CITY OF BURLINGTON, VERMONT
CITY COUNCIL TRANSPORTATION, ENERGY & UTILITIES COMMITTEE
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Transportation, Energy and Utilities Committee of the City Council

Tuesday, December 17, 2019 5:00 PM

Burlington Department of Public Works – Front Conference Room
645 Pine Street – Burlington, VT

–AGENDA–

1. **Agenda**
2. **Minutes of 11/19/2019**
3. **Public Forum**
4. **2019 Snow and Ice Plan**
    a. Lee Perry, DPW
    b. 15-minute duration
    c. Action: Informative, no action needed.
5. **Traffic Calming Program Update**
    a. Nicole Losch, DPW
    b. 15-minute duration
    c. Action: Informative, no action needed.
6. **Asset Management Resolution**
    a. Martha Keenan, DPW
    b. 15-minute duration
    c. Action requested, TEUC vote to sponsor for City Council.
7. **Climate Change Resolution**
    a. TEUC Led Discussion
    b. 20-minute duration
    c. Action requested, TEUC vote to sponsor for City Council.
8. **Waterfront Rail Update**
    a. Chapin Spencer, DPW presenting
    b. 20-minute duration
    c. Action: Informative, no action needed.
9. **Councilors' Update**
10. **Adjourn**

Memorandum

To: Michele Boomhower
VTrans Director of Policy, Planning & Intermodal Development Division

Date: December 2, 2019

Project #: 57981.00

From: David Saladino, P.E., AICP

Re: Burlington Amtrak Train Servicing and Storage Facility Assessment Technical Addendum

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This technical memorandum serves as an addendum to the *Burlington Amtrak Train Servicing and Storage Facility Assessment* report (June 2019) and provides an updated Evaluation Matrix and supporting technical background associated with a potential sixth Amtrak train servicing and storage location located adjacent to the McNeil Generating Station in Burlington, Vermont.

McNeil Site Overview

Figure 1: Potential Train Servicing & Storage Location Sites

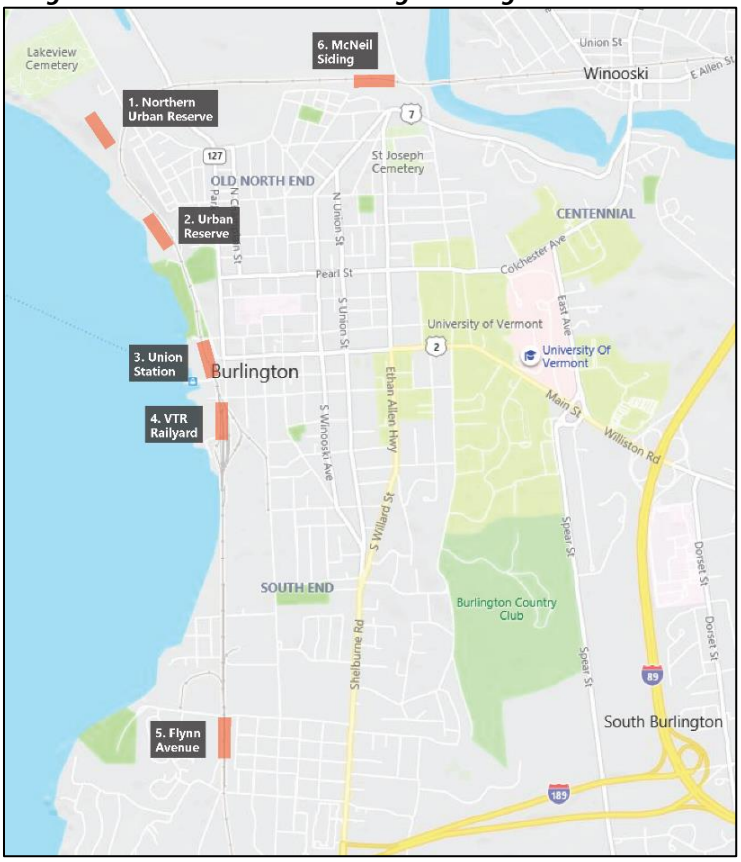

Figure 1 to the right shows the location of the McNeil site in relation to the other five potential locations identified and evaluated in the June 2019 *Site Assessment* report. The McNeil site is located along the New England Central Railroad (NECR) Winooski Branch line adjacent to the McNeil Generating Station and Queen City Steel, north of Riverside Avenue and west of Intervale Road in the north end of Burlington.

Figure 2 on the following page shows a conceptual plan of the proposed rail siding and access road immediately to the south of the existing NECR track. The proposed siding and access road fall entirely within the NECR right-of-way – which is owned and maintained by NECR.

For Amtrak to access this site, track rights from NECR would have to be acquired as the passenger train would use a portion of NECR's Winooski Branch line from College Street to Intervale Road.

This site would be located on a new siding immediately east of the McNeil Generating Plant on the southerly side of the NECR mainline track. This location is approximately 2.1 miles north of Union Station as measured along the rail corridor. This site is located at the base of the Winooski River bluff, approximately 80-85 feet below the elevation of the closest homes and businesses located off Riverside Avenue. This vertical separation

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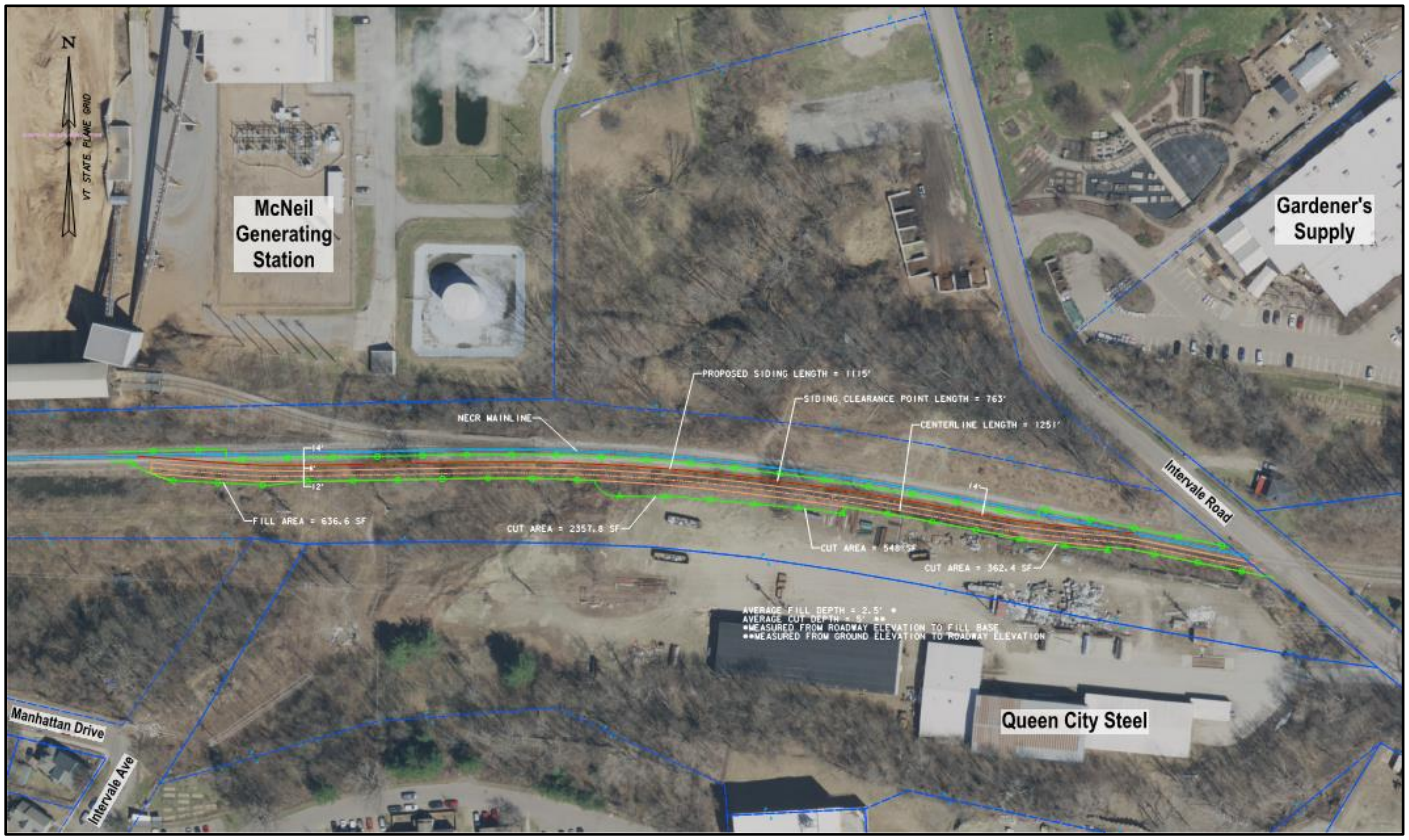
provides a moderate level of noise and visual screening from adjacent homes and businesses. For comparison purposes, the track in the Urban Reserve is approximately 90 feet below the homes on Lakeview Terrace.

To service and store the Amtrak train at this location, approximately 1,200-feet of new track, new switches, and approximately 1,300-feet of new access roadway would have to be constructed. This construction would require earthwork to ensure that the roadway and track would be located at the same grade. A three-phase power drop would be needed to provide access from the existing power lines in the vicinity. The construction of this track, roadway, and related infrastructure is estimated to cost approximately $1,500,000.

Figure 2: McNeil Site Siding and Access Road - Concept Plan



Evaluation Criteria

The potential McNeil train servicing and and storage location was evaluated using the same methodology and metrics used for the other five sites. These criteria are summarized below:

- Design, Construction, and Property Acquisition Costs were calculated using unit costs from VTrans, Vermont Railway (VTR), and previously completed railroad construction projects. Construction of the McNeil Siding is estimated to cost approximately $1,500,000 for new track, two switches, electrical power service, and a new access road.
- Electrical Power Availability was based on the proximity of the nearest three-phase power supply and the necessary infrastructure required to connect the train to the electrical power grid. Three-phase power is required for the "hot start" device to keep the diesel fuel from gelling without having to idle the locomotive all night. Three-phase power is available near the McNeil siding but would require a power drop line to the siding.
- Additional Crew Hours were calculated and included as a criterion because of federal regulations which restrict the number of consecutive hours a crew can work to 12 hours. After this period of time, a minimum break of ten hours is required. The calculations were based on the amount of time it would take to bring the train from Union Station to the McNeil siding, then have the crew travel to downtown Burlington, where it is assumed the crew would be lodged overnight. There is also additional morning delay of travelling back to the train and bringing it to Union Station for passenger pick-up.
- Property Acquisition is required anywhere that the property is not already owned by the State or locations that would require a lease agreement with VTR or NECR. The McNeil siding property is owned by NECR which would require a lease agreement between VTR and NECR. VTR is expected to be the maintenance provider and point of contact for this train as they are located in Burlington, whereas NECR is based in St. Albans.
- Natural Resource Constraints were measured based on a desktop review of the sites and adjacent mapped natural resources such as wetlands, rare, threatened, and endangered species, river corridors, and floodplains. Two rare species were identified proximate to the site. Upon further inspection, one of the species is an aquatic organism whose presence is likely limited to the Winooski River corridor and the second is not a state- or federally-protected species.
- Lighting Impacts were estimated based on Amtrak lighting requirements for overnight storage, the proximity to residential areas, whether there is already lighting in the location, or if new lighting is being introduced to an area. The servicing and storage area lighting would be a low-level light overnight which increases in brightness when being serviced. There is current ambient light in the vicinity of this site from adjacent industrial buildings, but additional lighting would be required for servicing and security.

- Visual Impacts were evaluated based on how visible the train would be from various angles. Taking topography and adjacent land uses into consideration, this site is anticipated to have little to no impact on adjacent neighborhoods as it located significantly down slope from adjacent residential areas and has ample tree coverage.
- Noise Impacts from the idling locomotive was evaluated using Cadna-A[1] sound prediction software which utilizes the methods outlined in the International Standards Organization (ISO) Standard 9613-2:2006[2]. This prediction method considers the topography, ground cover, wind conditions, and intervening objects such as buildings. The following summarizes the principal assumptions of the noise model:
    - Moderate downwind conditions are assumed which conservatively predict efficient sound propagation from the source to receptors in all directions.
    - Sound attenuation is affected by shielding and diffraction provided by local buildings intervening the propagation path between the source and receptors.
    - Ground cover in the study area depends on site specific conditions. The McNeil site was assumed to be surrounded by earth, grass, and other vegetation which provide acoustically soft ground.

  Noise was analyzed assuming one idling locomotive at the potential storage and servicing site. The reference sound level of the idling locomotive used in the study was determined using measurements of an idling Amtrak P32AC Locomotive at the Amtrak Station in Rutland, Vermont on September 7, 2018. Measurements were conducted using an ANSI Type I sound level meter (Larson Davis Model 831) and employed best measurement practices. The P32AC is an older model of locomotive than will be used for the Burlington service. The newer locomotives are anticipated to be quieter than those currently in service, so the resulting analysis should be construed as an order-of-magnitude evaluation and not necessarily an exact estimate of noise at a given location.

  Noise receptors were identified at all residential parcels experiencing sound levels 40 dBA and greater from the idling locomotives using a combination of available parcel data, aerial photography, and Google Street View™. Noise receptors were identified at single-family residences and multi-family residences and were tabulated according to the number of dwelling units. The number of residences that would be exposed to sound levels between 40 to 50 dBA, 50 to 60 dBA, and greater than 60 dBA were quantified.

  Per information from Amtrak, "hot start" equipment would be integrated into the locomotives which would eliminate the need for the locomotives to idle overnight. With this equipment in place, the train would only

[1] Computer Aided Noise Abatement (Cadna-A). DataKustik GmbH. Version 2017.
[2] "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation" ISO 9613-2:2006. 2006.

need to go through a 20 to 40-minute power up and power down sequence upon departure and arrival, limiting the duration of noise impacts. The noise analysis is elaborated upon in more detail in Appendix C.

The McNeil Site would be setback from residences at relatively similar distances as the Northern Urban Reserve and Urban Reserves sites, but there are a greater number of multi-family residences near the McNeil Site. Therefore, there would be a greater number of residences that would be exposed to locomotive idling noise 50 dBA or greater at the McNeil Site compared to the Northern Urban Reserve and Urban Reserve sites.

- Air Quality and Emissions were analyzed assuming one idling locomotive at each potential storage site for 40 minutes. Pollutant dispersion modeling was conducted using the AERSCREEN dispersion model3 which is a screening model that uses worst-case meteorology to conservatively estimate pollutant concentrations. Additionally, models were developed with the appropriate geometry for homes along Manhattan Drive and Riverside Avenue near the McNeil Site as these receptors are elevated relative to the tracks.

  The results of the dispersion modeling for each location show that only nitrogen dioxide emissions from the locomotive have the potential to approach or exceed the National Ambient Air Quality Standards (NAAQS) under the 1-hour averaging period at the Union Station Site. Elevated receptors (such as balconies) may experience nitrogen dioxide emissions greater than the NAAQS within 50 feet of the locomotive. Nitrogen dioxide concentrations at all ground level receptors at all sites and elevated homes along Lakeview Terrace, Manhattan Drive, and Riverside Avenue would be well below the NAAQS.

  Pollutant concentrations from the idling locomotive for all criteria pollutants and averaging periods are well below the NAAQS criteria at the McNeil site. A copy of the Air Quality Assessment memorandum is provided in Appendix C.

- Proximity to Residential Areas is a straight-line measurement from each train servicing and storage location to the nearest residence. This distance was measured to be under 0.1 mile for the McNeil siding.

- Impacts to VTR & NECR Operations were based on potential impacts to VTR and NECR daily freight rail operations. These operations include, but are not limited to, loading, unloading, servicing, building and storing trains. This site is located approximately 2 miles from VTR rail lines, resulting in minimal impacts to VTR operations. Impacts to NECR operations are primarily related to potential impacts to NECR's wood chip trains that service the McNeil Generating Station. Since the Amtrak train would be stored and serviced overnight on a separate siding, impacts on the wood chip trains would be limited.

[3] AERSCREEN Dispersion Model, Version 16121r, US Environmental Protection Agency.

Evaluation Matrix

An evaluation matrix was created to summarize the scoring assigned to each metric for each location. The evaluation matrix and total scores for each site are summarized in **Table 1** on the following page. Each of the evaluation criterion was scored on a scale of 0 to 3 with zero representing the lowest possible score and three representing the highest possible score for each metric. The highest possible score for a given site is 33 points. No weighting was applied to the scoring metrics.

Table 1: Evaluation Matrix

Location	Estimated Costs		Electrical Power Availability		Additional Crew Hours		Property Acquisition		Natural Resource impacts		Lighting Impacts	
	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments
Northern Urban Reserve	2	$2,290,000 (new track and switch, electrical power, utilities, and new access road)	2	New electrical lines and connection required	2	44 minutes per day	1	Acquisition required from the City of Burlington	3	No anticipated impacts	1	Lighting will be added in an area where there are currently no lights
Urban Reserve	2	$2,240,000 (new track and switch, earthwork, electrical power, utilities)	2	New electrical lines and connection required	2	40 minutes per day	1	Acquisition required from the City of Burlington	3	No anticipated impacts	1	Lighting will be added in an area where there are currently no lights
Union Station	3	$300,000 (electrical power)	3	New connection to existing electrical line required	3	0 minutes per day	3	This is located within an existing railroad corridor owned by the State	3	No anticipated impacts	2	Brighter lighting will be required overnight
VTR Railyard	0	$50,000,000 (relocation of Railyard to alleviate operational conflicts)	3	New connection to existing electrical line required	2	30 minutes per day	2	Lease agreements will need to be made with VRS	3	No anticipated impacts	2	Brighter lighting will be required outside of current Railyard operational hours.
Flynn Avenue	2	$1,500,000 (relocation of VRS storage currently on this siding)	2	New electrical lines and connection required	1	60 minutes per day	2	Lease agreements will need to be made with VRS	3	No anticipated impacts	2	Brighter lighting will be required overnight
McNeil Siding	2	$1,500,000 (new track, two switches, electric power, and new access road)	3	New connection to existing electrical line required	1	75 minutes per day	1	Property owned by NECR; Lease agreement needed	3	No anticipated impacts	2	Brighter lighting will be required overnight

Location	Train Visibility		Noise Impacts		Horn Impacts		Air Quality & Emissions		Proximity to Residential Areas		Impacts to Freight Rail Operations		Total Score	Ranking
	Score	Comments	Score	Number of Residences Impacted[2]	Score	Number of Additional Horn Warnings[3]	Score	Comments	Score	Comments	Score	Comments		
Northern Urban Reserve	3	The train will be located down slope from most homes and will not be easily visible from the east	1	50 residences	1	4 Additional Horn Warnings	3	Does not exceed NAAQS[4]	3	The train is less than 528 feet from residences but is significantly down slope	2	Minor impacts to VRS operations. The train would be stored on a new siding off of a VRS siding north of the railyard	**24**	**3**
Urban Reserve	2	The train will be located down slope from most homes and will be slightly visible from the east	1	62 residences	1	4 Additional Horn Warnings	3	Does not exceed NAAQS	3	The train is less than 528 feet from residences but is significantly down slope	2	Minor impacts to VRS operations. The train would be stored on a new siding off of the VRS main line north of the railyard limits	**23**	**5**
Union Station	1	The train will be located between Union Station and ECHO	2	26 residences	3	0 Additional Horn Warnings	0	Potentially exceeds Nitrogen Dioxide standard	0	The train is less than 50 feet from residences	3	No impacts to VRS operations. The train would be stored on a new siding off of the VRS track	**26**	**1**
VTR Railyard	3	The train will be located within an existing railyard and will not significantly change the current views	3	12 residences	1	4 Additional Horn Warnings	3	Does not exceed NAAQS	2	The train is less than 528 feet from residences	0	Major impacts to VRS operations. The train would be in direct conflict with current VRS operations	**24**	**3**
Flynn Avenue	2	The train will be stored in an area which often has trains currently but it located close to many residences	0	160 residences	1	4 Additional Horn Warnings	3	Does not exceed NAAQS	2	The train is less than 528 feet from residences	1	Significant impacts to VRS operations. The train would be stored on a siding currently used by VRS or along a siding which would disrupt Railyard operations	**21**	**6**
McNeil Siding	3	The train will be located down slope from most homes and will not be easily visible from Riverside Avenue	1	85 residences	1	4 Additional Horn Warnings	3	Does not exceed NAAQS	3	The train is less than 528 feet from residences but is significantly down slope	2	No impacts to VRS operations. Minor impacts anticipated to NECR's wood chip train.	**25**	**2**

[2] *Number of Residences with dBAs more than 50*

[3] *Additional horn warnings necessary at road crossings from and to the Union Station*

[4] *National Ambient Quality Standards for specific pollutants*

Appendices

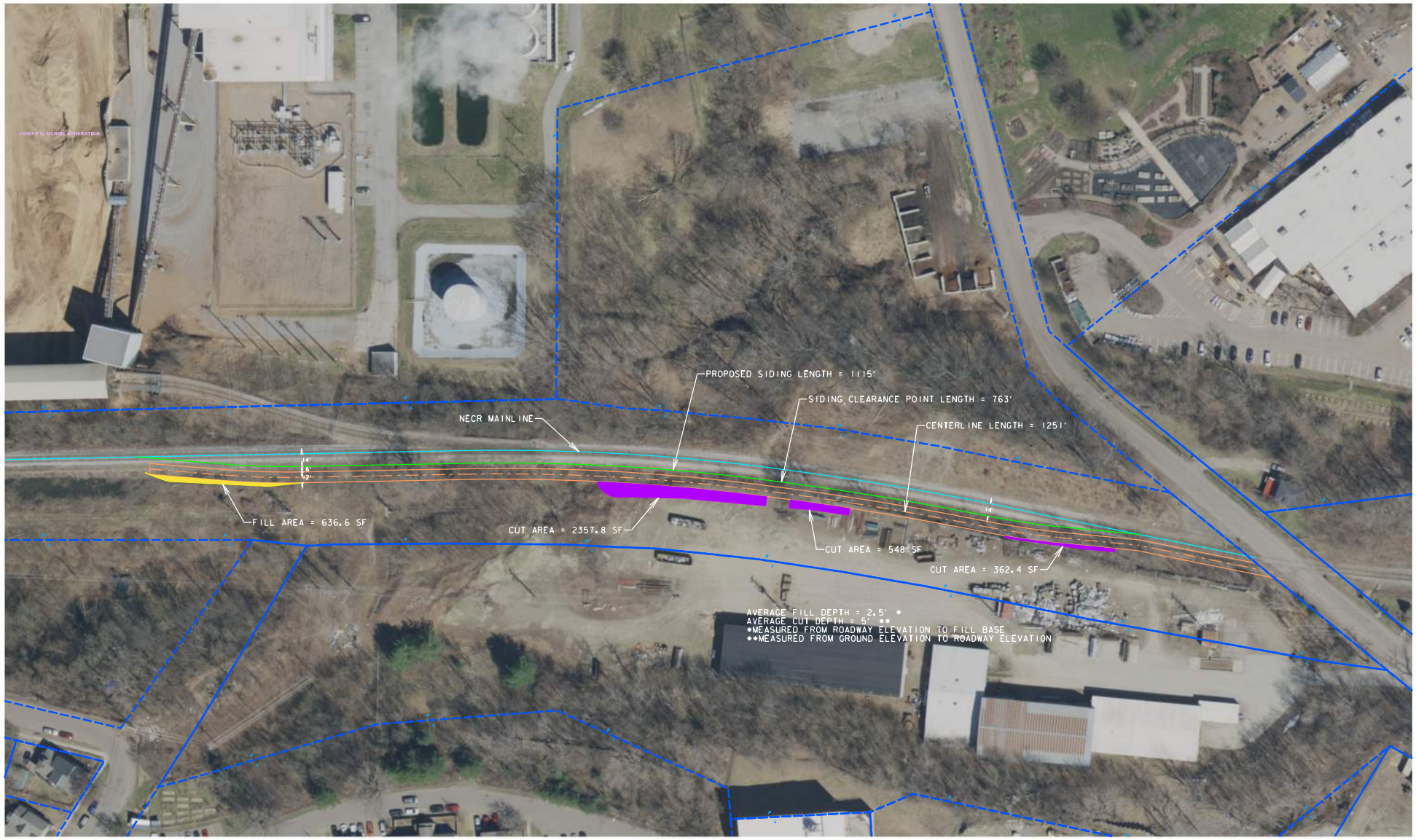
Appendix A - Concept Plan and Maps

Appendix B - Amtrak Design Criteria

Appendix C - Noise and Air Evaluation

Appendix D - Conceptual Cost Estimate

Appendix A - **Concept Plan and** Maps



vhb

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PROJECT NUMBER:	PROJECT NUMBER
FILE NAME: ppms*/Section/------.dgn	PLOT DATE: 10/24/2019
PROJECT LEADER: ------	DRAWN BY: ------
DESIGNED BY: ------	CHECKED BY: ------
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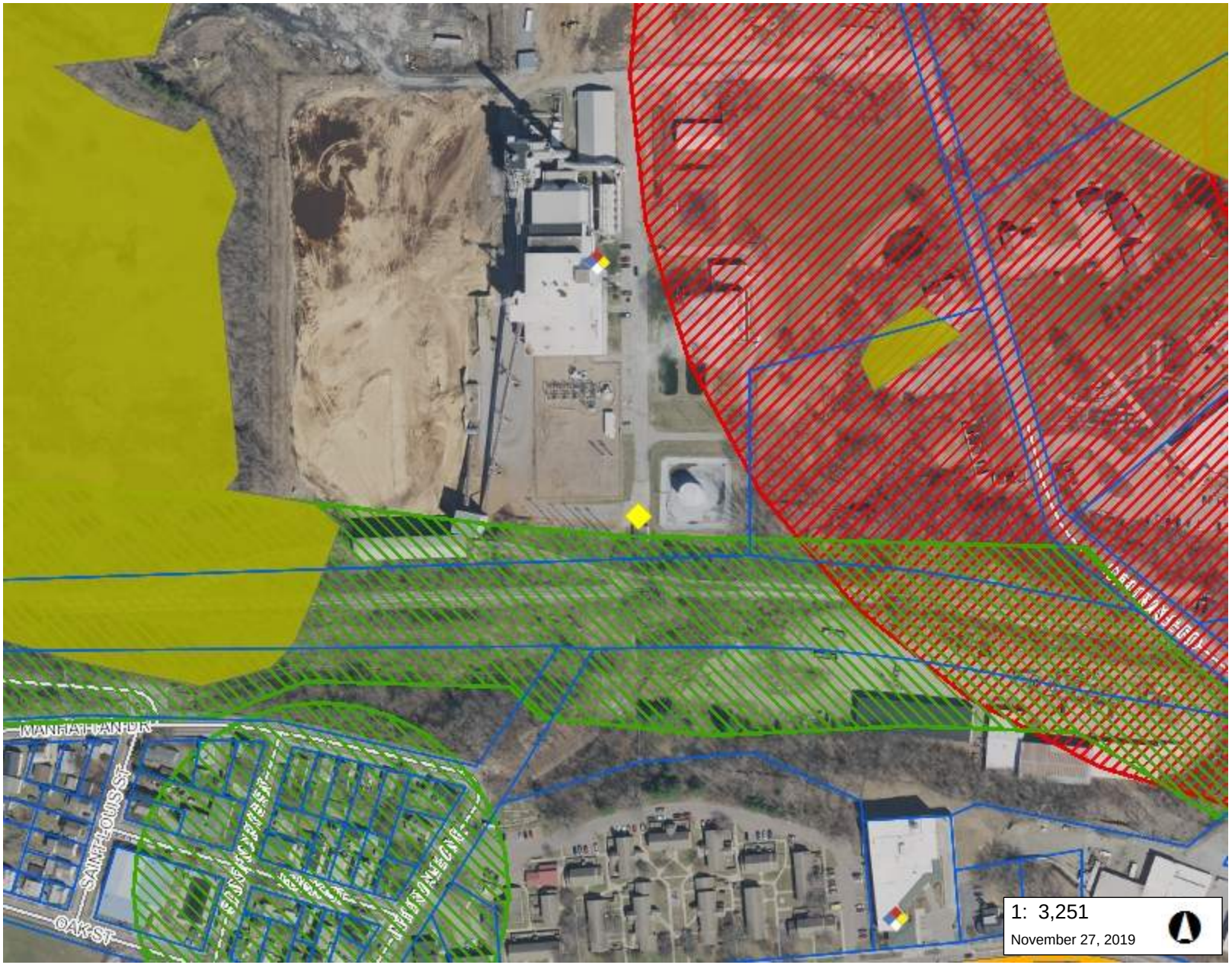
McNeil Siding - Natural Resource Map

Vermont Agency of Natural Resources

vermont.gov



LEGEND

- Wetland - VSWI
  - Class 1 Wetland
  - Class 2 Wetland
  - Buffer
- Hazardous Site
- Hazardous Waste Generators
- Rare Threatened Endangered
  - Threatened or Endangered
  - Rare
- Parcels (standardized)
- Roads
  - Interstate
  - Principal Arterial
  - Minor Arterial
  - Major Collector
  - Minor Collector
  - Local
  - Not part of function Classification S

NOTES

Map created using ANR's Natural Resources Atlas

165.0 0 82.00 165.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 271 Ft. 1cm = 33 Meters

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Appendix B – **Amtrak** Design **Criteria**

Burlington, VT

Amtrak Design Criteria for Proposed Layover Facility

In preparation for extended service of the Ethan Allen line from Rutland to Burlington with two intermittent stops at Vergennes and Middlebury, Amtrak operations requests a designated layover siding, separated from passenger boarding platforms, for train turnovers with the following recommended components:

Lighting:

Brightness Level: 2fc to 5 fc when inactive / 20 fc when active
Type: LED with step dimming control by motion sensors highly recommended

Electrical Power:

Air Compressor: 480V, 3 phase service (30 amp breaker)
Train Disconnect Panel: 480V, 3 phase service (800 amp breaker)
Location: Near rear of engine

Water Service:

Service Station: One (1) Snyder service station for every two (2) coaches.
Assume six (6) coaches for Ethan Allen line for three (3) stations.
Location: 112' from the front of the engine / 170' intervals thereafter.
Sanitary: Provide sanitary sewer dump station for 'honey dipper' truck usage.
Water Supply Lines: Provide 2" water lines to each service station.
Power: 120 VAC, 40 amp service to each water service station.
General: Provide tap, meter, and backflow preventer per codes.

Air:

Compressor: Saylor Beall Air Compressor (model 735-80, Series 5-96-R04) with 80 gallon tank and 5hp motor.
Locate in 10'x10' shed.
Provide 480v, 3 phase service with disconnect switch.

Platform:

Height: Low level 8" ATR – *assume access by on-board stairways*
Length: 600' - *Based on existing Ethan Allen Amfleet coaches.*
Covering: 75' long roof shed for Locomotive. See Amtrak SDP for specific design criteria.

Access, ROW, Storage:

Storage: Provide enclosed, lockable storage for cleaners and equipment.
Exact sizes and quantities TBD, estimated two or three 10'x10'sheds.
Yard: Parking for one (1) Honey Dipper truck, three (3) to five (5) service vans.
Access Driveway: 12' wide access road along track.

Crew Base / Staff Facilities:

Not needed at this location. Crew procedure is taxi to off-site accommodations.

Appendix C – Noise and Air Evaluation

Memorandum

To: VTrans

Date: November 30, 2019

Project #: 57981.00

From: VHB

Re: Burlington Amtrak Storage Facility
Noise Analysis

The Chittenden County Regional Planning Commission (CCRPC), the City of Burlington (COB), the Vermont Agency of Transportation (VTrans), and Vermont Rail Systems (VRS), are collaborating on a study to identify an overnight storage and servicing location for the future Amtrak passenger train in the greater Burlington area. A component of evaluating the feasibility of the six potential storage sites are potential noise effects from idling locomotives at nearby sensitive locations including residences. This memorandum presents background information on noise, summarizes the assessment methodology, and presents results of the noise analysis.

Noise Background

Sound is the rapid fluctuations of air pressure above and below ambient pressure levels. Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, work, communication or recreation. How people perceive sound depends on several measurable physical characteristics including:

- **Sound Level** - Sound level is based on the amplitude change in pressure and is related to the loudness or intensity. Human hearing covers a wide range of changes in sound pressure amplitude. Therefore, sound levels are most often measured on a logarithmic scale of decibels (dB) relative to 20 micro-pascals. The decibel scale compresses the audible range of acoustic pressure levels, which can vary from the threshold of hearing (0 dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. For example, adding two equal sound levels results in a 3 dB increase in the overall level. Research indicates the general relationships between sound level and human perception are as follows:
  - A 3-dB increase is a doubling of acoustic energy and is approximately the smallest difference in sound level that can be perceived in most environments.
  - A 10-dB increase is a tenfold increase in acoustic energy and is generally perceived as a doubling in loudness to the average person.
- **Frequency** - Sounds are comprised of acoustic energy distributed over a range of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in Hertz. Human hearing generally ranges from 20 to 20,000 Hz; however, the human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A-weighting [dBA] is commonly used to evaluate environmental noise levels.
  - Sound levels reported in octave or one-third-octave frequency bands are often used to describe the frequency content of different sounds. Some sources of sound can generate "pure tones" which is when there is a concentration of sound within a narrow frequency range such as a whistle. Humans can hear pure tones very well and such conditions can be a cause of increased annoyance.

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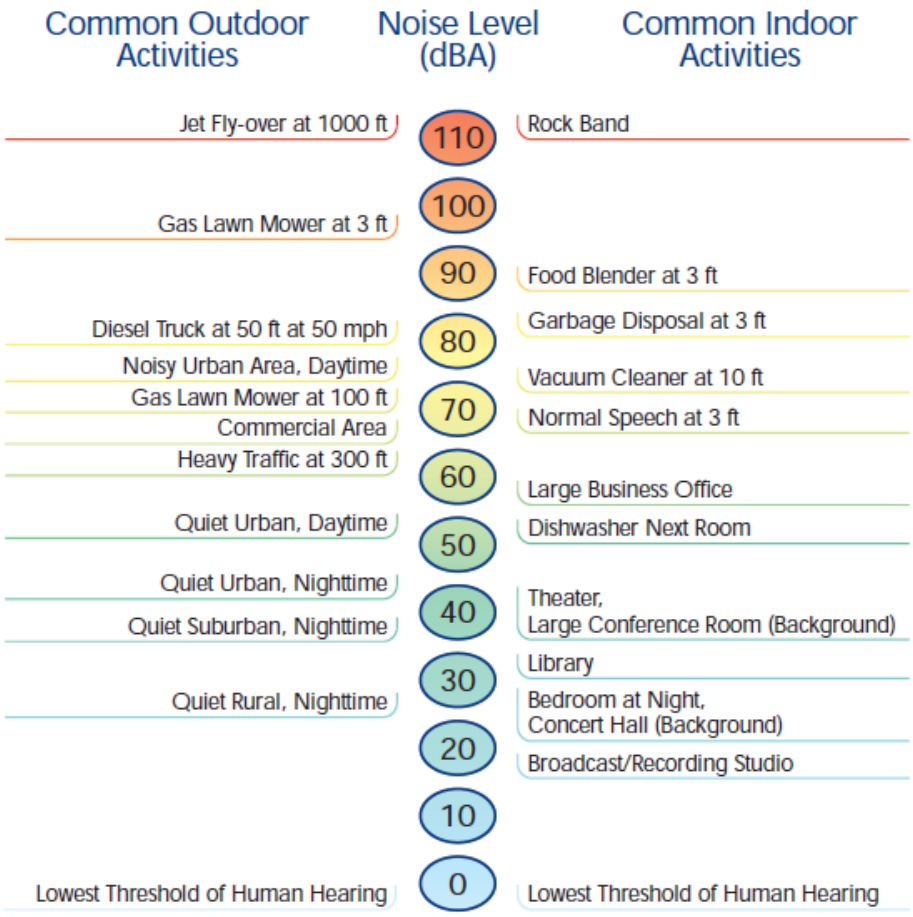
A variety of sound level descriptors can be used for environmental noise analyses. These descriptors relate to the way sound varies in level over time. The following is a list of common sound level descriptors:

- The *Maximum A-weighted Level* (Lmax) represents the highest sound level generated by a source. For mobile sources, the maximum level typically occurs when the source is closest to the measurement or analysis location.
- The *Energy-average Level* (Leq) is a single value that is equivalent in sound energy to the fluctuating levels over a period of time. The Leq accounts for how loud events are during the period, how long they last, and how many times they occur. Typically, Leq sound levels are used to describe the time-varying sound level over a 1-hour period and may be denoted as Leq_{1h}. Leq is commonly used to describe environmental noise and relates well to human annoyance.

Figure 1 shows typical A-weighted sound levels for common outdoor and indoor activities.

- **Figure 1 Typical Ambient Outdoor and Indoor Sound Levels**



Source: Caltrans, 2016.

Regulatory Context

Noise generated by the proposed locomotive storage has been evaluated according to the Federal Railroad Administration (FRA) equipment regulations and Burlington Noise Ordinance.

FRA Equipment Regulations

Noise is generated by diesel-electric locomotives while it is providing head end power (HEP) to the passenger coaches while idling. The HEP provides power to the rail cars without providing power to the traction motors. The FRA has equipment noise standards for all locomotives operating under stationary conditions with an idle throttle setting. As defined in 40 CFR 201.11, no locomotive manufactured after December 31, 1979 may exceed a maximum sound level of 70 dBA when operated at idle at a distance of 100 feet from the locomotive center. Since the Amtrak trains operate on a railroad subject to FRA jurisdiction, locomotives must comply with this noise standard.

Burlington Noise Ordinance

The City of Burlington has established a Noise Ordinance to preserve the public health, safety and welfare of its citizens. The purpose of the ordinance is to prohibit excessive and disturbing noise. The Burlington Noise Ordinance does not establish quantitative noise limits, but instead primarily focuses on restricting certain noise sources to specific times of day. The ordinance specifies express prohibitions on noise originating from parties, machinery, construction, loud speakers, radios, televisions and other sound amplification devices (including those in motor vehicles). A general prohibition is placed on any noise that disturbs, injures, or endangers the peace or health of any person or the community.

The Burlington Noise Ordinance does not prohibit noise generated from locomotives. Additionally, since noise from the locomotives is controlled by federal regulation, the local ordinance is not applied.

Analysis Methodology

Noise from the locomotives has been evaluated at each study location including nearby residential receptors.

Receptor Identification

Noise receptors were identified at all residential parcels experiencing sound levels 40 dBA and greater from the idling locomotives using a combination of available parcel data, aerial photography, and Google Street View™. Noise receptors were identified at single-family residences and multi-family residences and are tabulated according to the number of dwelling units. The number of residences that would be exposed to sound levels between 40 to 50 dBA, 50 to 60 dBA, and greater than 60 dBA.

Noise Sources

Noise was analyzed assuming one idling locomotive at each potential storage site. The reference sound level of the idling locomotive used in the study is provided in Table 1. The reference sound level was determined using measurements of an idling Amtrak P32AC Locomotive at the Amtrak Station in Rutland, Vermont on September 7, 2018. Measurements were conducted using ANSI Type I sound level meter (Larson Davis Model 831) and employed best measurement practices.

Table 1 Locomotive Idling Emissions at 100 feet (dBA)

		Frequency (Hz)							
Source	**Overall**	**63**	**125**	**250**	**500**	**1,000**	**2,000**	**4,000**	**8,000**
Idling Locomotive	77	72	63	66	68	68	67	65	64

Source: VHB measurements of an Amtrak P32AC Idling Locomotive on September 7, 2018.

Noise Model

Sound generated by the idling locomotive has been predicted using Cadna-A[1] sound prediction software which utilizes the methods outlined in the International Standards Organization (ISO) Standard 9613-2:2006[2]. This prediction method considers the topography, ground cover, wind conditions, and intervening objects such as buildings. The following summarizes the principal assumptions:

- Moderate downwind conditions are assumed which conservatively predict efficient sound propagation from the source to receptors in all directions.
- Sound attenuation is affected by shielding and diffraction provided by local buildings intervening the propagation path between the source and receptors.
- Ground cover in the study area depends on site-specific conditions. The McNeil site was assumed to be surrounded by earth, grass, and other vegetation which provide acoustically soft ground.

Analysis Results

Site 6, McNeil Siding Site, is located near the Joseph C. McNeil Generating Station. There are residences near this site along Riverside Avenue, Manhattan Drive, and Intervale Avenue which are elevated relative to the tracks. The terrain provides acoustic shielding from the idling locomotives. There would be no residences exposed to noise greater than 60 dBA. There would be approximately 85 residences exposed to sound levels between 50 and 60 dBA and 229 residences exposed to sound levels between 40 and 50 dBA.

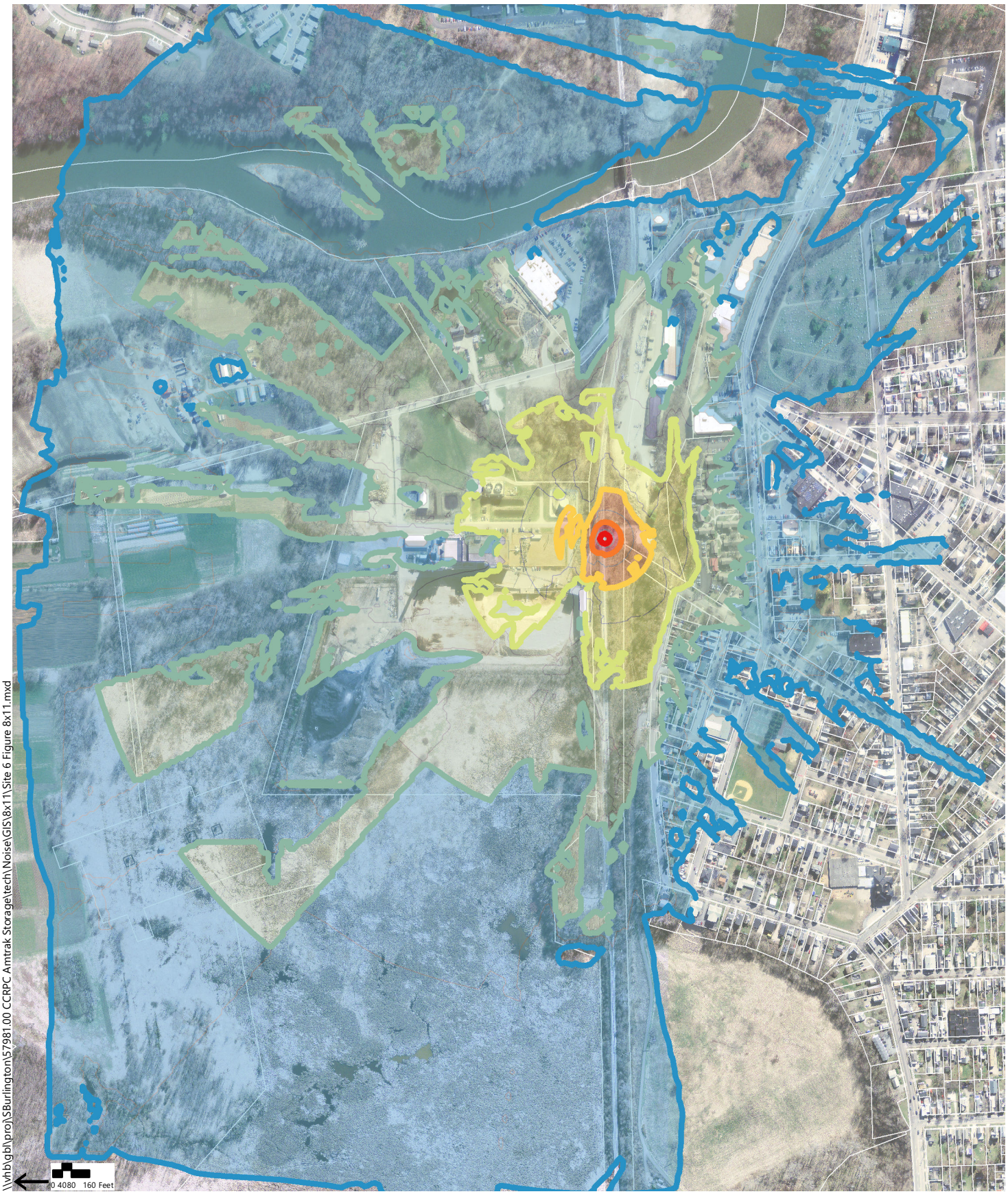
Table 2 presents the number of residences experiencing maximum (Lmax) sound levels between 40 and 50 dBA, between 50 and 60 dBA, between 60 and 70 dBA, between 70 and 80 dBA and greater than 80 dBA from the idling locomotive.

