
c. Total Retainage (Line 5a + Line 5b)		$	0.00
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)		$	812,566.98
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)		$	756,881.21
8. AMOUNT DUE THIS APPLICATION		$	55,685.77
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)		$	0.00

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By: _____ Date: 2/12/16

Payment of: $55,685.77
(Line 8 or other - attach explanation of other amount)

is recommended by: _____ 2/29/2016
(Engineer) (Date)

Payment of: $55,685.77
(Line 8 or other - attach explanation of other amount)

is approved by: _____
(Owner) (Date)

Approved by: _____
Funding Agency (if applicable) (Date)

Project Name: MAIN ROAD NORTH SEWER MAIN REPLACMENT PROJECT

Payment Application No. 6

Application Date: 2/12/2016

Application Period: 1/1/15-2/12/16

OWNER: TOWN OF HAMPDEN

CONTRACTOR: T.Buck Construction, Inc

Item	Description	Approximate Quantity	Units	Unit Price	Contract Value	Previous Quantity	Quantity This Period	Quantity to date	Quantity Remaining	Prior	This Application	Total to Date	Balance to Finish
1	ADMINISTRATIVE	1.00	LS	$ 43,000.00	$ 43,000.00	1.00		1.00	0.00	$ 43,000.00	$ -	$ 43,000.00	$ -
2	ROCK EXCAVATION	300.00	CY	$ 0.01	$ 3.00	278.50		278.50	21.50	$ 2.79	$ -	$ 2.79	$ 0.22
3	EXCAVATION BELOW NORMAL GRADE	50.00	CY	$ 25.00	$ 1,250.00			0.00	50.00	$ -	$ -	$ -	$ 1,250.00
4	SELECT BACKFILL	50.00	CY	$ 10.00	$ 500.00			0.00	50.00	$ -	$ -	$ -	$ 500.00
5	4' DIAMETER PRE-CAST SEWER MANHOLE	6.00	EA	$ 5,000.00									
5A	INSTALLATION-70%	6.00	EA	$ 3,500.00	$ 21,000.00	6.00		6.00	0.00	$ 21,000.00	$ -	$ 21,000.00	$ -
5B	TESTING- 25%	6.00	EA	$ 1,250.00	$ 7,500.00	6.00		6.00	0.00	$ 7,500.00	$ -	$ 7,500.00	$ -
5C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	6.00	EA	$ 250.00	$ 1,500.00	6.00		6.00	0.00	$ 1,500.00	$ -	$ 1,500.00	$ -
6	6' DIAMETER PRE-CAST SEWER DROP MANHOLE	1.00	EA	$ 6,000.00						$ -	$ -	$ -	$ -
6A	INSTALLATION-70%	1.00	EA	$ 4,200.00	$ 4,200.00	1.00		1.00	0.00	$ 4,200.00	$ -	$ 4,200.00	$ -
6B	TESTING- 25%	1.00	EA	$ 1,500.00	$ 1,500.00	1.00		1.00	0.00	$ 1,500.00	$ -	$ 1,500.00	$ -
6C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	1.00	EA	$ 300.00	$ 300.00	1.00		1.00	0.00	$ 300.00	$ -	$ 300.00	$ -
7	10" SDR 35 SEWER MAIN	50.00	LF	$ 85.00						$ -	$ -	$ -	$ -
7A	INSTALLATION-70%	50.00	EA	$ 59.50	$ 2,975.00			0.00	50.00	$ -	$ -	$ -	$ 2,975.00
7B	TESTING- 25%	50.00	EA	$ 21.25	$ 1,062.50			0.00	50.00	$ -	$ -	$ -	$ 1,062.50
7C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	50.00	EA	$ 4.25	$ 212.50			0.00	50.00	$ -	$ -	$ -	$ 212.50
8	12" SDR 35 SEWER MAIN	1700.00	LF	$ 150.00						$ -	$ -	$ -	$ -
8A	INSTALLATION-70%	1700.00	EA	$ 105.00	$ 178,500.00	1,718.50		1,718.50	(18.50)	$180,442.50	$ -	$ 180,442.50	$ (1,942.50)
8B	TESTING- 25%	1700.00	EA	$ 37.50	$ 63,750.00	1,718.50		1,718.50	(18.50)	$ 64,443.75	$ -	$ 64,443.75	$ (693.75)
8C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	1700.00	EA	$ 7.50	$ 12,750.00	1,718.50		1,718.50	(18.50)	$ 12,888.75	$ -	$ 12,888.75	$ (138.75)
9	4" SDR 35 SEWER SERVICE--OPEN CUT	130.00	LF	$ 150.00						$ -	$ -	$ -	$ -