Table 2 Residential Receptors Exposed to Locomotive Sound

		Number of Residences				
Site	**Site Description**	**40-50 dBA**	**50-60 dBA**	**60-70 dBA**	**70-80 dBA**	**>80 dBA**
6	McNeil Siding	229	85	0	0	0

[1] Computer Aided Noise Abatement (Cadna-A). *DataKustik GmbH*. Version 2017. http://www.datakustik.com/en/products/cadnaa.

[2] "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation" ISO 9613-2:2006. 2006.



\\vhbgbl\pro\SBurlington\57981.00 CCRPC Amtrak Storage\tech\Noise\GIS\8x11\Site 6 Figure 8x11.mxd

Burlington Amtrak Servicing & Storage Facility Study | Burlington, Vermont

Sound Level Contours
McNeil Generating Station Siding

Sound Levels

40-50 dBA	60-70 dBA	40 dBA	70 dBA
50-60 dBA	70-80 dBA	50 dBA	80 dBA
	>80 dBA	60 dBA	90 dBA

Memorandum

To: VTrans

Date: November 30, 2019

Project #: 57981.00

From: VHB

Re: Burlington Amtrak Storage Facility
Air Quality Analysis

The Chittenden County Regional Planning Commission (CCRPC), the City of Burlington (COB), the Vermont Agency of Transportation (VTrans), and Vermont Rail Systems (VRS), are collaborating on a study to identify an overnight storage and servicing location for the future Amtrak passenger train in the greater Burlington area. A component of evaluating the feasibility of the six potential storage sites is potential air quality effects from idling locomotives at nearby sensitive locations including residences. This memorandum presents background information on air quality, summarizes the assessment methodology, and presents the results of the air quality analysis.

Regulatory Context

The air quality statutes and regulations that are applicable to the Storage Facility include the 1990 Clean Air Act Amendments (CAAA) and the National Ambient Air Quality Standards (NAAQS). The CAAA is the basis for most Federal air pollution control programs. The purpose of the CAAA is to preserve air quality and protect the public's health and welfare. Under the authority of the CAAA, the Environmental Protection Agency (EPA) regulates air quality nationally. EPA delegates authority to the Department of Environmental Conservation (DEC) for monitoring and enforcing air quality regulations in the State of Vermont. Conformity with the State Implementation Plan is not assessed in this analysis because the Storage Facility is located in Chittenden County, which is designated by the EPA as in Attainment (i.e., in compliance with applicable standards) for all criteria pollutants. Therefore, this area is exempt from conformity requirements.

Under authority of the CAAA, the EPA established the NAAQS that define allowable limits for atmospheric concentrations of various criteria air pollutants including particulates. Primary standards are established at levels designed to protect the public health. Secondary standards are established at levels designed to protect the public welfare by accounting for the effects of air pollution on vegetation, soil, materials, visibility, and other aspects of the general welfare. The EPA has set the NAAQS for criteria pollutants to protect the public health and welfare. Table 1 presents the NAAQS for these pollutants.

40 IDX Drive
Building 100, Suite 200
South Burlington, VT 05403-7771
P 802.497.6100

Table 1 National Ambient Air Quality Standards

Pollutant	Averaging Period	Primary Standard	Secondary Standard	Form
Carbon Monoxide (ppm)	8-hour	9	-	Not to be exceeded more than once per year
	1-hour	35	-	
Nitrogen Dioxide (ppb)	1-hour	100	-	98th percentile of daily maximum concentrations, averaged over 3 years
	Annual[a]	53	53	Annual Mean
Ozone (ppm)	8-hour[b]	0.070	0.070	Annual 4th highest daily maximum concentration, averaged over 3 years
Particulate Matter 2.5 ($\mu g/m^3$)	Annual	12	15	Annual mean, averaged over 3 years
	24-hour	35	35	98th percentile, averaged over 3 years
Particulate Matter 10 ($\mu g/m^3$)	24-hour	150	150	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (ppb)	1-hour[c]	75	-	99th percentile of daily maximum concentrations, averaged over 3 years
	3-hour	-	0.5	Not to be exceeded more than once per year
Lead ($\mu g/m^3$)	3-month average[d]	0.15	0.15	Not to be exceeded

Source: US Environmental Protection Agency

[a] The level of the annual NO_2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

[b] Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O_3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O_3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

[c] The previous SO_2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which implementation plans providing for attainment of the current (2010) standard have not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 C.F.R. §50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the require NAAQS.

[d] In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu g/m^3$ as a calendar quarter average) also remain in effect.

(ppm) – parts per million; (ppb) – parts per billion; ($\mu g/m^3$) – micrograms per meter cubed

Analysis Methodology

Air Quality from the locomotives has been evaluated at each study location for nearby residential receptors and locations of ambient air.

Background Concentrations

Background concentrations were obtained from the DEC, who maintain a network of ambient air monitors across the state in response to the CAAA. Background concentrations are added to project emission sources to determine the total pollutant concentration at a receptor location for comparison to the NAAQS. The most current background

concentrations were obtained from the DEC's recommended background concentrations for air quality monitoring.[1] Concentrations were chosen from the monitoring location closest to the Storage Facility (the Burlington monitoring site). Only pollutants that were considered in the air quality modeling are presented in Table 2. The criteria pollutants not considered in the air quality modeling (Ozone, Sulfur Dioxide, and Lead) are not studied because they are not substantially emitted by locomotives. All background concentrations are well below the NAAQS and demonstrate Chittenden County's Attainment designation by the EPA.

Table 2 Background Concentrations

Pollutant	Units	Averaging Period	Background Concentration	NAAQS Standard
Carbon Monoxide	ppm	8-hour	0.6	9
	ppm	1-hour	1.2	35
Nitrogen Dioxide	ppb	1-hour	33	100
	ppb	Annual	6.5	53
Particulate Matter 2.5	$\mu g/m^3$	Annual	6.0	12
	$\mu g/m^3$	24-hour	10	35
Particulate Matter 10	$\mu g/m^3$	24-hour	32	150

Source: Vermont Department of Environmental Conservation.

Emission Sources

Locomotive emissions were analyzed assuming one idling locomotive at each potential storage site for 40 minutes. The reference emission factors of the idling locomotive used in the study were retrieved from "Emission Factors for Locomotives", an EPA guidance document.[2] The emission factors are for an Amtrak P32AC Locomotive under the Tier 0 emission standard and with an engine power representative of idling conditions.

Dispersion Model

Pollutant dispersion modeling was conducted using the AERSCREEN dispersion model.[3] AERSCREEN is a screening model that uses worst-case meteorology to conservatively estimate pollutant concentrations. Dispersion modeling was conducted for receptors located 6 feet above the ground that were placed between the locomotive stack and 500 feet for NO_2 and 150 feet for other pollutants. These ranges were sufficient to capture the distance that experiences the maximum pollutant concentration from locomotive emissions. Additionally, models were developed with the appropriate geometry for homes along Manhattan Drive and Riverside Avenue near the McNeil Site as these receptors

[1] "Ambient Monitoring Background Data For Use In Air Quality Impact Evaluation". Vermont Department of Environmental Conservation. http://dec.vermont.gov/air-quality/permits/construction/background-data. Accessed October 4, 2018.
[2] "Emission Factors for Locomotives". US Environmental Protection Agency. EPA-420-F-09-025. April 2009.
[3] AERSCREEN Dispersion Model, Version 16121r, US Environmental Protection Agency.

are elevated relative to the tracks. Pollutant concentrations with averaging periods other than 1-hour were modeled using the recommended persistence factors from the "AERSCREEN User's Guide".[4]

Analysis Results

The results of the dispersion modeling for the Storage Facility show pollutant concentrations from the idling locomotive for all criteria pollutants and averaging periods are below the NAAQS criteria at all receptor locations at the McNeil site. The potential to exceed the NAAQS for each site is summarized in Table 3.

Table 3 Potential for Air Quality Impact by Site

Site	Site Description	Potential to Exceed NAAQS?	Potential Exceedance Location
6	McNeil Siding	All Pollutants: No	N/A

[4] "AERSCREEN User's Guide". US Environmental Protection Agency. EPA-454/B-16-004. December 2016.

Appendix **D – Conceptual Cost Estimate**

Computations

Project:	**Amtrak Storage**	**Project #:**	**57981.00**
Location:	**Burlington, VT**	**Sheet:**	
Calculated by:	**JDA**	**Date:**	**12/27/2017**
Checked by:	**ELQ**	**Date:**	**3/27/18**
Revised	**EC**	**Revised:**	**5/10/19**
Revised	**JDS**	**Revised:**	**11/25/19**
Title:	**Conceptual Cost Estimates**		

Conceptual Cost Estimates Summary

Site #	Description	Estimated Costs
1	Northern Reserve	$2,290,000
2	Urban Reserve	$2,240,000
3	Train Station	$300,000
4	Railyard	$50,000,000
5	City Market	$1,500,000
6	McNeil Generating Station	$1,500,000

Computations

Project:	**Amtrak Storage**	**Project #:**	**57981.00**
Location:	**Burlington, VT**	**Sheet:**	
Calculated by:	**JDA**	**Date:**	**12/27/2017**
Checked by:	**ELQ**	**Date:**	**3/27/18**
Revised:	**EC**	**Date:**	**5/10/19**
Title:	**Burlington Amtrak Storage Cost Estimates**		

1. Northern Urban Reserve

		length (EST), ft	unit cost ($/mi)	unit cost ($/ft)	Cost ($)
Roadway	New road segment	1200	$3,000,000	$568	$681,818
Utilities	Electrical Connection	1		$300,000	$300,000
Railroad	New Siding	700		$250	$175,000
	New Track north College St	200		$250	$50,000
	New Signal and Gates	1		$1,000,000	$1,000,000
	New Switch	1		$75,000	$75,000
				Subtotal:	$2,281,818
				Rounded total:	$2,290,000

2. Urban Reserve

		length (EST), ft	unit cost ($/mi)	unit cost ($/ft)	Cost ($)
Roadway	New road segment	500	$3,000,000	$568.18	$284,091
Utilities	Electrical Connection	1		$300,000	$300,000
Railroad	New Siding and Retaining Wall	700		$750	$525,000
	New Track north College St	200		$250	$50,000
	New Signal and Gates	1		$1,000,000	$1,000,000
	New Switch	1		$75,000	$75,000
				Subtotal:	$2,234,091
				Rounded total:	$2,240,000

3. Train Station

		length (EST), ft	unit cost ($/mi)	unit cost ($/ft)	Conc. Cost ($)
Roadway	New road segment	n/a			
	Rehab road segment	n/a			
Utilities	Electrical Connection	1		$300,000	$300,000
Railroad	New Track	n/a			
	New Switch	n/a			
				Subtotal:	$300,000
				Rounded total:	$300,000

Project:	**Amtrak Storage**	**Project #:**	**57981.00**
Location:	**Burlington, VT**	**Sheet:**	
Calculated by:	**JDA**	**Date:**	**10/13/17**
Checked by:	**ELQ**	**Date:**	**3/27/18**
Title:	**Unit Costs for Reference**		

Conceptual Cost Estimates: Unit Costs

Estimated Railroad Siding Cost

	Est. Cost	Cost Unit
Two Lane Roadway	$250	Foot

Unit Cost: $250 per foot

Estimated Railroad Switch Cost

	Est. Cost	Cost Unit
Railroad turn out	$75,000	Each

Unit Cost: $75,000 each

Estimated New Two Lane Roadway Cost

	Est. Cost	Cost Unit
Two Lane Roadway	$3,000,000	Mile

* Source: American Road & Transportation Builders Association FAQs

Unit Cost: $3,000,000 per mile

Estimated Conversion of existing Road Segment

	Est. Cost	Cost Unit
Two Lane Roadway	$1,000,000	Mile

* Source: American Road & Transportation Builders Association FAQs

Unit Cost: $1,000,000 per mile

Estimated Cost to Remove Road Segment

	Est. Cost	Cost Unit
Remove Road	$400,000	Mile

$75.76 per foot

Unit Cost: $400,000 per mile

Project:	**Amtrak Storage**	**Project #:**	**57981.00**
Location:	**Burlington, VT**	**Sheet:**	
Calculated by:	**JDA**	**Date:**	**10/13/17**
Checked by:	**ELQ**	**Date:**	**3/27/18**
Title:	**Unit Costs for Reference**		

Conceptual Cost Estimates: Unit Costs

Bike Path Relocation

	unit $ / ft
New 10' Shared Use Path, per ft*	$250
Remove existing bike path, per ft**	$32
Subtotal:	$282
Rounded total:	$290 per foot

Estimated Water Line Costs

	Est. Cost	Cost Unit
Water Line	$190	Each

* Source: Previous VHB Project Estimates

Unit Cost: $190 each

Estimated Sewer Line Costs

	Est. Cost	Cost Unit
Sewer Line	$150	Feet

* Source: Research and Engineering Judgement

Unit Cost: $150 per foot

Estimated Electrical Connection

	Est. Cost	Cost Unit
Electrical Connection	$300,000	Each

* Source: Research and Engineering Judgement

Unit Cost: $300,000 each

Estimated Rail Crossing Signal Cost

	Est. Cost	Cost Unit
Rail Crossing Signal	$1,000,000	Each

Unit Cost: $1,000,000 each

Computations

Project: Amtrak Train Storage
Location: Burlington, VT
Calculated by: S.E. Burbank
Checked by:
Title: McNeil Generating Station Site

Project #: 57981.00
Sheet: 1 of 1
Date: 11/25/2019
Date:

		Unit	Qty	Unit Cost	Cost
Roadway	New Road Segment	LF	1300	$ 568	$738,636
Utilities	Electrical Connection	EA	1	$ 300,000	$300,000
Railroad	Railroad Siding	LF	1200	$ 250	$300,000
	Railroad turn out	EA	2	$ 75,000	$150,000
				Subtotal	$1,488,636
				Rounded total:	$1,500,000

CITY OF BURLINGTON
DEPARTMENT OF PUBLIC WORKS

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Chapin Spencer
DIRECTOR OF PUBLIC WORKS

MEMORANDUM

To: City Council Transportation, Energy & Utilities Committee

From: Chapin Spencer, Director

CC: Grace Ciffo (CEDO), Norm Baldwin P.E. and Susan Molzon P.E. (DPW), Cindi Wight (Parks)

Re: Waterfront Rail Update

Date: December 12, 2019

This is an update on waterfront rail issues that were discussed at the November 4 City Council and the November 19 Transportation, Energy & Utilities Committee (TEUC) meetings.

Questions for VTrans: Based on November 4 Council input, the Mayor sent a letter dated November 19 to VTrans seeking additional information from the Agency. VTrans replied on December 3 and their correspondence is attached.

Questions for Vermont Rail System: At the November 19 TEUC meeting, City Councilors had a number of questions for Vermont Rail System (VRS) and City staff was asked to invite VRS to the December TEUC meeting. VRS replied that they would be unable to participate, but they provided a detailed correspondence that details their operational needs (see attached).

Vermont Rail Council: The Vermont Rail Council met on December 3 and reviewed and ranked potential Amtrak servicing and storage sites including the new potential site adjacent to the McNeil Generating Station in Burlington's Intervale. The McNeil site was the top ranked site from the Vermont Rail Council members (see attached).

City Input: VTrans has requested the City weigh in with our preference on an Amtrak overnighting and servicing location by the end of 2019 – though there was discussion with VTrans at the November 19 TEUC meeting of potentially asking for a one month extension. My suggestion is that we seek a one month extension and we use the December TEUC meeting to identify whether there are any outstanding questions for VTrans and VRS – and then have the TEUC meet mid-January to discuss taking a position that would be taken up at by the City Council in late January. We are still trying to coordinate a site visit to Rutland to observe the nighttime servicing of the Amtrak train – and are trying to accommodate this around holiday schedules.

Feel free to reach out with any questions.

Vermont Rail Council
Amtrak to Burlington Overnight Storage Priority

Location	Flynn Avenue	McNeil Siding	Northern Urban Reserve	Urban Reserve	Union Station	VTR Railyard
D. Allaire	4	1	2	3	5	6
C. Andreasson	5	1	2	3	4	6
C. Baker	6	2	3	5	1	3
J. Erenhouse*						
C. Fowler	5	1	3	4	6	2
C. Hunter	6	3	2	1	4	5
C. Moore	4	1	2	3	6	5
R. Moulton	5	1	3	4	6	2
J. Munger	5	1	2	3	6	4
B. Savage	4	1	2	3	6	5
A. Whitman	4	1	2	3	5	6
D. Wulfson	5	2	1	3	4	6
Total Score	53	15	24	35	53	50

Lowest Valued Total Score is the Most Preferred Location
Members rank their preferences from most preferred (#1) to least preferred (#6)

*** J. Erenhouse Not In Attendence**

1	McNeil
2	Northern Urban
3	Urban
4	VTR Railyard
5	Flynn/Union

VERMONT RAIL SYSTEM
One Railway Lane, Burlington, VT 05401
Tel. 802-658-2550 Fax. 802-658-2553

November 25, 2019

Secretary Flynn, Chairman
Vermont Rail Advisory Council
Vermont Agency of Transportation
219 North Main Street
Barre, VT 05641

Re: Amtrak Servicing and Storage Study

Dear Secretary Flynn and Members of Rail Advisory Council:

We are excited to be a part of the effort to bring long awaited daily passenger train service to Burlington and write to offer comments on the CCRPC analysis of potential locations to store and service Amtrak's Ethan Allen after its nightly arrival at Union Station in Burlington. As you already know, VRS has been publicly working for several years now with VTrans and others to help identify how and where to accommodate Amtrak, and we believe it is important to recall that this has been a long-standing work in progress that dates in some manner as far as back as the Champlain Flyer. Detailed engineering plans for double-tracking in Burlington were shared with City officials more than three years ago in 2016, and Main Street Landing has already acknowledged that the CCRPC assessment process included public meetings in 2017 with the Burlington Public Works Commission at which the owner of Main Street Landing raised her concerns about overnight site locations and the potential for a negative impact on her Main Street Landing development project. Main Street Landing expressed similar reservations at Rail Council in November, 2017 so it is hardly appropriate to suggest that these questions have only recently been brought forward for public discussion.

As a first matter, we agree with CCRPC that the railyard and the siding south of Flynn Avenue are the least appropriate of the alternatives considered, but otherwise have no real operational preference as to whether Amtrak overnights at Union Station or other locations north of Maple Street. In light of claims by representatives of Main Street Landing LLC suggesting that the railyard is a more appropriate location than Union Station or points north, we believe it would be helpful to understand

two key issues from our point of view: our inability to build new track in an already congested railyard; and the operational difficulties of accommodating Amtrak within the existing footprint when we have to interchange with the NECR every night. As detailed below, overnighting Amtrak south of Flynn Avenue would cause similar interference with existing freight operations, doubling the time Amtrak requires VRS freight and passenger trains to stand down and clear the main line, and doubling the number of train movements blocking city streets every morning and every evening.

We also want to set the record straight and advise Rail Council that VRS considers construction of a second passenger siding at Union Station essential to the return of Amtrak passenger service to Burlington – and would intend to proceed with necessary track work regardless of any eventual decision about where Amtrak will overnight. None of the work planned by VRS between Maple and College Street will extend beyond the right-of-way that existed long before Main Street Landing's development began, and all of the work can be coordinated with the City of Burlington's longstanding plan to relocate and rehabilitate the bike path. Main Street Landing LLC or others who suggest that Amtrak service can return to Burlington without construction of a second siding at Union Station or that track construction somehow depends upon the site selected for Amtrak storage and service appear uninformed about the realities of railroad operations. As we stated more than eighteen months ago in a letter to attorneys representing Main Street Landing only weeks after the State of Vermont completed the multi-million dollar purchase of the train station, "[r]econstruction of the siding to allow passenger service can't possibly be a surprising development to your clients and will be a necessary element of rail service regardless of where the train overnights." A copy of this March 19, 2018 letter to attorneys for Main Street Landing, VTrans and the City is attached for your convenience, not having been included in the materials presented to Rail Council at your prior meeting.

1. Rail Yard Congestion: In evaluating possible site locations for overnighting Amtrak, the CCRP study reviewed the operational and cost implications of overnighting Amtrak's Ethan Allen in the railyard. As those familiar with the CCRP Study (See Fig. 8) already understand, the existing Burlington railyard is squeezed between Lake Champlain and properties along Pine Street and there is no room to build new track for Amtrak's Ethan Allen (two locomotives and five or six passenger cars) within the existing footprint and current track configuration. In that confined area, freight trains arriving south from Rutland and from the north over the NECR have to be received,

reorganized, maneuvered, loaded and unloaded every day. Track space needs to accommodate locomotive and freight car maintenance, inspection and repair work as well as switching and loading activities for daily freight trains and for special trains such as those associated with December's Polar Express or large scale rail movements by the Vermont Army National Guard. See attached photo of VTANG loading in April, 2019. The railyard also includes buildings, storage facilities and the infrastructure needed to transload freight that cannot be moved to build new tracks.

Ms. Moulton and others are also wrong to suggest that the railyard is active only during the day, and that nothing is going on at night that would be impacted by Amtrak storage. VRS operates 24 hours/day, and every night the NECR brings a train with inbound railcars from the NECR past the Union Station passenger platform and into the Burlington yard to set off cars for us, and to pick up outbound cars. Two of the railyard tracks that might appear to be open or empty to those unfamiliar with railroad operations are needed during this interchange process to accept inbound railcars for our customers while the other track is kept open to "run around" their train and get onto the north end of the outbound cars the NECR is collecting.

Whether night or day, we need to have tracks to move around on as part of regular daily operations; not all tracks can have railcars on them. As it is, we separate our passenger trains into two or three parts when operating in Burlington so we can fit the passenger coaches on tracks that already have freight cars – all in order to keep our operating tracks open. Shuffling Amtrak passenger coaches in this manner is not feasible because Amtrak requires that the train be kept as a single unit and will not allow it to be split up onto separate tracks each night and reassembled every morning.

2. <u>Flynn Avenue:</u> Storing or siting the Amtrak train outside of the railyard and south of Flynn Avenue would not require track space in the railyard for storage, but presents other operational problems and would double the number of times each morning and each evening when VRS needs to clear out of the way for Amtrak to cross through the yard. Storage south of Flynn Avenue would also double the number of times that traffic will be blocked at Flynn Ave., Maple Street and King Street – impacts that are minimized if the Amtrak train remains north of Maple Street because VRS freight and passenger trains would be able to get back to work quickly as soon as Amtrak gets through the yard limits each morning and each evening.

If Amtrak does not stay north of Maple Street and was required to come back in the yard to tie up for the night at a siding south of Flynn Avenue, our own train crews would need to stay clear of the mainline and stand by while Amtrak unloads passengers and then eventually makes a backup move over King Street, Maple Street and through the yard past Flynn Ave., all the time waiting for Amtrak to clear up on an "open" track. The result is that our employees and train crew could easily be waiting over an hour extra every night for all this to occur even in the best of circumstances. In the morning the reverse process would need to occur with our crews and local freight service again waiting until Amtrak could clear through the yard limits from Flynn Ave. up to Union Station and then south again after boarding passengers.

As it is, accommodating Amtrak through the yard every morning will not be simple or straightforward since we have a very limited window to maneuver the freight cars received overnight at interchange and building the outbound freight quickly enough to meet schedules. Most of these daily activities must happen between 7:00 AM and Noon in order to make connections, so requiring Amtrak to make multiple moves in or through yard limits during this time will be exponentially difficult for our operations and customer service. Remaining north of Maple Street after arrival is the only way to reasonably minimize yard interference.

* * * * * * * * * ***

A real estate developer intentionally choosing to build so close to active railroad tracks, fully aware and advocating for the return of passenger rail service to Burlington, and receiving more than $3.0 million in payments from the State of Vermont to secure the train station for public use, should not be surprised to encounter railroad activity in the vicinity of a train station and within the boundaries of a pre-existing right-of-way. We continue to believe that the return of passenger service to Burlington is cause for celebration, and would be glad to provide additional information on our operations if helpful to your understanding.

Regards,

Selden Houghton
Vice President

FACT SHEET- RAILROAD OPERATIONS

1. **No Amtrak Refueling Anticipated:** Amtrak's Ethan Allen does not currently refuel in Rutland during overnight servicing, has not refueled in Rutland, and there have never been plans to include refueling as part of overnight service for the Ethan Allen when scheduled passenger service begins to Burlington.

2. **Shore Power eliminates or greatly reduces any need for idling.** Amtrak has advised VRS and VTrans that locomotive idling for extended or overnight periods will no be part of normal or ordinary Amtrak operations in Burlington regardless of site location.

3. **Amtrak Train Length.** Amtrak requires that its train (680') be overnighted as a single unit and not separated to be shuffled around the railyard, unlike freight and passenger trains currently operated by VRS. When Amtrak service was initiated to Rutland, a new siding was built at the Rutland train station specifically to accommodate overnight storage and service requirements.

4. **Nightly Freight Interchange.** VRS and NECR interchange freight daily in Burlington south of Maple Street and freight trains arriving from and departing to the north use the single track adjacent to Union Station. Every night, track must be kept open and available in the railyard for VRS to accept inbound freight trains and prepare outbound trains for nightly departure. VRS operations also regularly include freight movements north of Maple and beyond College Street as well.

5. **Northern Urban Reserve (Site 1)** The City of Burlington realigned the path through the Northern Urban Reserve in 2016 to follow the lake shore as part of its Bike Path Rehabilitation Project (Phase 1b). https://enjoyburlington.com/burlington-greenway-project. After the City moved the path, VRS identified the Northern Urban Reserve as a potential and practical site within the right-of-way and adjacent to an existing 1200' siding.

6. **Crossing impacts and crew time.** Overnight storage of Amtrak at the station platform where passengers embark in the mornings and disembark in the evening minimizes the number of times that passenger train movements block crossings and delay traffic at King Street and Maple Street, and eliminates additional run time for train crews subject to hour of service limitations.

7. **Burlington City Referendum to Realign Bicycle/Pedestrian Path.** The City is actively working to finalize the bike path's new design and relocation to the west side of the rail right of way. Relocating the bike path away from the Union Station passenger loading platform was the subject of a public vote by Burlington residents in 2016 after a 2012 City Bike Path Task Force Study recommended realigning the path to improve safety.

> ***"Should the Mayor of Burlington and the City Council be advised to relocate the Burlington Bicycle Path to the west side of the railroad tracks between College and King streets even if that means utilizing the public trust doctrine or eminent domain to accomplish this task?"***
>
> **APPROVED- November 2016**

8. **Public Ownership of Train Station:** The State of Vermont owns the train station in Burlington and has paid Main Street Landing approximately $3.0 million to secure public use of the train station for Amtrak at platform level - the final payment of $500,000 toward the purchase having been made to Main Street Landing in February, 2018.

9. **Siding Reconstruction at Union Station.** Vermont Railway intends to reactivate a second track for passenger service at Union Station to accommodate both Amtrak and existing railroad operations, and considers it fortunate that we can fully construct a second track within the existing right-of-way. VRS gave specific notice of this intention to Main Street Landing, VTrans and the City of Burlington more than eighteen months ago by the attached letter dated March 19, 2018.

Without a second siding, Amtrak will block the mainline and potentially interfere with freight operations. The absence of a second siding could also require that VRS curtail popular passenger operations such as Polar Express, the Ronald McDonald House Jingle Bell Express, and even the

Burlington Fireworks trains in order to avoid conflicts over track authority since non-Amtrak trains could not lawfully be occupying the same track at the Burlington passenger loading platform.

The need to preserve railroad flexibility to operate over the pre-existing right-of-way in the event it became necessary or desirable to resume operations was a key element of the original 1985 Agreement with the City and the State of Vermont, and use as a bike path has always been acknowledged as temporary.

> **"... Lessee further expressly acknowledges that it is aware that it again may be necessary or desirable for the [State] or the Railroad to terminate this Lease Agreement *and to relay railroad tracks and resume railroad operations over all or a portion of the lands and premises* herein leased to the Lessee." *(emphasis added).***
>
> 1985 Bike Path Lease Agreement, Article IX, Paragraph 1

See Also 1985 Bike Path Lease Agreement, p.2. (An allowed use *"during the period of time that such portion of the LESSOR's lands and premises is not immediately required for railroad operations."*);

See Also Amendment No. 2 (1996) ("...the CITY has arranged to lease, *for interim use* as a bicycle and pedestrian path....);

See Also Amendment No. 3 (2015) ("In accordance with 49 C.F.R. §1152.29 (Prospective use of rights-of-way for *interim trail use* and rail banking), the City acknowledges that use of the VTR's North Burlington Branch right-of-way *is subject to possible reconstruction and reactivation* of the right of way for rail service").

10. Bike Path Relocation – Not Destruction: Well before construction of the Wing Building, the 1994 Agreement with Main Street Landing explicitly referenced the 1985 Bike Path Lease Agreement, and specifically acknowledged that the Railroad retains the right "to relocate existing railroad tracks and facilities" to within eight feet of the building, if not closer. 1994 Main Street Landing Agreement, Para.11.

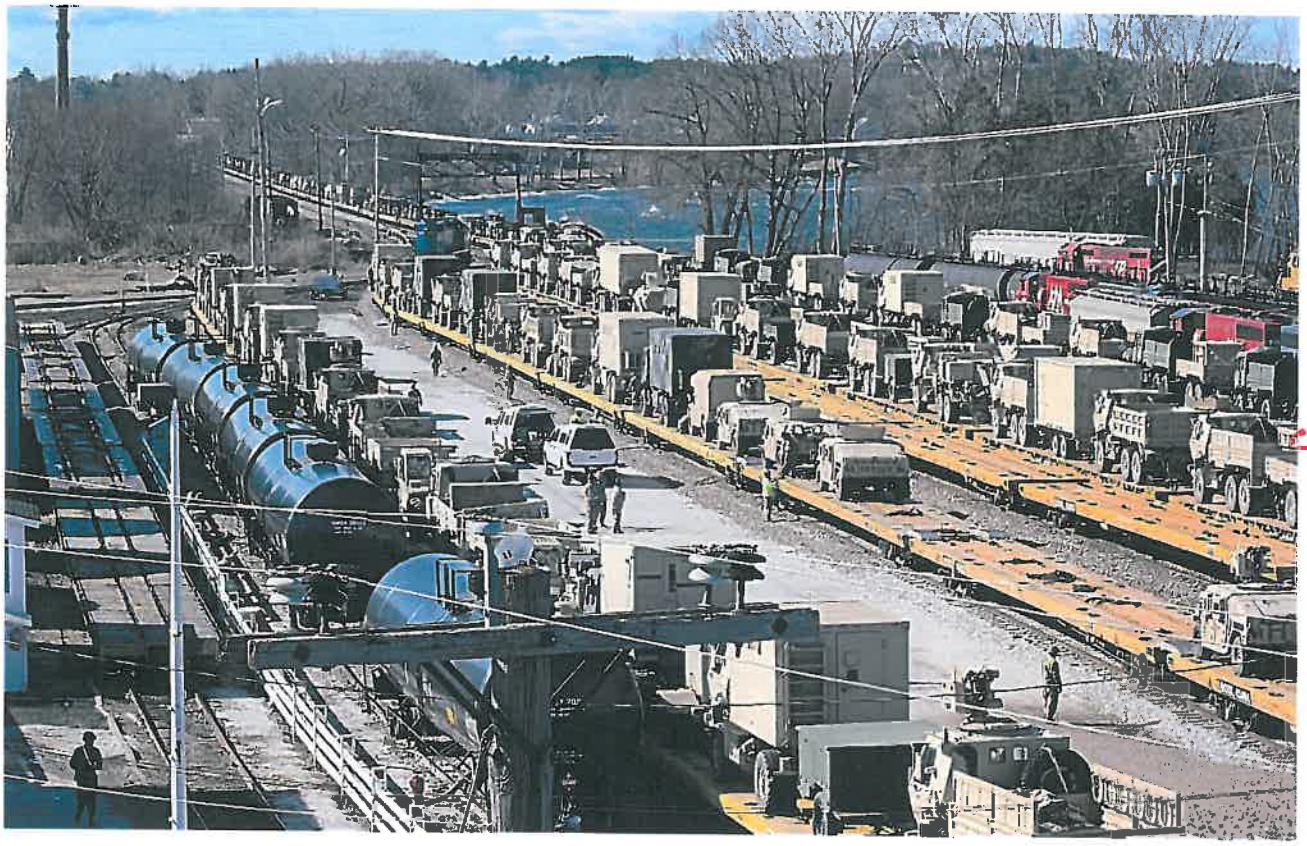
VRS track work planned for Union Station will take place entirely within the existing railroad right of way and fully coordinated with the City's ongoing upgrade and planned relocation of the bike

path. The completed project will maintain eight feet of pedestrian access for businesses while improving platform safety for railroad passengers and the public.

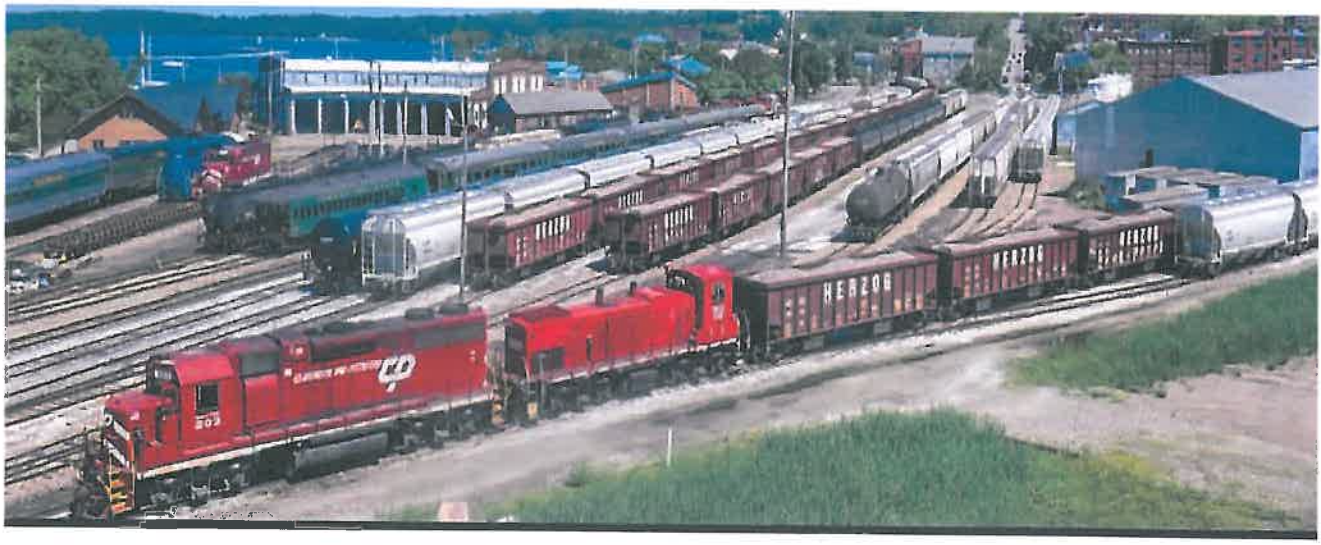
11. **Wing Building Proximity to Active Rail.** Main Street Landing LLC chose to site new construction without a setback and as close as possible to active railroad tracks with full knowledge that the railroad could reactivate tracks within the right of way. The 1994 Agreement signed by Ms. Moulton does not restrict the right of the Railroad to rebuild a second track and does not provide that the bike path is to remain on the passenger platform on anything other than an interim basis. Purchasers of condominiums from Main Street Landing should have been aware that the owner had agreed that the Railroad has the right "to relocate existing railroad tracks and facilities" and that relocated track could be expected to come as close as, if not closer than, eight feet of the building according to that 1994 Agreement.

12. **Main Street Landing Support for Relocation** Efforts to relocate the bike path did not begin with the 2016 City vote, and even those who do not favor selecting Union Station for overnighting should recognize these are two separate issues and support relocating the bike path away from the train station loading platform for safety reasons.

> **"We need to move ahead ASAP on the relocation of the bike path....we don't want pedestrians and bikers to collide....so the City needs to proceed poste (sic) haste – what is the hold up with the State getting the money to the City to do this work? –let's coordinate the spur at the same time."** Excerpt from Melinda Moulton Email (8/3/99) to Brian Searles at VTrans and Burlington Mayor Peter Clavelle.



Burlington Railyard Looking South - April 2019



Burlington Railyard looking North

VERMONT RAIL SYSTEM
One Railway Lane, Burlington, VT 05401
Tel. 802-658-2550 Fax. 802-658-2553

Mathew Byrne, Esq.
Gravel & Shea
P.O. Box 369
Burlington, VT 05402-0369

March 19, 2018

Re: Main Street Landing, LLC

Dear Matt:

I am in receipt of your letter of March 8, 2018 noting concerns by Main Street Landing LLC with bringing Amtrak passenger service to Union Station, and more than a bit dismayed by the contentious tone of your correspondence. As you well know, it has been a long standing goal of many in Vermont (and your client in particular) to bring back regularly scheduled passenger rail service between Burlington and New York City. Reconstruction of the siding to allow passenger service can't possibly be a surprising development to your clients and will be a necessary element of rail service regardless of where the train overnights. I would be happy to explain further if you would like to meet and discuss, but suffice it to say that it is inaccurate for you to characterize the reconstruction effort as building a "new rail siding" or a breach of any agreement or promise by Vermont Railway, Inc. The 1994 Agreement you referenced does not support your allegations. Moreover, the law is perfectly clear that any interim use is subject to possible reconstruction and reactivation of the right-of-way for rail service.

As to your suggestion that other locations be considered for Amtrak locomotives during the overnight hours, your client should have already advised you that a formal analysis of the several options available has not yet been completed. It is therefore premature and inaccurate for you to write that an overnight location has already been selected. I would be pleased to forward you a copy when that analysis is received so that it can inform future discussions with your client.

Please call directly if you have any concerns you would like to discuss.

Regards,

Peter F. Young
Deputy General Counsel

Cc: Office of the City Attorney
Vermont Agency of Transportation

VERMONT RAIL SYSTEM
One Railway Lane, Burlington, VT 05401
Tel. 802-658-2550 Fax. 802-658-2553

Mathew Byrne, Esq.
Gravel & Shea
P.O. Box 369
Burlington, VT 05402-0369

June 8, 2018

Re: Main Street Landing, LLC

Dear Matt:

I am writing to reiterate our offer to meet with Ms. Moulton to discuss the concerns she has expressed about railroad passenger operations at Union Station and Amtrak's efforts to return regular passenger service to Burlington, and to update her on the various operational changes we have implemented over the past few weeks. These include a shift in locomotive and generator placement farther away from the passenger platform and residents, a reduced reliance on locomotive generating power in meeting train requirements for electric power, as well as changes to the automated at-grade signals at King Street. You should also know that another change we have implemented is that the locomotive itself is not running until approximately fifteen minutes before the scheduled departure, reducing idle time further.

Whether it's our weekend dinner train or Vermont Children Foundation's Polar Express, Ronald McDonald House Jingle Bell Express, Kids Day rides or Mothers' Day Brunch Excursions, locomotive power is obviously an essential part of our ongoing train service at Union Station. As your client will recall, the Champlain Flyer brought daily service to that passenger platform for a number of years as well.

We would be glad of the opportunity to learn more about your clients concerns, and hope to have the chance to meet to discuss these matters directly.

Regards.

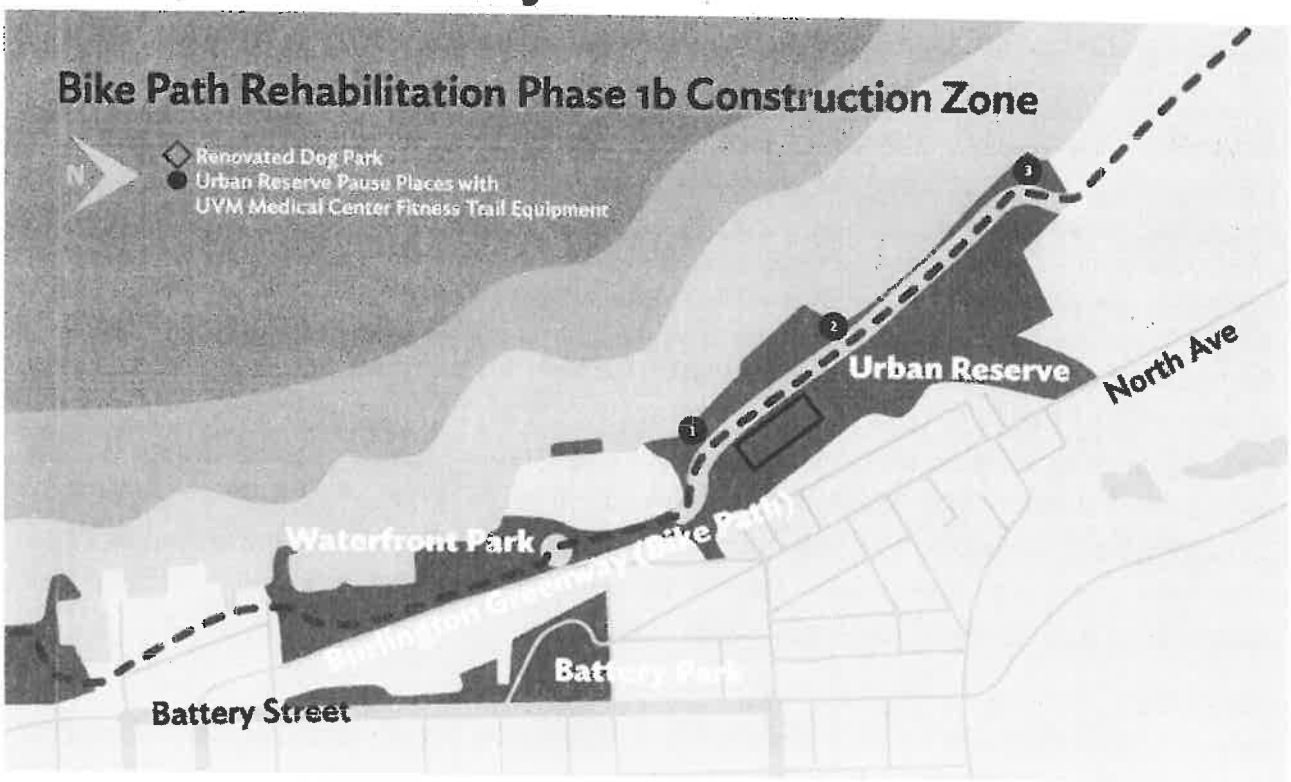
Peter F. Young
Deputy General Counsel

Cc: David Wulfson

BURLINGTON PARKS RECREATION WATERFRONT VERMONT
(https://enjoyburlington.com/)

Blog

Burlington Greenway: Bike Path Rehabilitation Project



Bike Path Re-Opens as Burlington Greenway

Recent aerial drone photo.

Update 12/16

Burlington Parks, Recreation and Waterfront is pleased to announce major construction of Phase 1b of the Burlington Greenway is complete and the beloved lakeshore path is once again open to the public! Thank you for your patience and understanding during the construction closure, which began in late June of this year. One mile of the path, through what's known as the Urban Reserve (just north of the Skatepark), has been completely rebuilt to new, higher standards, and in the southern portion of the project, realigned to hug the Lake Champlain shoreline.

Additionally, three new 'pause places' have been developed, including one new mini park at Texaco Beach. The Waterfront Dog Park received a facelift, and extensive areas of industrial pavement have been removed, soils capped, and extensive landscaping is completed that includes native trees, shrubs and perennials, and a special seed mix of mostly native, resilient grasses and flowering perennials.

"It is with great pleasure and excitement that we open the path back up to the Burlington community." Says BPRW Director Jesse Bridges. "We have transformed abandoned industrial land and rehabilitated it into a gem for the City's park system. Beyond just a path repaving project this project created a true linear park, the Burlington Greenway, that will continue to be the City's defining feature supporting passive and active recreation, tourism and multi-modal transportation."

VERMONT

State of Vermont
Office of the Secretary
219 North Main Street, Suite 101
Montpelier, VT 05633-5001
www.aot.state.vt.us

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[fax] 802-479-2210
[ttd] 800-253-0191

Agency of Transportation

December 3, 2019

Mayor Miro Weinberger
City Hall
49 Church Street
Burlington, VT 05401

Dear Mayor Weinberger,

Thank you for your recent correspondence regarding our coordinated efforts to bring Amtrak train service to Burlington. We are excited by the enthusiasm you expressed in your letter and your commitment to working with VTrans to return train service to the Queen City, while respecting and protecting the values of the City and its residents.

On Tuesday, November 19th, Michele Boomhower and Dan Delabruere of my staff had the opportunity to meet with the Transportation, Utilities and Energy Committee (TUEC) of the City Council to discuss the project and provide information, including information regarding a new potential overnight storage site which the Agency identified adjacent to the McNeil generating plant. At that meeting, Michele and Dan outlined very preliminary information regarding the McNeil site, since that time the Agency has worked with the CCRPC and consulting firm VHB, to prepare an Addendum (attached) to the *Burlington Amtrak Train Servicing and Storage Facility Assessment* which augments the original Assessment to include an evaluation of the McNeil location utilizing the same criteria as were applied to the original 5 locations.

Additionally, Michele and Dan committed to the TUEC to provide the following enhanced communications related to the project to assure that anyone interested in the project has access to up to date, direct, information:

- VTrans will develop a project website to provide up to date information
- VTrans will issue quarterly project updates through an email distribution link which will be built into the project website
- VTrans and City Staff will continue to meet on a monthly basis to coordinate the Amtrak project and the Greenway project
- At the invitation of the City Transportation, Utilities & Energy Committee, or any other bodies of City Government, the Agency will provide biannual updates on the project.

VTrans Working to Get You There
Vermont Agency of Transportation

In response to the questions you posed in our recent correspondence, we offer the following responses:

1. The reasons for which the Amtrak cannot be accommodated in the Railyard. Vermont Rail System (VRS) and VTrans have stated that the existing Railyard is not an option for overnighting the Amtrak train, and the City needs a better understanding of why this is the case.

   On November 25th I received the attached letter from VRS regarding the Amtrak Servicing and Storage Study. Information regarding the challenges and obstacles of train storage in the railyard are outlined in that letter.

2. The feasibility of overnighting and servicing the train in Saint Albans or another location beyond Burlington. If the State believes this option infeasible, the City needs more information about why this is the case.

   During the last Rail Advisory Council meeting there was a vote taken to request that VTrans explore the option of having the Amtrak service extend further north of Burlington. As background, staff have been working with New England Central Railroad (NECR) and VRS over the past few years to plan for the detour of VRS train traffic over the NECR railroad during the track closure in Middlebury as part of the Middlebury Tunnel Project; this detour is expect to occur during the 2020 construction season.

   To prepare for this detour "studies" were completed to determine the required improvements to the line between College Street, Burlington and the wye in Essex Junction to allow for the additional freight trains which will travel over this segment of track. The list of improvements needed for the safe movement of freight will be implemented in advance of the detour so the increased volume and weight of freight trains, traveling at low speeds, can utilize the line during the limited time closure of the track segments in Middlebury. At this time, there have been no comprehensive studies completed to evaluate the level of improvements needed to operate passenger service between Burlington and Essex Junction. A comprehensive study would be required.

   Under the VTrans Grant Agreement with the FRA, the Agency is required to commence Amtrak service to Burlington service by 2021, all focus has centralized on the planning, permitting and construction of this service. In this advanced stage of delivering Amtrak service to Burlington, a change to the destination of the train beyond Burlington, even if it were feasible, would put at risk the commencement of service from Rutland to Burlington on the current timeline.

The 2015 State Rail Plan does express, as a second-tier priority after Amtrak passenger service to Burlington and Montreal, Amtrak service from Burlington to Essex Junction (see excerpt from the Rail Plan below).

> ***ES.1.4.4. Vermont Passenger Rail Priorities***
>
> **VTrans has established extending the *Ethan Allen Express* to Burlington and the *Vermonter* to Montreal as first priorities. Second priority is to establish the service between Albany and Burlington through North Bennington and Manchester, and further extending the *Ethan Allen Express* from Burlington to Essex Junction. Third priority is to upgrade all passenger routes to FRA Track Class 4 and to add another frequency to the *Vermonter* service. Exhibit ES-5 maps VTrans priorities.**

In order to understand the implications of extending service from Burlington to Essex Junction, and then potentially on to Saint Albans, VTrans would need to undertake a comprehensive analysis. Such an analysis would likely cost between $200,000-$400,000 and take 12-18 months to complete. At this time the Agency has not scheduled nor budgeted for such an analysis due to the fact that we are still in the process of focusing on the top priorities in the Rail Plan, returning passenger service to Burlington and Montreal.

Some of the questions which would need to be contemplated in such a future study include:

- Should the train go to Essex or St. Albans if it goes beyond Burlington?
- What capital expenses would be needed from the currently planned end of the service to any new termination point?
- What are the costs with an expansion in the route?
- Is there interest on the owners and operators of the tracks to allow an additional passenger train to operate on the track and if they do will this trigger the need for PTC? If it does, who is responsible for the installation, maintenance and operating costs of this?
- Could it meet the Amtrak Vermonter with schedule changes?
- What impact would these schedule changes have on current services?
- If an extension of the service is feasible what does the operating schedule look like?
- What is potential ridership with an expansion in the route?
- Would our partner states support this change? If so what does the cost and revenue splits look like? Would train crews" time out" with an extension in distance for their routes, thus requiring an additional crew to complete the trip?
- What conflicts if any does this pose for other uses on the various tracks involved?

Amtrak to Burlington is the State's goal. This will remain our focus as we work with our partners to make this happen. Any additional services beyond Burlington can be discussed and proceed through a planning process in the future, however this must be done separate from the critical path we are on currently to bring service to Burlington.

Discussions with NECR have been positive, but rightfully so they would like VTrans to have a defined plan to present to them (a business plan) for consideration and response. This plan needs to define specifics of the service (times, stops, etc.), so they can evaluate the impact on their infrastructure and operations. NECR will need enough detail to decide what infrastructure improvements would need to be implemented by VTrans, costs that would be associated with this, as well as operating and maintenance costs that would be VTrans' responsibility if NECR granted permission for a future additional Amtrak service. Additionally, the State would need to identify a source of funding.

3. Why a second track is needed between King and College Streets to accommodate the Amtrak train, an understanding of what alternative strategies have been considered, and if there are additional actions that could make such an alternative feasible. The City is specifically interested in understanding why a second track is necessary at this time if Union Station is not selected as the overnighting location and thus Amtrak would only be briefly stopping at Union Station two times a day.

While Amtrak enjoys a federal delegation allowing it to pass upon any rail operator's tracks, there must be an agreement in place with the railroad which hosts the Amtrak train, and that agreement is predicated on the "Host Railroad" being provided accommodation to maintain its current and future services. Vermont Rail System (VRS), which will serve as the "Host Railroad" for the Amtrak Service, requires the second track to maintain its freight rail operations and its passenger train service (see attached letter from VRS regarding these details).

One of the most significant operational obstacles faced by VRS as the host of the Amtrak service is the limitations which are created during the time which Amtrak is traveling on the track between the wye in Rutland and the end of the VRS controlled line at College Street in Burlington. For each segment of track a train is operating on, a "track warrant" must be obtained from the dispatch center to assure that there are no other trains on the line. It is expected that the "track warrant segment" agreed to by Amtrak and the Federal Railroad Administration would be the entire segment from Rutland to College Street, Burlington – which would then require that no other trains be operating on the line, including in and out or the railyard in Burlington. VTrans is working with Amtrak to seek an FRA exemption which would reduce the warrant segment to Rutland to Middlebury and Middlebury to Burlington so there would be less disruption on VRS operations.

The track warrant segment, even if reduced to Middlebury to Burlington, would interrupt all VRS rail operations during the time the Amtrak train is on the primary track. VRS has predicated the second track as necessary, regardless of where the Amtrak train is stored overnight, due to operational interruptions outlined above, which would be compounded if the evening Amtrak service were not on time.

4. The CCRPC report finds that "nitrogen dioxide emissions from the locomotive have the potential to approach or exceed the NAAQS under the 1-hour averaging period" because the balconies of the Wing Building residences will be less than 50 feet from the train. Does the State believe that this is a concern that will require mitigation, and if so, what are the estimated mitigation costs? Additionally, would mitigation be necessary only if the Amtrak overnighted at Union Station or are the air quality concerns still exist regardless of the overnighting location?

VTrans is committed to mitigating air quality standard exceedances, should there be any identified once any necessary field testing is completed at the location chosen for the overnight storage of the train. Such testing could be accomplished in advance of the train service commencing; however, the State will not be scheduling testing until a location for the overnight storage of the train has been identified. Based on the outcome of the testing, the State would undertake an analysis of mitigation measures which could be implemented and determine which measures will be most appropriate to implement if such measures are required. The State would undertake the analysis and design, if needed, in consultation with the City.

In terms of actual idling of the train when arriving at the station to disembark riders is 5-10 minutes, including completing full shut down of the engines. Departure start up and idling is the same amount of time, 5-10 minutes, except during cold winter temperatures when the engine fluids need to be brought up to temperature and brake check completed, this can cause the engines to need to idle 20-30 minutes.

5. Some constituents have expressed concern the construction of a second rail in front of Union Station will lead to additional train building and freight storage in the heart of the waterfront. Does the State believe a significant increase in such activities is likely? As the owner of the rail line in front of Union Station, can the State ensure that this will not happen?

Based on statements which have been made by VRS officials, the State does not believe that there will be a significant increase in the building or freight storage of trains on the additional track. The State leases the railroad right of way to VRS, under its lease, VRS is within its rights to undertake any railroad operations, or construction of improvements, it deems necessary for its business purposes; the State has no authority to control, direct, or prohibit such uses or improvements.

I look forward to our continued collaboration on the advancement of this project. Please feel free to contact me at any time if you have questions or concerns.

Sincerely,

Joe Flynn
Secretary of Transportation

Cc: Michele Boomhower, Director of Policy, Planning and Intermodal Development
Dan Delabruere, Bureau Director, Rail and Aviation

Chapin Spencer

From: Melinda Moulton <melinda@mainstreetlanding.com>
Sent: Friday, December 13, 2019 11:13 AM
To: Chapin Spencer; Maxwell Tracy
Cc: Grace Ciffo; Ritchie Berger; Mayor's Office
Subject: Re: City's Upcoming TEUC Meeting with Waterfront Rail Item
Attachments: STATE of VT and MSL Analysis of Station 11.27.19.xlsx; Brian Searles E-mail 1999.pdf

Hi Chapin -
I have looked at the documents for Tuesday's meeting and I would like you to include my response to the letter from VRS to the Agency of Transportation. I submitted this to the Rail Council at their meeting in early December where they determined Union Station was the Lease Likely location to park the Amtrak. My e-mail to them and the attached documents clearly dispute several items in the letter from Mr. Haughton of VRS to Joe Flynn at AOT and I would want folks at the TEUC to have a copy of my letter to the Rail Council and the two attachments. It is below as are the attachments to support my e-mail. I never supported a second track as my e-mail to Brian Searles in its entirety shows and we lost money on the Train Station as shown on my spreadsheet of income and expenses. Please be sure the committee has all of this prior to the meeting as I will be addressing Mr. Haughton's misinformation - it IS important and it shows the truth!! Our patience is wearing very thin as it relates to honesty around all of this, and I am compelled - seems daily - to set the record straight. It is shameful to me.
Thank you, Chapin.
Melinda
Attachments (2)
To: Vermont Rail Council Members
From: Melinda Moulton, CEO
Re: Response to Meeting Attachments
Date: November 27th, 2019

I am in receipt of the handouts in preparation of the Rail Council meeting scheduled for Tuesday the 3rd of December in Barre.

I ask that you warm up my seat, as I and my associates plan to attend to defend our position to oppose the second rail line extending the Rail Yard eight feet from our residents for the storage, servicing, and building of trains and the operation of VRS's for-profit, non-transit restaurant on the Waterfront.

I am not going to dispute all that I have read with dismay in these documents as we will do that on Tuesday. However I will dispute two statements in Mr. Haughton's letter to Secretary Flynn that are blatantly dishonest.

Last Paragraph in the Haughton Letter:
"MSL received more than $3.0 million in payments from the State of Vermont" - Mr. Haughton neglected to include all the money that Main Street Landing spent to subsidize this project. I am attaching my spreadsheet that is backed up by invoices and documents to prove that at the end of the 20 year period and through the State's purchase of Unit 1A that Main Street Landing subsidized approximately $1,846,000 (One Million Eight Hundred and Forty Six Dollars) to the State's benefit.

We demand that Mr. Houghton correct his letter to reflect the actual reality and the truth. Our support of the State's lease and ultimate purchase of the Unit was done in good faith and with our

support over the years to help bring about passenger rail's return. We should be thanked for what we have done on the State's behalf to support this project.

#12 - I am attaching the email that Mr. Haughton is referring to dated 8/3/99 from me to Brian Searles. Mr. Haughton has chosen to take out of context one sentence of this email to try to have you believe that Main Street Landing supported the 2nd rail line all along. Please read the attached email in its entirety and you will see a paragraph that starts with "Main Street Landing will not accept having a rail spur located between its property and the existing rail line.....and it goes on to explain in nine additional sentences our strong opposition to a second rail line next to our building.

Again, Mr. Haughton needs to include the entire email in his letter and not pick out a sentence that basically is my telling Brian Searles that the spur needs to be on Pecor's land or further north or south on City Land.....and we can have that conversation.

In our present politics where truth is skewed to mislead and malign I would expect better from Vermonters. The whole experience the past two years has been horrific. Our successful Public Records Request has turned up shocking evidence of a flawed and damaging public construction project that deserved public education, awareness, and input. Instead it all happened behind closed doors to the benefit of a few and certainly not to the benefit of the citizens of Vermont.

One question I will ask the State is why they feel so compelled to carry the water for the Vermont Rail Systems Company over and above the health, welfare, and safety of Vermont citizens?

You all know we can have AMTRAK come to Burlington without the second rail line. You know it does not cost $50,000,000 to park the train in the Rail Yard. You all know that the storage, servicing, and building of diesel trains eight feet from a residential building will pollute the air and destroy a neighborhood. You also know it is going to cost more that $250,000 to put in the 2nd rail line on to the waterfront. Why are tax payers expected to pay for the 2nd rail line?

You also know that The State's lease with the railroad requires the protection of citizen health, safety, and well being in whatever VRS does on State Land.

I am attaching our updated rebuttal response to the Amtrak Storage Study dated the 19th of November. I respectfully request that you read it because what we have here is a major Violation of Public Trust - it is deeply disheartening.

Public opinion is gathering steam against the second track on the waterfront. This is a battle we will wage for as long as it takes.

See you all next Tuesday - Happy Thanksgiving.
Melinda Moulton
attachment (3)
Excel Sheet showing State's Costs and MSL Costs for Unit 1A
E-Mail 8/5/1999 from M. Moulton to Brian Searles showing MSL's
Updated Rebuttal Report Dated 11.19.19 On the Amtrak Storage Study

On Fri, Dec 13, 2019 at 10:53 AM Chapin Spencer <cspencer@burlingtonvt.gov> wrote:

> Hello Melinda,

I wanted to make sure you are aware that the upcoming City Council Transportation Energy and Utilities Committee meeting is this coming Tuesday 12/17 and there is a Waterfront Rail agenda item towards the end of the meeting. We've uploaded a number of recent VTrans, VRS and Rail Council documents to the committee's webpage: https://www.burlingtonvt.gov/CityCouncil/TEUC.

I do not expect the committee to take major action at this meeting as they are just getting these documents as well. There may be discussion around requesting a one month extension from the State for getting the City's input on a storage and servicing location – as I believe the Councilors will want a bit more time to discuss and consider this new information.

CEDO Assistant Director Grace Ciffo is copied. She's coordinating much of the bike path relocation efforts, so I wanted to make sure folks are connected.

Happy Holidays to you, Rick and the fam.

Best,

Chapin

Chapin Spencer, Director

Department of Public Works

645 Pine Street, Burlington, VT

www.burlingtonvt.gov/DPW

802-863-9094

Our Mission: To steward Burlington's infrastructure and environment by delivering efficient, effective, and equitable public services.

--

Analysis of Train Station Under Lease & Purchase							Represents What State Received			
By: Melinda Moulton 11.27.2019							Represents What the State Paid			
Actual or Averaged Figures							The Bottom Line			
Received from Feds and State to Build Train Station in 1999								$1,500,000		
Received from Feds and State to fit up the Station								$250,000		
Total Paid by the State of Vermont to Main Street Landing to Build and Fit Up the 1st Floor									$1,750,000	STATE PAID
State leased Station 10,000 square feet for 20 years					**FOR FREE**					
				Market Average Rent			$11.00	per sq. foot		
							10,000	square feet		
							20	years	$2,200,000.00	FREE TO STATE
Triple Net Charges which were for heat, electric, prop. Taxes, insurance, etc.										
were billed monthly at an average over the past 20 years to the State							$1,200,000	per year		
$5,000	per month						20	years	$1,200,000	STATE PAID
12	months	(MSL offered subsidy to our tenant for NNN - the State benefited from that)								
Main Street Landing Secured a Tenant - a Health Club that paid										
on Average over 20 years			**$6,000**	**per month to the State**			$72,000	per year		
							20	years	$1,440,000	FREE TO STATE
Main Street Landing paid for all repairs and upgrades on the							$3,000	per year average		
Train Station never once billing the State							20	years	$60,000	FREE TO STATE
for 20 years.										
Main Street Landing gave the State's Tenant 10 f				who was paying them rent						
10 FREE parking spaces in the Surface Lot for 20 years							$40	a space	$96,000	FREE TO STATE
							10	spaces		
							12	months		
							20	years		
Main Street Landing's Losses in our Relationship with the State of Vermont								On Lease Arrangement	**($846,000.00)**	FREE TO STATE
State of Vermont never invested one dime into their space									Page Two	
for 20 years to pay for any repairs or maintenance or									11/27/2019	
damage or upgrades. Main Street Landing covered those									MLM	
costs in order to make the Rail Project palpable for the										
State of Vermont. Why - Because we wanted to support										
the return of Passenger Rail to Burlington										
Here are the True Numbers of what the State paid on the Purchase of the Unit 1A In Union Station										
ACTUAL MARKET VALUE OF THE 1st Floor of the Union Station										
January 2017 the State bought the station for $500,000 per the							10,000	square feet	$1,500,000	Market Value
lease agreement - the space was actually worth with market rates							$150	per square feet		
The State only Paid $500,000 (a deal)									$500,000	STATE PAID
Had we not ever entered into the Lease with the State of Vermont back in 1999										
We would not have assumed this loss in the sale of the 1st floor of the station									($1,000,000)	FREE TO STATE
Main Street Landing's losses in our relationship with the State of Vermont								($1,846,000.00)		To the State's
And it is what the State Gained in its relationship with Main Street Landing										BENEFIT and not
										MSL's.
CORRECT YOUR RECORDS!!!!!!										

Subj: **Fwd: Passenger Rail**
Date: 8/5/99 8:08:14 AM EST
From: MainStLnd
To: watts@together.net

Richard - just want you to know that I have bent over backwards for the State and City on the train project - I have no intention of bending forward....!! The attached is a list of issues we need to get resolved regarding passenger rail - which I sent to Brian Searles this week. Quite frankly - I don't think the train should run until these are taken care of....certainly the fit up of the station is critical. This won't be completed until 1/1/99 (just got the okay to proceed from the State - and it takes 5 months to complete from design to construction).....maybe you can help on some of these pending issues which should have been taken care of before the train began to run....!
Melinda

Forwarded Message:
Subj: **Passenger Rail**
Date: 8/3/99 2:43:06 PM EST
From: MainStLnd
To: Brian.Searles@state.vt.us
CC: jhebda@vermontrailway.com, MMONTE@Together.Net
CC: clavelle@vbimail.champlain.edu
CC: pplumeau@ccmpo.org
BCC: scompton@aot.state.vt.us

Brian -
I Just want you to know what we need to work on regarding the commuter rail:
**Agreement to Allow Main Street Landing to move rail platform to front of station
I need this ASAP because I have to go before Planning and get the approval.
and I need to do the relocation before the hard weather sets in.
**Resolution on Parking for the Ethan Allen Connection - and commuter rail.
Our parking lot to the north of Union Station is designated for our tenants ONLY....we need to coordinate with the City to use their lot and somehow develop a way to direct people to either the Radisson Garage or my garage off of King Street.
With the completion of the Multi-Modal transit center across the street we will have 150 spaces to accommodate rail - but until then....it is a problem that needs to be addressed right away.
**I will be working with Jerry Hebda on the ticket counter and what kinds of things are needed to support the sale of tickets and distribution of information.
**Our Architect is completing drawings for fit up of station - we will have a budget ready to submit to AOT by the 1st of September.
**We will begin the fit up shortly thereafter and have it completed by the 1st of the year
**Main Street Landing will not accept having a rail spur located between its property and the existing rail line. I discussed this with Vt. Railway and John Pennington
several years ago - and explained that our project was designed to accommodate pedestrians - a spur will very negatively affect both my completed phase one and proposed phase two redevelopment projects.
This was resolved prior to my agreeing to construct the train station - and I was assurred that my pedestrian corridor would remain and only one line would exist from King to College Streets.....This issue has resurfaced again....
and I need to reiterate that we adamently oppose a spur in front of Union Station - and suggest that the spur happen either on Pecor's land next to the relocated bike path or further north or south on City land.
**We need to move ahead ASAP on the relocation of the bike path....we don't want pedestrians and bikers to collide.....so the City needs to proceed poste haste - what is the hold up with the State getting the money to the City to do this work? - let's coordinate the spur at the same time!
**I really love working with Sue Compton. She has been terrific getting things completed and keeping this project rolling

d.....she is a doer and one of the
smartest people I have ever met.....This has been a very hard battle..
and it's good to have such a proficient warrior guiding the Governor's vision!!
**Where are we with the Vermont Transit Authority - who is going to run the
commuter rail project and other passenger rail projects....this is critical
to Main Street Landing - that this be successful...where are we with
securing the operator?
We should probably talk soon about these issues!
See you next Wednesday!
Melinda

City of Burlington

Department of Public Works

Technical Services Engineering Division
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Burlington, VT 05402
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www.burlingtonvt.gov/DPW

Memo

Date: *December 11, 2019*

To: *Transportation, Energy & Utilities Committee*

From: *Nicole Losch, PTP, Senior Planner*
Norm Baldwin, Assistant Director
Chapin Spencer, Director

Subject: *Cope Associates Report – Process Improvement for Traffic Calming and Traffic Requests*

Recommendation

No action is recommended.

Background

The Department of Public Works (DPW) manages two programs (among others) within the Engineering Division:

1. Traffic Requests: typically address regulatory, stand-alone changes related to parking, signs, and small roadway improvements. Some traffic requests are simple, while others are complex and take longer to resolve. During the Cope Report analysis in 2017-2018,
    a. New requests averaged 6 each month
    b. Staff closed an average of 9 requests each month
    c. There was an average of 68 open traffic requests

    Since the report's completion in 2018, DPW Engineering increased in size and restructured. With the department's commitment for resources and additional clarity through supplemental policies (Public Engagement Plan, Narrow Streets, Crosswalk Guidelines, etc), the Division has been able to reduce the number of traffic requests in queue (currently 47), expedite the process, and improve customer service.

2. Traffic Calming and Neighborhood Enhancements: this program was established in the late 1990's and has not been updated since the early 2000's. Requests are neighborhood-initiated and require 1/3 of the neighborhood to support the request for traffic calming. Projects are advanced in the order they are received. During the Cope Report analysis, traffic calming projects generally took 1-2 years to begin and

4 years to construct after the neighborhood petition is submitted. Usually staff manage two traffic calming projects each year, leaving an average wait-list of 5 projects waiting to begin the process. Projects did not advance while the Cope Report was completed and the queue has since grown to 11.

There is overlap between the Traffic Request program and the Traffic Calming program. For example, a resident may request stop signs, but may not indicate that the reason is to slow traffic. In that case, the traffic request process would apply the stop sign warrant analysis, may find that stop signs are not warranted, present this to the customer and the Commission, only to have the customer then ask for traffic calming. The Cope Report considered ways to unify and streamline both programs to avoid this disjointed process.

Process Improvements

In early summer 2017, the DPW hired Cope & Associates to develop an understanding of the existing programs and recommend improvements. Their work assessed the organizational structure, the processes used to advance projects, and the strategy to advance change.

Cope & Associates conducted 10 interviews with staff, Commission members, and the community; they reviewed and mapped our current program information and processes; and have presented a report of the programs' strengths, weaknesses, opportunities, and threats (Attached). The Cope Report recommended a new approach to redesign the process, policies, and forms for an improved program.

Next Steps

Since the additional Engineering staff, program restructuring, and policy development, the Traffic Request program has been stable and may not currently benefit as much from the initial recommendations. However, the Traffic Calming program has not progressed and should still seek improvements for customers and staff. Several recommendations from the Cope Report are still relevant for the Traffic Calming program but should be modified for this program's unique needs (abbreviated from pages 10-11 of the report):

1. Redesign the intake process, policy, and forms
2. Formalize the process for gathering internal stakeholder input
3. Expedite and streamline the process, and apply technical standards already adopted by the City and/or State
4. Separate Neighborhood Enhancement projects from Traffic Calming projects and develop an annual budget for each program
5. Revise the process and policy for community input in traffic calming projects

In essence, these changes will prioritize traffic calming projects that address identified traffic safety issues (e.g. vehicle speed, vehicle volume, and/or crashes on a street). To accomplish this, a contract has been procured with Stantec to develop a new program and guide that implements these recommendations. This will include: thresholds that distinguish traffic calming from neighborhood enhancements (currently Appendix D of the Cope Report), design treatments tiered toward the different types of streets (considering total traffic volume, total truck traffic, number of travel lanes, etc.), and design standards for the traffic calming and neighborhood enhancement treatments.

Our goal is to have draft recommendations from Stantec in March 2020, a presentation of the draft guide in June 2020, and the final report complete by September 2020. For any streets that do not have current traffic data but are in the traffic calming queue, data will be collected in April 2020 (weather permitting). With new thresholds to identify streets eligible for traffic calming and with traffic data available for all streets in the

queue, staff will begin to separate traffic calming projects from neighborhood enhancements in June 2020. Depending on financial resources available, in July 2020 we will either hire a consultant or dedicate staff resource to manage the oldest requests in the areas of highest demonstrated need.

COPE
& ASSOCIATES, INC.

Department of Public Works
Neighborhood Traffic Management Project

Consultant Final Report & Recommendations

September 26, 2018

BURLINGTON, VT
PUBLIC WORKS

Cope & Associates, Inc.
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Contents

Acknowledgements

This project would not have been possible if not for the dedication of the entire Neighborhood Traffic Management Project Team:

Norm Baldwin – Assistant Director of Technical Services
Elizabeth Gohringer – Associate Planner
Nicole Losch – Senior Planner
Phillip Peterson – Engineering Technician / Interim Excavation Inspector
Chapin Spencer – Director of Public Works

Additional contributors

David Allerton – Former Public Works Engineer

Interviewees

A special thank you to those interviewed during the process

Jen Adrian, Kathleen Donahue, Val Ducharme, Nathan Lavery, Nicole Losch, Philip Peterson, Justine Sears, John Shumaker, Chapin Spencer

Executive Summary

In July 2017, the Department of Public Works (DPW) selected Cope & Associates, Inc. (COPE) to facilitate a strategic planning process and provide expertise in process redesign for the DPW Traffic Calming, Neighborhood Enhancements and Traffic and Parking Regulation Programs. The main purpose of our work[1] to date then became three-fold:

1. To improve the customer experience
2. To improve multiple DPW processes
3. To reap efficiencies derived from the improvements in the DPW process

This work incorporates recommendations for process, form, and policy revisions which will offer DPW customers a streamlined experience and a faster turn-around time, affording our customers a less stressful and much more seamless experience. By utilizing current technologies to the fullest, DPW will increase process transparency for customers, a significant gain. Internally, the revised processes will shift staff functions and department operations; processes will no longer be person-dependent and the establishment of regular review meetings will significantly increase internal customer relations with other City departments. The re-design of DPW processes offer the department efficiencies through enhanced communications, streamlined processes through improvements in policy and form design, thus allowing DPW staff to take a more proactive approach to their work.

[1] Project Team Charter, Burlington Department of Public Works, 2017.

Goals of the Project

This Team is chartered to: Enhance the customers' positive experiences with the City of Burlington's Department of Public Works' Traffic Calming Program and Traffic Request Program, improve internal coordination, and improve the quality, efficiency, and transparency of the programs' processes that align with the City's vision of the transportation system.

The goals of the project are:

1. Identify all processes involved in the daily work of the programs;
2. Streamline the process for reviewing projects;
3. Propose a redesign to meet the Charter expectations; define metrics for process and responsiveness
4. Recommend and prepare to implement additional improvements and costs associated with these recommendations to reduce the queue of requests and fit within the City's and DPW's strategic initiatives.

Approach

COPE began the engagement by gathering information about the Department of Public Works' current and historical operation of Neighborhood Traffic Management, and conducting a qualitative interview process to inform a SWOT analysis (internal Strengths and Weaknesses, and external Opportunities and Threats). This data fueled the team's next phase of work: to redesign the neighborhood traffic management processes.

A thorough exploration of the current and historical documents, forms, policies and procedures was conducted to understand the current operations of the department. Documents included:

- DPW Standard Operating Policies
- Plan BTV Walk Bike
- Transportation Plan: Traffic Calming
- Regulations
- Decision Making Flow Charts
- Neighborhood Traffic Management Petition Request Form
- Neighborhood Enhancements Program Information Sheet
- Traffic Calming and enhancements flyer
- Burlington City Strategic Plan

Interviews

Once COPE had gained insight into the operations, policies and procedures of the department, COPE designed a qualitative interview question set and interview protocol. COPE conducted interviews to gain insight into the internal culture and external image of the department. The

Neighborhood Traffic Management Team reviewed and approved the materials and provided COPE with a list of 10 interviewees, internal and external to the department, who could speak to the work of DPW. The Interview Questions, Protocol and Interviewee List can be found in Appendix A. Data from the interviews was analyzed and compiled into a SWOT analysis.

SWOT Analysis

The SWOT helped produce a rich dialogue within the team about the opportunities the department could tackle with the redesign of the neighborhood traffic management processes, as well as offer opportunities to think more strategically about the bigger picture of the Department's mission. Developing a greater awareness of the organization from an array of sources internal and external to the organization provided a rich dialogue to support the strategic planning and process redesign initiatives. A SWOT analysis highlights the positives and challenges inside your organization (***S***trengths & ***W***eaknesses), as well as the external ***O***pportunities and ***T***hreats to the organization.

Strengths	**Weaknesses**
• Strong Community Voice through current process • Safety Minded Process • High Quality technical expertise • Motivated and experienced staff are accessible and listen • DPW is a supportive environment	• Too many intake avenues and non-value-added steps • Unclear prioritization process and long wait times • Inconsistent escalation of decision-making and Commission support • City vision and related DPW work not well understood • Lack of DPW staff capacity and empowerment
Opportunities	**Threats**
• City Council and DPW Commission collaboration (align city vision) • Delegate certain decisions to staff rather than Commission • Adopt clear policy for public input and for internal reviews • Balance needs of the community and build transparency and trust • Apply traffic changes proactively and in a consistent timeframe	• Backlog of requests lead to poor communication • Perception of inequality for traffic requests and traffic calming • Commission process can be unclear and lead to delays • DPW Commission, staff and council may not have goals aligned • Politics sometimes trump technical recommendations

Process Redesign

The team mapped the current processes, then designed new processes. Throughout the process the team engaged in learning opportunities to further enhance the productivity and engagement of the team in the project. The team learned about team norms, project lifecycles, change management, and gained insight into the methodologies behind process redesign. The overall approach we took was the PDSA Model: Plan Do Study Act.

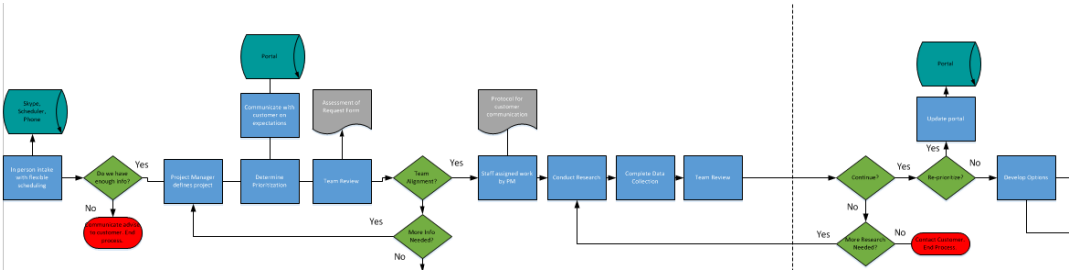
Each part of the current process was carefully mapped using sticky notes to start as a tactile engaging way to represent ideas, and then converted to an electronic format using Visio software for ease of manipulation. A large part of business process redesign (BPR) is storytelling. We used a set of standard shapes to tell the story of how the current processes unfold and the same shapes to portray the revised process; non-team members then attempted to "tell the story" that the process map described as a check on clarity and accuracy.

Sticky Note Approach

In order to accomplish the redesign, the team used sticky notes (shown below) to map current processes. Mapping the current processes, allowed us to reorganize steps and visually see opportunities to improve the customer experience, identify redundancies and inefficiencies.

Visio Approach

After the sticky note approach, the steps were transcribed in Visio. Visio is a software which organizes ideas visually in a flow-chart format. The team learned the many uses of the symbols used in flow-charting. For example, blue boxes identified steps, green diamonds represented decision points and teal barrels indicated software dependencies. The snapshot below is only a portion of one mapped process.



Blank Slate Approach

A "blank slate" approach was used to envision the revised process through the eyes of the customer and staff. This approach was selected, as opposed to mapping the existing process and making incremental changes. The blank slate approach allowed us to think more freely and not get caught up in "how we have always done it." Throughout the redesign phase, we researched a variety of options, involved key leadership to implement quick-wins and improvements, and reported progress.

Current Processes

The current processes that were mapped include:

- Intake
- Traffic Calming
- Residential Parking
- Traffic Requests
- Implementation

Twenty-one metrics were used to analyze the current process. These metrics represent customer impact, (e.g., customer wait time, manual steps that could be automated, risk points, places of discretion where exceptions can be made).

Current Processes Metrics

Measurements	Intake	Traffic Calming	Residential Parking	Traffic Requests	Implementation
# of Steps	11	53	18	24	12
# of Decision Points	4	12	5	8	5
# of People involved - Internal	3	10	10	11	8
# of People Involved - External	0	10	3	3	2
# of "Person Dependent" steps	1	1	13	24	2
# of Handoffs to other Depts. / Div	2	8	4	4	3
# of Manual Steps	1	8	5	5	4
# of Software tools	1	7	2	6	5
# of software tools that interface		2	2	5	1
# of Forms	2	1	1	1	3
# of Manual Steps that could be automated	0	6	0	0	0
# of Manual Steps that could be automated - future (softwre)	0	1	4	4	2
# of Risk Points	3	9	6	5	3
# of Places Discretion/ Exceptions can be made	3	13	1	4	0
# of Times Photocopies are made	0	0	1	1	3
# of Points where Fire is invoved	0	3	0	1	0
# of Points where Legal is involved	0	1	1	1	1
# of Points where City Coucil is invo	1	1	1	1	0
# of Points where DPW Commission is involved	1	1	1	2	0
# of possible sources of request	40				

The current process is antiquated and does not meet the expectations of our customers. In the current intake process there are 40 ways to submit a request for a traffic calming, traffic request or parking request, which creates a range of challenges for staffing efficiency. These submission options include, but are not limited to using SeeClickFix, phone or email to various DPW staff, through a City Council or DPW Commission representative, through the Mayor's office, etc.

These requests can be anonymous and include little information. This array of request mechanisms has evolved over the years due to a desire to serve the customer. However, the leniency of the request policy is no longer serving the customer. It is causing DPW staff to become "detectives", searching for contact information, request details necessary to assess the situation, and has ultimately led to customer dissatisfaction. After intake there are long wait times and periods of no communication as DPW staff attempts to navigate the many ways and formats for which a request lands on their desk. In addition, the staff must determine how to prioritize projects and when to advance projects.

The team conducted an analysis of averaged time and cost per process, summarized in the table below, for each process. The team was able to estimate time per step using their significant expertise and experience conducting the work. The analysis was checked against costs billed to each process, and was determined to be in line with costing. Average cost was calculated by multiplying the time per step by an averaged pay rate for staff involved in the process.

Current Process	Steps	AVG Time (Hours)	AVG Cost
Intake	11	0.6	$ 35
Traffic Calming	53	108	$ 8,233
Residential Parking	18	23	$ 1,763
Traffic Requests	24	24	$ 1,839
Approval & Implementation*	12	9	$ 703
TOTAL	118	165	$ 12,573

Neighborhood Traffic Management Projects are complex, time intensive and include public engagement. There are extensive wait times between steps, these wait times were not included in our analysis, as they varied tremendously due to the variability in project demands. The table above estimates that over the course of a Traffic Calming project, DPW staff will complete an average of 108 hours of work, costing, in employee time, $8,233. Neighborhood Traffic Calming Projects take on average 3 years to implement.

The Traffic Calming Team took a series of complex processes that began with 118 steps and by reimagining it through the customers' eyes redesigned it to include only 45 steps. The team found opportunities to take advantage of existing technologies, to increase efficiencies, eliminate redundancies and minimize wait times; they were able to reduce the number of documents through consolidation and elimination.

Revised Processes

The revised processes were redesigned with the aim of improving the customer experience and the Neighborhood Traffic Management processes, as well as to reap efficiencies of improved processes. The blank-slate approach to redesign allowed the team to remove all boundaries and re-envision the processes, through the customer's eyes with the addition of value added steps. The team made dramatic changes in the following ways.

1. Redesigning the Intake Process, Policy and Forms;
2. Streamlining the Traffic Calming, Traffic Request and Residential Parking Requests into one process;
3. Formalizing the process for gathering Internal Stakeholder Input;
4. Expedite and streamline the process, and apply technical standards already adopted by the City and/or State.
5. Proposing changes to Ordinances and Policies to reflect staff expertise in decision making;
6. Separating Neighborhood Enhancement Projects from Traffic Calming Projects and recommending a budget for each program or project;
7. Revising the process and policy for community input in traffic calming projects; and,
8. Taking advantage of existing technology to improve transparency and ease of customer experience.

Redesigning the Intake Process, Policy and Forms

The team determined that creating one streamlined process would be beneficial for the customer. In the current process the customer can be bounced from one staff to another if the request is determined to be a traffic calming project rather than a traffic request or vice versa and then back again, once more information is collected. When looking at the processes from the customer's perspective the team realized that it doesn't matter to the customer who they are working with, but rather, that their request is met within a timely manner.

When the team looked back at 2017 data, of the requests that came in through the RFS system, they determined that of the 71 requests that were submitted only 18 were implemented. The large difference between requests submitted and those implemented can largely be attributed to duplication, incomplete, or anonymous requests. It can be assumed that those completing incomplete requests are not satisfied with their current customer experience. The team has developed multiple strategies for improving this customer experience by reducing the number of incomplete requests on the waitlist through the revision of policies, the intake process, and intake form. The current process includes 11 steps, 4 decision points and includes two handoffs; the revised process eliminates handoffs and established a new process for creating a stronger customer experience upfront. The team redesigned the intake form and will create a policy for what was considered a sufficient amount of information to move forward with the request (Appendix C, Intake Form).

Streamlining Processes

To streamline Traffic Calming, Traffic Requests and Residential Parking Requests into one streamlined process, the team had to reconsider how it is organized. In the current process there are 41-person dependent steps, and silos between staff members who work on traffic requests and those who work on traffic calming projects. In the revised process there is only one person-dependent step, for the City Engineer to sign off on a project. In the revised process, each team member will be able to follow any type of request through the entire process. This will prevent bottlenecks, redistribute workloads, and take pressure off of stakeholders through the elimination of person dependent steps. This work also created a greater appreciation and understanding of each other's work and workload.

Formalizing Internal Stakeholder Input

The redesigned process streamlined, formalized, and structured how stakeholders, including other city employees will be involved in the process. Currently, for each request, employees from the Fire Department, Parks, etc., are called for input at various times during the process. In the current process internal stakeholders could be called upon to provide input 42 times, within 1 traffic request, 1 residential parking request and 1 traffic calming project. In addition, staff did not coordinate these interactions or requests for information, so stakeholders could be tapped for information by multiple DPW staff, for multiple projects, with different deadlines and priority demands. City staff could not predict when they would have to provide input or information to

DPW staff. These informal relationships have led to bottlenecks and poor internal customer relations. In the revised process the team determined that they would set a schedule for stakeholder review and invite appropriate city staff to these meetings. The team determined that there are 10 key city stakeholders that should be looped into the process earlier, increasing buy-in and collecting vital information needed for decision making much earlier in the process.

Changes to Ordinances and Policies

A key theme emerged during interviews, the amount of requests that go before the DPW Commission may be unnecessary and is not in the best interest of the customer, City Residents, the Commission, or DPW staff. Currently, regulatory changes to traffic and parking require Commission approval. Staff spends significant time compiling, formatting and presenting items for the Commission and the Commission, in turn, spends significant time reviewing, deliberating and acting on each request.

The table below lists the current requests, which must be reviewed and approved by the Commission for which the team believes do not need to go before the Commission. The team determined that these requests are best decided by the DPW staff, due to their technical expertise and the clear decision-making criteria established in adopted manuals and guides. Recommended changes proposed by DPW staff should be approved by the Commission in the form of a Resolution to set parameters and criteria for approval by staff. Changes to each regulation will still be reflected in ordinance, so the process of drafting ordinance language, posting period etc. would remain unchanged. The option of appeal would remain, given staff-determined criteria; these decisions need to be articulated in advance to avoid discretionary actions as much as possible as these cause confusion and variance.

Revising the policies for which requests must go before the Commission, will reduce the time DPW staff spend on preparation for Commission meetings and will allow Commission meetings to be focused on complex issues or those which require forums for public input. The Commission's role of responding to community concerns remains intact. Most importantly, this shift in policy reflects a clarification and delineation between the roles and responsibilities of the Commission and DPW staff. Overtime the roles and responsibilities of the Commission and DPW staff have evolved with the staff and Commission members in a reactive manner. The shift in policy will publicly reestablish DPW staff as technical experts who are capable and authorized to make decisions that relate to the public safety of the City's roads. The team has determined that the following Ordinances will need to be revised and approved by the Commission to effect these changes in request approval. All staff decisions will be appealable to the Commission.

Regulation	Current Approval Process	Proposed Approval Process
Handicap Parking Designation	Commission	DPW Staff
No Right on Red Signs	Commission	DPW Staff
Parking setbacks at crosswalks and intersections	Commission	DPW Staff
Bus Stops	Commission	DPW Staff
School Crossing Guards	Commission	DPW Staff
Designation of Fire Lanes	Commission	DPW Staff

The following Ordinances have been determined to remain unchanged at this time.