9A	INSTALLATION-70%	130.00	EA	$ 105.00	$ 13,650.00	196.50		196.50	(66.50)	$ 20,632.50	$ -	$ 20,632.50	$ (6,982.50)
9B	TESTING- 25%	130.00	EA	$ 37.50	$ 4,875.00	196.50		196.50	(66.50)	$ 7,368.75	$ -	$ 7,368.75	$ (2,493.75)
9C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	130.00	EA	$ 7.50	$ 975.00	196.50		196.50	(66.50)	$ 1,473.75	$ -	$ 1,473.75	$ (498.75)
10	4" SDR 35 SEWER SERVICE-DIRECTIONAL DRILL	350.00	LF	$ 110.00						$ -	$ -	$ -	$ -
10A	INSTALLATION-70%	350.00	EA	$ 77.00	$ 26,950.00			0.00	350.00	$ -	$ -	$ -	$ 26,950.00
10B	TESTING- 25%	350.00	EA	$ 27.50	$ 9,625.00			0.00	350.00	$ -	$ -	$ -	$ 9,625.00
10C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	350.00	EA	$ 5.50	$ 1,925.00			0.00	350.00	$ -	$ -	$ -	$ 1,925.00
11	6" SDR 35 SEWER SERVICE--OPEN CUT	30.00	LF	$ 75.00						$ -	$ -	$ -	$ -
11A	INSTALLATION-70%	30.00	EA	$ 52.50	$ 1,575.00	150.00		150.00	(120.00)	$ 7,875.00	$ -	$ 7,875.00	$ (6,300.00)
11B	TESTING- 25%	30.00	EA	$ 18.75	$ 562.50	150.00		150.00	(120.00)	$ 2,812.50	$ -	$ 2,812.50	$ (2,250.00)
11C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	30.00	EA	$ 3.75	$ 112.50	150.00		150.00	(120.00)	$ 562.50	$ -	$ 562.50	$ (450.00)
12	6" SDR 35 SEWER SERVICE-DIRECTIONAL DRILL	225.00	LF	$ 95.00						$ -	$ -	$ -	$ -
12A	INSTALLATION-70%	225.00	EA	$ 66.50	$ 14,962.50			0.00	225.00	$ -	$ -	$ -	$ 14,962.50
12B	TESTING- 25%	225.00	EA	$ 23.75	$ 5,343.75			0.00	225.00	$ -	$ -	$ -	$ 5,343.75
12C	SATISFACTORY CLEANUP AND SURFACE RESTORATION(5%)	225.00	EA	$ 4.75	$ 1,068.75			0.00	225.00	$ -	$ -	$ -	$ 1,068.75
13	CLAY DAMS	4.00	EA	$ 400.00	$ 1,600.00	4.00		4.00	0.00	$ 1,600.00	$ -	$ 1,600.00	$ -
14	CLAY DAM PIPING	300.00	LF	$ 25.00	$ 7,500.00	257.00		257.00	43.00	$ 6,425.00	$ -	$ 6,425.00	$ 1,075.00
15	PROVIDE 2" RIGID INSULATION	100.00	LF	$ 8.00	$ 800.00	305.00		305.00	(205.00)	$ 2,440.00	$ -	$ 2,440.00	$ (1,640.00)
16	TRENCH PAVEMENT REPAIR --STATE ROAD	100.00	SY	$ 130.00	$ 13,000.00	178.57		178.57	(78.57)	$ 23,214.10	$ -	$ 23,214.10	$ (10,214.10)
17	TRENCH PAVEMENT REPAIR -TOWN ROAD AND DRIVEWAY	225.00	SY	$ 66.00	$ 14,850.00	434.79		434.79	(209.79)	$ 28,696.14	$ -	$ 28,696.14	$ (13,846.14)
18	TRENCH PAVEMENT REPAIR -SIDEWALK	500.00	SY	$ 26.00	$ 13,000.00	479.87		479.87	20.13	$ 12,476.62	$ -	$ 12,476.62	$ 523.38
19	LOAM AND SEED	1200.00	SY	$ 6.00	$ 7,200.00	1,576.63		1,576.63	(376.63)	$ 9,459.78	$ -	$ 9,459.78	$ (2,259.78)
20	MAYO RD PUMP STATION	1.00	LS	$160,000.00	$ 160,000.00	1.00		1.00	0.00	$160,000.00	$ -	$ 160,000.00	$ -
21	ROUTE 202 PUMP STATION	1.00	LS	$119,546.00	$ 119,546.00	1.00		1.00	0.00	$119,546.00	$ -	$ 119,546.00	$ -
22	TESTING ALLOWANCE	1.00	ALL	$ 2,000.00	$ 2,000.00			0.00	1.00	$ -	$ -	$ -	$ 2,000.00
23	MAYO RD PUMP STATION GRINDER STATION	1.00	LS	$ 50,000.00	$ 50,000.00	1.00		1.00	0.00	$ 50,000.00	$ -	$ 50,000.00	$ -
	Stored Materials											$ -	$ -
CO1	Change Order One	1.00	LS	$ 21,206.56	$ 21,206.56	0.25	0.75	1.00	0.00	$ 5,356.63	$ 15,849.93	$ 21,206.56	$ (0.00)
CO2	Change Order Two-Balancing	1.00	LS	$ (19,763.58)	$ (19,763.58)	0.00		0.00	1.00	$ -	$ -	$ -	$ (19,763.58)
Totals					$ 812,566.98					$796,717.06	$ 15,849.93	$ 812,566.98	$ 0.00