Regulation	Current Approval Process	Proposed Approval Process
Stop or Yield Signs	Commission	DPW Staff
Meter Duration and Rates	Commission Continues to Approve Zone Changes	DPW approve rates and duration
15 min, 30 min, 1hr, 2hr limited parking	Commission	DPW Staff
No stopping, standing or parking	Commission	DPW Staff
Designated School Zones	Commission	DPW Staff
Parking facilities designation and regulation	Commission keeps designation	DPW Staff Regulates

Neighborhood Enhancement Projects

Currently, Neighborhood Enhancements requests are treated like traffic calming projects. However, there is a fundamental difference between these two types of projects. Traffic Calming projects include street design (or redesign) strategies to address a defined public safety problem with vehicle speed, vehicle volume, and/or crashes on a street.

Public safety problems created by traffic are defined by any one or all of these:

- Travel speeds exceeding _____ on (low-volume streets) as measured by the 85th percentile speeds;

- Traffic volumes exceeding ___ on (low-volume streets) as measured by AADT;
- Travel speeds exceeding 5 mph over the posted speed limit on (other street types) streets as measured by the 85th percentile speeds;
- Crash history involving ____ number of crashes in ____ years.

Neighborhood quality of life can still be impacted by traffic when none of the Traffic Calming criteria are met. In those situations, Neighborhood Enhancements may include more modest street design and management strategies to balance traffic with other uses on a street. The neighborhood will be involved in identifying the source of the problem, which will inform the type of enhancement that may be appropriate. See Appendix D for the breakdown of projects by revised definition.

The team made the decision to formalize a policy and budget for Neighborhood Enhancement projects as a way to recognize that the Department strives to work towards being pro-active in its project planning, allowing them to tackle more neighborhood enhancement projects. DPW staff also recognized the importance of tying all project planning to the City of Burlington's Walk Bike Plan.

Public Input Changes

In the current process, there are multiple opportunities for business owners, residents and landlords to contribute input into the design and decisioning of neighborhood traffic management projects. The City of Burlington enjoys an involved and vocal community; it is often said that "every living room in Burlington is a campaign headquarters". While this level of advocacy and involvement in civic government has made Burlington the vibrant community it is today, the level of community input offered in DPW projects has grown to be a challenge to manage. Over the years the amount of public input had increased organically as pressures, circumstances and leadership changed. Today, the process is less balanced, public input holds more weight than the expertise of the DPW staff, and public relations can win out over safety recommendations. In the revised process, DPW staff have eliminated mandatory petitions, and streamlined the community forums held for public input. The team also plans to address the changes in process through community education.

Technology

DPW is in the process of transitioning from RFS to See-Click-Fix software for intake. The team believes that the software, which has been implemented in other cities around the country, will improve the intake process. Through the redesign process, we developed a list of needs for communicating progress with the customer. It was determined that the See-Click-Fix software can meet these needs and will help keep the customer informed of the progress staff is making on their request. In addition, the team has determined that it will harness further functions of Teamwork.com project management software to ensure projects remain on track.

Revised Processes Metrics

These changes in process, policy and forms will significantly improve the DPW's processes. The same 21 metrics were used to analyze the revised processes and reflect the difference in design.

Measurements	Revised Intake Process	Revised Process	Approval & Implementation
# of Steps	2	33	12
# of Decision Points	1	10	5
# of People involved - Internal	2	10	8
# of People Involved - External	0	5	2
# of "Person Dependent" steps	0	1	2
# of Handoffs to other Depts. / Div	0	3	3
# of Manual Steps	0	2	4
# of Software tools	1	2	5
# of software tools that interface	0	0	1
# of Forms	1	3	3
# of Manual Steps that could be automated	0	0	0
# of Manual Steps that could be automated - future (softwre)	0	0	2
# of Risk Points	1	3	3
# of Places Discretion/ Exceptions can be made	0	3	0
# of Times Photocopies are made	0	0	3
# of Points where Fire is invoved	0	1	0
# of Points where Legal is involved	0	0	1
# of Points where City Coucil is involved	0	0	0
# of Points where DPW Commission is involved	0	0	0
# of possible sources of request	1	n/a	n/a
# Clouds	0	0	0

The revised processes were costed for time and cost.

Revised Processes	Steps	AVG Time (Hours)	AVG Cost
Intake	1	0.3	$ 8
Redesigned Review Process	33	58	$ 4,434
Approval & Implementation*	12	9	$ 703
TOTAL	34	58.49	$ 4,441.86

*The twelve existing steps for approval and implementation processes were assessed for opportunities for improvement, and it was determined by the team that these processes were sufficient and would remain unchanged at this time.

One of the goals of the redesigned review process is to improve staff workflow. Currently the DPW staff is reactive, trying to complete requests in a timely manner and have limited time to think proactively and develop new programs, strategies and initiatives to support the goals of DPW and the City of Burlington. In the current process the average staff time required to process a review for a traffic request is 24 hours and includes significant wait times for DPW staff between steps. The redesigned review process will actually take 58 hours from start to finish, however, the number of requests that will go through the entire review process will be significantly reduced due to the establishment of policies and a redesigned process that allows the team the decision-making power to close a request before going through the entire review process. In addition, the revised, streamlined process will have significantly fewer wait times, allowing staff to get through more requests in less time. Currently, it takes an average of 3 years to complete Traffic Calming Project. The team anticipates that the revised process will triple the speed in which they can implement a project.

Comparison

The total variance in steps from the current to the revised processes was 84, and resulted in an average time savings of 97 hours and average cost savings of $7, 429. The team determined that the dramatic change from the current processes would prevent them from making accurate projections of the number of requests they will receive and the number that will go through the entire process to implementation. Therefore, further extrapolation to estimate a projected annual cost savings could not be conducted. The team will need to establish a data management plan to assess the success of the redesign and for continuous improvement opportunities.

Comparison	Steps Saved	AVG Time (Hours)	AVG Cost
Intake	10	0.3	$ 28
New Process - Traffic Calming, Res Parking, Traffic Requests	74	106.4	$ 8,104
Implementation (Remained Same)	0	0	0
Total Variance	84	97	$ 7,429

Recommendations

Throughout the analysis process we looked for ways to streamline, ensuring maximum efficiency and thereby increasing customer satisfaction through delivery of prompt and precise service. Paramount to succeeding in providing this level of service is a well-informed staff. Orientation and training does a great job equipping new employees with the knowledge they need to perform their roles.

As part of the work, Neighborhood Traffic Management Project Team identified and recommended the policies and procedures that need to be reviewed and considered while implementing any recommendations. It is the team's expectation that new policies and procedures will need to be developed to support the redesigned processes. The introduction of new technologies and the pursuit of quality will be embedded into every step. Recommendations are provided under four umbrellas: Process & Staff, Policy, Technology, and External Communication changes. **All recommended changes are explicitly designed to ultimately improve service to the customer.**

Process & Staff

1. Recommend the Commission endorse reengineering of the process as presented, vote to approve a resolution regarding the ordinance decisioning and vote to recommend that the City Council make any amendments to City Code that requires their approval.
2. Recommend DPW establish the metrics that will measure the success of the redesign and for continuous improvement opportunities.
3. Recommend DPW establish an Implementation plan for staff for new processes
4. Recommend DPW establish an annual orientation for Commission members by Chair and staff

Policy

5. Recommend DPW Management convene with the Commission to clarify roles and expectations of each. Should clarity of role also be needed from City Council as a result of this process, then the Commission should approach the Council to generate role clarity between the bodies.
6. Recommend the Commission create a mechanism for DPW Management to provide a Biannual Report of all staff decisions made under the new process for the first year to enable the Commission to evaluate how the new process is working. DPW should define the measures for success and the format based on their technical expertise and understanding.
7. Recommend DPW Management engage in a process to determine what proportion of available staff resources and capital budgets should be focused on traffic improvements and what proportion may be available for neighborhood enhancements. This proration will be important to staff management of priority lists for projects.
8. Recommend that DPW Management update its traffic calming and neighborhood enhancements guidelines to address the changes of process and generally to modernize its documentation.

External Communications

9. Recommend public communications about traffic calming, traffic ordinances and/ or residential parking be considered part of a common program, something like *"Traffic Management"* to send clear signals that silos no longer exist.
10. Recommend intake of Traffic Management requests be internally channeled to a central repository. This will reduce public confusion about when an actual request has been made and provide a clear communications channel for DPW to update.
11. Recommend DPW conduct an education campaign to educate stakeholders about the revised process and expectations for requests.

Technology

12. Recommend full utilization of a software tool to assist in streamlining the process, providing a more customer-friendly entry into the process, as well as providing efficient and transparent project update communications.

Report Conclusion & Next Steps

Burlington DPW leaders have embraced this change project with energy and intent. The goals of the project have been addressed, with significant improvements seen in all areas. There is a positive energy to move quickly now into implementation.

One aspect that COPE wishes to highlight is the opportunity that still remains for the Strategic Planning process initially included in the design to leverage the energy and positivity of this process redesign. It has potential to clarify the balance of the Department's work between the City Vision (proactive, broad benefit) and requests from community members (reactive, localized benefit). COPE believes that there is a need to develop a single area of strategy pertaining to clarifying how the Department's work fits into the broader City vision.

There are some excellent "sources of truth" for the Department to draw from, including a highly engaged political environment, a City Vision that is inclusive of a multitude of transportation networks, and the BTV Walk Bike Plan. The themes from the SWOT analysis indicate opportunities for a more ambitious and holistic strategy:

Strengths	**Weaknesses**
• **Strong Community Voice through current process** • **Safety Minded Process** • **High Quality technical expertise** • **Motivated and experienced staff are accessible and listen** • DPW is a supportive environment	• Too many intake avenues and non-value-added steps • **Unclear prioritization process and long wait times** • Inconsistent escalation of decision-making and Commission support • **City vision and related DPW work not well understood** • **Lack of DPW staff capacity and empowerment**
Opportunities	**Threats**
• **City Council and DPW Commission collaboration (align city vision)** • Delegate certain decisions to staff rather than Commission • Adopt clear policy for public input and for internal reviews • Balance needs of the community and build transparency and trust • **Apply traffic changes proactively and in a consistent timeframe**	• Backlog of requests lead to poor communication • **Perception of inequality for traffic requests and traffic calming** • Commission process can be unclear and lead to delays • **DPW Commission, staff and council may not have goals aligned** • **Politics sometimes trump technical recommendations**

The themes in bold present a very clear picture of strengths that can be leveraged within a clearly defined vision of the role and value added of the Department of Public Works. Similarly, the highlighted weaknesses and threats offer the gift of feedback to align its work more explicitly

and strengthen the understanding of both the complexity of the work of the Department and of the integrity with which that work is carried out. With another term for the incumbent Mayor, there is also a known political leadership with which to partner and assume a full leadership role.

The potential demonstrated by the team is significant, without addressing a broader strategic alignment of City and Departmental vision and strategy, the team will be limited to working within a reactive and tactical space and the full advantages of the redesigned processes will not be realized.

Appendix A: Interview Protocol, Questions, Interviewee List

Interview Protocol

Introduction:

Welcome. Thank you for participating in this interview. As you know from the invitation email from Chapin Spencer, Director of Public Works for the City of Burlington the organization is reviewing the Traffic Calming Program.

I am with Cope & Associates, an organization development consulting and training firm. We are interviewing individuals who have knowledge of the Department of Public Works and its traffic calming scope and activities.

We use an Appreciative Inquiry approach to interviews, which means that we invite you to speak to what you consider most important on the topics provided and on aspects that we may not introduce. I may ask follow up questions for clarification or further detail.

- There are 2 of us conducting interviews.
- The format for each interview is the same. Each interview will last about 60 minutes. I will cover a few points here at the beginning, and we have a structured set of questions.
- If you later realize you forgot something, you are welcome to contact me with the changes.
- I will take notes while you talk. If you say something you want me to pay special attention to, just let me know and I will highlight it. If you regret saying something, I can delete it.
- No transcript, notes, or raw data will be given back to DPW.
- We may use quotes in our report, but no names will be attributed to specific comments.
- If you say something that truly represents the majority and could not be quoted without you being identified, I will ask your permission first.
- We want you to feel comfortable to talk openly. In considering your answers, please take time to reflect if needed. We really want to hear what you have to say. There are no right answers.
- We will aggregate all answers from the interviews and summarize themes.
- Themes will be used by the Steering Committee as information for decision making throughout the strategic planning process.

Topics for today's discussion:

We will be asking you questions that cover the following areas:

- Your relationship with DPW
- Insights on what works well and what is challenging about current practices
- Ideas on how to improve on current state
- Other related topics you feel are important to consider

Urgent Action Items:

Sometimes urgent situations are revealed during interviews, for example, safety, sexual harassment issues; if this happens, we address these items immediately with senior management.

We have a few ground rules:

- Turn off your cell phone or please put it on "silent."
- What is said in this room stays in this room
- Everyone's opinion has value

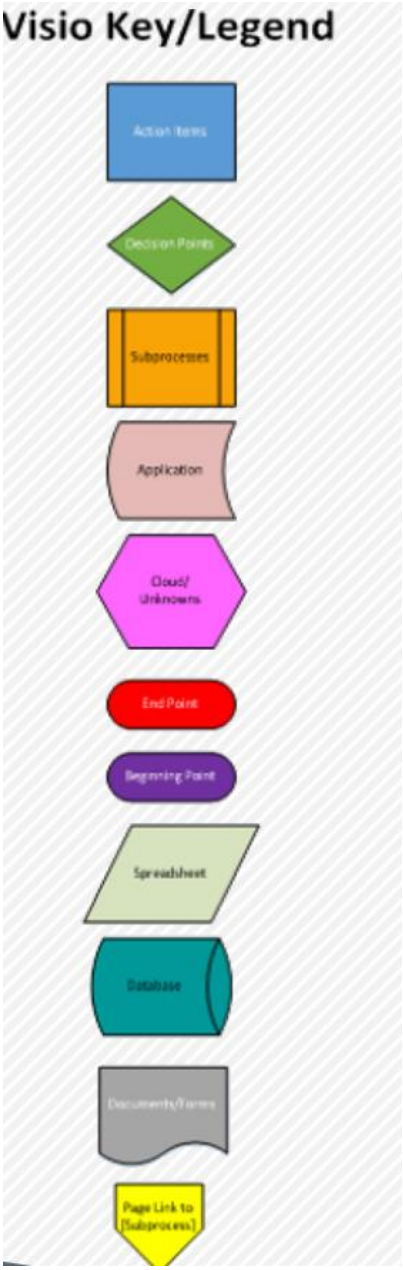
Interviewee List

Name	Title
Philip Peterson	Engineering Technician
Val Ducharme	Customer Service Representative
Justine Sears	Public Works Commission
Chapin Spencer	Director of Public Works
Nicole Losch	DPW Senior Planner
Kathleen Donahue	Owner Kings Corner Deli
Nathan Lavery	Former Public Works Commissioner and neighborhood leader for traffic calming on Hyde Street
Jen Adrian	Navigated Requests
John Shumaker	Car Share Vermont, Navigated Requests

Interview Questions

1. What is your relationship to DPW? (If a consumer, ask why they contacted DPW initially, and follow up to get clarity on the process they went through)
2. What are the strengths of the current process?
3. What do you see as areas for improvement?
4. What would you note about community supports and challenges that might make this work more effective?
5. What would you like to share about the scope of what the DPW is involved in regarding traffic solutions?
6. How does DPW's work connect to the City of Burlington vision?
7. What values do you see the DPW operate on? (If unclear, ask what criteria does DPW use to respond to requests)
8. Please speak to the quality of the work of the DPW's traffic request processing.
9. If you could change two things about the traffic calming request process, what would they be?
10. Imagine you wake up in five years and everything is working really well, what would you see?
11. What did we not ask that you wish we had, and how would you respond to that question?

Appendix B: Visio Shapes Key



Appendix C: Intake Form

Traffic Request Intake Form

Used for Requests Relating to:

- Traffic Regulations
- Residential Parking
- Traffic Calming
- Neighborhood Enhancements

Name of staff member who took this request
Date

1. Name (First, Last)
2. Full Address
3. Phone number
4. Email Address
5. Best time and method to reach you?
6. Describe the location relating to the request, be as specific as possible (specific intersection or block on a street)? Option to upload a photo
7. What is the nature of the issue(s) (speeding, unsafe intersection, unsafe pedestrian crossing, lack of parking, desire for greening/neighborhood project)?
8. If relevant, please describe when you noticed these issue(s) (times of day, days of the week)?
9. If relevant, have any prior steps been taken to address this issue? (speaking with neighbors, contacting other City departments, councilors/commissioners)

Appendix D: Neighborhood Enhancement and Traffic Calming Definitions

Neighborhood Enhancements vs. Traffic Calming

Traffic Calming includes street design (or redesign) strategies to address a defined public safety problem with vehicle speed, vehicle volume, and/or crashes on a street. Public safety problems created by traffic are defined by any one or all of these:

- Travel speeds exceeding _____ on (low-volume streets) as measured by the 85th percentile speeds;
- Traffic volumes exceeding ___ on (low-volume streets) as measured by AADT;
- Travel speeds exceeding 5 mph over the posted speed limit on (other street types) streets as measured by the 85th percentile speeds;
- Crash history involving ____ number of crashes in ____ years.

Neighborhood quality of life can still be impacted by traffic when none of the Traffic Calming criteria are met. In those situations, Neighborhood Enhancements may include more modest street design and management strategies to balance traffic with other uses on a street. The neighborhood will be involved in identifying the source of the problem, which will inform the type of enhancement that may be appropriate.

	Traffic Calming	Neighborhood Enhancement	Cost
VISUAL ALTERATIONS			
Painting lines	X	X	$
Painting intersections		X	$
One-way / two-way / travel lane conversion	X		$$
VERTICAL DEFLECTION			
Eliminating or adding parking	X	X	$
Installing curb extensions and/or neckdowns	X	X	$$
Reduced corner radii	X	X	$$
Chicanes	X		$
Narrowing streets	X		$$$
Medians – raised or curbed	X		$$
HORIZONTAL DEFLECTION			
Speed humps / bumps / tables / cushions	X		$$
Traffic circles	X	X	$$

Raised intersection	X		$$$
Rumble strips / pavement texture or material (brick or cobblestone)	X	X	$$$
Diverter	X		$$
Closure	X		$$$

WHEREAS, the City Council declared that a climate emergency exists which threatens our community and human health and safety, biodiversity, and our common environment; and

WHEREAS, emissions in Vermont have risen since 1990, with the largest increases coming from the transportation sector, which also accounts for the largest share of greenhouse gas emissions in the City and State; and

WHEREAS, the climate emergency declaration, in addition to the actions to be taken by city government, called on residents to take steps to reduce vehicle miles travelled through walking, biking, and mass transit

WHEREAS, to effectively reduce transportation-related fossil fuel emissions, a comprehensive, systemic, and properly funded approach is needed to create an alternative system which is not reliant on fossil fuel powered means of transportation, especially single occupancy automobiles; and

WHEREAS, the Administration and City Council have taken steps on the road to an alternative system by requesting that a number of zoning ordinance changes be drafted, including eliminating the requirement for a minimum number of parking spaces, releasing permitting requirements for existing parking, reducing the dimensional requirements for new parking spaces, reducing the maximum number of parking spaces that are allowed to be built in new developments, creating regulatory mechanisms, including transportation demand management requirements, to ensure investment in alternative transportation, and studying how traffic impact fees can be used to support the expansion and increased use of alternative modes of transportation (including but not limited to transit, biking, and walking and then updating the City's ordinances to implement this use of impact fees; and

WHEREAS, according to internationally recognized transportation and city planning expert Jeff Speck, cities that are less automobile dependent and are highly walkable and bikeable are most livable, appealing, cost effective, and economically viable. According to Speck, if a resident take a bus ride, for every $1 they spend, society spends $1.50 to support that transportation. If a resident decides to drive, it costs society $9.20 for every $1 the driver spends. When a resident walks, the cost to society is a penny. "The more we can walk, bike, and take transit, we're spending a lot less than the alternative, which is to drag around a two-ton carcass of steel that belches climate change," says Speck; and

WHEREAS, recognizing that significant funding is needed to properly fund an alternative transportation system, voters amended the City Charter to allow revenues generated from on-street parking equipment and systems to be used for the proper repair or construction of streets and sidewalks, traffic or parking demand management facilities, planning, or services and other transportation-related activities; and

WHEREAS, on these street parking funds were used for the Greenride Bikeshare program because increasing non-car transportation reduces traffic by taking cars off the road;

NOW THEREFORE BE IT RESOLVED that the City Council's Transportation, Energy and Utilities Committee (TEUC), in order to better understand how to properly fund an alternative transportation system needed to fight climate change, requests that the director of Public Works provide it with a report by its first meeting in February 2020 on (1) the revenues of the street parking system, the residential parking system, and any other parking related revenues that are not dedicated and restricted by law, (2) the current budget uses and actual uses of those funds, (3) a list of legally acceptable uses of those funds for measures that would reduce vehicle miles travelled, including but not limited to whether or not those funds could be paid to Green Mountain Transit in order to eliminate fares on one or more routes, and (4) a list of revenue raising ideas and, if possible, projected revenues to be realized from each

idea, including but not limited to the expansion of areas in which meters are placed, the raising of residential parking permit fees, and the expansion of hours for which parking is charged throughout the metered parking system.

BURLINGTON PUBLIC WORKS

SNOW AND ICE CONTROL PLAN

SNOW AND ICE CONTROL PLAN

The purpose of this plan is to define the operational procedures and best management practices (BMP's) for storing and utilizing snow and ice control materials, and for performing winter maintenance activities. It defines the level of service that Burlington Public Works will strive to provide on our 95 miles of streets, 130 miles of sidewalks, and 20.85 combined miles of bike lanes.

Since storms vary dramatically and occur during a variety of traffic conditions, this Snow and Ice Control Plan is intended to be flexible. It is a guide structured to fit average conditions, but able to accommodate the wide variety of conditions that will be encountered by maintenance crews who are working to maintain safe roads and conditions.

STORM WARNING NOTIFICATION

The Department of Public Works Right of Way uses multiple weather services available online, such as National Oceanic and Atmospheric Administration (NOAA) and the Weather Channel. DPW will issue storm related public service announcements via the local media, Facebook, Twitter, and any City website **http://www.burlingtonvt.gov/**

Text messages:
GovDelivery https://public.govdelivery.com/accounts/VTBURLINGTON/subscriber/new

Facebook: https://www.facebook.com/BTVDPW

Twitter: @btvdpw

Phone: 802-658-SNOW

Burlington Public Works has also invested in (4) traffic message boards stationed along key arterial roadways that will warn residents of any winter parking bans.

PERSONNEL SCHEDULING

Our Right of Way crew of (17) full time Street Maintenance Workers and approximately (2) seasonal employees, which may vary due to budgetary constraints, or availability of applicants, maintain the streets and sidewalks. Large storms may require around the clock coverage. This will require help from outside work groups and departments. The Street Maintenance Manager will secure volunteers during the normal workday and create a plan based on the available manpower and weather conditions. The plan will be reviewed by the Assistant Director - Maintenance Division before implementing.

MOBILIZATION

When the decision has been made to react to a storm, the Street Maintenance Manager will mobilize the crew. Since all trucks, tractors and routes are assigned, all the employees need is the call to deploy. If a storm event is predicted after normal business hours, the personnel will be put “on-call” per the union contract and the on-call employees will make themselves available by telephone. The department is aware that employees may have personal needs that may arise and may not be able to be “on call” at all times. If an employee has a personal issue, they may address it with their direct supervisor.

While DPW Street Maintenance is tasked specifically with the staffing for snow and ice control operations, the employees of the Fleet Maintenance group have a responsibility to assist with equipment repairs. Once the decision has been made to respond to a storm event, during normal working hours the street Maintenance Manager will notify the Fleet Manager. The Fleet Manager will then schedule his employees to provide maintenance assistance. After normal working hours, if the foreman in charge determines that the streets and sidewalks need to be plowed he will call the “on-call” maintenance team.

SNOW AND ICE CONTROL MATERIALS

Road salt (NaCl) is the primary snow and ice control material. The salt is normally purchased under the State of Vermont contract. FY20 the contract was awarded to Cargill; the local distributor is Barrett's Trucking in Burlington @ 863-1311. DPW uses approximately 4000tons of road salt per year. The Street Maintenance Manager is responsible for the ordering and inventory of the salt. The entire salt inventory is stored at 645 Pine Street. Liquids like magnesium chloride (MgCl2) and Promelt Magic Minus Zero are being used to reduce the amounts of salt needed to clear the roads. Safety Data Sheets (SDS) are available in a binder in every truck and in the SDS binder located in the Street Maintenance area. As a courtesy, Burlington property owners are permitted to take (1) 5-gallon bucket of salt per winter from the salt shed at 645 Pine St. when it does not interrupt the City's operations.

EQUIPMENT INSPECTION

WEEKLY VEHICLE CHECK SHEET

UNIT#:			UNIT HOURS:		UNIT MILES:			
DATE:			OPERATOR:					
		Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
Registration,ins card,vsi								
Engine oil level								
Coolant level								
Power steering fluid								
Washer fluid								
Brake fluid								
Trans fluid level								
Hyd oil level								
DOT pre trip inspection								

* VISUAL WALK AROUND OF VEHICLE FOR ANY DAMAGE SUCH AS DENTS, DINGS, BROKEN OR CRACKED GLASS

* NOTE ANY DAMAGE ON THIS SHEET AND ALSO REPORT TO MANAGER

*TIRE CONDITION AND AIR PRESSURE

*INSPECT RADIATOR FOR DEBRIS BLOCKING AIR FLOW. SEE EQM IF CLEANING NEEDED

*GREASE ALL APPLICABLE LUBE FITTINGS, DAILY IF REQUIRED.

*TOP OFF FUEL TANK AT END OF SHIFT. CHECK FUEL LEVEL BEFORE SHIFT

*CLEAN INTERIOR OF VEHICLE OF DEBRIS AND CLEAN . WASH EXTERIOR IF NEEDED.

*DRAIN AIR TANKS DAILY AT END OF SHIFT.

RECYCLING TRUCKS, EMPTY PACKER CLEAN OUTS DAILY AT END OF SHIFT

*TANKER TRUCKS, EMPTY AND WASHE DEBRIS BODY, PROP OPEN TO DRY OVERNIGHT

* SWEEPERS CHECK AND CLEAN AIR FILTERS DAILY. REPLACE IF NEEDED

*SWEEPERS CLEAN AND WASH DEBRIS BODY AND PROP OPEN TO DRY

* NOTIFY EQM OF ANY UNSAFE CONDITION AND REMOVE UNIT FROM SERVICE AND TAG OUT OF SERVICE.

All City equipment; to include all plow trucks, loaders, and sidewalk tractors will be operator level inspected before any snow operations. Immediately following a

storm on the next regular business day, all equipment will be cleaned, greased, fluids levels checked, and a proper preventive maintenance check per the manufactures operator manual. All deficiencies will be reported immediately to DPW Fleet Services.

EQUIPMENT CALIBRATION

Every November, all truck spreaders and computerized spreader controls will be calibrated with salt (NaCl) per the manufactures operation manual. After every storm event, each truck will have the mileage and pounds per lane mile recorded. This task will be assigned to a working foreman and one other street maintenance worker.

TRAINING OF PERSONNEL

Training is a key part to our snow plans success. All operators are properly trained before using any equipment utilizing operator manuals, manufacturers trainers, our in house trained employees, and on the job training. All employees will be able to properly operate, and maintain the equipment before actually plowing snow. Before the first snow storm, all operators will drive their route, getting familiar with obstacles such as high manholes, trees, narrow roads, mailboxes, etc. Any reported obstructions will be reported to the Right of Way Inspector for further action. Every truck has a binder with all route maps, bike routes, CCTA emergency routes, and the list of dead end roads.

SNOW ROUTE ASSIGNMENT

All operators will be assigned a route, whether it is in a truck or a sidewalk tractor. Continuity is important in assigning routes and equipment. Operators will learn the best way to battle snow and ice if they are doing the same streets every storm and will know areas that need special attention such as bridges, on and off ramps,

hills, curves, school zones, and bike lanes. The same with the equipment, the operators in the same truck or tractor will know how it handles and what the vehicles limits are.

The sizes of the routes are designed for the City's fleet of trucks and tractors. There are 10 large trucks, 1 small truck for dead ends and narrow streets, and 11 tractors. Of the 10 large trucks, 1 is a spare in case of a break down. With the 11 tractors, 2 are spares. Depending on the accumulation of snow, it could take an operator with a large truck approximately 5-7 hours to plow their route once. An operator on a sidewalk route will take approximately 6-7 hours to plow their route, if they are salting at the same time it will take 8-9 hours to complete once.

LOADING PROCEDURES

The loading of salt in all trucks will be by the oldest available loader in the fleet. The operation will be conducted by qualified City employees only. The trucks will be loaded to their max GVWR and not overloaded. The loader will have operator level preventive maintenance after every storm event and all loading procedures will be supervised by an assigned working foreman.

SALTING AND PLOWING PROCEDURES

Salting Operations

Streets will be salted during light storms where minor accumulations of snow are expected. This requires the use of 6 large trucks that will salt the primary streets with priorities going to the routes coming into and exiting

the City, primary roads leading into neighborhoods, school zones, downtown, intersections, and bike lanes. Not every street is salted unless there is a prediction of ice.

Plowing Operations

Plowing of the streets is the same regardless of the amount of snow predicted. The City owns (10) large plow trucks with (1) being used as a spare in case of break down and (1) small truck for dead ends and narrow streets. We can add plows to (1) front end loader for additional help in major storms.

The (9) large plow trucks are assigned a route and each route starts with its primary street, leading to its secondary main, and then into the neighborhood streets. (Truck route maps appendix B.) The (1) small plow truck is assigned a list of narrow and dead end streets. (Narrow and dead street list appendix B.)

Sidewalk Plowing and salting

There are (9) sidewalk routes and are plowed during the day concurrently with street, and bike lane plowing. Extra attention is given to the downtown, Old North End, areas around schools and school crossing guard locations.

During a night time snow push back or any night time plowing operation, sidewalk plowing usually starts around 3 a.m. so that the sidewalks are open when school begins. This time could vary depending on the size of the storm.

If the storm exceeds 12” of snow and there are snow banks along the sidewalk, we will have to snow blow every sidewalk. This will take considerable time and manpower. This operation could take up to 24 hours or more. Again the priorities are downtown, Old North End, and school zones. We normally have many equipment failures while snow blowing, so having fleet services available is key.

We routinely plow, scrape, and sometimes salt the sidewalks during the day to maintain a safe environment.

Accessibility (Handicapped) Parking Spaces

Burlington has a large amount of handicapped parking spaces that must be cleared of snow. This will take place once the streets and sidewalks have been cleared. After the storm, the department will start clearing the spaces starting from the downtown, working their way to the outskirts of the city. With the limited amount of manpower available it may take many days before all spaces can be cleared of snow. If a resident has a particular handicap parking space that needs immediate attention, please call DPW Customer Service @ 863-9094.

Bike lanes

Burlington currently has 18 miles of bike lanes (curbside, defined by paint only), .85 miles of protected bike lanes, and 2 miles of shared use paths.. They are located on residential, and main arterial roads, and the bike lane

will be plowed to the curb. DPW will dispatch a sidewalk tractor to clean the protected bike lanes of snow and salt. All unprotected bike lanes will be plowed utilizing city plow trucks in the corresponding plow route, and when plowing is complete a sidewalk tractor will clean and salt the bike lane as needed. When accumulated snow reaches levels that impact the City's ability to keep the bike lanes properly cleared, we will post the street for no parking in that area if needed, and perform snow removal operations. (Appendix A)

GMT Bus Routes

Burlington is a major hub for public transportation. Many of the priority routes are also major routes for the GMT public transportation system. The operators are familiar with their routes and understand the importance of the public transportation system. We routinely review the routes with the DPW Drivers. GMT passenger facilities (bus stops and shelters) are maintained by GMT and not the City of Burlington.

Performance Capabilities

As stated earlier, Burlington has 95 miles of roads, 130 miles of sidewalks, and 20.85 combined miles of bike lanes. During the average year we receive 80 inches of snow. Of course this is only an average and what really matters is when it falls, and how many snow events we have to deal with. Generally speaking, the length of the storm rather than the amount of snow determines how we deal with it. Our plans are built around these capabilities.

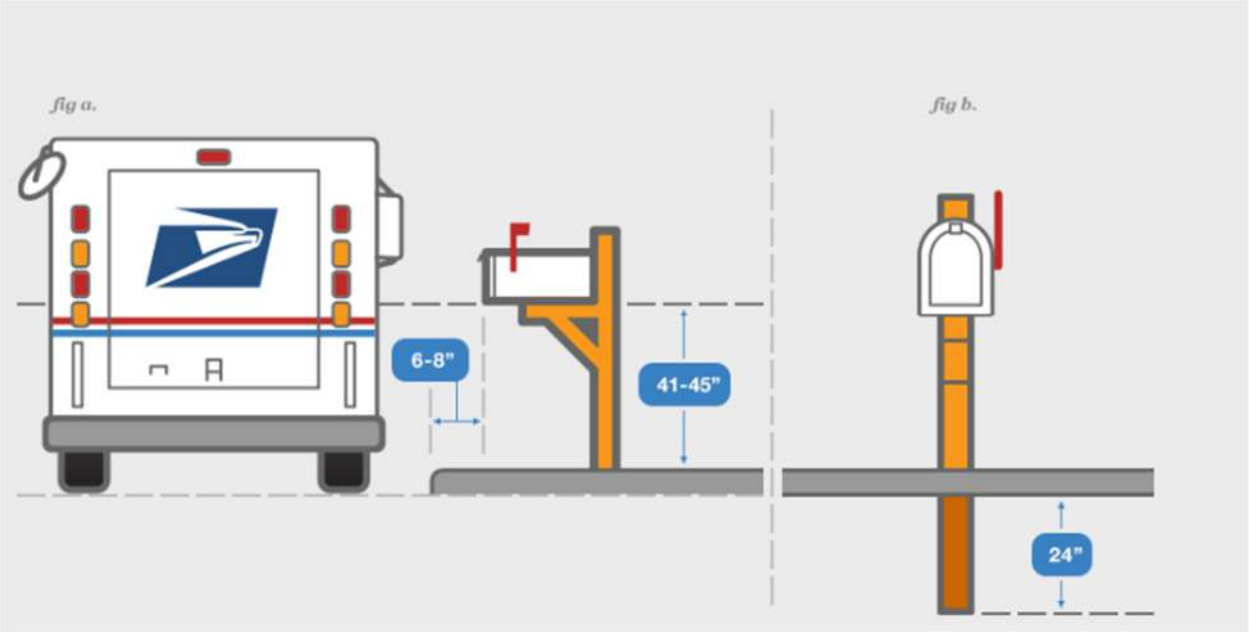
Street plowing routes	**10**
Hours to plow every street once	**5 to 7**
Hours to salt all streets @ 500 lbs. mile	**4**
Sidewalk plow routes	**9**
Hours to plow every sidewalk once	**8**
Hours to snow blow every sidewalk once (depending on depth and weight of snow)	**24 - 30**
Hours to salt every sidewalk	**12**

SNOW STORAGE

Snow removed from the City streets, greenbelts, parking lots, and parking meter spaces will be stored at 702 Lake Street in Burlington. This area is for the storage of City removed snow and not for any private contractor, unless contracted by a City department. This site is a former oil tank farm near the waterfront and has been an ideal storage area as the berm keeps contaminants from reaching the lake. This storage area will be cleaned of any trash and debris every spring.

SNOW OPERATION DAMAGES

1. **Mailboxes and other structures within the Right-of-Way**
   Occasionally mailboxes and other property may be damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight /volume of snow being plowed. The damage is not deliberate and in most cases unavoidable. Burlington Public Works is not responsible for damage and does not repair, replace or re-erect mailboxes that are located within the right-of-way unless physically struck by a DPW plow truck. In these cases, the property owner shall submit a claim to the City for reimbursement. All mailboxes must be installed to the USPS standards.



Many residents have basketball nets in the right of way, these not only interfere with plowing to the curb, but during inclement weather the plow operator may not see the basketball net and damage the basketball net and City equipment. The City will not be responsible for any damages to basketball nets within the right of way. If any basketball nets are found in the right of way, the DPW Excavation Inspector will be notified and will have it removed.

While removing the snow from the sidewalks we find many fences, borders and decorative landscaping close to the sidewalk. This presents quite a challenge for the department to operate the tractors safely. We ask that all landscaping be built at least 12" from the sidewalk in order to minimize damage to private and city property. Burlington Public Works will not be responsible for any damages to landscaping or fences that are within 12" of the sidewalk. All reported damage will be inspected by our Right of Way Inspector, and if the inspection finds the City responsible, an insurance claim will be made with our agent.

2. **Plantings in the right of way**

   Snow removal from the streets and sidewalks are a challenging task and there are many obstacles that the operators have to maneuver around, and the major items being trees and shrubs. While great care is taken not to damage the tree or shrubbery, the property owner must maintain the vegetation so it does not impede the right of way. While the City equipment may damage the vegetation, the trees and shrubbery may also damage the equipment. **The department will not be responsible for any damage to any plantings encroaching on the right of way.**

3. **Accident Protocol**

   Plowing snow in a large truck with a wing plow takes a special skill. Public Works employees are highly skilled and properly trained before they operate any commercial vehicle. Vehicle accidents will happen, and when they do, the following must happen:

   a. Stop vehicle in a safe area.
   b. Check all people involved for injuries. Call 911 if needed.
   c. The DPW employee will call their supervisor either by cell phone or by 2-way radio and inform him of the situation.
   d. Supervisor will call the Burlington Police Department. A police report will be taken, the DPW employee will receive a copy of the report, if the report is not available, you are required to obtain the incident number.
   e. If the vehicle is able to be driven, it must report to DPW Fleet Services for an evaluation before continuing on with snow plow operations.
   f. All accidents must be reported to the Assistant Director – Maintenance Division and the insurance company. The Assistant Director will report all the proper information on the Travelers Insurance Portal.

PARKING LIMITATIONS

Burlington does not have a seasonal parking ban like most towns in our region. It is the responsibility of the Public Works Director to declare a winter parking ban. Parking bans are declared on a case by case basis. Criteria for a parking ban include length of storm, amount of snow during the storm and how much snow is already on the streets and has not been plowed to the curb. By City ordinance **20-56** the ban must be declared by 3p.m. in order to be in effect by 10 p.m. that evening until 8 a.m. the following morning, except in Zone F (downtown zone) where the ban is in effect from midnight until 6 a.m. In other cases, where snow needs to be removed from the City right of way, the City will do so by posting the street for no parking either with signage or by bagging meters. During this time there will be no parking in accordance to the date and times stated on the sign, or meter bag.

Parking Ban Notification

Parking bans are warned in the following manner:

1. Using the City parking ban light system

2. Sending a press release to local radio and television stations, and print outlets

3. Posting alerts on social media, including Facebook & Twitter

4. Sending out text messages and e-mails via GovDelivery. BPD currently also uses the VT Alert system to send text, auto-call and email notifications.

5. An up to date recording on 658-SNOW

Once the Director calls a ban, the street maintenance foreman will notify the parking enforcement supervisor, who is responsible for the enforcement of the winter parking ban. Second, he will activate up to 90 plus flashing parking ban lights. These lights are located at the entrances of the City, important intersections, and throughout the City's neighborhoods. They are a visual warning to the residents that a parking ban is in effect.

The DPW Foreman in charge of the plowing crew will meet with the parking enforcement crew at 9:30 p.m. at the police department to review and cover any last details.

Vehicles must be off of the streets during these hours if a ban is declared or they will be towed. While parking bans make it easier to plow snow, it is difficult for some people to find alternative parking. DPW does offer free parking in the City owned parking garages as an option. Parking is available in the Marketplace and the Cherry St Parking Garages on the lower decks only. Vehicles must be removed by 7:30 am or they will be charged the full day's rate**.** Additional information can be found at http://www.burlingtonvt.gov/.

While a winter parking ban is not called for every storm, if residents have access to off street parking, we urge them to use it. Additional information can be found at http://www.burlingtonvt.gov/dpw/parking/winter-parking

The City currently has 3 designated tow areas.

Lake St. Extension: Vehicles towed from the Old North End and west of Willard St. from Pearl St. to Maple St.

Gosse Court, North Ave to the end: Vehicles towed from the New North End.

Oakledge Park parking lot: Vehicles towed from the south end and west of Willard St. from Maple St. south.

When the lots are full, vehicles found on the street could also be towed to the nearest street the Public Works Department designates as a drop-off point. This would be a street that has been cleared of snow. For car owners to find their vehicle, please call (802) 540-2380.

AFTER STORM RESPONSIBILITIES

It is expected that 12 hours after a snow storm that every City street will have been plowed. The Street Maintenance Foreman will inspect every City street to ensure that the streets are cleared and passable. The department will continue to patrol the streets and maintain them to be safe and passible. It is possible that the downtown and some narrow streets may have to have the snow removed. If this service is needed, it will happen approximately 2-3 days after the storm using City owned equipment. Snow removal downtown usually happens in the early morning hours. For the narrow streets, dead end streets, and bike lanes we will post the streets for "no parking" and remove the snow during the day.

SNOW RELATED CITY ORDINANCES

27-84 Throwing snow into street prohibited.

No person shall throw or put, or cause to be thrown or put, snow or ice in the part of the street known as the travel portion nor on a sidewalk of a street.

(Rev. Ords. 1962, § 4303; 1969 Cum. Supp., § 4303)

27-2 Enclosing highway; erecting fence or encroachment; nuisance.

No person shall enclose a part of the highway or street, or erect a fence, building or other encroachment, or make obstructions, or create a nuisance on a highway or street, or continue such enclosure, fence, building, encroachment or nuisance on a highway or street.

(Rev. Ords. 1962, § 4209)

Appendix A Bike Lanes

Bike Lanes / Buffered Bike Lanes	Start / End	Bike Lane/Facility Width
Austin Dr north/east	Queen City Park Rd to Red Rocks	5'
Austin Dr south/west	Queen City Park Rd to Red Rocks	5'
Colchester Ave westbound	Mill St to Prospect St	5'/6'
Colchester Ave eastbound	Prospect St to East Ave	
Colchester Ave eastbound	Greenmount Cemetery to Mill St	5'/6'
College St eastbound	Union St to S. Prospect St	4'
East Ave southbound	Colchester Ave to Carrigan Dr	4'
Ethan Allen Parkway eastbound	North Ave to Farrington Pkwy	6.5' with buffer
Flynn Ave westbound	Pine St to Briggs St	6'
Flynn Ave eastbound	Briggs St to Shelburne St	5'/6'
Riverside Ave eastbound	N. Prospect St to Salmon Hole	
Riverside Ave westbound	Salmon Hole to N. Prospect St	
Main St eastbound	University Heights to Spear St	4'
Main St westbound	Spear St to University Heights	4'
Winooski Ave southbound	Decatur St to Pearl St	7'
Winooski Ave southbound	Maple St to Howard St	
Winooski Ave northbound	Howard St to Maple St	
North Ave northbound	Sherman St to Plattsburg Ave	6'
North Ave southbound	Plattsburg Ave to Berry St	
Park St southbound	North St to Sherman St	5'
Park St northbound	Pearl St to Sherman St	5'
North Champlain St northbound	Pearl St to Manhattan Dr	5'
Pine St southbound	Main St to Home Ave	5'

Pine St northbound	Home Ave to Locust St	5'
Willard St northbound	Cliff St to Maple St	
Willard St southbound	North St to Maple St	5'
Pearl St eastbound	Battery St to Prospect St	5'
Pearl St westbound	Winooski Ave to Battery St	5'
Mansfield Ave northbound	Colchester Ave to North St	
Sherman St eastbound	Park St to N Champlain St	5'
QB Separated Bike Lanes		
Union St northbound	Main St to Winooski Ave	6'
Elmwood Ave northbound & southbound	Grant St to Peru St	5'
North Champlain 2-way on east side	Sherman St to Peru St	8'
North Ave northbound	south of Rt 127 intersection	5'
Sherman St	Park St to North Ave	6'
Neighborhood Greenways		
ONE Greenway	Mansfield Ave to Sherman St	N/A
Advisory Lanes		
Flynn Ave westbound	Lake Forest Dr to Oakledge Park	5'
Flynn Ave eastbound	Oakledge Park to Lake Forest Dr	5'
Shared Lanes		
Colchester Ave both directions		N/A
Flynn Ave westbound	Shelburne Rd to Pine St	N/A
Pine St northbound	Locust St to Maple St(?)	N/A
Mansfield Ave southbound	North St to Colchester Ave	N/A
Winooski Ave northbound	Decatur St to Riverside Ave	N/A
Winooski Ave southbound	Riversie Ave to Decatur St	N/A
College St westbound	Prospect St to Union St	N/A
Pearl St westbound	Prospect St to S Winooski Ave	N/A
Shared Use Paths		
Riverside Ave	Winooski Ave to Mill St	8'
Colchester Ave	Mansfield Ave to East Ave	8'
Main St		12'
Parkway		9'

Appendix B – Narrow and Dead End Street List

DEAD END AND NARROW STREETS

MAIN ST AND SOUTH END	**CROSS ROAD AND SPECIAL DIRECTIONS**
ADAMS CT	SHELBURNE RD, **AT LEFT TURN, CLEAN RIGHT SIDE DRIVEWAY ENTRANCE**
LUDWIG CT	HOOVER ST, **BACKDRAG AND PLOW ACROSS HOOVER ST**
REDSTONE TERR	HOOVER ST
ALFRED ST	SHELBURNE RD
PEROTTA PL	HOOVER ST
GOVE CT	SHELBURNE RD
GOLDEN PL	HOWARD ST
SPRUCE CT	SPRUCE ST
ELM TERR	S. WINOOSKI AVE
BROWNS CT	KING ST
BEECH ST	WILLARD AND SOUTH UNION
KINGSLAND TERR	SOUTH UNION
UNIVERSITY TERR	MAIN ST, **BACKDRAG AND PLOW OUT**
PINE PLACE	PINE ST, **NO SIDEWALK, SALT AND CLEAN WELL**
LEDGEMERE ST	MARIAN ST
CATHERINE ST	LOCUST AND ST. PAUL

MAIN ST TO MANHATTEN DR

THIBAULT PKWY	COLCHESTER AVE
NASH PLACE	COLCHESTER AVE
LATHAM COURT	COLCHESTER AVE
CALARCO CT	COLCHESTER AVE
COLCHESTER CT	COLCHESTER AVE
CHASE LANE	CHASE ST
RUMSEY LANE	CHASE ST
CHASE ST	BARRETT ST, **BACK DRAG END OF ST**.
VERMONT PARK	HILLSIDE TERR, RIVERSIDE AVE
HYDE ST	ARCHIBALD ST
GERMAIN ST	ARCHIBALD ST
CHARLES ST	NORTH WILLARD
RUSSELL ST	NORTH WILLARD

CONVERSE COURT	HICKOK PL
LAFAYETTE PL	PEARL ST
ORCHARD TERR	BUELL ST
CLOAREC CT	INTRVALE AVE
ALLEN ST	ELMWOOD AVE
MYTRLE ST	PARK ST
POPLAR ST	NORTH CHAMPLAIN ST
CROWLEY ST	NORTH AVE
SUNSET CT	NORTH AVE
VOLTZ ST	MANHATTEN DR

OVER →

NEW NORTH END	**CROSS ROADS AND SPECIAL INSTRUCTIONS**
POIRIER PL	NORTH AVE, **BACK DRAG END OF STREET AND PLOW OUT**
PLATTSBURG AVE EXT (GRIT PIT RD)	PLATTSBURG AVE, **PLOW PAST THE LAST HOUSE**
RIVERVIEW DR (CAMP DAISY RD)	NOTHVIEW DR
NORTH COVE ROADS (2)	NORTH AVE EXTENSION, **RIGHT BRANCH OF ROAD NEEDS TO PLOWED OUT**
APPLETREE PT ROAD	**DIRT ROAD, PLOW TO THE END**
SUNSET CLIFF RD	**DIRT ROAD, PLOW TO END**
LORI LANE	**ONLY PLOW ROTARY ON LEFT SIDE**
WEST ST	NORTH AVE

ALL STREETS ON THIS LIST WILL BE INSPECTED BY THE STREET MAINTENCE FORMAN AFTER THE STORM.

Plow Route #1

Areas to pay close attention to
Ledge Rd
Fern Hill (N Prospect)
Maple St
Cliff St
GMT Routes
Maple St
Cliff St
Prospect St
Bike Lanes
N/S Willard St

Plow Route #2

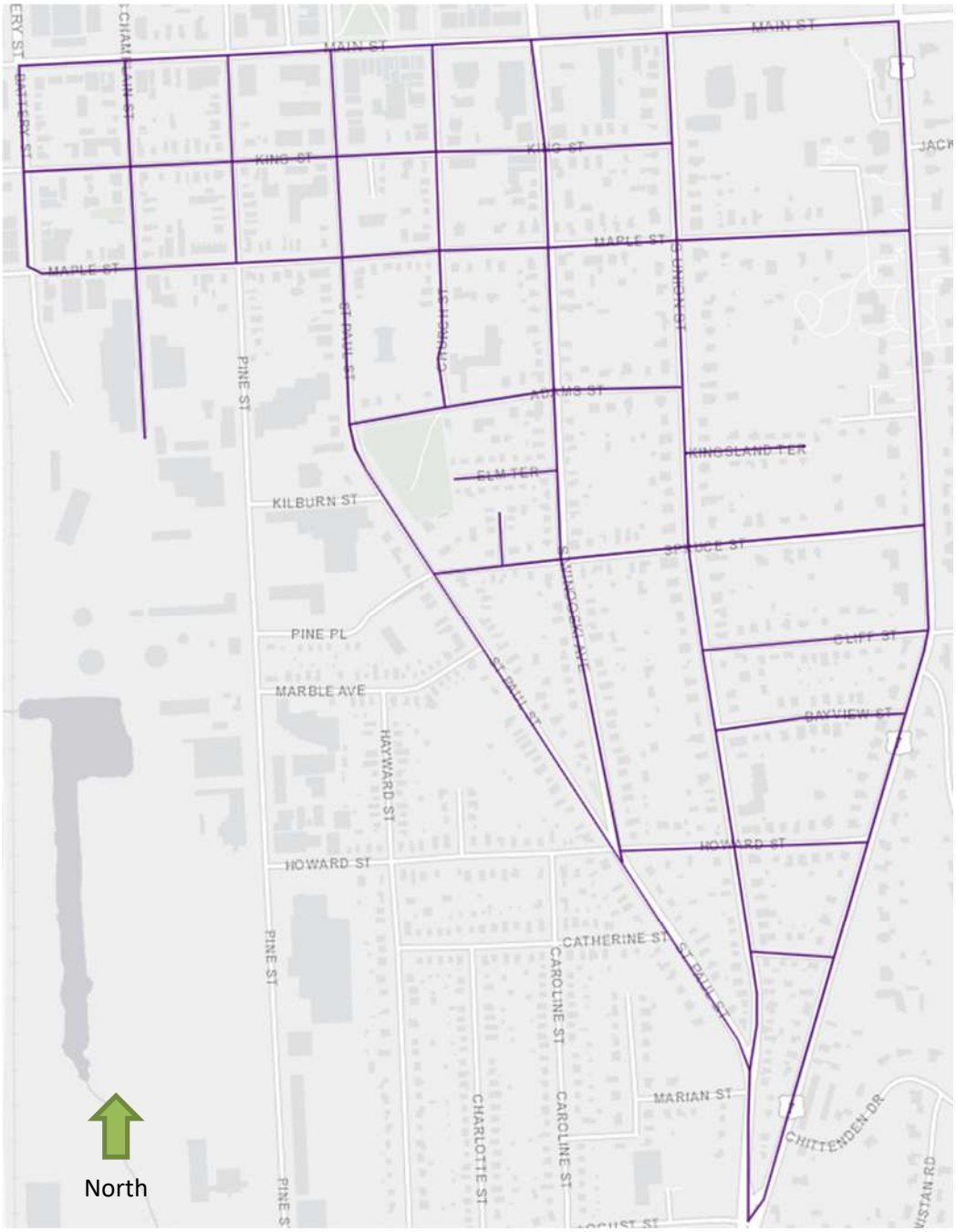
GMT Routes
Cherry St
Pearl St
Main St
North St
Colchester Ave
Battery St
Elmwood Ave
Grant St
N Winooski Ave
Bike Lanes
S Winooski Ave
N Union St
N Winooski Ave
N Willard St
Mansfield Ave
Pearl St
Colchester Ave
East Ave
College St

Plow Route #3

GMT Routes
Pine St
Shelburne St
Industrial Pkwy
Howard St
Bike Lanes
Pine St Main – Home
Flynn Ave
Austin Dr

Plow Route #4

GMT Routes
Main St
Maple St
Cliff St
Kilburn St
S Union St
St Paul St
Howard St
Bike Lanes
S Winooski Ave
S Union St
S Willard St

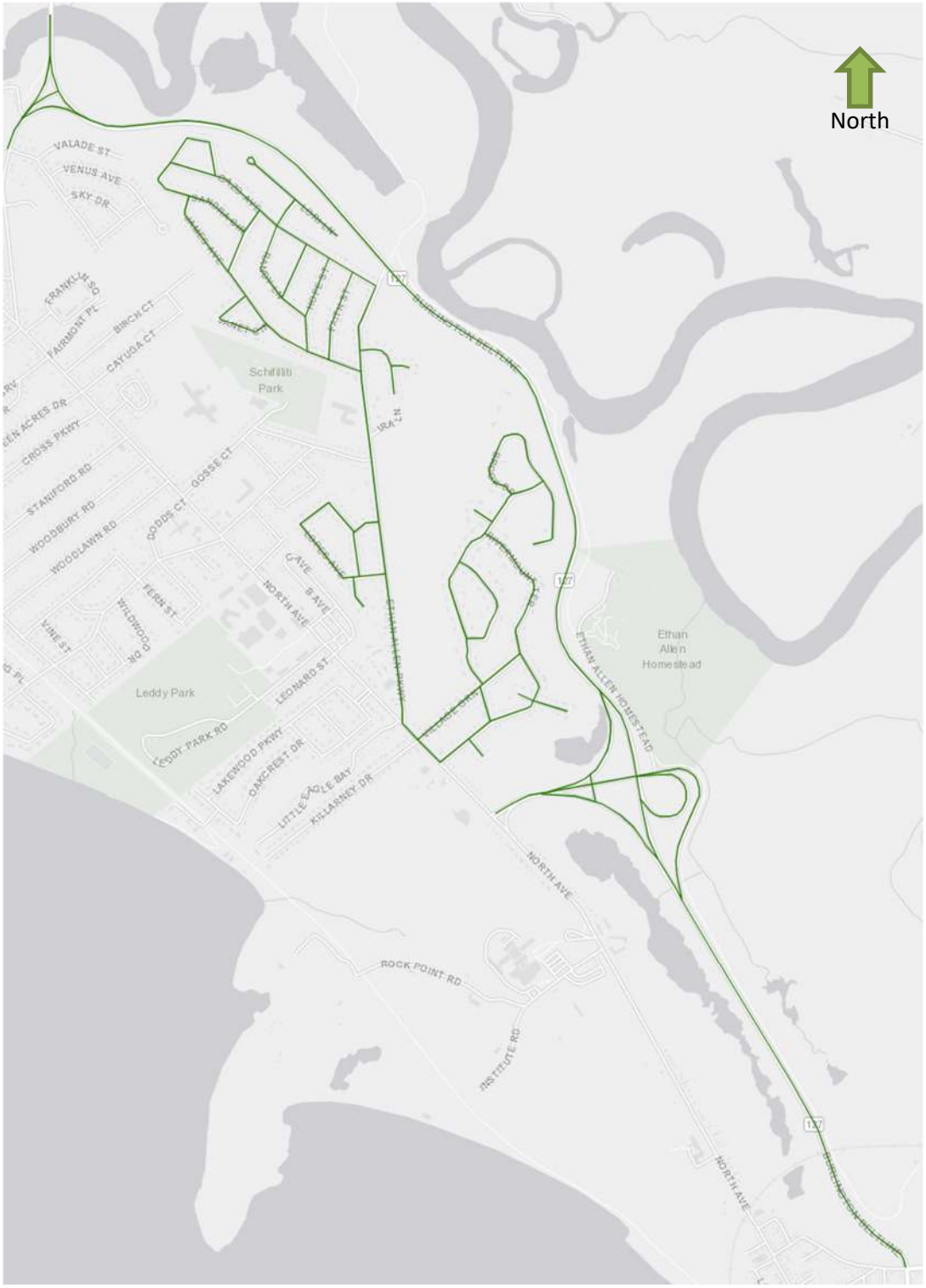


Plow Route #5

GMT Routes
North Ave
Riverside Ave
Colchester Ave
Bike Lanes
North Willard St
Colchester Ave
Riverside Ave

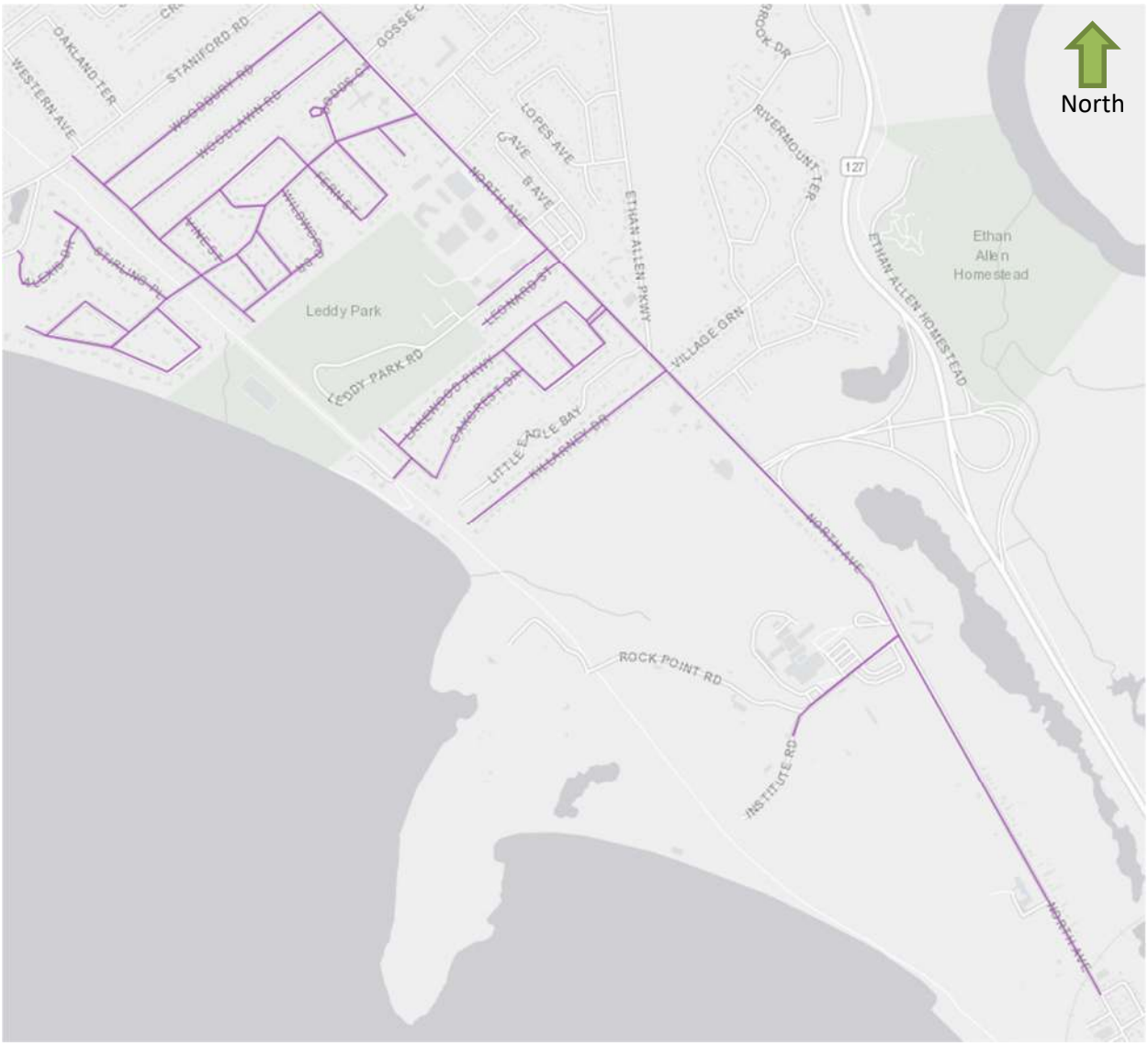
Plow Route #6

GMT Routes
North Ave
Bike Lanes
North Ave



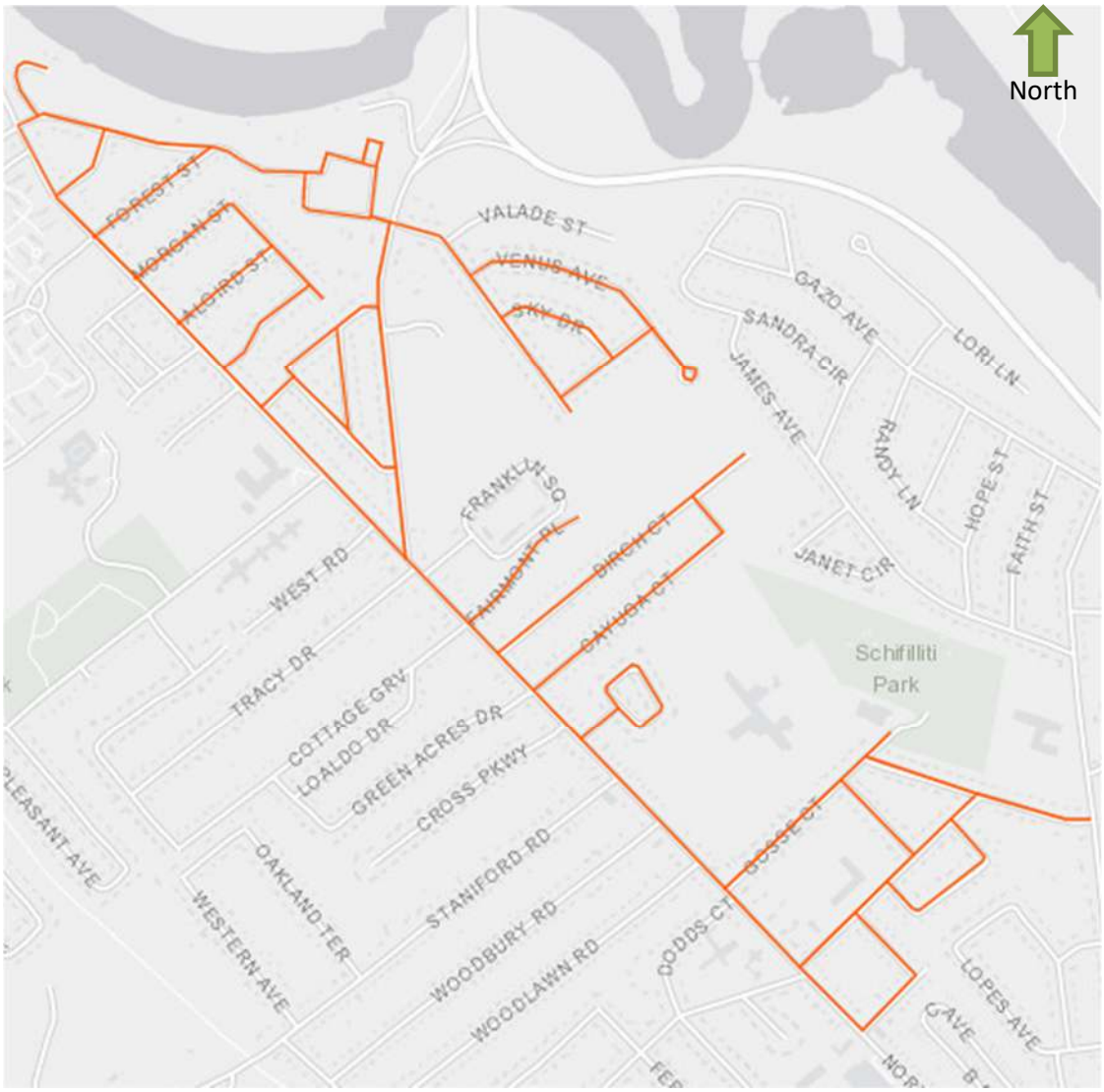
Plow Route #7

GMT Routes
North Ave
Bike Lanes
North Ave



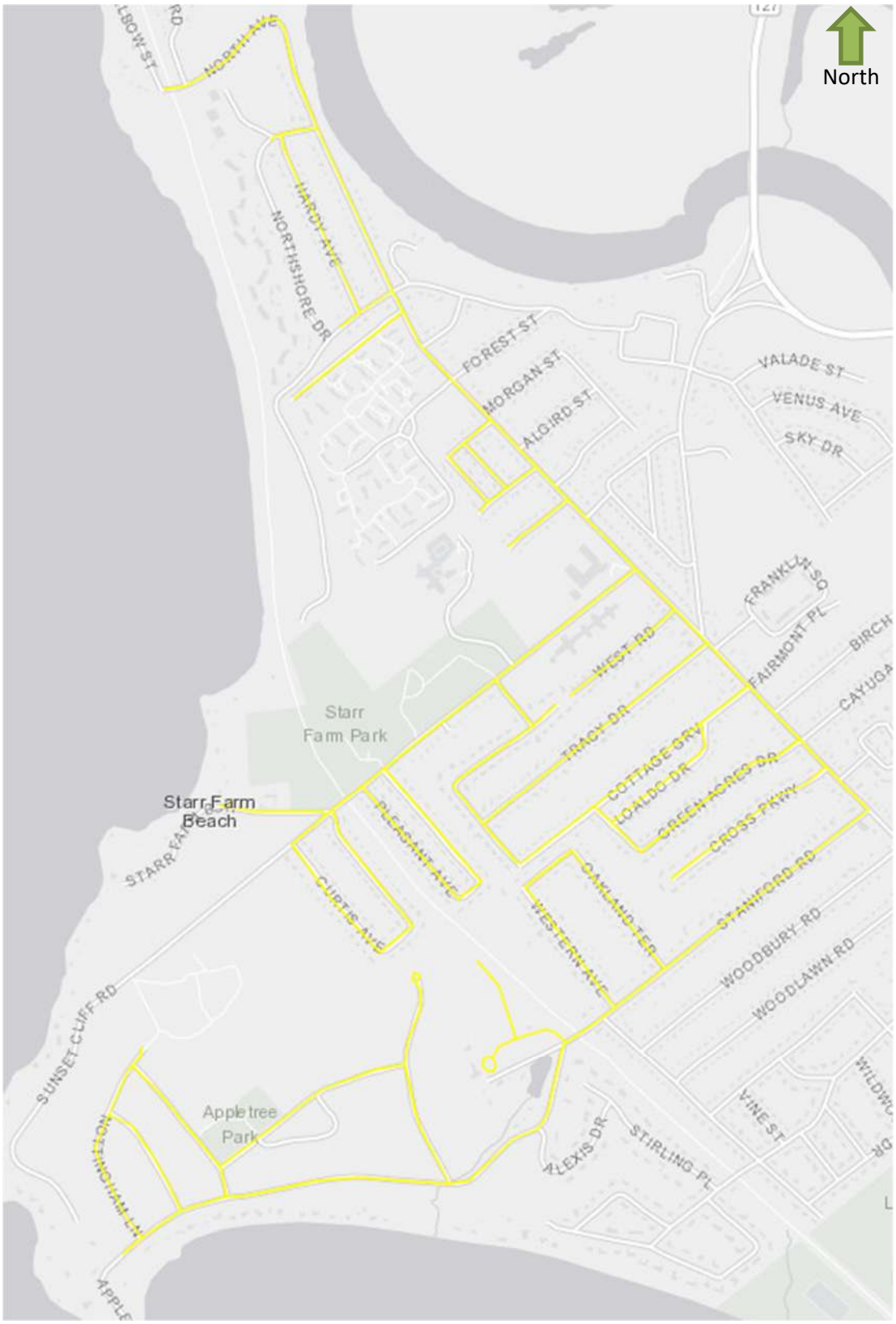
Plow Route #8

GMT Routes
North Ave



Plow Route #9

GMT Routes
North Ave
Bike Lanes
North Ave



BURLINGTON PUBLIC WORKS

SNOW AND ICE CONTROL PLAN

SNOW AND ICE CONTROL PLAN

The purpose of this plan is to define the operational procedures and best management practices (BMP's) for storing and utilizing snow and ice control materials, and for performing winter maintenance activities. It defines the level of service that Burlington Public Works will strive to provide on our 95 miles of streets, 130 miles of sidewalks, and 20.85 combined miles of bike lanes.

Since storms vary dramatically and occur during a variety of traffic conditions, this Snow and Ice Control Plan is intended to be flexible. It is a guide structured to fit average conditions, but able to accommodate the wide variety of conditions that will be encountered by maintenance crews who are working to maintain safe roads and conditions.

STORM WARNING NOTIFICATION

The Department of Public Works Right of Way uses multiple weather services available online, such as National Oceanic and Atmospheric Administration (NOAA) and the Weather Channel. DPW will issue storm related public service announcements via the local media, Facebook, Twitter, and any City website **http://www.burlingtonvt.gov/**

Text messages:
GovDelivery https://public.govdelivery.com/accounts/VTBURLINGTON/subscriber/new

Facebook: https://www.facebook.com/BTVDPW

Twitter: @btvdpw

Phone: 802-658-SNOW

Burlington Public Works has also invested in (4) traffic message boards stationed along key arterial roadways that will warn residents of any winter parking bans.

PERSONNEL SCHEDULING

Our Right of Way crew of (17) full time Street Maintenance Workers and approximately (2) seasonal employees, which may vary due to budgetary constraints, or availability of applicants, maintain the streets and sidewalks. Large storms may require around the clock coverage. This will require help from outside work groups and departments. The Street Maintenance Manager will secure volunteers during the normal workday and create a plan based on the available manpower and weather conditions. The plan will be reviewed by the Assistant Director - Maintenance Division before implementing.

MOBILIZATION

When the decision has been made to react to a storm, the Street Maintenance Manager will mobilize the crew. Since all trucks, tractors and routes are assigned, all the employees need is the call to deploy. If a storm event is predicted after normal business hours, the personnel will be put “on-call” per the union contract and the on-call employees will make themselves available by telephone. The department is aware that employees may have personal needs that may arise and may not be able to be “on call” at all times. If an employee has a personal issue, they may address it with their direct supervisor.

While DPW Street Maintenance is tasked specifically with the staffing for snow and ice control operations, the employees of the Fleet Maintenance group have a responsibility to assist with equipment repairs. Once the decision has been made to respond to a storm event, during normal working hours the street Maintenance Manager will notify the Fleet Manager. The Fleet Manager will then schedule his employees to provide maintenance assistance. After normal working hours, if the foreman in charge determines that the streets and sidewalks need to be plowed he will call the “on-call” maintenance team.

SNOW AND ICE CONTROL MATERIALS

Road salt (NaCl) is the primary snow and ice control material. The salt is normally purchased under the State of Vermont contract. FY20 the contract was awarded to Cargill; the local distributor is Barrett's Trucking in Burlington @ 863-1311. DPW uses approximately 4000tons of road salt per year. The Street Maintenance Manager is responsible for the ordering and inventory of the salt. The entire salt inventory is stored at 645 Pine Street. Liquids like magnesium chloride (MgCl2) and Promelt Magic Minus Zero are being used to reduce the amounts of salt needed to clear the roads. Safety Data Sheets (SDS) are available in a binder in every truck and in the SDS binder located in the Street Maintenance area. As a courtesy, Burlington property owners are permitted to take (1) 5-gallon bucket of salt per winter from the salt shed at 645 Pine St. when it does not interrupt the City's operations.

EQUIPMENT INSPECTION

WEEKLY VEHICLE CHECK SHEET

UNIT#:			UNIT HOURS:		UNIT MILES:			
DATE:			OPERATOR:					
		Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
Registration,ins card,vsi								
Engine oil level								
Coolant level								
Power steering fluid								
Washer fluid								
Brake fluid								
Trans fluid level								
Hyd oil level								
DOT pre trip inspection								

* VISUAL WALK AROUND OF VEHICLE FOR ANY DAMAGE SUCH AS DENTS, DINGS, BROKEN OR CRACKED GLASS

* NOTE ANY DAMAGE ON THIS SHEET AND ALSO REPORT TO MANAGER

*TIRE CONDITION AND AIR PRESSURE

*INSPECT RADIATOR FOR DEBRIS BLOCKING AIR FLOW. SEE EQM IF CLEANING NEEDED

*GREASE ALL APPLICABLE LUBE FITTINGS, DAILY IF REQUIRED.

*TOP OFF FUEL TANK AT END OF SHIFT. CHECK FUEL LEVEL BEFORE SHIFT

*CLEAN INTERIOR OF VEHICLE OF DEBRIS AND CLEAN . WASH EXTERIOR IF NEEDED.

*DRAIN AIR TANKS DAILY AT END OF SHIFT.

RECYCLING TRUCKS, EMPTY PACKER CLEAN OUTS DAILY AT END OF SHIFT

*TANKER TRUCKS, EMPTY AND WASHE DEBRIS BODY, PROP OPEN TO DRY OVERNIGHT

* SWEEPERS CHECK AND CLEAN AIR FILTERS DAILY. REPLACE IF NEEDED

*SWEEPERS CLEAN AND WASH DEBRIS BODY AND PROP OPEN TO DRY

* NOTIFY EQM OF ANY UNSAFE CONDITION AND REMOVE UNIT FROM SERVICE AND TAG OUT OF SERVICE.

All City equipment; to include all plow trucks, loaders, and sidewalk tractors will be operator level inspected before any snow operations. Immediately following a

storm on the next regular business day, all equipment will be cleaned, greased, fluids levels checked, and a proper preventive maintenance check per the manufactures operator manual. All deficiencies will be reported immediately to DPW Fleet Services.

EQUIPMENT CALIBRATION

Every November, all truck spreaders and computerized spreader controls will be calibrated with salt (NaCl) per the manufactures operation manual. After every storm event, each truck will have the mileage and pounds per lane mile recorded. This task will be assigned to a working foreman and one other street maintenance worker.

TRAINING OF PERSONNEL

Training is a key part to our snow plans success. All operators are properly trained before using any equipment utilizing operator manuals, manufacturers trainers, our in house trained employees, and on the job training. All employees will be able to properly operate, and maintain the equipment before actually plowing snow. Before the first snow storm, all operators will drive their route, getting familiar with obstacles such as high manholes, trees, narrow roads, mailboxes, etc. Any reported obstructions will be reported to the Right of Way Inspector for further action. Every truck has a binder with all route maps, bike routes, CCTA emergency routes, and the list of dead end roads.

SNOW ROUTE ASSIGNMENT

All operators will be assigned a route, whether it is in a truck or a sidewalk tractor. Continuity is important in assigning routes and equipment. Operators will learn the best way to battle snow and ice if they are doing the same streets every storm and will know areas that need special attention such as bridges, on and off ramps,

hills, curves, school zones, and bike lanes. The same with the equipment, the operators in the same truck or tractor will know how it handles and what the vehicles limits are.

The sizes of the routes are designed for the City's fleet of trucks and tractors. There are 10 large trucks, 1 small truck for dead ends and narrow streets, and 11 tractors. Of the 10 large trucks, 1 is a spare in case of a break down. With the 11 tractors, 2 are spares. Depending on the accumulation of snow, it could take an operator with a large truck approximately 5-7 hours to plow their route once. An operator on a sidewalk route will take approximately 6-7 hours to plow their route, if they are salting at the same time it will take 8-9 hours to complete once.

LOADING PROCEDURES

The loading of salt in all trucks will be by the oldest available loader in the fleet. The operation will be conducted by qualified City employees only. The trucks will be loaded to their max GVWR and not overloaded. The loader will have operator level preventive maintenance after every storm event and all loading procedures will be supervised by an assigned working foreman.

SALTING AND PLOWING PROCEDURES

Salting Operations

Streets will be salted during light storms where minor accumulations of snow are expected. This requires the use of 6 large trucks that will salt the primary streets with priorities going to the routes coming into and exiting

the City, primary roads leading into neighborhoods, school zones, downtown, intersections, and bike lanes. Not every street is salted unless there is a prediction of ice.

Plowing Operations

Plowing of the streets is the same regardless of the amount of snow predicted. The City owns (10) large plow trucks with (1) being used as a spare in case of break down and (1) small truck for dead ends and narrow streets. We can add plows to (1) front end loader for additional help in major storms.

The (9) large plow trucks are assigned a route and each route starts with its primary street, leading to its secondary main, and then into the neighborhood streets. (Truck route maps appendix B.) The (1) small plow truck is assigned a list of narrow and dead end streets. (Narrow and dead street list appendix B.)

Sidewalk Plowing and salting

There are (9) sidewalk routes and are plowed during the day concurrently with street, and bike lane plowing. Extra attention is given to the downtown, Old North End, areas around schools and school crossing guard locations.

During a night time snow push back or any night time plowing operation, sidewalk plowing usually starts around 3 a.m. so that the sidewalks are open when school begins. This time could vary depending on the size of the storm.

If the storm exceeds 12” of snow and there are snow banks along the sidewalk, we will have to snow blow every sidewalk. This will take considerable time and manpower. This operation could take up to 24 hours or more. Again the priorities are downtown, Old North End, and school zones. We normally have many equipment failures while snow blowing, so having fleet services available is key.

We routinely plow, scrape, and sometimes salt the sidewalks during the day to maintain a safe environment.

Accessibility (Handicapped) Parking Spaces

Burlington has a large amount of handicapped parking spaces that must be cleared of snow. This will take place once the streets and sidewalks have been cleared. After the storm, the department will start clearing the spaces starting from the downtown, working their way to the outskirts of the city. With the limited amount of manpower available it may take many days before all spaces can be cleared of snow. If a resident has a particular handicap parking space that needs immediate attention, please call DPW Customer Service @ 863-9094.

Bike lanes

Burlington currently has 18 miles of bike lanes (curbside, defined by paint only), .85 miles of protected bike lanes, and 2 miles of shared use paths.. They are located on residential, and main arterial roads, and the bike lane

will be plowed to the curb. DPW will dispatch a sidewalk tractor to clean the protected bike lanes of snow and salt. All unprotected bike lanes will be plowed utilizing city plow trucks in the corresponding plow route, and when plowing is complete a sidewalk tractor will clean and salt the bike lane as needed. When accumulated snow reaches levels that impact the City's ability to keep the bike lanes properly cleared, we will post the street for no parking in that area if needed, and perform snow removal operations. (Appendix A)

GMT Bus Routes

Burlington is a major hub for public transportation. Many of the priority routes are also major routes for the GMT public transportation system. The operators are familiar with their routes and understand the importance of the public transportation system. We routinely review the routes with the DPW Drivers. GMT passenger facilities (bus stops and shelters) are maintained by GMT and not the City of Burlington.

Performance Capabilities

As stated earlier, Burlington has 95 miles of roads, 130 miles of sidewalks, and 20.85 combined miles of bike lanes. During the average year we receive 80 inches of snow. Of course this is only an average and what really matters is when it falls, and how many snow events we have to deal with. Generally speaking, the length of the storm rather than the amount of snow determines how we deal with it. Our plans are built around these capabilities.

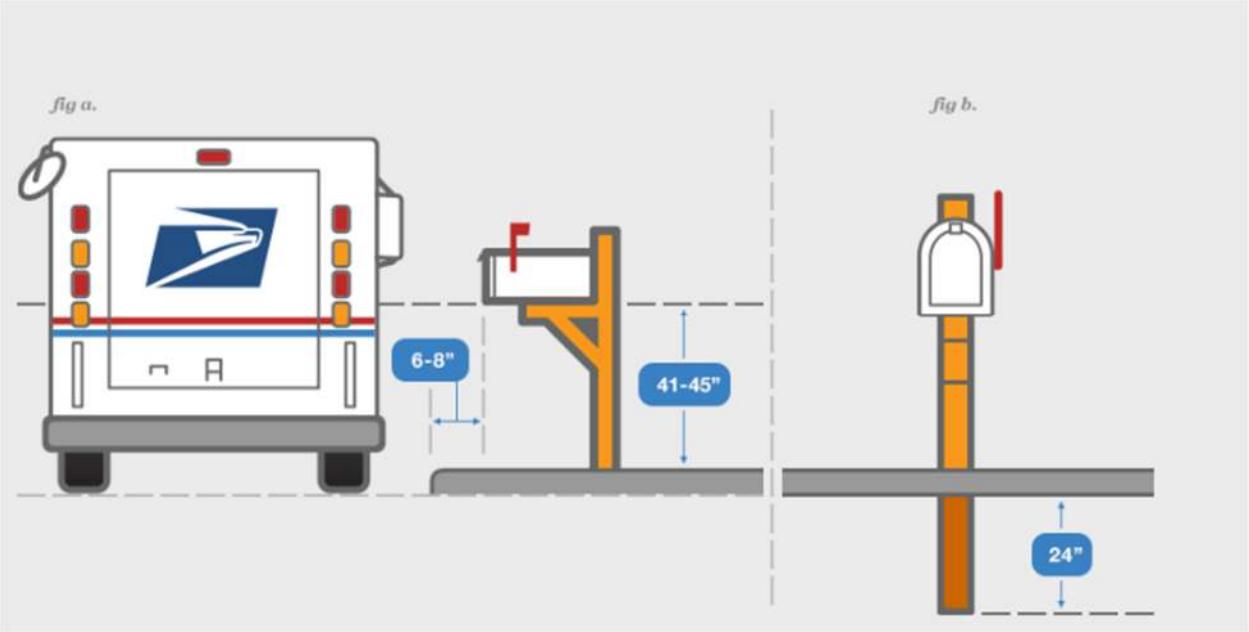
Street plowing routes	**10**
Hours to plow every street once	**5 to 7**
Hours to salt all streets @ 500 lbs. mile	**4**
Sidewalk plow routes	**9**
Hours to plow every sidewalk once	**8**
Hours to snow blow every sidewalk once (depending on depth and weight of snow)	**24 - 30**
Hours to salt every sidewalk	**12**

SNOW STORAGE

Snow removed from the City streets, greenbelts, parking lots, and parking meter spaces will be stored at 702 Lake Street in Burlington. This area is for the storage of City removed snow and not for any private contractor, unless contracted by a City department. This site is a former oil tank farm near the waterfront and has been an ideal storage area as the berm keeps contaminants from reaching the lake. This storage area will be cleaned of any trash and debris every spring.

SNOW OPERATION DAMAGES

1. **Mailboxes and other structures within the Right-of-Way**
   Occasionally mailboxes and other property may be damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight /volume of snow being plowed. The damage is not deliberate and in most cases unavoidable. Burlington Public Works is not responsible for damage and does not repair, replace or re-erect mailboxes that are located within the right-of-way unless physically struck by a DPW plow truck. In these cases, the property owner shall submit a claim to the City for reimbursement. All mailboxes must be installed to the USPS standards.



Many residents have basketball nets in the right of way, these not only interfere with plowing to the curb, but during inclement weather the plow operator may not see the basketball net and damage the basketball net and City equipment. The City will not be responsible for any damages to basketball nets within the right of way. If any basketball nets are found in the right of way, the DPW Excavation Inspector will be notified and will have it removed.

While removing the snow from the sidewalks we find many fences, borders and decorative landscaping close to the sidewalk. This presents quite a challenge for the department to operate the tractors safely. We ask that all landscaping be built at least 12" from the sidewalk in order to minimize damage to private and city property. Burlington Public Works will not be responsible for any damages to landscaping or fences that are within 12" of the sidewalk. All reported damage will be inspected by our Right of Way Inspector, and if the inspection finds the City responsible, an insurance claim will be made with our agent.

2. **Plantings in the right of way**

   Snow removal from the streets and sidewalks are a challenging task and there are many obstacles that the operators have to maneuver around, and the major items being trees and shrubs. While great care is taken not to damage the tree or shrubbery, the property owner must maintain the vegetation so it does not impede the right of way. While the City equipment may damage the vegetation, the trees and shrubbery may also damage the equipment. **The department will not be responsible for any damage to any plantings encroaching on the right of way.**

3. **Accident Protocol**

   Plowing snow in a large truck with a wing plow takes a special skill. Public Works employees are highly skilled and properly trained before they operate any commercial vehicle. Vehicle accidents will happen, and when they do, the following must happen:

   a. Stop vehicle in a safe area.
   b. Check all people involved for injuries. Call 911 if needed.
   c. The DPW employee will call their supervisor either by cell phone or by 2-way radio and inform him of the situation.
   d. Supervisor will call the Burlington Police Department. A police report will be taken, the DPW employee will receive a copy of the report, if the report is not available, you are required to obtain the incident number.
   e. If the vehicle is able to be driven, it must report to DPW Fleet Services for an evaluation before continuing on with snow plow operations.
   f. All accidents must be reported to the Assistant Director – Maintenance Division and the insurance company. The Assistant Director will report all the proper information on the Travelers Insurance Portal.

PARKING LIMITATIONS

Burlington does not have a seasonal parking ban like most towns in our region. It is the responsibility of the Public Works Director to declare a winter parking ban. Parking bans are declared on a case by case basis. Criteria for a parking ban include length of storm, amount of snow during the storm and how much snow is already on the streets and has not been plowed to the curb. By City ordinance **20-56** the ban must be declared by 3p.m. in order to be in effect by 10 p.m. that evening until 8 a.m. the following morning, except in Zone F (downtown zone) where the ban is in effect from midnight until 6 a.m. In other cases, where snow needs to be removed from the City right of way, the City will do so by posting the street for no parking either with signage or by bagging meters. During this time there will be no parking in accordance to the date and times stated on the sign, or meter bag.

Parking Ban Notification

Parking bans are warned in the following manner:

1. Using the City parking ban light system

2. Sending a press release to local radio and television stations, and print outlets

3. Posting alerts on social media, including Facebook & Twitter

4. Sending out text messages and e-mails via GovDelivery. BPD currently also uses the VT Alert system to send text, auto-call and email notifications.

5. An up to date recording on 658-SNOW

Once the Director calls a ban, the street maintenance foreman will notify the parking enforcement supervisor, who is responsible for the enforcement of the winter parking ban. Second, he will activate up to 90 plus flashing parking ban lights. These lights are located at the entrances of the City, important intersections, and throughout the City's neighborhoods. They are a visual warning to the residents that a parking ban is in effect.

The DPW Foreman in charge of the plowing crew will meet with the parking enforcement crew at 9:30 p.m. at the police department to review and cover any last details.

Vehicles must be off of the streets during these hours if a ban is declared or they will be towed. While parking bans make it easier to plow snow, it is difficult for some people to find alternative parking. DPW does offer free parking in the City owned parking garages as an option. Parking is available in the Marketplace and the Cherry St Parking Garages on the lower decks only. Vehicles must be removed by 7:30 am or they will be charged the full day's rate**.** Additional information can be found at http://www.burlingtonvt.gov/.

While a winter parking ban is not called for every storm, if residents have access to off street parking, we urge them to use it. Additional information can be found at http://www.burlingtonvt.gov/dpw/parking/winter-parking

The City currently has 3 designated tow areas.

Lake St. Extension: Vehicles towed from the Old North End and west of Willard St. from Pearl St. to Maple St.

Gosse Court, North Ave to the end: Vehicles towed from the New North End.

Oakledge Park parking lot: Vehicles towed from the south end and west of Willard St. from Maple St. south.

When the lots are full, vehicles found on the street could also be towed to the nearest street the Public Works Department designates as a drop-off point. This would be a street that has been cleared of snow. For car owners to find their vehicle, please call (802) 540-2380.