SECTION 00 63 63 – CHANGE ORDER

No. 2

Date of Issuance: 2/18/2016 Effective Date: 2/29/2016

Project: Main Road North Sewer Main Replacement Project	Owner: Town of Hampden	Owner's Contract No.:
Contract: Main Road North Sewer Main Replacement Project		Date of Contract: 5/12/2014
Contractor: T. Buck Construction		Engineer's Project No.: 213302.11

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

This is a Balancing Change Order. See attached spreadsheet for actual quantities installed. As shown on the attached spreadsheet, the contract price plus Change Order #1 will be decreased by $19,763.58

Attachments (list documents supporting change):

Balancing Change Order Spreadsheet Dated 2/18/2016

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price:	Original Contract Times: ☐ Working days ☒ Calendar days
$811,124.00	Substantial completion (days or date): 75 days Ready for final payment (days or date): 90 days
[Increase] [~~Decrease~~] from previously approved Change Orders No. 1 to No. 1:	[~~Increase~~] [~~Decrease~~] from previously approved Change Orders No. 1 to No. 1:
$21,206.56	Substantial completion (days): N/A Ready for final payment (days): N/A
Contract Price prior to this Change Order:	Contract Times prior to this Change Order:
$832,330.56	Substantial completion (days or date): 75 days Ready for final payment (days or date): 90 days
[~~Increase~~] [Decrease] of this Change Order:	[~~Increase~~] [~~Decrease~~] of this Change Order:
$19,763.58	Substantial completion (days or date): N/A Ready for final payment (days or date): N/A
Contract Price incorporating this Change Order:	Contract Times with all approved Change Orders:
$812,566.98	Substantial completion (days or date): 75 days Ready for final payment (days or date): 90 days

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: Howard Wilson	By:	By:
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized
Date: 2/29/2016	Date:	Date:

COMMITMENT & INTEGRITY
DRIVE RESULTS

WOODARD &CURRAN

One Merchants Plaza | Suite 501
Bangor, Maine 04401
www.woodardcurran.com

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T 207.945.5105
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Town of Hampden
Main Road North Sewer Main Replacement Project
Change Order 2 - Balancing Change Order
Project No. 213302.11
2/29/2016