AFTER STORM RESPONSIBILITIES

It is expected that 12 hours after a snow storm that every City street will have been plowed. The Street Maintenance Foreman will inspect every City street to ensure that the streets are cleared and passable. The department will continue to patrol the streets and maintain them to be safe and passible. It is possible that the downtown and some narrow streets may have to have the snow removed. If this service is needed, it will happen approximately 2-3 days after the storm using City owned equipment. Snow removal downtown usually happens in the early morning hours. For the narrow streets, dead end streets, and bike lanes we will post the streets for "no parking" and remove the snow during the day.

SNOW RELATED CITY ORDINANCES

27-84 Throwing snow into street prohibited.

No person shall throw or put, or cause to be thrown or put, snow or ice in the part of the street known as the travel portion nor on a sidewalk of a street.

(Rev. Ords. 1962, § 4303; 1969 Cum. Supp., § 4303)

27-2 Enclosing highway; erecting fence or encroachment; nuisance.

No person shall enclose a part of the highway or street, or erect a fence, building or other encroachment, or make obstructions, or create a nuisance on a highway or street, or continue such enclosure, fence, building, encroachment or nuisance on a highway or street.

(Rev. Ords. 1962, § 4209)

Appendix A Bike Lanes

Bike Lanes / Buffered Bike Lanes	Start / End	Bike Lane/Facility Width
Austin Dr north/east	Queen City Park Rd to Red Rocks	5'
Austin Dr south/west	Queen City Park Rd to Red Rocks	5'
Colchester Ave westbound	Mill St to Prospect St	5'/6'
Colchester Ave eastbound	Prospect St to East Ave	
Colchester Ave eastbound	Greenmount Cemetery to Mill St	5'/6'
College St eastbound	Union St to S. Prospect St	4'
East Ave southbound	Colchester Ave to Carrigan Dr	4'
Ethan Allen Parkway eastbound	North Ave to Farrington Pkwy	6.5' with buffer
Flynn Ave westbound	Pine St to Briggs St	6'
Flynn Ave eastbound	Briggs St to Shelburne St	5'/6'
Riverside Ave eastbound	N. Prospect St to Salmon Hole	
Riverside Ave westbound	Salmon Hole to N. Prospect St	
Main St eastbound	University Heights to Spear St	4'
Main St westbound	Spear St to University Heights	4'
Winooski Ave southbound	Decatur St to Pearl St	7'
Winooski Ave southbound	Maple St to Howard St	
Winooski Ave northbound	Howard St to Maple St	
North Ave northbound	Sherman St to Plattsburg Ave	6'
North Ave southbound	Plattsburg Ave to Berry St	
Park St southbound	North St to Sherman St	5'
Park St northbound	Pearl St to Sherman St	5'
North Champlain St northbound	Pearl St to Manhattan Dr	5'
Pine St southbound	Main St to Home Ave	5'

Pine St northbound	Home Ave to Locust St	5'
Willard St northbound	Cliff St to Maple St	
Willard St southbound	North St to Maple St	5'
Pearl St eastbound	Battery St to Prospect St	5'
Pearl St westbound	Winooski Ave to Battery St	5'
Mansfield Ave northbound	Colchester Ave to North St	
Sherman St eastbound	Park St to N Champlain St	5'
QB Separated Bike Lanes		
Union St northbound	Main St to Winooski Ave	6'
Elmwood Ave northbound & southbound	Grant St to Peru St	5'
North Champlain 2-way on east side	Sherman St to Peru St	8'
North Ave northbound	south of Rt 127 intersection	5'
Sherman St	Park St to North Ave	6'
Neighborhood Greenways		
ONE Greenway	Mansfield Ave to Sherman St	N/A
Advisory Lanes		
Flynn Ave westbound	Lake Forest Dr to Oakledge Park	5'
Flynn Ave eastbound	Oakledge Park to Lake Forest Dr	5'
Shared Lanes		
Colchester Ave both directions		N/A
Flynn Ave westbound	Shelburne Rd to Pine St	N/A
Pine St northbound	Locust St to Maple St(?)	N/A
Mansfield Ave southbound	North St to Colchester Ave	N/A
Winooski Ave northbound	Decatur St to Riverside Ave	N/A
Winooski Ave southbound	Riversie Ave to Decatur St	N/A
College St westbound	Prospect St to Union St	N/A
Pearl St westbound	Prospect St to S Winooski Ave	N/A
Shared Use Paths		
Riverside Ave	Winooski Ave to Mill St	8'
Colchester Ave	Mansfield Ave to East Ave	8'
Main St		12'
Parkway		9'

Appendix B – Narrow and Dead End Street List

DEAD END AND NARROW STREETS

MAIN ST AND SOUTH END	**CROSS ROAD AND SPECIAL DIRECTIONS**
ADAMS CT	SHELBURNE RD, **AT LEFT TURN, CLEAN RIGHT SIDE DRIVEWAY ENTRANCE**
LUDWIG CT	HOOVER ST, **BACKDRAG AND PLOW ACROSS HOOVER ST**
REDSTONE TERR	HOOVER ST
ALFRED ST	SHELBURNE RD
PEROTTA PL	HOOVER ST
GOVE CT	SHELBURNE RD
GOLDEN PL	HOWARD ST
SPRUCE CT	SPRUCE ST
ELM TERR	S. WINOOSKI AVE
BROWNS CT	KING ST
BEECH ST	WILLARD AND SOUTH UNION
KINGSLAND TERR	SOUTH UNION
UNIVERSITY TERR	MAIN ST, **BACKDRAG AND PLOW OUT**
PINE PLACE	PINE ST, **NO SIDEWALK, SALT AND CLEAN WELL**
LEDGEMERE ST	MARIAN ST
CATHERINE ST	LOCUST AND ST. PAUL

MAIN ST TO MANHATTEN DR

THIBAULT PKWY	COLCHESTER AVE
NASH PLACE	COLCHESTER AVE
LATHAM COURT	COLCHESTER AVE
CALARCO CT	COLCHESTER AVE
COLCHESTER CT	COLCHESTER AVE
CHASE LANE	CHASE ST
RUMSEY LANE	CHASE ST
CHASE ST	BARRETT ST, **BACK DRAG END OF ST**.
VERMONT PARK	HILLSIDE TERR, RIVERSIDE AVE
HYDE ST	ARCHIBALD ST
GERMAIN ST	ARCHIBALD ST
CHARLES ST	NORTH WILLARD
RUSSELL ST	NORTH WILLARD

CONVERSE COURT	HICKOK PL
LAFAYETTE PL	PEARL ST
ORCHARD TERR	BUELL ST
CLOAREC CT	INTRVALE AVE
ALLEN ST	ELMWOOD AVE
MYTRLE ST	PARK ST
POPLAR ST	NORTH CHAMPLAIN ST
CROWLEY ST	NORTH AVE
SUNSET CT	NORTH AVE
VOLTZ ST	MANHATTEN DR

OVER →

NEW NORTH END	**CROSS ROADS AND SPECIAL INSTRUCTIONS**
POIRIER PL	NORTH AVE, **BACK DRAG END OF STREET AND PLOW OUT**
PLATTSBURG AVE EXT (GRIT PIT RD)	PLATTSBURG AVE, **PLOW PAST THE LAST HOUSE**
RIVERVIEW DR (CAMP DAISY RD)	NOTHVIEW DR
NORTH COVE ROADS (2)	NORTH AVE EXTENSION, **RIGHT BRANCH OF ROAD NEEDS TO PLOWED OUT**
APPLETREE PT ROAD	**DIRT ROAD, PLOW TO THE END**
SUNSET CLIFF RD	**DIRT ROAD, PLOW TO END**
LORI LANE	**ONLY PLOW ROTARY ON LEFT SIDE**
WEST ST	NORTH AVE

ALL STREETS ON THIS LIST WILL BE INSPECTED BY THE STREET MAINTENCE FORMAN AFTER THE STORM.

Plow Route #1

Areas to pay close attention to
Ledge Rd
Fern Hill (N Prospect)
Maple St
Cliff St
GMT Routes
Maple St
Cliff St
Prospect St
Bike Lanes
N/S Willard St

Plow Route #2

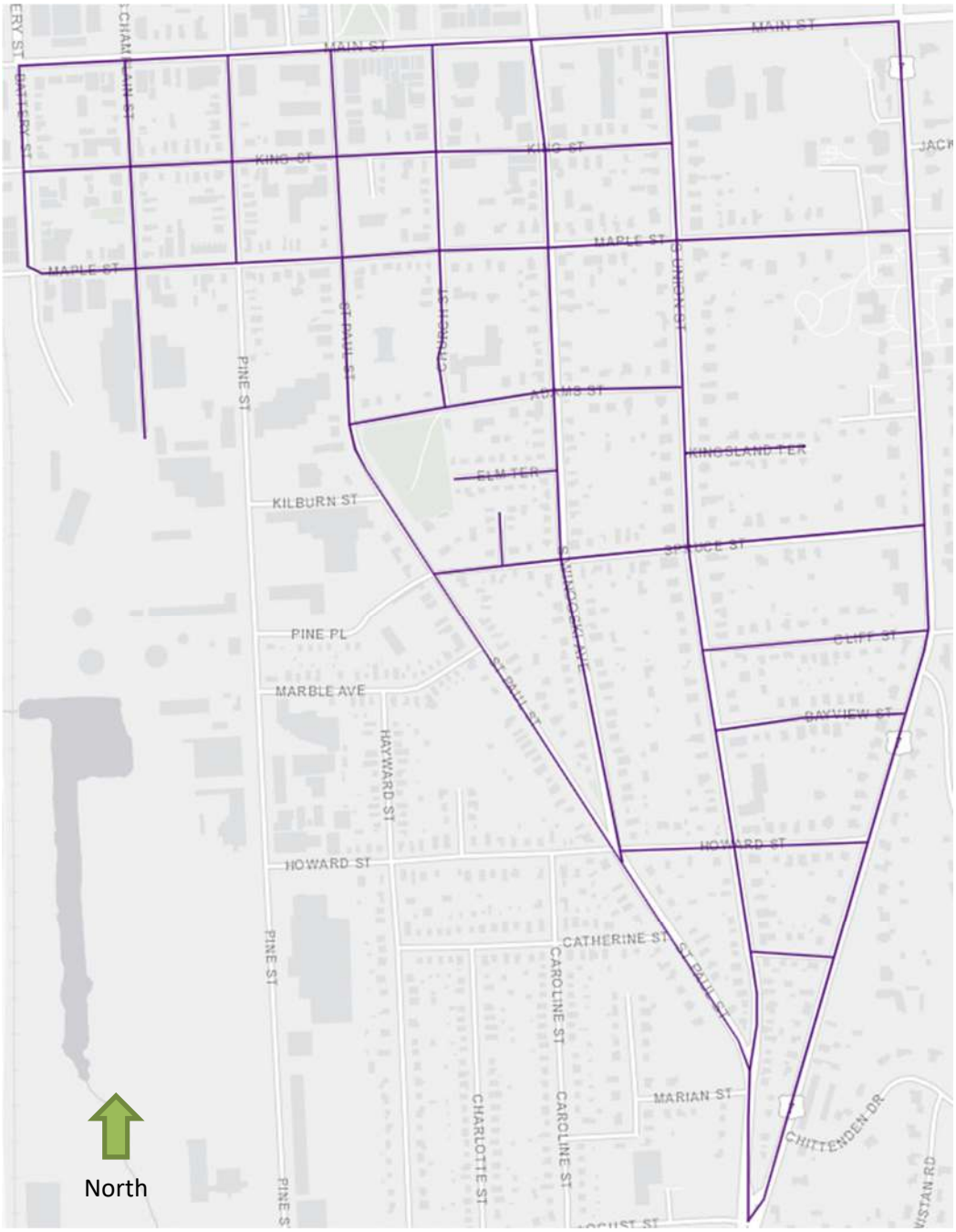
GMT Routes
Cherry St
Pearl St
Main St
North St
Colchester Ave
Battery St
Elmwood Ave
Grant St
N Winooski Ave
Bike Lanes
S Winooski Ave
N Union St
N Winooski Ave
N Willard St
Mansfield Ave
Pearl St
Colchester Ave
East Ave
College St

Plow Route #3

GMT Routes
Pine St
Shelburne St
Industrial Pkwy
Howard St
Bike Lanes
Pine St Main – Home
Flynn Ave
Austin Dr

Plow Route #4

GMT Routes
Main St
Maple St
Cliff St
Kilburn St
S Union St
St Paul St
Howard St
Bike Lanes
S Winooski Ave
S Union St
S Willard St

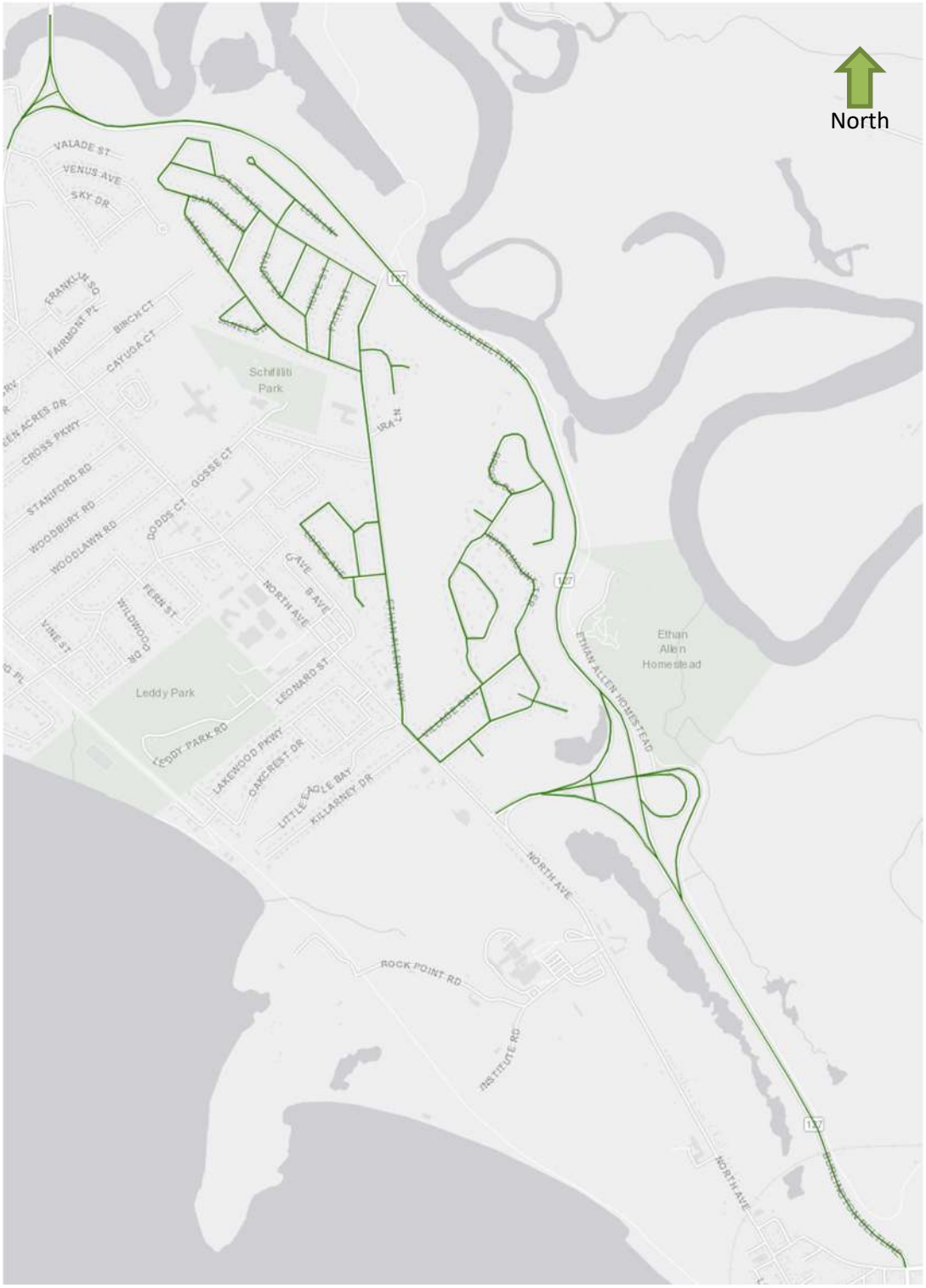


Plow Route #5

GMT Routes
North Ave
Riverside Ave
Colchester Ave
Bike Lanes
North Willard St
Colchester Ave
Riverside Ave

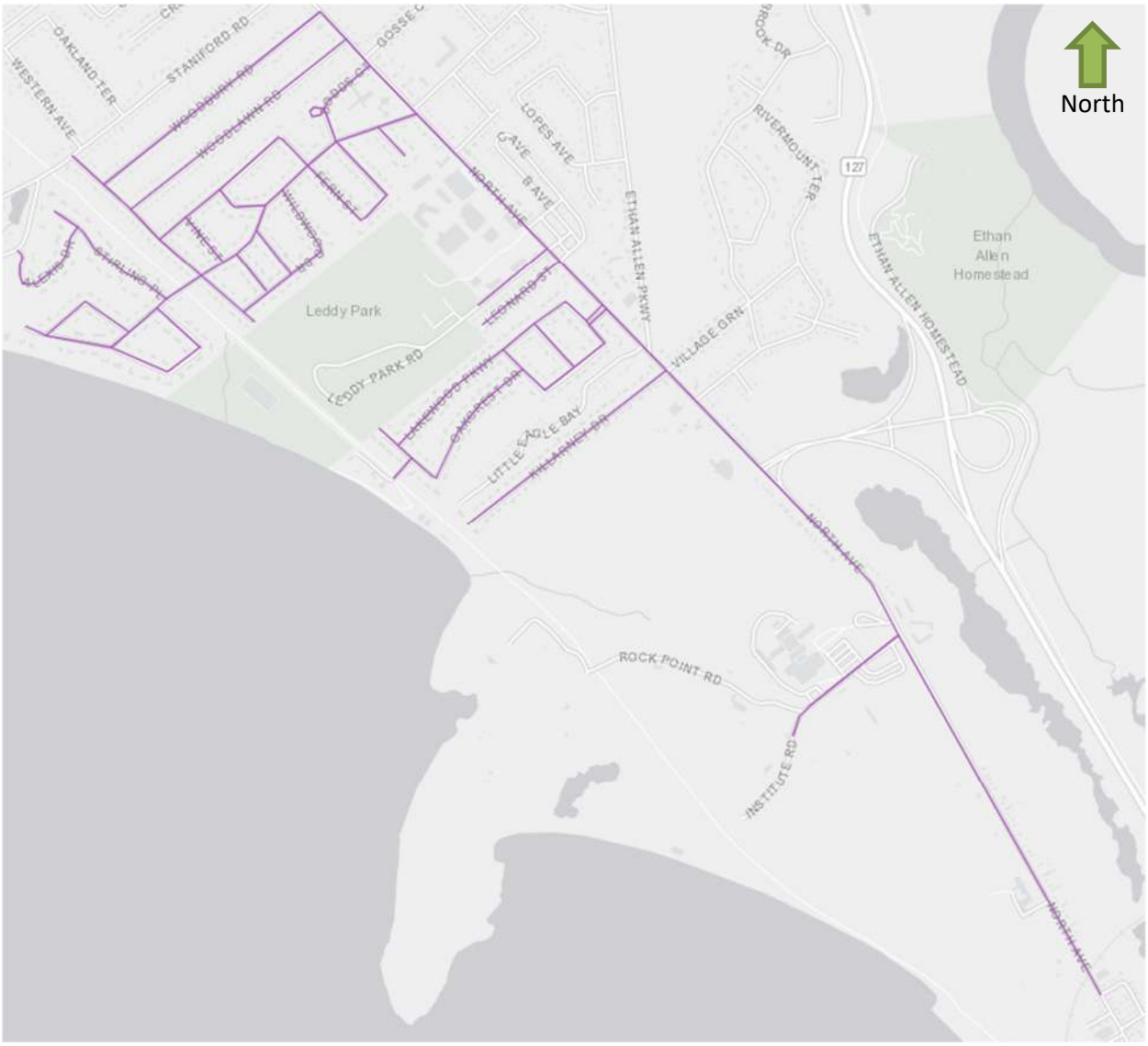
Plow Route #6

GMT Routes
North Ave
Bike Lanes
North Ave



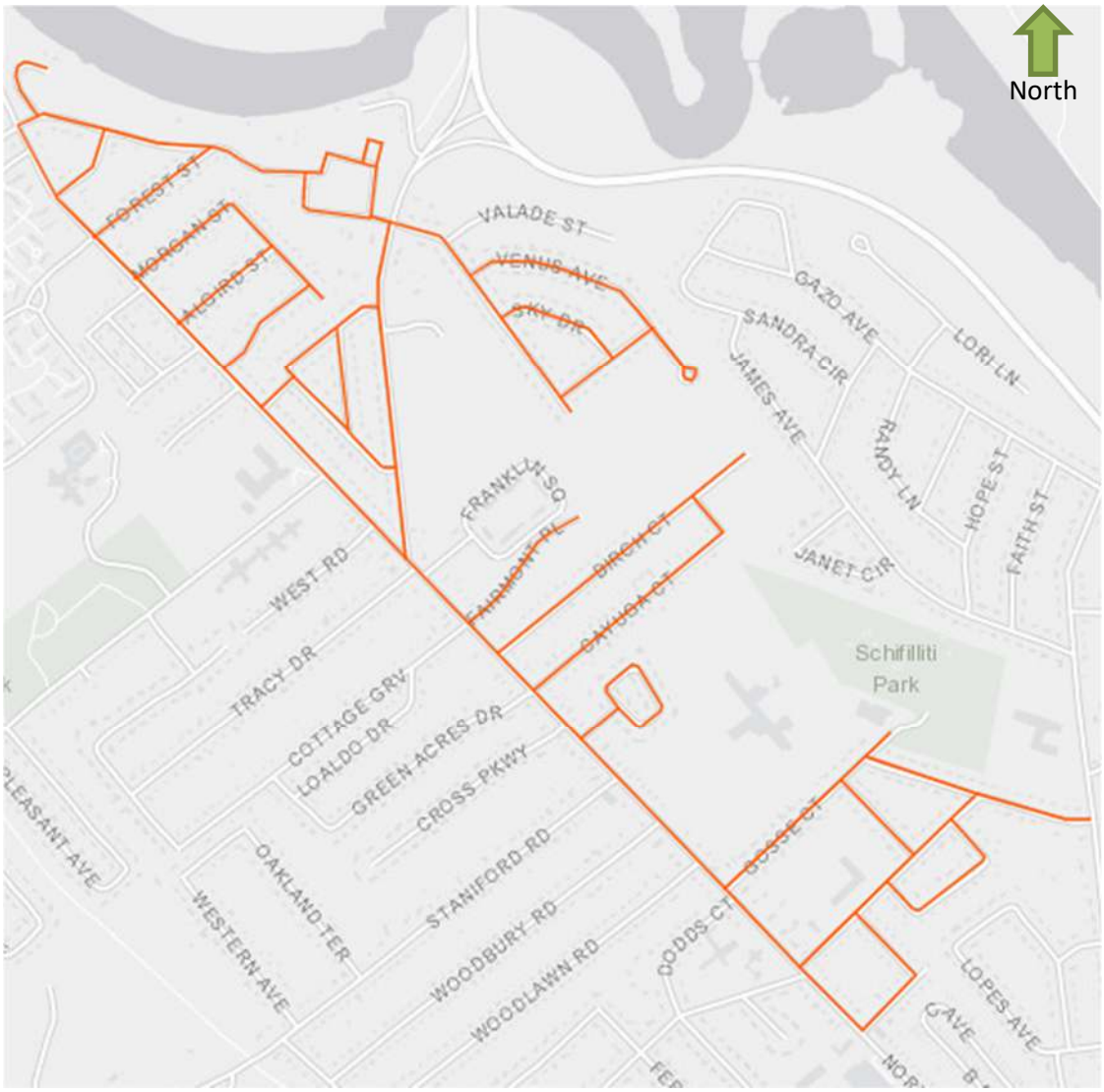
Plow Route #7

GMT Routes
North Ave
Bike Lanes
North Ave



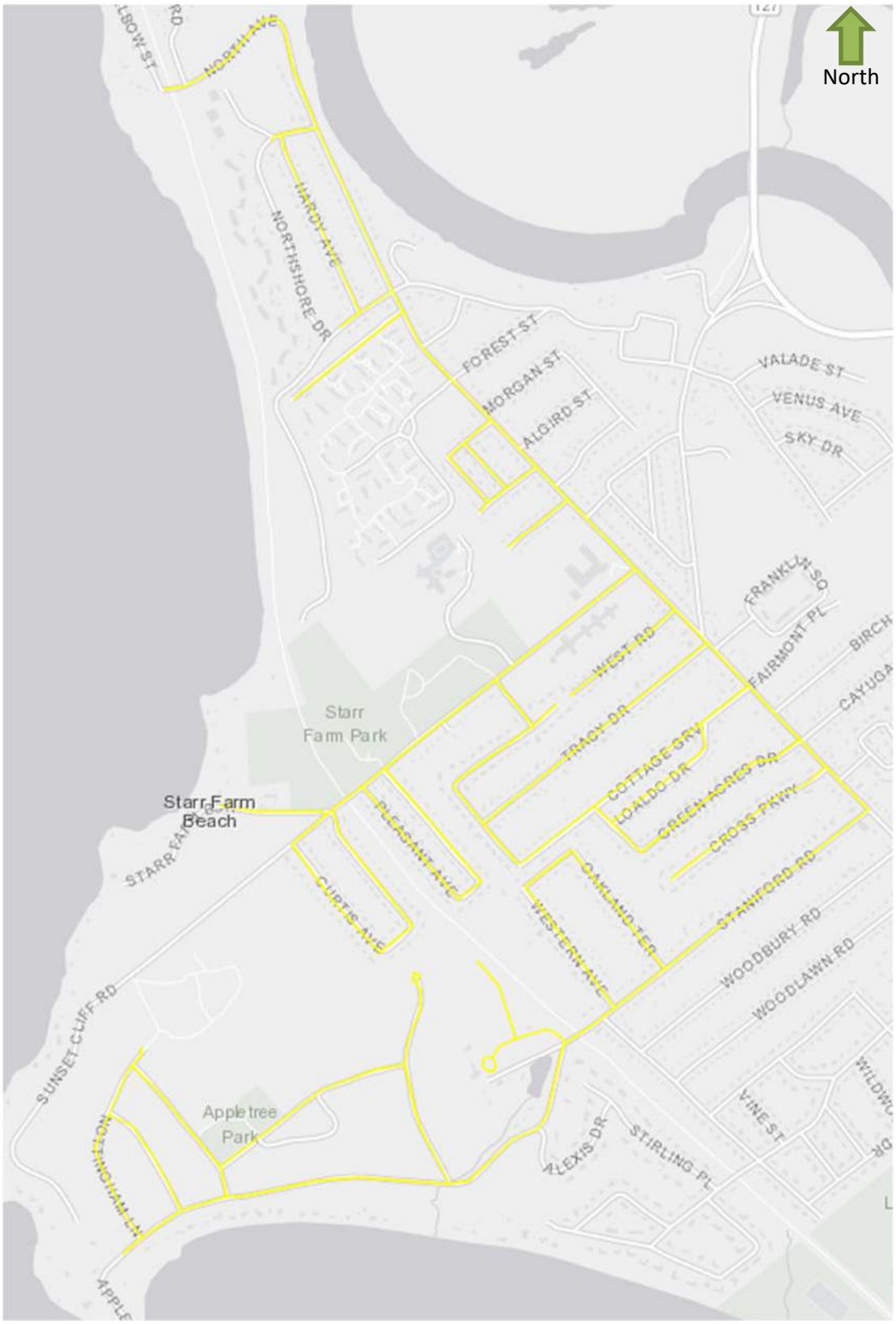
Plow Route #8

GMT Routes
North Ave



Plow Route #9

GMT Routes
North Ave
Bike Lanes
North Ave



BURLINGTON PUBLIC WORKS

SNOW AND ICE CONTROL PLAN

SNOW AND ICE CONTROL PLAN

The purpose of this plan is to define the operational procedures and best management practices (BMP's) for storing and utilizing snow and ice control materials, and for performing winter maintenance activities. It defines the level of service that Burlington Public Works will strive to provide on our 95 miles of streets, 130 miles of sidewalks, and 20.85 combined miles of bike lanes.

Since storms vary dramatically and occur during a variety of traffic conditions, this Snow and Ice Control Plan is intended to be flexible. It is a guide structured to fit average conditions, but able to accommodate the wide variety of conditions that will be encountered by maintenance crews who are working to maintain safe roads and conditions.

STORM WARNING NOTIFICATION

The Department of Public Works Right of Way uses multiple weather services available online, such as National Oceanic and Atmospheric Administration (NOAA) and the Weather Channel. DPW will issue storm related public service announcements via the local media, Facebook, Twitter, and any City website **http://www.burlingtonvt.gov/**

Text messages:
GovDelivery https://public.govdelivery.com/accounts/VTBURLINGTON/subscriber/new

Facebook: https://www.facebook.com/BTVDPW

Twitter: @btvdpw

Phone: 802-658-SNOW

Burlington Public Works has also invested in (4) traffic message boards stationed along key arterial roadways that will warn residents of any winter parking bans.

PERSONNEL SCHEDULING

Our Right of Way crew of (17) full time Street Maintenance Workers and approximately (2) seasonal employees, which may vary due to budgetary constraints, or availability of applicants, maintain the streets and sidewalks. Large storms may require around the clock coverage. This will require help from outside work groups and departments. The Street Maintenance Manager will secure volunteers during the normal workday and create a plan based on the available manpower and weather conditions. The plan will be reviewed by the Assistant Director - Maintenance Division before implementing.

MOBILIZATION

When the decision has been made to react to a storm, the Street Maintenance Manager will mobilize the crew. Since all trucks, tractors and routes are assigned, all the employees need is the call to deploy. If a storm event is predicted after normal business hours, the personnel will be put “on-call” per the union contract and the on-call employees will make themselves available by telephone. The department is aware that employees may have personal needs that may arise and may not be able to be “on call” at all times. If an employee has a personal issue, they may address it with their direct supervisor.

While DPW Street Maintenance is tasked specifically with the staffing for snow and ice control operations, the employees of the Fleet Maintenance group have a responsibility to assist with equipment repairs. Once the decision has been made to respond to a storm event, during normal working hours the street Maintenance Manager will notify the Fleet Manager. The Fleet Manager will then schedule his employees to provide maintenance assistance. After normal working hours, if the foreman in charge determines that the streets and sidewalks need to be plowed he will call the “on-call” maintenance team.

SNOW AND ICE CONTROL MATERIALS

Road salt (NaCl) is the primary snow and ice control material. The salt is normally purchased under the State of Vermont contract. FY20 the contract was awarded to Cargill; the local distributor is Barrett's Trucking in Burlington @ 863-1311. DPW uses approximately 4000tons of road salt per year. The Street Maintenance Manager is responsible for the ordering and inventory of the salt. The entire salt inventory is stored at 645 Pine Street. Liquids like magnesium chloride (MgCl2) and Promelt Magic Minus Zero are being used to reduce the amounts of salt needed to clear the roads. Safety Data Sheets (SDS) are available in a binder in every truck and in the SDS binder located in the Street Maintenance area. As a courtesy, Burlington property owners are permitted to take (1) 5-gallon bucket of salt per winter from the salt shed at 645 Pine St. when it does not interrupt the City's operations.

EQUIPMENT INSPECTION

WEEKLY VEHICLE CHECK SHEET

UNIT#:			UNIT HOURS:		UNIT MILES:			
DATE:			OPERATOR:					
		Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
Registration,ins card,vsi								
Engine oil level								
Coolant level								
Power steering fluid								
Washer fluid								
Brake fluid								
Trans fluid level								
Hyd oil level								
DOT pre trip inspection								

* VISUAL WALK AROUND OF VEHICLE FOR ANY DAMAGE SUCH AS DENTS, DINGS, BROKEN OR CRACKED GLASS

* NOTE ANY DAMAGE ON THIS SHEET AND ALSO REPORT TO MANAGER

*TIRE CONDITION AND AIR PRESSURE

*INSPECT RADIATOR FOR DEBRIS BLOCKING AIR FLOW. SEE EQM IF CLEANING NEEDED

*GREASE ALL APPLICABLE LUBE FITTINGS, DAILY IF REQUIRED.

*TOP OFF FUEL TANK AT END OF SHIFT. CHECK FUEL LEVEL BEFORE SHIFT

*CLEAN INTERIOR OF VEHICLE OF DEBRIS AND CLEAN . WASH EXTERIOR IF NEEDED.

*DRAIN AIR TANKS DAILY AT END OF SHIFT.

RECYCLING TRUCKS, EMPTY PACKER CLEAN OUTS DAILY AT END OF SHIFT

*TANKER TRUCKS, EMPTY AND WASHE DEBRIS BODY, PROP OPEN TO DRY OVERNIGHT

* SWEEPERS CHECK AND CLEAN AIR FILTERS DAILY. REPLACE IF NEEDED

*SWEEPERS CLEAN AND WASH DEBRIS BODY AND PROP OPEN TO DRY

* NOTIFY EQM OF ANY UNSAFE CONDITION AND REMOVE UNIT FROM SERVICE AND TAG OUT OF SERVICE.

All City equipment; to include all plow trucks, loaders, and sidewalk tractors will be operator level inspected before any snow operations. Immediately following a

storm on the next regular business day, all equipment will be cleaned, greased, fluids levels checked, and a proper preventive maintenance check per the manufactures operator manual. All deficiencies will be reported immediately to DPW Fleet Services.

EQUIPMENT CALIBRATION

Every November, all truck spreaders and computerized spreader controls will be calibrated with salt (NaCl) per the manufactures operation manual. After every storm event, each truck will have the mileage and pounds per lane mile recorded. This task will be assigned to a working foreman and one other street maintenance worker.

TRAINING OF PERSONNEL

Training is a key part to our snow plans success. All operators are properly trained before using any equipment utilizing operator manuals, manufacturers trainers, our in house trained employees, and on the job training. All employees will be able to properly operate, and maintain the equipment before actually plowing snow. Before the first snow storm, all operators will drive their route, getting familiar with obstacles such as high manholes, trees, narrow roads, mailboxes, etc. Any reported obstructions will be reported to the Right of Way Inspector for further action. Every truck has a binder with all route maps, bike routes, CCTA emergency routes, and the list of dead end roads.

SNOW ROUTE ASSIGNMENT

All operators will be assigned a route, whether it is in a truck or a sidewalk tractor. Continuity is important in assigning routes and equipment. Operators will learn the best way to battle snow and ice if they are doing the same streets every storm and will know areas that need special attention such as bridges, on and off ramps,

hills, curves, school zones, and bike lanes. The same with the equipment, the operators in the same truck or tractor will know how it handles and what the vehicles limits are.

The sizes of the routes are designed for the City's fleet of trucks and tractors. There are 10 large trucks, 1 small truck for dead ends and narrow streets, and 11 tractors. Of the 10 large trucks, 1 is a spare in case of a break down. With the 11 tractors, 2 are spares. Depending on the accumulation of snow, it could take an operator with a large truck approximately 5-7 hours to plow their route once. An operator on a sidewalk route will take approximately 6-7 hours to plow their route, if they are salting at the same time it will take 8-9 hours to complete once.

LOADING PROCEDURES

The loading of salt in all trucks will be by the oldest available loader in the fleet. The operation will be conducted by qualified City employees only. The trucks will be loaded to their max GVWR and not overloaded. The loader will have operator level preventive maintenance after every storm event and all loading procedures will be supervised by an assigned working foreman.

SALTING AND PLOWING PROCEDURES

Salting Operations

Streets will be salted during light storms where minor accumulations of snow are expected. This requires the use of 6 large trucks that will salt the primary streets with priorities going to the routes coming into and exiting

the City, primary roads leading into neighborhoods, school zones, downtown, intersections, and bike lanes. Not every street is salted unless there is a prediction of ice.

Plowing Operations

Plowing of the streets is the same regardless of the amount of snow predicted. The City owns (10) large plow trucks with (1) being used as a spare in case of break down and (1) small truck for dead ends and narrow streets. We can add plows to (1) front end loader for additional help in major storms.

The (9) large plow trucks are assigned a route and each route starts with its primary street, leading to its secondary main, and then into the neighborhood streets. (Truck route maps appendix B.) The (1) small plow truck is assigned a list of narrow and dead end streets. (Narrow and dead street list appendix B.)

Sidewalk Plowing and salting

There are (9) sidewalk routes and are plowed during the day concurrently with street, and bike lane plowing. Extra attention is given to the downtown, Old North End, areas around schools and school crossing guard locations.

During a night time snow push back or any night time plowing operation, sidewalk plowing usually starts around 3 a.m. so that the sidewalks are open when school begins. This time could vary depending on the size of the storm.

If the storm exceeds 12” of snow and there are snow banks along the sidewalk, we will have to snow blow every sidewalk. This will take considerable time and manpower. This operation could take up to 24 hours or more. Again the priorities are downtown, Old North End, and school zones. We normally have many equipment failures while snow blowing, so having fleet services available is key.

We routinely plow, scrape, and sometimes salt the sidewalks during the day to maintain a safe environment.

Accessibility (Handicapped) Parking Spaces

Burlington has a large amount of handicapped parking spaces that must be cleared of snow. This will take place once the streets and sidewalks have been cleared. After the storm, the department will start clearing the spaces starting from the downtown, working their way to the outskirts of the city. With the limited amount of manpower available it may take many days before all spaces can be cleared of snow. If a resident has a particular handicap parking space that needs immediate attention, please call DPW Customer Service @ 863-9094.

Bike lanes

Burlington currently has 18 miles of bike lanes (curbside, defined by paint only), .85 miles of protected bike lanes, and 2 miles of shared use paths.. They are located on residential, and main arterial roads, and the bike lane

will be plowed to the curb. DPW will dispatch a sidewalk tractor to clean the protected bike lanes of snow and salt. All unprotected bike lanes will be plowed utilizing city plow trucks in the corresponding plow route, and when plowing is complete a sidewalk tractor will clean and salt the bike lane as needed. When accumulated snow reaches levels that impact the City's ability to keep the bike lanes properly cleared, we will post the street for no parking in that area if needed, and perform snow removal operations. (Appendix A)

GMT Bus Routes

Burlington is a major hub for public transportation. Many of the priority routes are also major routes for the GMT public transportation system. The operators are familiar with their routes and understand the importance of the public transportation system. We routinely review the routes with the DPW Drivers. GMT passenger facilities (bus stops and shelters) are maintained by GMT and not the City of Burlington.

Performance Capabilities

As stated earlier, Burlington has 95 miles of roads, 130 miles of sidewalks, and 20.85 combined miles of bike lanes. During the average year we receive 80 inches of snow. Of course this is only an average and what really matters is when it falls, and how many snow events we have to deal with. Generally speaking, the length of the storm rather than the amount of snow determines how we deal with it. Our plans are built around these capabilities.

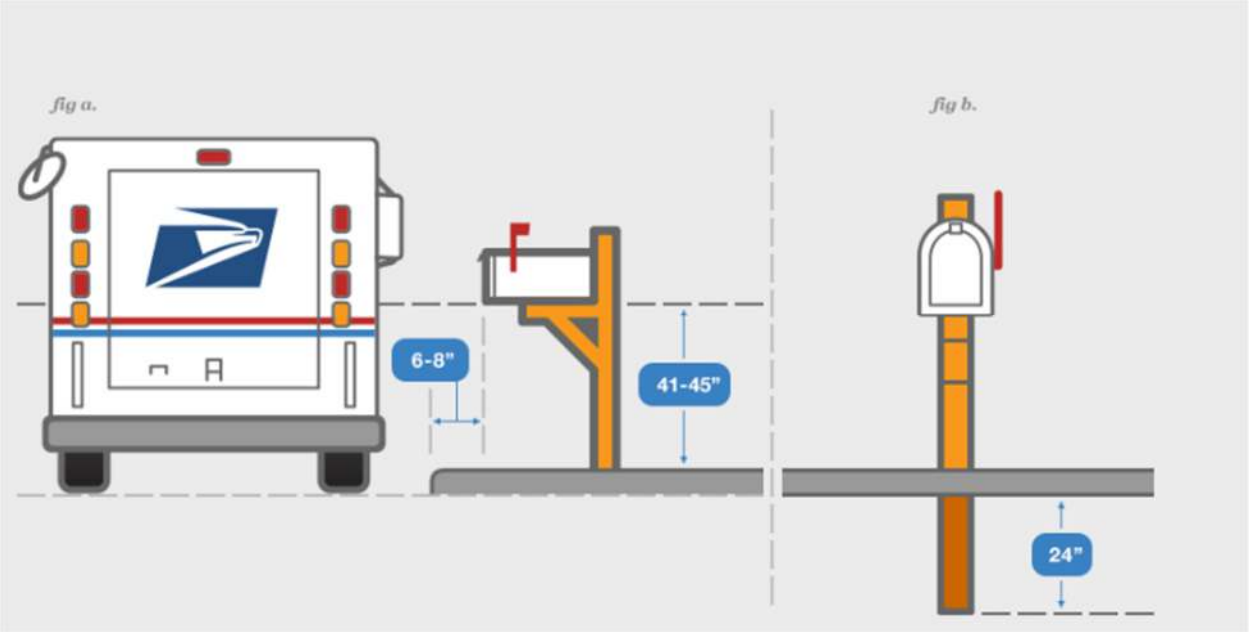
Street plowing routes	**10**
Hours to plow every street once	**5 to 7**
Hours to salt all streets @ 500 lbs. mile	**4**
Sidewalk plow routes	**9**
Hours to plow every sidewalk once	**8**
Hours to snow blow every sidewalk once (depending on depth and weight of snow)	**24 - 30**
Hours to salt every sidewalk	**12**

SNOW STORAGE

Snow removed from the City streets, greenbelts, parking lots, and parking meter spaces will be stored at 702 Lake Street in Burlington. This area is for the storage of City removed snow and not for any private contractor, unless contracted by a City department. This site is a former oil tank farm near the waterfront and has been an ideal storage area as the berm keeps contaminants from reaching the lake. This storage area will be cleaned of any trash and debris every spring.

SNOW OPERATION DAMAGES

1. **Mailboxes and other structures within the Right-of-Way**
   Occasionally mailboxes and other property may be damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight /volume of snow being plowed. The damage is not deliberate and in most cases unavoidable. Burlington Public Works is not responsible for damage and does not repair, replace or re-erect mailboxes that are located within the right-of-way unless physically struck by a DPW plow truck. In these cases, the property owner shall submit a claim to the City for reimbursement. All mailboxes must be installed to the USPS standards.



Many residents have basketball nets in the right of way, these not only interfere with plowing to the curb, but during inclement weather the plow operator may not see the basketball net and damage the basketball net and City equipment. The City will not be responsible for any damages to basketball nets within the right of way. If any basketball nets are found in the right of way, the DPW Excavation Inspector will be notified and will have it removed.

While removing the snow from the sidewalks we find many fences, borders and decorative landscaping close to the sidewalk. This presents quite a challenge for the department to operate the tractors safely. We ask that all landscaping be built at least 12" from the sidewalk in order to minimize damage to private and city property. Burlington Public Works will not be responsible for any damages to landscaping or fences that are within 12" of the sidewalk. All reported damage will be inspected by our Right of Way Inspector, and if the inspection finds the City responsible, an insurance claim will be made with our agent.

2. **Plantings in the right of way**

   Snow removal from the streets and sidewalks are a challenging task and there are many obstacles that the operators have to maneuver around, and the major items being trees and shrubs. While great care is taken not to damage the tree or shrubbery, the property owner must maintain the vegetation so it does not impede the right of way. While the City equipment may damage the vegetation, the trees and shrubbery may also damage the equipment. **The department will not be responsible for any damage to any plantings encroaching on the right of way.**

3. **Accident Protocol**

   Plowing snow in a large truck with a wing plow takes a special skill. Public Works employees are highly skilled and properly trained before they operate any commercial vehicle. Vehicle accidents will happen, and when they do, the following must happen:

   a. Stop vehicle in a safe area.
   b. Check all people involved for injuries. Call 911 if needed.
   c. The DPW employee will call their supervisor either by cell phone or by 2-way radio and inform him of the situation.
   d. Supervisor will call the Burlington Police Department. A police report will be taken, the DPW employee will receive a copy of the report, if the report is not available, you are required to obtain the incident number.
   e. If the vehicle is able to be driven, it must report to DPW Fleet Services for an evaluation before continuing on with snow plow operations.
   f. All accidents must be reported to the Assistant Director – Maintenance Division and the insurance company. The Assistant Director will report all the proper information on the Travelers Insurance Portal.

PARKING LIMITATIONS

Burlington does not have a seasonal parking ban like most towns in our region. It is the responsibility of the Public Works Director to declare a winter parking ban. Parking bans are declared on a case by case basis. Criteria for a parking ban include length of storm, amount of snow during the storm and how much snow is already on the streets and has not been plowed to the curb. By City ordinance **20-56** the ban must be declared by 3p.m. in order to be in effect by 10 p.m. that evening until 8 a.m. the following morning, except in Zone F (downtown zone) where the ban is in effect from midnight until 6 a.m. In other cases, where snow needs to be removed from the City right of way, the City will do so by posting the street for no parking either with signage or by bagging meters. During this time there will be no parking in accordance to the date and times stated on the sign, or meter bag.

Parking Ban Notification

Parking bans are warned in the following manner:

1. Using the City parking ban light system

2. Sending a press release to local radio and television stations, and print outlets

3. Posting alerts on social media, including Facebook & Twitter

4. Sending out text messages and e-mails via GovDelivery. BPD currently also uses the VT Alert system to send text, auto-call and email notifications.

5. An up to date recording on 658-SNOW

Once the Director calls a ban, the street maintenance foreman will notify the parking enforcement supervisor, who is responsible for the enforcement of the winter parking ban. Second, he will activate up to 90 plus flashing parking ban lights. These lights are located at the entrances of the City, important intersections, and throughout the City's neighborhoods. They are a visual warning to the residents that a parking ban is in effect.

The DPW Foreman in charge of the plowing crew will meet with the parking enforcement crew at 9:30 p.m. at the police department to review and cover any last details.

Vehicles must be off of the streets during these hours if a ban is declared or they will be towed. While parking bans make it easier to plow snow, it is difficult for some people to find alternative parking. DPW does offer free parking in the City owned parking garages as an option. Parking is available in the Marketplace and the Cherry St Parking Garages on the lower decks only. Vehicles must be removed by 7:30 am or they will be charged the full day's rate**.** Additional information can be found at http://www.burlingtonvt.gov/.

While a winter parking ban is not called for every storm, if residents have access to off street parking, we urge them to use it. Additional information can be found at http://www.burlingtonvt.gov/dpw/parking/winter-parking

The City currently has 3 designated tow areas.

Lake St. Extension: Vehicles towed from the Old North End and west of Willard St. from Pearl St. to Maple St.

Gosse Court, North Ave to the end: Vehicles towed from the New North End.

Oakledge Park parking lot: Vehicles towed from the south end and west of Willard St. from Maple St. south.

When the lots are full, vehicles found on the street could also be towed to the nearest street the Public Works Department designates as a drop-off point. This would be a street that has been cleared of snow. For car owners to find their vehicle, please call (802) 540-2380.

AFTER STORM RESPONSIBILITIES

It is expected that 12 hours after a snow storm that every City street will have been plowed. The Street Maintenance Foreman will inspect every City street to ensure that the streets are cleared and passable. The department will continue to patrol the streets and maintain them to be safe and passible. It is possible that the downtown and some narrow streets may have to have the snow removed. If this service is needed, it will happen approximately 2-3 days after the storm using City owned equipment. Snow removal downtown usually happens in the early morning hours. For the narrow streets, dead end streets, and bike lanes we will post the streets for "no parking" and remove the snow during the day.

SNOW RELATED CITY ORDINANCES

27-84 Throwing snow into street prohibited.

No person shall throw or put, or cause to be thrown or put, snow or ice in the part of the street known as the travel portion nor on a sidewalk of a street.

(Rev. Ords. 1962, § 4303; 1969 Cum. Supp., § 4303)

27-2 Enclosing highway; erecting fence or encroachment; nuisance.

No person shall enclose a part of the highway or street, or erect a fence, building or other encroachment, or make obstructions, or create a nuisance on a highway or street, or continue such enclosure, fence, building, encroachment or nuisance on a highway or street.

(Rev. Ords. 1962, § 4209)

Appendix A Bike Lanes

Bike Lanes / Buffered Bike Lanes	Start / End	Bike Lane/Facility Width
Austin Dr north/east	Queen City Park Rd to Red Rocks	5'
Austin Dr south/west	Queen City Park Rd to Red Rocks	5'
Colchester Ave westbound	Mill St to Prospect St	5'/6'
Colchester Ave eastbound	Prospect St to East Ave	
Colchester Ave eastbound	Greenmount Cemetery to Mill St	5'/6'
College St eastbound	Union St to S. Prospect St	4'
East Ave southbound	Colchester Ave to Carrigan Dr	4'
Ethan Allen Parkway eastbound	North Ave to Farrington Pkwy	6.5' with buffer
Flynn Ave westbound	Pine St to Briggs St	6'
Flynn Ave eastbound	Briggs St to Shelburne St	5'/6'
Riverside Ave eastbound	N. Prospect St to Salmon Hole	
Riverside Ave westbound	Salmon Hole to N. Prospect St	
Main St eastbound	University Heights to Spear St	4'
Main St westbound	Spear St to University Heights	4'
Winooski Ave southbound	Decatur St to Pearl St	7'
Winooski Ave southbound	Maple St to Howard St	
Winooski Ave northbound	Howard St to Maple St	
North Ave northbound	Sherman St to Plattsburg Ave	6'
North Ave southbound	Plattsburg Ave to Berry St	
Park St southbound	North St to Sherman St	5'
Park St northbound	Pearl St to Sherman St	5'
North Champlain St northbound	Pearl St to Manhattan Dr	5'
Pine St southbound	Main St to Home Ave	5'

Pine St northbound	Home Ave to Locust St	5'
Willard St northbound	Cliff St to Maple St	
Willard St southbound	North St to Maple St	5'
Pearl St eastbound	Battery St to Prospect St	5'
Pearl St westbound	Winooski Ave to Battery St	5'
Mansfield Ave northbound	Colchester Ave to North St	
Sherman St eastbound	Park St to N Champlain St	5'
QB Separated Bike Lanes		
Union St northbound	Main St to Winooski Ave	6'
Elmwood Ave northbound & southbound	Grant St to Peru St	5'
North Champlain 2-way on east side	Sherman St to Peru St	8'
North Ave northbound	south of Rt 127 intersection	5'
Sherman St	Park St to North Ave	6'
Neighborhood Greenways		
ONE Greenway	Mansfield Ave to Sherman St	N/A
Advisory Lanes		
Flynn Ave westbound	Lake Forest Dr to Oakledge Park	5'
Flynn Ave eastbound	Oakledge Park to Lake Forest Dr	5'
Shared Lanes		
Colchester Ave both directions		N/A
Flynn Ave westbound	Shelburne Rd to Pine St	N/A
Pine St northbound	Locust St to Maple St(?)	N/A
Mansfield Ave southbound	North St to Colchester Ave	N/A
Winooski Ave northbound	Decatur St to Riverside Ave	N/A
Winooski Ave southbound	Riversie Ave to Decatur St	N/A
College St westbound	Prospect St to Union St	N/A
Pearl St westbound	Prospect St to S Winooski Ave	N/A
Shared Use Paths		
Riverside Ave	Winooski Ave to Mill St	8'
Colchester Ave	Mansfield Ave to East Ave	8'
Main St		12'
Parkway		9'

Appendix B – Narrow and Dead End Street List

DEAD END AND NARROW STREETS

MAIN ST AND SOUTH END	**CROSS ROAD AND SPECIAL DIRECTIONS**
ADAMS CT	SHELBURNE RD, **AT LEFT TURN, CLEAN RIGHT SIDE DRIVEWAY ENTRANCE**
LUDWIG CT	HOOVER ST, **BACKDRAG AND PLOW ACROSS HOOVER ST**
REDSTONE TERR	HOOVER ST
ALFRED ST	SHELBURNE RD
PEROTTA PL	HOOVER ST
GOVE CT	SHELBURNE RD
GOLDEN PL	HOWARD ST
SPRUCE CT	SPRUCE ST
ELM TERR	S. WINOOSKI AVE
BROWNS CT	KING ST
BEECH ST	WILLARD AND SOUTH UNION
KINGSLAND TERR	SOUTH UNION
UNIVERSITY TERR	MAIN ST, **BACKDRAG AND PLOW OUT**
PINE PLACE	PINE ST, **NO SIDEWALK, SALT AND CLEAN WELL**
LEDGEMERE ST	MARIAN ST
CATHERINE ST	LOCUST AND ST. PAUL

MAIN ST TO MANHATTEN DR

THIBAULT PKWY	COLCHESTER AVE
NASH PLACE	COLCHESTER AVE
LATHAM COURT	COLCHESTER AVE
CALARCO CT	COLCHESTER AVE
COLCHESTER CT	COLCHESTER AVE
CHASE LANE	CHASE ST
RUMSEY LANE	CHASE ST
CHASE ST	BARRETT ST, **BACK DRAG END OF ST**.
VERMONT PARK	HILLSIDE TERR, RIVERSIDE AVE
HYDE ST	ARCHIBALD ST
GERMAIN ST	ARCHIBALD ST
CHARLES ST	NORTH WILLARD
RUSSELL ST	NORTH WILLARD

CONVERSE COURT	HICKOK PL
LAFAYETTE PL	PEARL ST
ORCHARD TERR	BUELL ST
CLOAREC CT	INTRVALE AVE
ALLEN ST	ELMWOOD AVE
MYTRLE ST	PARK ST
POPLAR ST	NORTH CHAMPLAIN ST
CROWLEY ST	NORTH AVE
SUNSET CT	NORTH AVE
VOLTZ ST	MANHATTEN DR

OVER →

NEW NORTH END	**CROSS ROADS AND SPECIAL INSTRUCTIONS**
POIRIER PL	NORTH AVE, **BACK DRAG END OF STREET AND PLOW OUT**
PLATTSBURG AVE EXT (GRIT PIT RD)	PLATTSBURG AVE, **PLOW PAST THE LAST HOUSE**
RIVERVIEW DR (CAMP DAISY RD)	NOTHVIEW DR
NORTH COVE ROADS (2)	NORTH AVE EXTENSION, **RIGHT BRANCH OF ROAD NEEDS TO PLOWED OUT**
APPLETREE PT ROAD	**DIRT ROAD, PLOW TO THE END**
SUNSET CLIFF RD	**DIRT ROAD, PLOW TO END**
LORI LANE	**ONLY PLOW ROTARY ON LEFT SIDE**
WEST ST	NORTH AVE

ALL STREETS ON THIS LIST WILL BE INSPECTED BY THE STREET MAINTENCE FORMAN AFTER THE STORM.

Plow Route #1

Areas to pay close attention to
Ledge Rd
Fern Hill (N Prospect)
Maple St
Cliff St
GMT Routes
Maple St
Cliff St
Prospect St
Bike Lanes
N/S Willard St

Plow Route #2

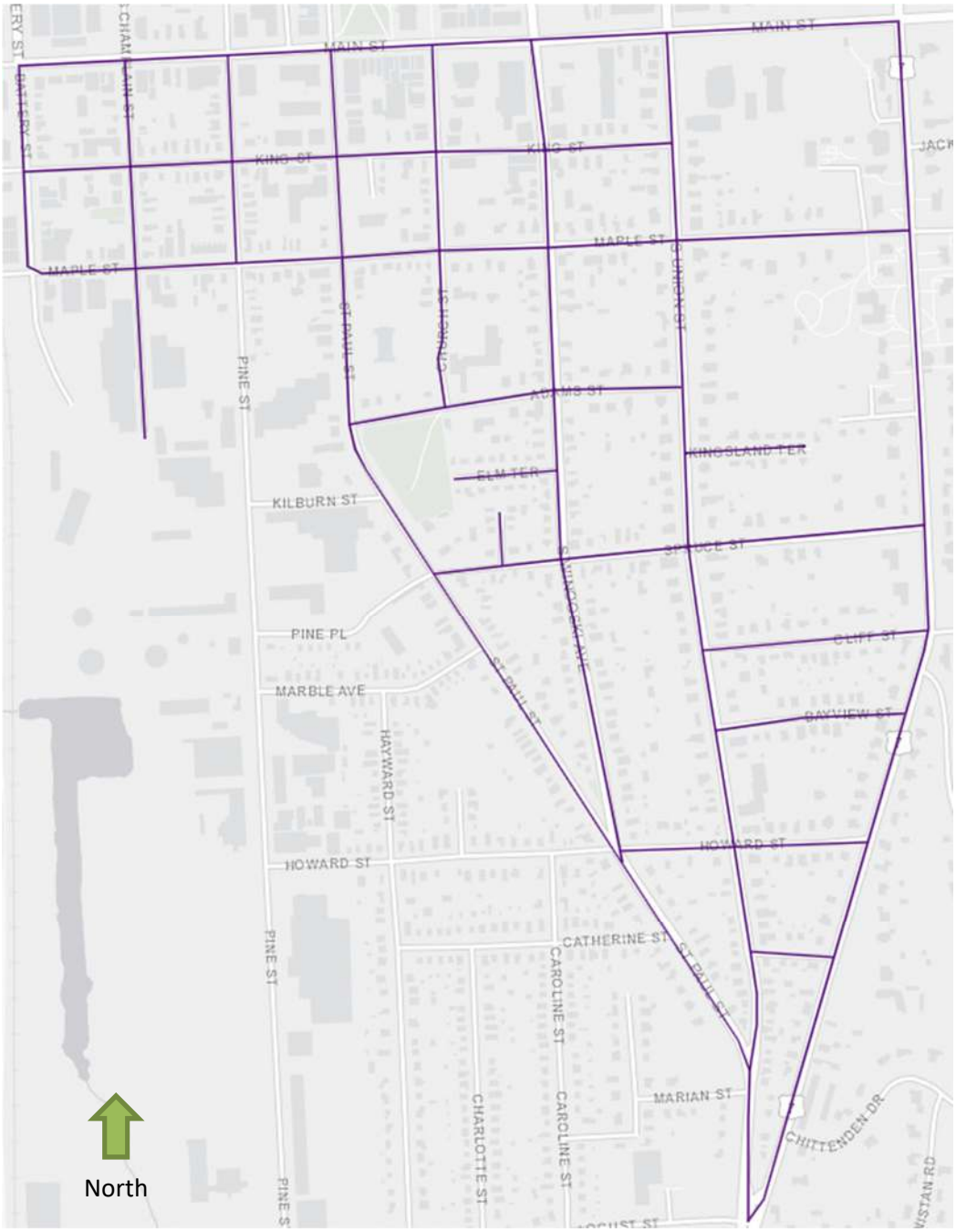
GMT Routes
Cherry St
Pearl St
Main St
North St
Colchester Ave
Battery St
Elmwood Ave
Grant St
N Winooski Ave
Bike Lanes
S Winooski Ave
N Union St
N Winooski Ave
N Willard St
Mansfield Ave
Pearl St
Colchester Ave
East Ave
College St

Plow Route #3

GMT Routes
Pine St
Shelburne St
Industrial Pkwy
Howard St
Bike Lanes
Pine St Main – Home
Flynn Ave
Austin Dr

Plow Route #4

GMT Routes
Main St
Maple St
Cliff St
Kilburn St
S Union St
St Paul St
Howard St
Bike Lanes
S Winooski Ave
S Union St
S Willard St

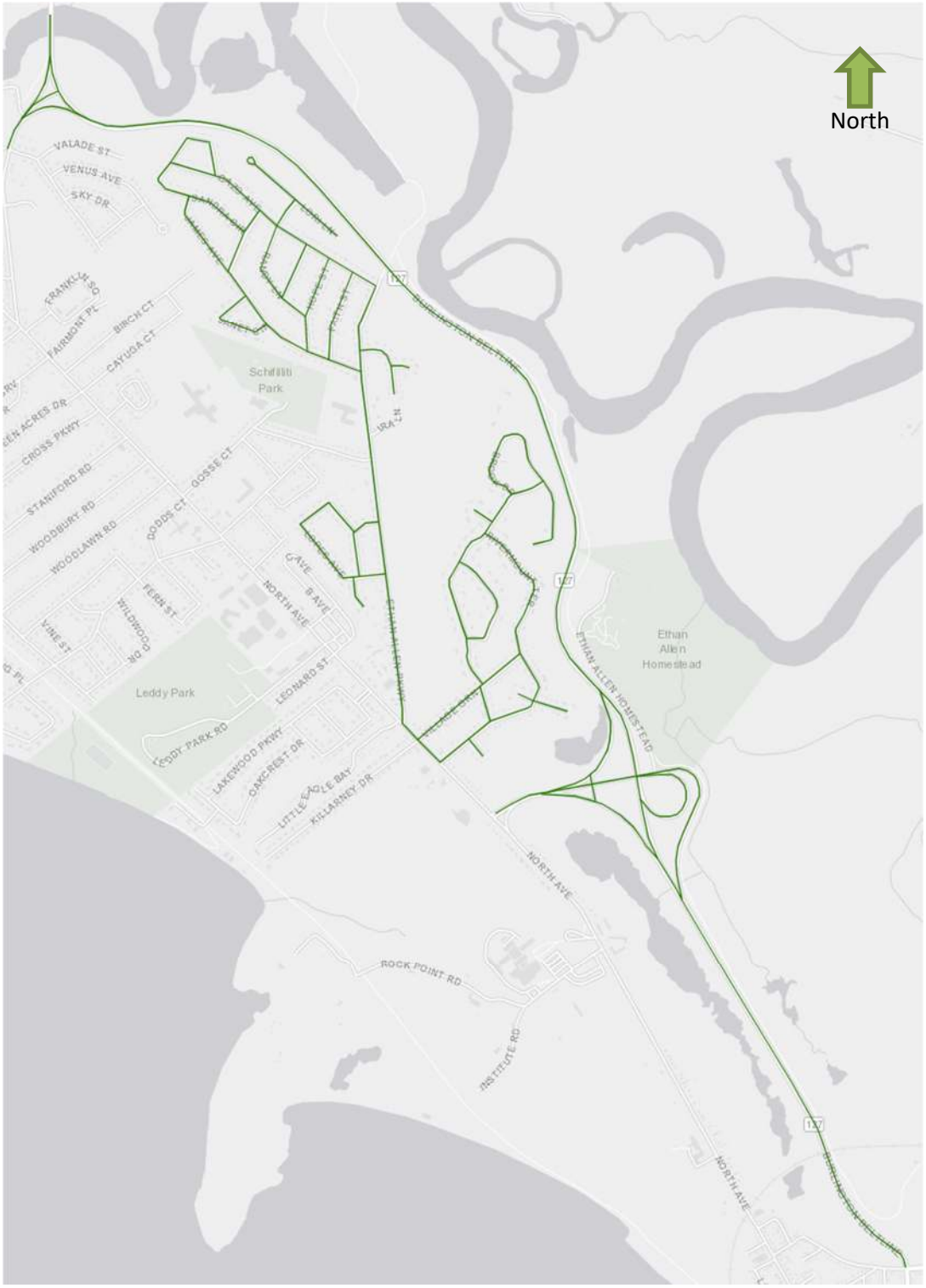


Plow Route #5

GMT Routes
North Ave
Riverside Ave
Colchester Ave
Bike Lanes
North Willard St
Colchester Ave
Riverside Ave

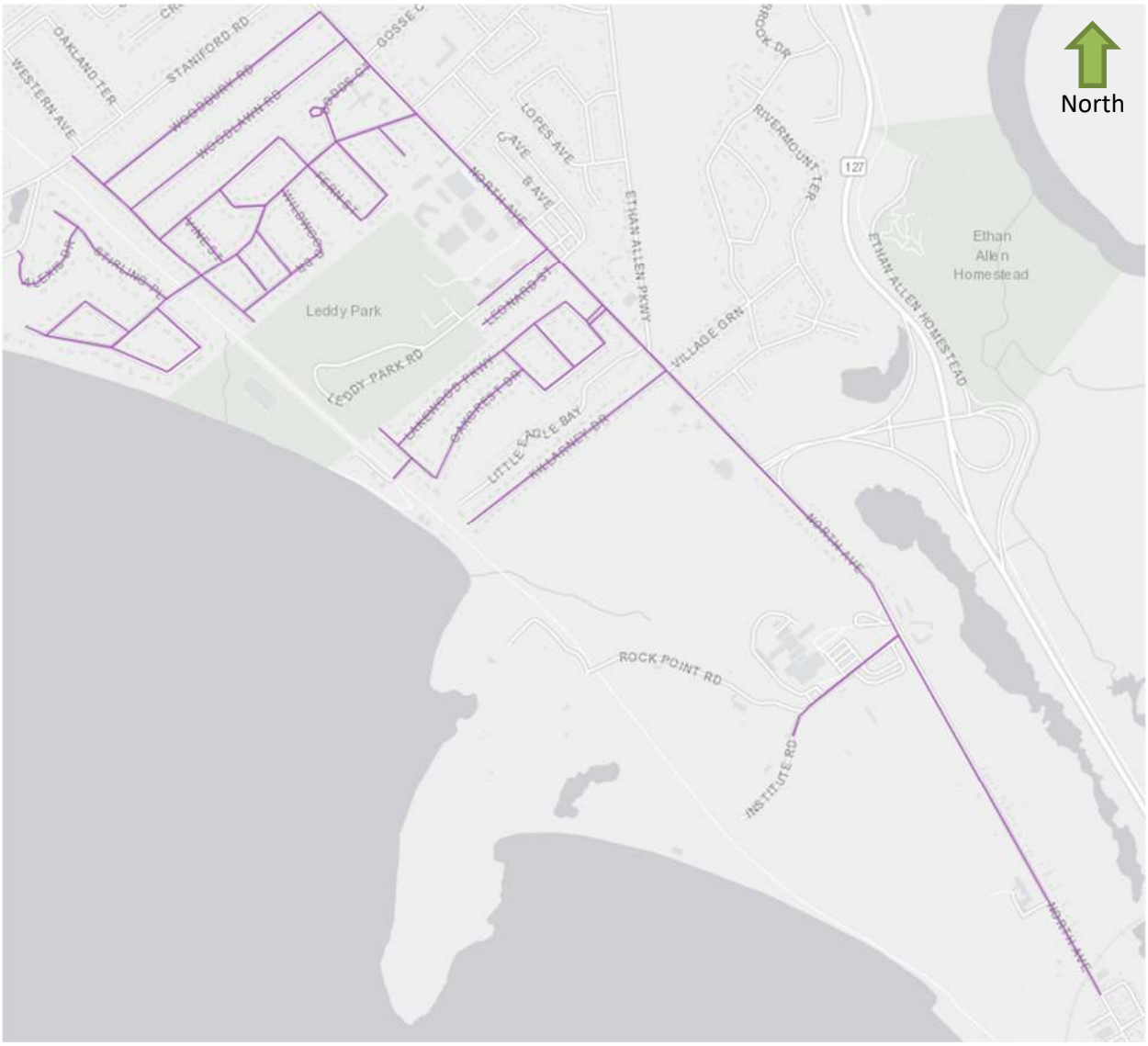
Plow Route #6

GMT Routes
North Ave
Bike Lanes
North Ave



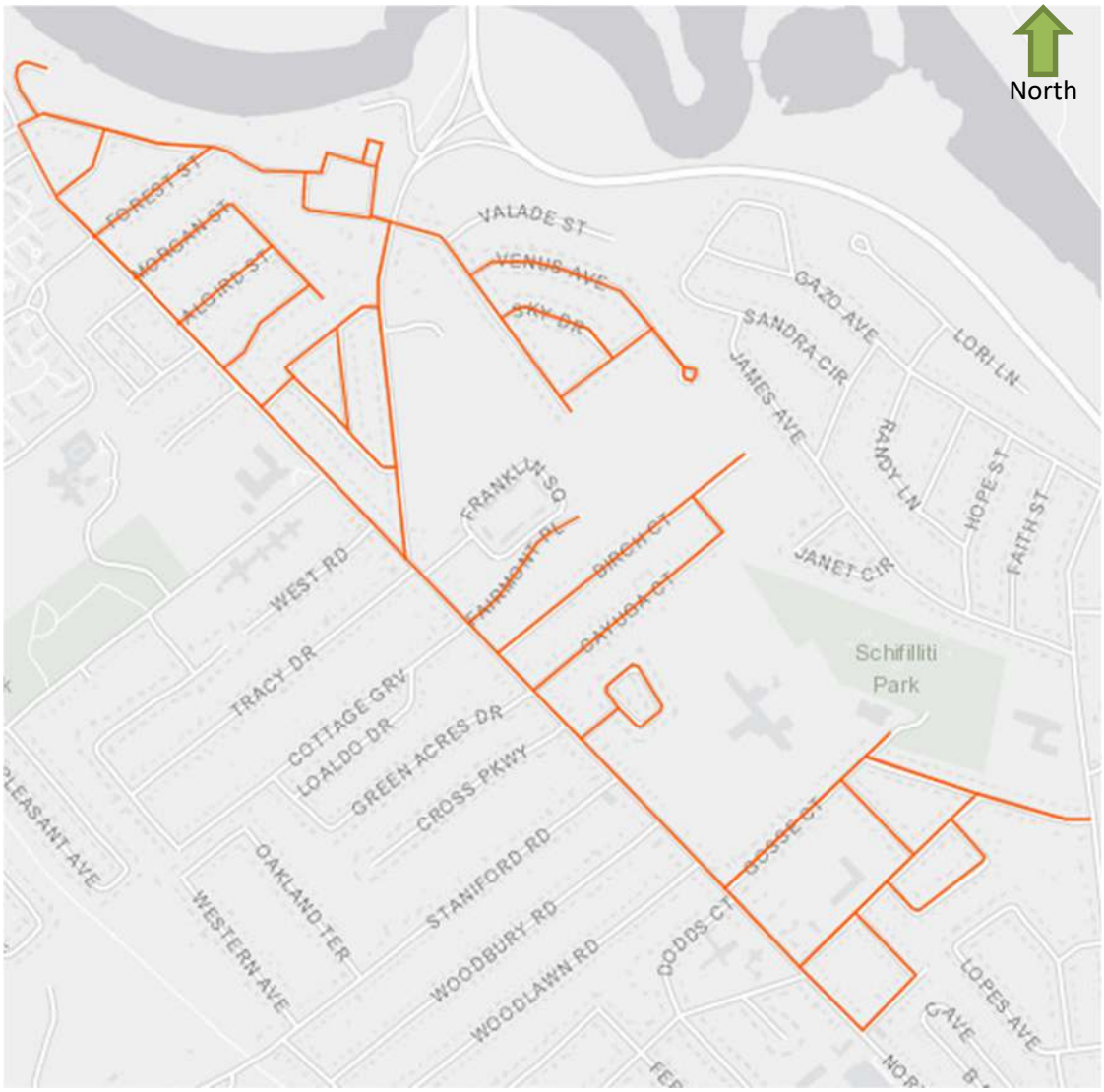
Plow Route #7

GMT Routes
North Ave
Bike Lanes
North Ave



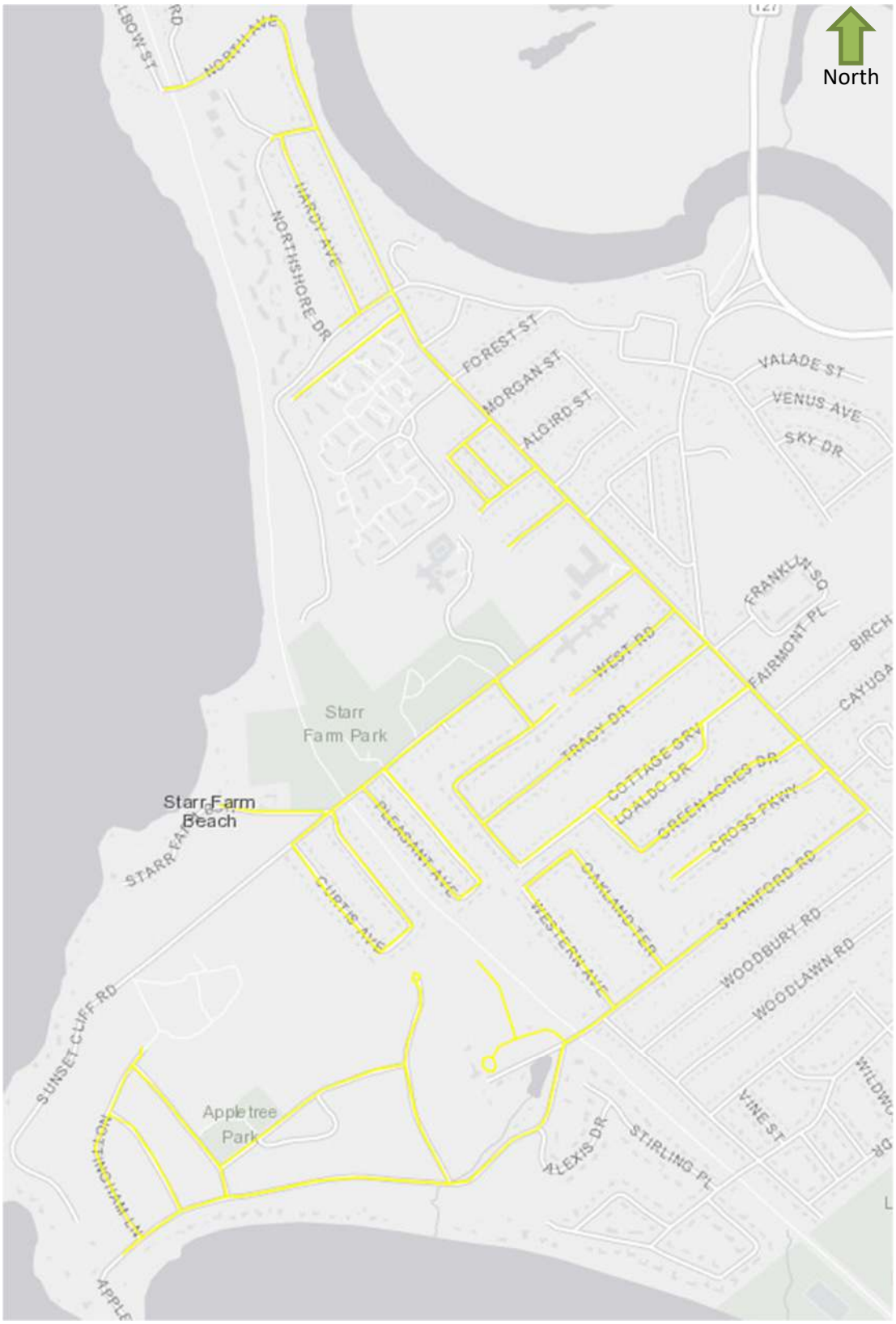
Plow Route #8

GMT Routes
North Ave



Plow Route #9

GMT Routes
North Ave
Bike Lanes
North Ave



BURLINGTON PUBLIC WORKS

SNOW AND ICE CONTROL PLAN

SNOW AND ICE CONTROL PLAN

The purpose of this plan is to define the operational procedures and best management practices (BMP's) for storing and utilizing snow and ice control materials, and for performing winter maintenance activities. It defines the level of service that Burlington Public Works will strive to provide on our 95 miles of streets, 130 miles of sidewalks, and 20.85 combined miles of bike lanes.

Since storms vary dramatically and occur during a variety of traffic conditions, this Snow and Ice Control Plan is intended to be flexible. It is a guide structured to fit average conditions, but able to accommodate the wide variety of conditions that will be encountered by maintenance crews who are working to maintain safe roads and conditions.

STORM WARNING NOTIFICATION

The Department of Public Works Right of Way uses multiple weather services available online, such as National Oceanic and Atmospheric Administration (NOAA) and the Weather Channel. DPW will issue storm related public service announcements via the local media, Facebook, Twitter, and any City website **http://www.burlingtonvt.gov/**

Text messages:
GovDelivery https://public.govdelivery.com/accounts/VTBURLINGTON/subscriber/new

Facebook: https://www.facebook.com/BTVDPW

Twitter: @btvdpw

Phone: 802-658-SNOW

Burlington Public Works has also invested in (4) traffic message boards stationed along key arterial roadways that will warn residents of any winter parking bans.

PERSONNEL SCHEDULING

Our Right of Way crew of (17) full time Street Maintenance Workers and approximately (2) seasonal employees, which may vary due to budgetary constraints, or availability of applicants, maintain the streets and sidewalks. Large storms may require around the clock coverage. This will require help from outside work groups and departments. The Street Maintenance Manager will secure volunteers during the normal workday and create a plan based on the available manpower and weather conditions. The plan will be reviewed by the Assistant Director - Maintenance Division before implementing.

MOBILIZATION

When the decision has been made to react to a storm, the Street Maintenance Manager will mobilize the crew. Since all trucks, tractors and routes are assigned, all the employees need is the call to deploy. If a storm event is predicted after normal business hours, the personnel will be put “on-call” per the union contract and the on-call employees will make themselves available by telephone. The department is aware that employees may have personal needs that may arise and may not be able to be “on call” at all times. If an employee has a personal issue, they may address it with their direct supervisor.

While DPW Street Maintenance is tasked specifically with the staffing for snow and ice control operations, the employees of the Fleet Maintenance group have a responsibility to assist with equipment repairs. Once the decision has been made to respond to a storm event, during normal working hours the street Maintenance Manager will notify the Fleet Manager. The Fleet Manager will then schedule his employees to provide maintenance assistance. After normal working hours, if the foreman in charge determines that the streets and sidewalks need to be plowed he will call the “on-call” maintenance team.

SNOW AND ICE CONTROL MATERIALS

Road salt (NaCl) is the primary snow and ice control material. The salt is normally purchased under the State of Vermont contract. FY20 the contract was awarded to Cargill; the local distributor is Barrett's Trucking in Burlington @ 863-1311. DPW uses approximately 4000tons of road salt per year. The Street Maintenance Manager is responsible for the ordering and inventory of the salt. The entire salt inventory is stored at 645 Pine Street. Liquids like magnesium chloride (MgCl2) and Promelt Magic Minus Zero are being used to reduce the amounts of salt needed to clear the roads. Safety Data Sheets (SDS) are available in a binder in every truck and in the SDS binder located in the Street Maintenance area. As a courtesy, Burlington property owners are permitted to take (1) 5-gallon bucket of salt per winter from the salt shed at 645 Pine St. when it does not interrupt the City's operations.

EQUIPMENT INSPECTION

WEEKLY VEHICLE CHECK SHEET

UNIT#:			UNIT HOURS:		UNIT MILES:			
DATE:			OPERATOR:					
		Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
Registration,ins card,vsi								
Engine oil level								
Coolant level								
Power steering fluid								
Washer fluid								
Brake fluid								
Trans fluid level								
Hyd oil level								
DOT pre trip inspection								

* VISUAL WALK AROUND OF VEHICLE FOR ANY DAMAGE SUCH AS DENTS, DINGS, BROKEN OR CRACKED GLASS

* NOTE ANY DAMAGE ON THIS SHEET AND ALSO REPORT TO MANAGER

*TIRE CONDITION AND AIR PRESSURE

*INSPECT RADIATOR FOR DEBRIS BLOCKING AIR FLOW. SEE EQM IF CLEANING NEEDED

*GREASE ALL APPLICABLE LUBE FITTINGS, DAILY IF REQUIRED.

*TOP OFF FUEL TANK AT END OF SHIFT. CHECK FUEL LEVEL BEFORE SHIFT

*CLEAN INTERIOR OF VEHICLE OF DEBRIS AND CLEAN . WASH EXTERIOR IF NEEDED.

*DRAIN AIR TANKS DAILY AT END OF SHIFT.

RECYCLING TRUCKS, EMPTY PACKER CLEAN OUTS DAILY AT END OF SHIFT

*TANKER TRUCKS, EMPTY AND WASHE DEBRIS BODY, PROP OPEN TO DRY OVERNIGHT

* SWEEPERS CHECK AND CLEAN AIR FILTERS DAILY. REPLACE IF NEEDED

*SWEEPERS CLEAN AND WASH DEBRIS BODY AND PROP OPEN TO DRY

* NOTIFY EQM OF ANY UNSAFE CONDITION AND REMOVE UNIT FROM SERVICE AND TAG OUT OF SERVICE.

All City equipment; to include all plow trucks, loaders, and sidewalk tractors will be operator level inspected before any snow operations. Immediately following a

storm on the next regular business day, all equipment will be cleaned, greased, fluids levels checked, and a proper preventive maintenance check per the manufactures operator manual. All deficiencies will be reported immediately to DPW Fleet Services.

EQUIPMENT CALIBRATION

Every November, all truck spreaders and computerized spreader controls will be calibrated with salt (NaCl) per the manufactures operation manual. After every storm event, each truck will have the mileage and pounds per lane mile recorded. This task will be assigned to a working foreman and one other street maintenance worker.

TRAINING OF PERSONNEL

Training is a key part to our snow plans success. All operators are properly trained before using any equipment utilizing operator manuals, manufacturers trainers, our in house trained employees, and on the job training. All employees will be able to properly operate, and maintain the equipment before actually plowing snow. Before the first snow storm, all operators will drive their route, getting familiar with obstacles such as high manholes, trees, narrow roads, mailboxes, etc. Any reported obstructions will be reported to the Right of Way Inspector for further action. Every truck has a binder with all route maps, bike routes, CCTA emergency routes, and the list of dead end roads.

SNOW ROUTE ASSIGNMENT

All operators will be assigned a route, whether it is in a truck or a sidewalk tractor. Continuity is important in assigning routes and equipment. Operators will learn the best way to battle snow and ice if they are doing the same streets every storm and will know areas that need special attention such as bridges, on and off ramps,

hills, curves, school zones, and bike lanes. The same with the equipment, the operators in the same truck or tractor will know how it handles and what the vehicles limits are.

The sizes of the routes are designed for the City's fleet of trucks and tractors. There are 10 large trucks, 1 small truck for dead ends and narrow streets, and 11 tractors. Of the 10 large trucks, 1 is a spare in case of a break down. With the 11 tractors, 2 are spares. Depending on the accumulation of snow, it could take an operator with a large truck approximately 5-7 hours to plow their route once. An operator on a sidewalk route will take approximately 6-7 hours to plow their route, if they are salting at the same time it will take 8-9 hours to complete once.

LOADING PROCEDURES

The loading of salt in all trucks will be by the oldest available loader in the fleet. The operation will be conducted by qualified City employees only. The trucks will be loaded to their max GVWR and not overloaded. The loader will have operator level preventive maintenance after every storm event and all loading procedures will be supervised by an assigned working foreman.

SALTING AND PLOWING PROCEDURES

Salting Operations

Streets will be salted during light storms where minor accumulations of snow are expected. This requires the use of 6 large trucks that will salt the primary streets with priorities going to the routes coming into and exiting

the City, primary roads leading into neighborhoods, school zones, downtown, intersections, and bike lanes. Not every street is salted unless there is a prediction of ice.

Plowing Operations

Plowing of the streets is the same regardless of the amount of snow predicted. The City owns (10) large plow trucks with (1) being used as a spare in case of break down and (1) small truck for dead ends and narrow streets. We can add plows to (1) front end loader for additional help in major storms.

The (9) large plow trucks are assigned a route and each route starts with its primary street, leading to its secondary main, and then into the neighborhood streets. (Truck route maps appendix B.) The (1) small plow truck is assigned a list of narrow and dead end streets. (Narrow and dead street list appendix B.)

Sidewalk Plowing and salting

There are (9) sidewalk routes and are plowed during the day concurrently with street, and bike lane plowing. Extra attention is given to the downtown, Old North End, areas around schools and school crossing guard locations.

During a night time snow push back or any night time plowing operation, sidewalk plowing usually starts around 3 a.m. so that the sidewalks are open when school begins. This time could vary depending on the size of the storm.

If the storm exceeds 12” of snow and there are snow banks along the sidewalk, we will have to snow blow every sidewalk. This will take considerable time and manpower. This operation could take up to 24 hours or more. Again the priorities are downtown, Old North End, and school zones. We normally have many equipment failures while snow blowing, so having fleet services available is key.

We routinely plow, scrape, and sometimes salt the sidewalks during the day to maintain a safe environment.

Accessibility (Handicapped) Parking Spaces

Burlington has a large amount of handicapped parking spaces that must be cleared of snow. This will take place once the streets and sidewalks have been cleared. After the storm, the department will start clearing the spaces starting from the downtown, working their way to the outskirts of the city. With the limited amount of manpower available it may take many days before all spaces can be cleared of snow. If a resident has a particular handicap parking space that needs immediate attention, please call DPW Customer Service @ 863-9094.

Bike lanes

Burlington currently has 18 miles of bike lanes (curbside, defined by paint only), .85 miles of protected bike lanes, and 2 miles of shared use paths.. They are located on residential, and main arterial roads, and the bike lane

will be plowed to the curb. DPW will dispatch a sidewalk tractor to clean the protected bike lanes of snow and salt. All unprotected bike lanes will be plowed utilizing city plow trucks in the corresponding plow route, and when plowing is complete a sidewalk tractor will clean and salt the bike lane as needed. When accumulated snow reaches levels that impact the City's ability to keep the bike lanes properly cleared, we will post the street for no parking in that area if needed, and perform snow removal operations. (Appendix A)

GMT Bus Routes

Burlington is a major hub for public transportation. Many of the priority routes are also major routes for the GMT public transportation system. The operators are familiar with their routes and understand the importance of the public transportation system. We routinely review the routes with the DPW Drivers. GMT passenger facilities (bus stops and shelters) are maintained by GMT and not the City of Burlington.

Performance Capabilities

As stated earlier, Burlington has 95 miles of roads, 130 miles of sidewalks, and 20.85 combined miles of bike lanes. During the average year we receive 80 inches of snow. Of course this is only an average and what really matters is when it falls, and how many snow events we have to deal with. Generally speaking, the length of the storm rather than the amount of snow determines how we deal with it. Our plans are built around these capabilities.

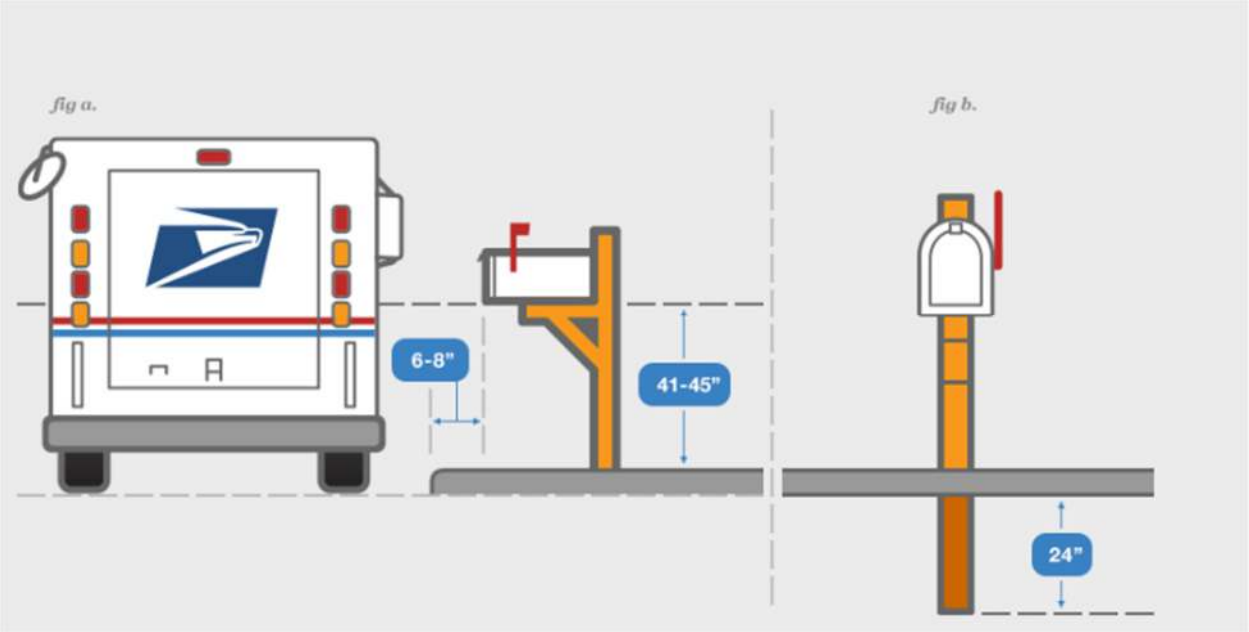
Street plowing routes	**10**
Hours to plow every street once	**5 to 7**
Hours to salt all streets @ 500 lbs. mile	**4**
Sidewalk plow routes	**9**
Hours to plow every sidewalk once	**8**
Hours to snow blow every sidewalk once (depending on depth and weight of snow)	**24 - 30**
Hours to salt every sidewalk	**12**

SNOW STORAGE

Snow removed from the City streets, greenbelts, parking lots, and parking meter spaces will be stored at 702 Lake Street in Burlington. This area is for the storage of City removed snow and not for any private contractor, unless contracted by a City department. This site is a former oil tank farm near the waterfront and has been an ideal storage area as the berm keeps contaminants from reaching the lake. This storage area will be cleaned of any trash and debris every spring.