BASE BID								
No.	Description	Unit	Bid Unit Price	Original Bid Quantity	Original Bid Value	Final Quantity Installed	Final Value	Change in Contract Price
1	Administrative (5% of Construction Cost)		$ 43,000.00	1	$43,000.00	1.0	$43,000.00	$0.00
2	Rock Excavation		$ 0.01	300	$3.00	278.5	$2.79	($0.22)
3	Excavation Below Normal Grade		$ 25.00	50	$1,250.00	-	$0.00	($1,250.00)
4	Select Backfill		$ 10.00	50	$500.00	-	$0.00	($500.00)
5	4' Diameter Pre-Cast Sewer Manhole		$ 5,000.00	6	$30,000.00	6.0	$30,000.00	$0.00
6	6' Diameter Pre-Cast Sewer Drop Manhole		$ 6,000.00	1	$6,000.00	1.0	$6,000.00	$0.00
7	10" SDR 35 Sewer Main		$ 85.00	50	$4,250.00	-	$0.00	($4,250.00)
8	12" SDR 35 Sewer Main		$ 150.00	1,700	$255,000.00	1,718.5	$257,775.00	$2,775.00
9	4" SDR 35 Sewer Service Open Cut		$ 150.00	130	$19,500.00	196.5	$29,475.00	$9,975.00
10	4" SDR 35 Sewer Service Directional Drill		$ 110.00	350	$38,500.00	-	$0.00	($38,500.00)
11	6" SDR 35 Sewer Service Open Cut		$ 75.00	30	$2,250.00	150.0	$11,250.00	$9,000.00
12	6" SDR 35 Sewer Service Directional Drill		$ 95.00	225	$21,375.00	-	$0.00	($21,375.00)
13	Clay Dams		$ 400.00	4	$1,600.00	4.0	$1,600.00	$0.00
14	Clay Dam Piping		$ 25.00	300	$7,500.00	257.0	$6,425.00	($1,075.00)
15	2" Rigid Insulation		$ 8.00	100	$800.00	305.0	$2,440.00	$1,640.00
16	Trench Pavement Repair - State Roads		$ 130.00	100	$13,000.00	178.6	$23,214.10	$10,214.10
17	Trench Pavement Repair - Town Roads and Driveways		$ 66.00	225	$14,850.00	434.8	$28,696.14	$13,846.14
18	Trench Pavement Repair - Sidewalk		$ 26.00	500	$13,000.00	479.9	$12,476.62	($523.38)
19	Loam & Seed		$ 6.00	1,200	$7,200.00	1,576.6	$9,459.78	$2,259.78
20	Mayo Rd Pump Station		$ 160,000.00	1	$160,000.00	1.0	$160,000.00	$0.00
21	Route 202 Pump Station		$ 119,546.00	1	$119,546.00	1.0	$119,546.00	$0.00
22	Testing Allowance		$ 2,000.00	1	$2,000.00	-	$0.00	($2,000.00)
23	Mayo Rd Pump Station Grinder Station		$ 50,000.00	1	$50,000.00	1.0	$50,000.00	$0.00
				Total Base Bid	**$811,124.00**		**$791,360.43**	**($19,763.58)**

Change Orders								
No.	Description	Unit	Unit Price	Estimated Quantity	Original Bid Value	Final Quantity Installed	Final Value	Change in Contract Price
1	Change Order 1	LS	$21,206.56	1	$21,206.56	1.00	$21,206.56	$21,206.56
2	Change Order 2 - Balancing	LS	($19,763.58)	1	($19,763.58)	1.00	($19,763.58)	($19,763.58)
				Total Change Orders	**$1,442.98**		**$1,442.98**	**$1,442.98**

Project Totals				
	Original Contract Price	$811,124.00	Change in Contract Price	$1,442.98
			Total Contract Price	**$812,566.98**

SECTION 00 65 16 – CERTIFICATE OF SUBSTANTIAL COMPLETION

Project: Main Road North Sewer Main Replacement Project	
Owner: Town of Hampden	Owner's Contract No.:
Contract: Main Road North Sewer Main Replacement Project	Engineer's Project No.: 213302.11

This tentative Certificate of Substantial Completion applies to:

☑ All Work under the Contract Documents: ☐ The following specified portions of the Work:

12/18/2014

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

☑ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Punch list and Final Completion will be issued in Spring 2015.

Contractor's Amended Responsibilities:

Contractor is responsible for coordinating/completing telemetry integration prior to 12/24/2014.

The following documents are attached to and made part of this Certificate:

N/A

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer	Date: 12/18/2014
Accepted by Contractor	Date
Accepted by Owner	Date: 12/19/14

*** END OF SECTION ***

Discussion: potential addition of sewer to MDOT Route 1A project – Sean Currier, DPW Director

TOWN OF HAMPDEN

DEPARTMENT OF PUBLIC WORKS

106 WESTERN AVE.
HAMPDEN, ME 04444

TEL 862-3337 FAX 862-5067

March 24, 2016

To: Angus Jennings
From: Sean Currier
Subject: Sewer Force Main replacement in conjunction with Rt 1A bridge project

As you are aware, there is an MeDOT project scheduled for paving, storm drain and sidewalk improvements along Rt 1A from Mountainview Drive to Western Ave (018644.00). This project is proposed in 2017/2018 providing the TIP issues are favorably resolved. As a separate project, the bridge over the Souadabscook Stream is being considered for replacement simultaneously with this project to allow for the sidewalk to continue over the bridge along the projected project scope.

We currently have a sewer 6" force main from the pump station at the Hampden Water District which extends Northerly across the bridge to Dudley Street where it changes diameter (to 8") and proceeds up over the hill toward Bangor where it resumes as gravity sewer. It is my recommendation that the Town renew this sewer force main (and upsize to 8") while the bridge replacement is ongoing. This would eliminate the need to reopen the road over the bridge at a later time and save rework. I am waiting on information from Bangor regarding what infrastructure upgrades may need to take place but wanted to alert you and the Council about the possibility of replacing the sewer while we have the opportunity and not disturb the State road at a later time.

I will follow up with additional information as soon as am able to contact Bangor WWTP staff.

Thank you for your consideration.

Sincerely,

Sean Currier