SNOW OPERATION DAMAGES

1. **Mailboxes and other structures within the Right-of-Way**
   Occasionally mailboxes and other property may be damaged by snow plowing operations due to poor visibility, the mailbox being buried in a snow bank or the weight /volume of snow being plowed. The damage is not deliberate and in most cases unavoidable. Burlington Public Works is not responsible for damage and does not repair, replace or re-erect mailboxes that are located within the right-of-way unless physically struck by a DPW plow truck. In these cases, the property owner shall submit a claim to the City for reimbursement. All mailboxes must be installed to the USPS standards.



Many residents have basketball nets in the right of way, these not only interfere with plowing to the curb, but during inclement weather the plow operator may not see the basketball net and damage the basketball net and City equipment. The City will not be responsible for any damages to basketball nets within the right of way. If any basketball nets are found in the right of way, the DPW Excavation Inspector will be notified and will have it removed.

While removing the snow from the sidewalks we find many fences, borders and decorative landscaping close to the sidewalk. This presents quite a challenge for the department to operate the tractors safely. We ask that all landscaping be built at least 12" from the sidewalk in order to minimize damage to private and city property. Burlington Public Works will not be responsible for any damages to landscaping or fences that are within 12" of the sidewalk. All reported damage will be inspected by our Right of Way Inspector, and if the inspection finds the City responsible, an insurance claim will be made with our agent.

2. **Plantings in the right of way**

   Snow removal from the streets and sidewalks are a challenging task and there are many obstacles that the operators have to maneuver around, and the major items being trees and shrubs. While great care is taken not to damage the tree or shrubbery, the property owner must maintain the vegetation so it does not impede the right of way. While the City equipment may damage the vegetation, the trees and shrubbery may also damage the equipment. **The department will not be responsible for any damage to any plantings encroaching on the right of way.**

3. **Accident Protocol**

   Plowing snow in a large truck with a wing plow takes a special skill. Public Works employees are highly skilled and properly trained before they operate any commercial vehicle. Vehicle accidents will happen, and when they do, the following must happen:

   a. Stop vehicle in a safe area.
   b. Check all people involved for injuries. Call 911 if needed.
   c. The DPW employee will call their supervisor either by cell phone or by 2-way radio and inform him of the situation.
   d. Supervisor will call the Burlington Police Department. A police report will be taken, the DPW employee will receive a copy of the report, if the report is not available, you are required to obtain the incident number.
   e. If the vehicle is able to be driven, it must report to DPW Fleet Services for an evaluation before continuing on with snow plow operations.
   f. All accidents must be reported to the Assistant Director – Maintenance Division and the insurance company. The Assistant Director will report all the proper information on the Travelers Insurance Portal.

PARKING LIMITATIONS

Burlington does not have a seasonal parking ban like most towns in our region. It is the responsibility of the Public Works Director to declare a winter parking ban. Parking bans are declared on a case by case basis. Criteria for a parking ban include length of storm, amount of snow during the storm and how much snow is already on the streets and has not been plowed to the curb. By City ordinance **20-56** the ban must be declared by 3p.m. in order to be in effect by 10 p.m. that evening until 8 a.m. the following morning, except in Zone F (downtown zone) where the ban is in effect from midnight until 6 a.m. In other cases, where snow needs to be removed from the City right of way, the City will do so by posting the street for no parking either with signage or by bagging meters. During this time there will be no parking in accordance to the date and times stated on the sign, or meter bag.

Parking Ban Notification

Parking bans are warned in the following manner:

1. Using the City parking ban light system

2. Sending a press release to local radio and television stations, and print outlets

3. Posting alerts on social media, including Facebook & Twitter

4. Sending out text messages and e-mails via GovDelivery. BPD currently also uses the VT Alert system to send text, auto-call and email notifications.

5. An up to date recording on 658-SNOW

Once the Director calls a ban, the street maintenance foreman will notify the parking enforcement supervisor, who is responsible for the enforcement of the winter parking ban. Second, he will activate up to 90 plus flashing parking ban lights. These lights are located at the entrances of the City, important intersections, and throughout the City's neighborhoods. They are a visual warning to the residents that a parking ban is in effect.

The DPW Foreman in charge of the plowing crew will meet with the parking enforcement crew at 9:30 p.m. at the police department to review and cover any last details.

Vehicles must be off of the streets during these hours if a ban is declared or they will be towed. While parking bans make it easier to plow snow, it is difficult for some people to find alternative parking. DPW does offer free parking in the City owned parking garages as an option. Parking is available in the Marketplace and the Cherry St Parking Garages on the lower decks only. Vehicles must be removed by 7:30 am or they will be charged the full day's rate**.** Additional information can be found at http://www.burlingtonvt.gov/.

While a winter parking ban is not called for every storm, if residents have access to off street parking, we urge them to use it. Additional information can be found at http://www.burlingtonvt.gov/dpw/parking/winter-parking

The City currently has 3 designated tow areas.

Lake St. Extension: Vehicles towed from the Old North End and west of Willard St. from Pearl St. to Maple St.

Gosse Court, North Ave to the end: Vehicles towed from the New North End.

Oakledge Park parking lot: Vehicles towed from the south end and west of Willard St. from Maple St. south.

When the lots are full, vehicles found on the street could also be towed to the nearest street the Public Works Department designates as a drop-off point. This would be a street that has been cleared of snow. For car owners to find their vehicle, please call (802) 540-2380.

AFTER STORM RESPONSIBILITIES

It is expected that 12 hours after a snow storm that every City street will have been plowed. The Street Maintenance Foreman will inspect every City street to ensure that the streets are cleared and passable. The department will continue to patrol the streets and maintain them to be safe and passible. It is possible that the downtown and some narrow streets may have to have the snow removed. If this service is needed, it will happen approximately 2-3 days after the storm using City owned equipment. Snow removal downtown usually happens in the early morning hours. For the narrow streets, dead end streets, and bike lanes we will post the streets for "no parking" and remove the snow during the day.

SNOW RELATED CITY ORDINANCES

27-84 Throwing snow into street prohibited.

No person shall throw or put, or cause to be thrown or put, snow or ice in the part of the street known as the travel portion nor on a sidewalk of a street.

(Rev. Ords. 1962, § 4303; 1969 Cum. Supp., § 4303)

27-2 Enclosing highway; erecting fence or encroachment; nuisance.

No person shall enclose a part of the highway or street, or erect a fence, building or other encroachment, or make obstructions, or create a nuisance on a highway or street, or continue such enclosure, fence, building, encroachment or nuisance on a highway or street.

(Rev. Ords. 1962, § 4209)

Appendix A Bike Lanes

Bike Lanes / Buffered Bike Lanes	Start / End	Bike Lane/Facility Width
Austin Dr north/east	Queen City Park Rd to Red Rocks	5'
Austin Dr south/west	Queen City Park Rd to Red Rocks	5'
Colchester Ave westbound	Mill St to Prospect St	5'/6'
Colchester Ave eastbound	Prospect St to East Ave	
Colchester Ave eastbound	Greenmount Cemetery to Mill St	5'/6'
College St eastbound	Union St to S. Prospect St	4'
East Ave southbound	Colchester Ave to Carrigan Dr	4'
Ethan Allen Parkway eastbound	North Ave to Farrington Pkwy	6.5' with buffer
Flynn Ave westbound	Pine St to Briggs St	6'
Flynn Ave eastbound	Briggs St to Shelburne St	5'/6'
Riverside Ave eastbound	N. Prospect St to Salmon Hole	
Riverside Ave westbound	Salmon Hole to N. Prospect St	
Main St eastbound	University Heights to Spear St	4'
Main St westbound	Spear St to University Heights	4'
Winooski Ave southbound	Decatur St to Pearl St	7'
Winooski Ave southbound	Maple St to Howard St	
Winooski Ave northbound	Howard St to Maple St	
North Ave northbound	Sherman St to Plattsburg Ave	6'
North Ave southbound	Plattsburg Ave to Berry St	
Park St southbound	North St to Sherman St	5'
Park St northbound	Pearl St to Sherman St	5'
North Champlain St northbound	Pearl St to Manhattan Dr	5'
Pine St southbound	Main St to Home Ave	5'

Pine St northbound	Home Ave to Locust St	5'
Willard St northbound	Cliff St to Maple St	
Willard St southbound	North St to Maple St	5'
Pearl St eastbound	Battery St to Prospect St	5'
Pearl St westbound	Winooski Ave to Battery St	5'
Mansfield Ave northbound	Colchester Ave to North St	
Sherman St eastbound	Park St to N Champlain St	5'
QB Separated Bike Lanes		
Union St northbound	Main St to Winooski Ave	6'
Elmwood Ave northbound & southbound	Grant St to Peru St	5'
North Champlain 2-way on east side	Sherman St to Peru St	8'
North Ave northbound	south of Rt 127 intersection	5'
Sherman St	Park St to North Ave	6'
Neighborhood Greenways		
ONE Greenway	Mansfield Ave to Sherman St	N/A
Advisory Lanes		
Flynn Ave westbound	Lake Forest Dr to Oakledge Park	5'
Flynn Ave eastbound	Oakledge Park to Lake Forest Dr	5'
Shared Lanes		
Colchester Ave both directions		N/A
Flynn Ave westbound	Shelburne Rd to Pine St	N/A
Pine St northbound	Locust St to Maple St(?)	N/A
Mansfield Ave southbound	North St to Colchester Ave	N/A
Winooski Ave northbound	Decatur St to Riverside Ave	N/A
Winooski Ave southbound	Riversie Ave to Decatur St	N/A
College St westbound	Prospect St to Union St	N/A
Pearl St westbound	Prospect St to S Winooski Ave	N/A
Shared Use Paths		
Riverside Ave	Winooski Ave to Mill St	8'
Colchester Ave	Mansfield Ave to East Ave	8'
Main St		12'
Parkway		9'

Appendix B – Narrow and Dead End Street List

DEAD END AND NARROW STREETS

MAIN ST AND SOUTH END	**CROSS ROAD AND SPECIAL DIRECTIONS**
ADAMS CT	SHELBURNE RD, **AT LEFT TURN, CLEAN RIGHT SIDE DRIVEWAY ENTRANCE**
LUDWIG CT	HOOVER ST, **BACKDRAG AND PLOW ACROSS HOOVER ST**
REDSTONE TERR	HOOVER ST
ALFRED ST	SHELBURNE RD
PEROTTA PL	HOOVER ST
GOVE CT	SHELBURNE RD
GOLDEN PL	HOWARD ST
SPRUCE CT	SPRUCE ST
ELM TERR	S. WINOOSKI AVE
BROWNS CT	KING ST
BEECH ST	WILLARD AND SOUTH UNION
KINGSLAND TERR	SOUTH UNION
UNIVERSITY TERR	MAIN ST, **BACKDRAG AND PLOW OUT**
PINE PLACE	PINE ST, **NO SIDEWALK, SALT AND CLEAN WELL**
LEDGEMERE ST	MARIAN ST
CATHERINE ST	LOCUST AND ST. PAUL

MAIN ST TO MANHATTEN DR

THIBAULT PKWY	COLCHESTER AVE
NASH PLACE	COLCHESTER AVE
LATHAM COURT	COLCHESTER AVE
CALARCO CT	COLCHESTER AVE
COLCHESTER CT	COLCHESTER AVE
CHASE LANE	CHASE ST
RUMSEY LANE	CHASE ST
CHASE ST	BARRETT ST, **BACK DRAG END OF ST**.
VERMONT PARK	HILLSIDE TERR, RIVERSIDE AVE
HYDE ST	ARCHIBALD ST
GERMAIN ST	ARCHIBALD ST
CHARLES ST	NORTH WILLARD
RUSSELL ST	NORTH WILLARD

CONVERSE COURT	HICKOK PL
LAFAYETTE PL	PEARL ST
ORCHARD TERR	BUELL ST
CLOAREC CT	INTRVALE AVE
ALLEN ST	ELMWOOD AVE
MYTRLE ST	PARK ST
POPLAR ST	NORTH CHAMPLAIN ST
CROWLEY ST	NORTH AVE
SUNSET CT	NORTH AVE
VOLTZ ST	MANHATTEN DR

OVER →

NEW NORTH END	**CROSS ROADS AND SPECIAL INSTRUCTIONS**
POIRIER PL	NORTH AVE, **BACK DRAG END OF STREET AND PLOW OUT**
PLATTSBURG AVE EXT (GRIT PIT RD)	PLATTSBURG AVE, **PLOW PAST THE LAST HOUSE**
RIVERVIEW DR (CAMP DAISY RD)	NOTHVIEW DR
NORTH COVE ROADS (2)	NORTH AVE EXTENSION, **RIGHT BRANCH OF ROAD NEEDS TO PLOWED OUT**
APPLETREE PT ROAD	**DIRT ROAD, PLOW TO THE END**
SUNSET CLIFF RD	**DIRT ROAD, PLOW TO END**
LORI LANE	**ONLY PLOW ROTARY ON LEFT SIDE**
WEST ST	NORTH AVE

ALL STREETS ON THIS LIST WILL BE INSPECTED BY THE STREET MAINTENCE FORMAN AFTER THE STORM.

Plow Route #1

Areas to pay close attention to
Ledge Rd
Fern Hill (N Prospect)
Maple St
Cliff St
GMT Routes
Maple St
Cliff St
Prospect St
Bike Lanes
N/S Willard St

Plow Route #2

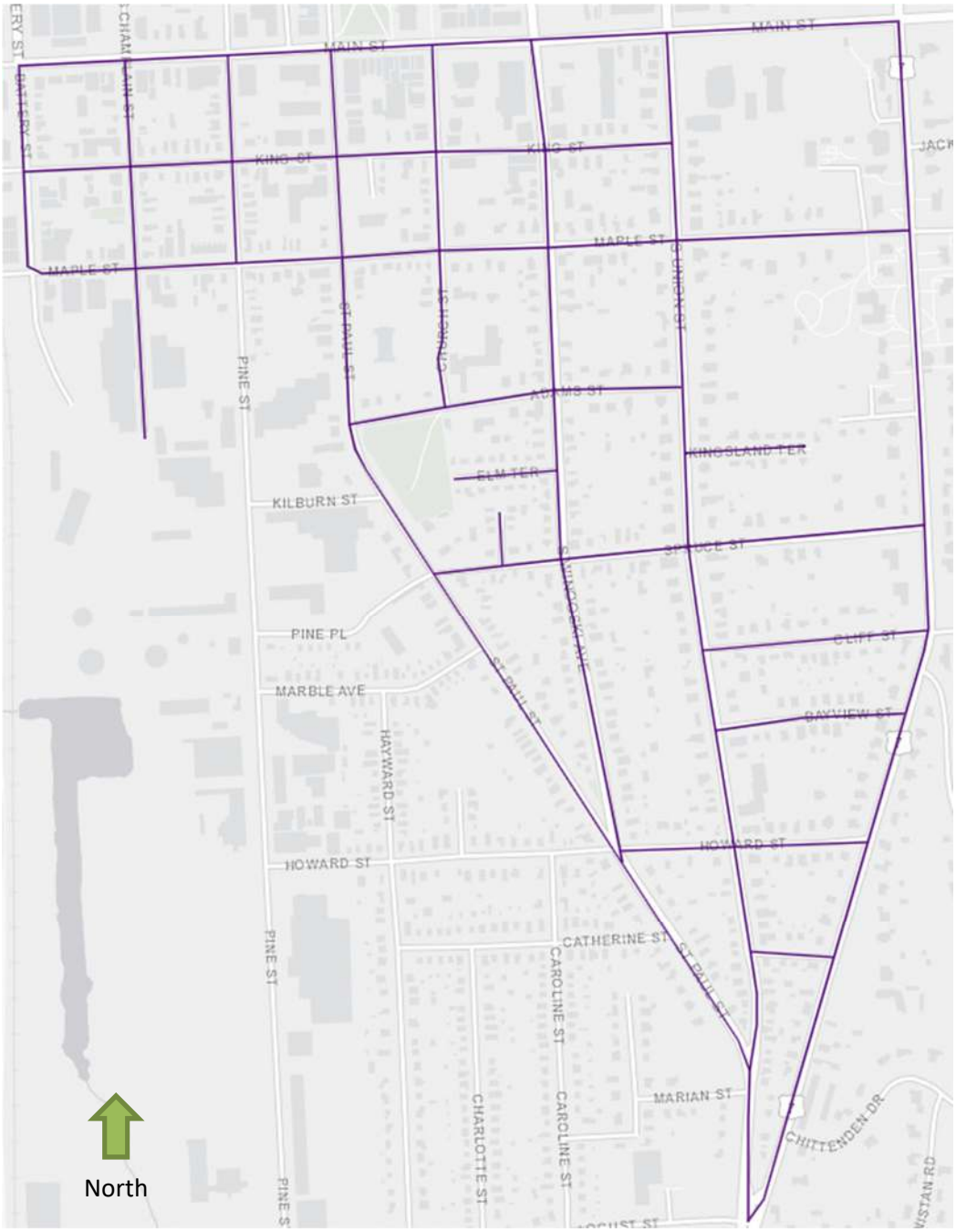
GMT Routes
Cherry St
Pearl St
Main St
North St
Colchester Ave
Battery St
Elmwood Ave
Grant St
N Winooski Ave
Bike Lanes
S Winooski Ave
N Union St
N Winooski Ave
N Willard St
Mansfield Ave
Pearl St
Colchester Ave
East Ave
College St

Plow Route #3

GMT Routes
Pine St
Shelburne St
Industrial Pkwy
Howard St
Bike Lanes
Pine St Main – Home
Flynn Ave
Austin Dr

Plow Route #4

GMT Routes
Main St
Maple St
Cliff St
Kilburn St
S Union St
St Paul St
Howard St
Bike Lanes
S Winooski Ave
S Union St
S Willard St

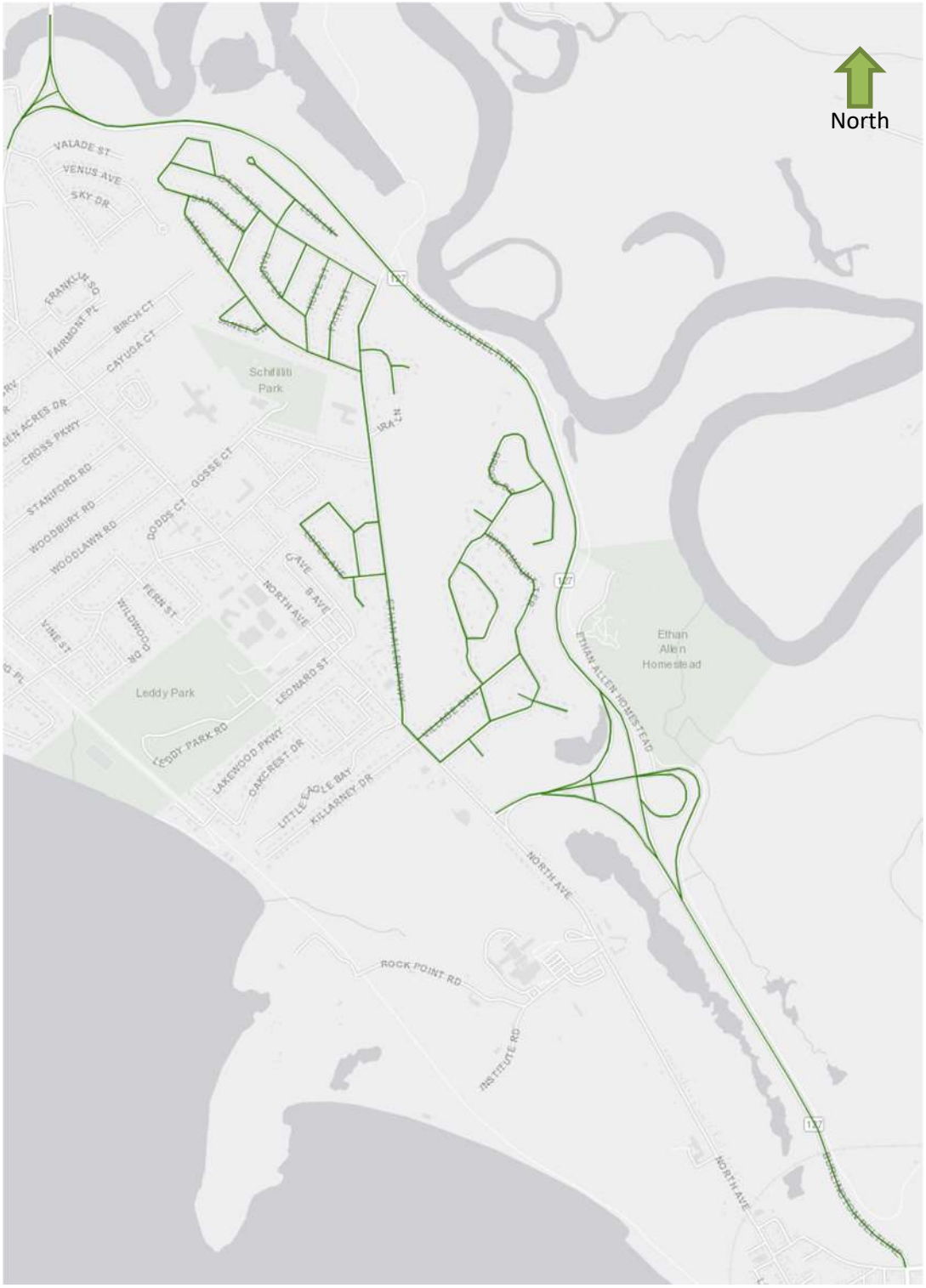


Plow Route #5

GMT Routes
North Ave
Riverside Ave
Colchester Ave
Bike Lanes
North Willard St
Colchester Ave
Riverside Ave

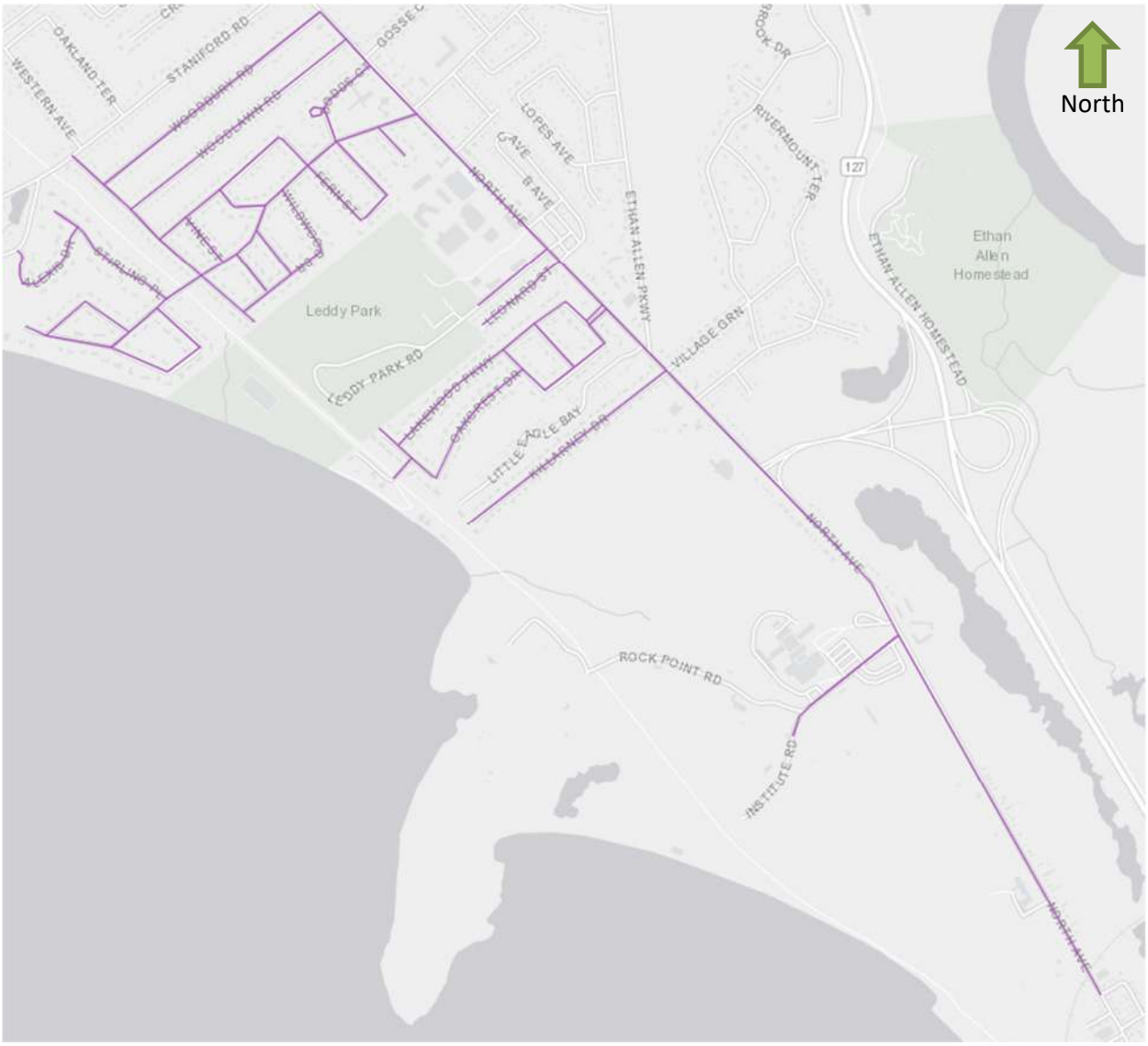
Plow Route #6

GMT Routes
North Ave
Bike Lanes
North Ave



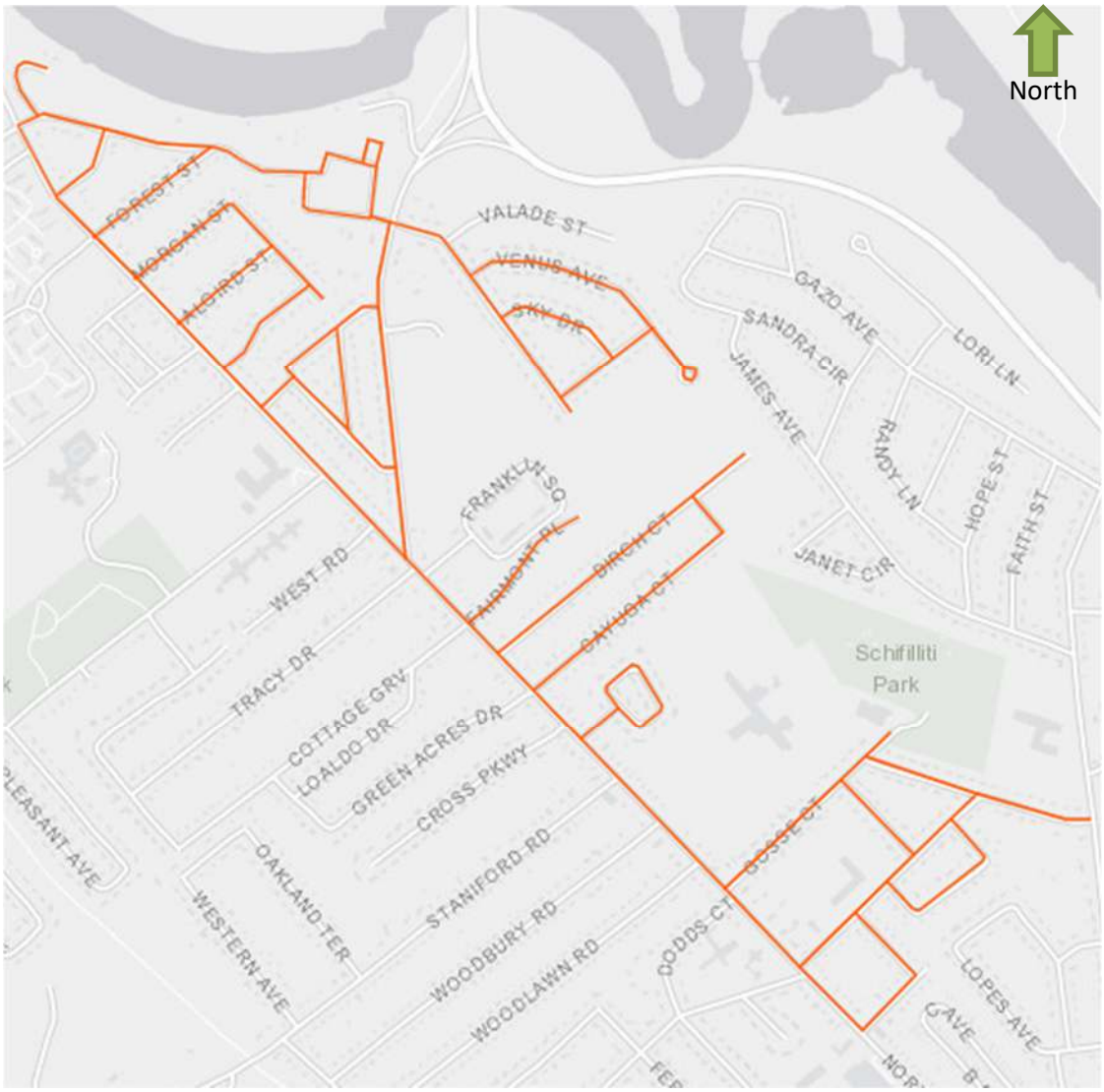
Plow Route #7

GMT Routes
North Ave
Bike Lanes
North Ave



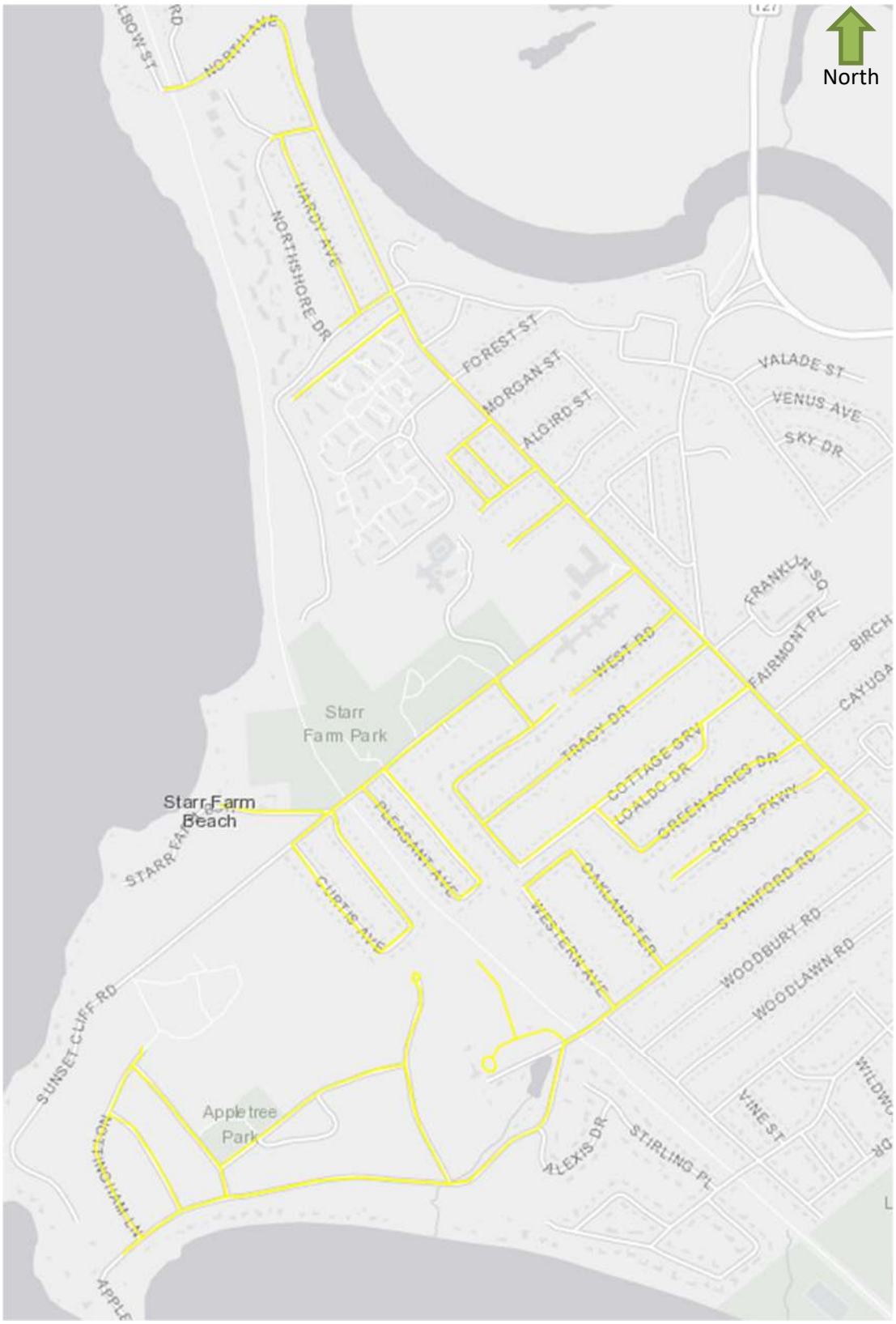
Plow Route #8

GMT Routes
North Ave



Plow Route #9

GMT Routes
North Ave
Bike Lanes
North Ave



Executive Summary

Intent

This Executive Report is intended to provide a realistic roadmap for improving the City of Burlington's Asset Management Program and to help the City practice sound stewardship of its infrastructure assets to ensure they are managed in a financially sustainable manner. Fundamental to this purpose is how best to integrate the City's Capital Improvement Programming with asset management. The current Administration has prioritized reinvestment into the City's aging and historically underinvested assets, and the best way to avoid such an intense period of large capital expenditures in the future is with a robust Asset Management Program.

Barton & Loguidice contracted with the City of Burlington to perform an initial investigation to better understand the City's current asset management practices, tools, resources, and data as a basis for an action plan to develop an Asset Management Plan that will endure. This Executive Report provides guidance on how to organize people, functions, and resources to build upon the City's unique qualities and to achieve its asset management goals.

This report summarizes recommendations for improving the City's practices for asset management, as they were evaluated in 2018. As the City continuously changes, new staff is added, the demands of the staff and infrastructure change, the City has to be open to changing itself and its structure. This report is designed to be amended, updated, and revised to meet the changes of a dynamic City.

Summary of Recommendations

The lists below summarize short-term and long-term recommendations for the City to implement a City-wide asset management program. Further, details on many of these recommendations are described in later sections of this report.

Short-Term Recommendations (within next 1-year)

1. Maintain primary asset management functions within the Department of Public Works where the people closest to the majority of the City's infrastructure assets lead the program.
2. Create and Capital & Asset Management Section under the DPW Technical Services Division inclusive of the asset management responsibilities and capital improvement planning.
3. Approve a reorganization memo that creates the new section, details its purpose, and identifies new resources and existing resources to be moved to the new section.
4. Hire a full-time Asset Management Administrator.
5. Establish an Asset Management Steering Committee with representation from all asset-intensive departments (DPW, Parks, IT, Mayor's office, Clerk / Treasurer's office, and Planning) to replace the existing Capital Committee and help guide the City's asset management initiatives and provide direct lines of communication between the Capital and Asset Management Section and departments.
6. Establish asset management program metrics and benchmarks, measure and present metrics on a regular basis.
7. Conduct a facility functional assessment to determine the adequacy of the City's buildings to house their intended function.

8. Create asset management policy; establish performance objectives; ensure legislative requirements are met; support funding applications; evaluate cost/benefit of outsourcing. Procedures should include methodologies for conducting asset criticality analysis (risk), and the process to add projects to the CIP.
9. Implement a GIS centric computerized maintenance management software system to manage the City-wide asset management program.
    a. Identify existing software applications used by departments that the CMMS software system will replace. This will be dependent upon the selected software package capabilities. The CMMS tool should support tactical, strategic, and operational asset management activities.

Long-Term Recommendations (1 - 3 years)

1. If necessary, add resources to the Innovation and Technology department to provide technical support for a City-wide computerized maintenance management software and GIS system.
2. Adjust staffing levels as appropriate for both Parks and Facility Maintenance to ensure adequate resources are available to maintain City facilities and grounds to appropriate condition levels and assist the City with obtaining the full value of its assets by performing proper maintenance.
3. Use BTVStat to monitor and continuously improve the City's asset management program.
4. Evaluation moving facility maintenance to the new Capital and Asset Management Section or another permanent and dedicated home within the city.
5. Develop a strong central GIS support service under the Innovation and Technology department with a full-time City-wide GIS coordinator.

Draft City Council Resolution Supporting Asset Management Program & Implementation
Sponsored by the CC Transportation Energy & Utilities Committee
Version: 12-16-19; Drafted by DPW

WHEREAS the City of Burlington manages more than $500 million in property, infrastructure, facilities, vehicles and equipment assets according to the City's Preliminary Strategic Asset Management Plan completed in 2016; and

WHEREAS these assets are critical to the vitality and sustainability of our community; and

WHEREAS the American Public Works Association defines asset management as "a comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of community benefits"; and

WHEREAS the City has long struggled to maintain its capital assets adequately; and

WHEREAS inadequate preventative maintenance activities lead to premature asset failure, reactive repair work, service disruptions, increased long-term costs, and frustrated constituents; and

WHEREAS City staff and policy makers seek to implement a robust, well-structured asset management program that will allow for defensible strategic decision making that maximizes the potential of the 10 Year Capital Plan; and

WHEREAS such a program will increase the overall sustainability of our infrastructure, improve customer satisfaction, reduce capital and operational costs; and

WHEREAS a 2019 Asset Management Program Development for the City of Burlington quantified the tangible organizational benefits of an advanced asset management program including a 20% savings in annual capital requirements, 5% savings by extending the lives of existing assets, 10% reduction in operation and maintenance costs through preventative maintenance, 5-10% savings on energy, lower borrowing costs, improved staff morale as well as intangible benefits; and

WHEREAS BTV Stat has laid an important foundation for a data-driven management approach that can further benefit from a data-driven asset management program; and

WHEREAS a 2016 Preliminary Strategic Asset Management Plan for the City of Burlington found that "Burlington is well-positioned to implement asset management [and] there is strong executive level support"; and

WHEREAS a 2019 Asset Management Program Development & Organizational Structure for the City of Burlington found that "This is a generational moment to create new synergies and break down silos."; and

WHEREAS the City Council has supported existing efforts including the hiring of an Asset Management Administrator to ensure the implementation and success of the following phases; and

WHEREAS a goal of the Phase II asset management implementation effort will be to procure a cross-departmental computerized asset management system that can manage work orders, customer inquiries, asset inventories, and preventative maintenance schedules for assets across the City; and

WHEREAS various General Fund, Special Revenue Fund, and Enterprise Fund budgets have included monies to continue asset management program development in FY20; and

WHEREAS asset management is a long-term commitment that requires ongoing human, programmatic and capital resources to succeed; and

WHEREAS the Transportation, Energy & Utilities Committee of the City Council unanimously approved forwarding this resolution to the full City Council at its January 6th, 2020 meeting;

NOW THEREFORE BE IT RESOLVED, the City Council strongly supports the development of an asset management program within City government to achieve more resilient and cost-effective municipal infrastructure; and

BE IT FURTHER RESOLVED, the City Council supports the Phase II asset management planning and implementation scope of work presented as part of this agenda item; and

BE IT FURTHER RESOLVED, the City Council directs the Transportation, Energy & Utilities Committee to lead the Council's engagement in this effort moving forward, including recommendations for future resourcing; and

BE IT FURTHER RESOLVED, the City Council requests an annual update from the Transportation, Energy & Utilities Committee and City staff on the City's Asset Management Program implementation.

Transportation, Energy and Utilities Committee of the City Council

Tuesday, December 17, 2019 5:00 PM

Burlington Department of Public Works – Front Conference Room 645 Pine Street – Burlington, VT

SIGN-IN SHEET

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Please note that this sign-in sheet and any information provided on it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

Transportation, Energy and Utilities Committee of the City Council
Tuesday, December 17, 2019 5:00 PM
Burlington Department of Public Works – Front Conference Room 645 Pine Street – Burlington, VT

SIGN-IN SHEET

NAME	EMAIL
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Phelan Fretz	pfretz@echovermont.org

Please note that this sign-in sheet and any information provided on it will be maintained as a public record and may be subject to disclosure under the Vermont Public Records Act.

Carl H. Fowler

A Comment on the December 3 Letter from Joe Flynn to the Mayor

December 17, 2019

The December 3rd letter from Joe Flynn to the Mayor contains an interesting new argument regarding the ETHAN ALLEN. It infers that the Federal Railroad Administration (FRA) might insist that the entire VRS mainline from Rutland to Burlington be treated as a single "territory" (block in railroad parlance) for purposes of dispatcher clearance, when the Amtrak train is enroute between those points--or that even if an exemption was received, there would be a territory covering the full line north of Middlebury to Burlington (after the train arrives there from what would be a Rutland-Middlebury "territory" clearance). Presumably this is related to the absence of block signals and Positive Train Control (PTC) on VRS? No passing track "meets" between active trains would be permitted--even though they are an absolutely routine part of railway operations.

This would be a real problem for VRS, as effectively it allows only one train to be in motion over at minimum 34 miles of line (Burlington-Middlebury) or, in the worst-case example--Burlington to Rutland--67 miles of track. But how does building a less than 900 foot passing track at Union Station resolve this?

This may (theoretically) be required by Amtrak and/or the FRA--but it is not at all typical of the way "Track Warrant" dispatching usually works on railroads nationwide. In general, a railroad's dispatcher issues a train a day/time specific "Track Warrant" clearance to operate a given train between stations and/or what railroaders call "Control Points"--typically between sidings. There may be speed restrictions added within a cleared district if there is maintenance under way, or if there has been, for example, really heavy rain. But to require that 34-67+ miles of a railroad, with existing passing tracks inside those miles of "cleared" track, to operate in this fashion--with no more than one moving train--is not the way this usually works.

If the FRA insisted the ETHAN ALLEN would be the only train operated in a district as long as Burlington to Middlebury (or worse all the way to Rutland) this would impact VRS operational fluidity when Amtrak was in motion. It is useful to note Vermont has already added capacity to the former Rutland RR route, in the form of at least one new passing track and a reconfigured one at Leicester Jct., as part of the Western Corridor Project. Why was this work needed if trains were never to meet/pass Amtrak in this territory?

Again, this is not the way Track Warrants usually work. Much more typical would be for the dispatcher to authorize (for example) the ETHAN ALLEN to proceed from say Middlebury to (for example) the passing track at Charlotte and to wait there for a new Warrant, or to pass an opposing train (for example the Dinner Train).

But how does any of this impact Union Station/Main Street Landing (MSL)--which is beyond the freight yards? Here is where I find this problem to be no justification for building the added passing track at MSL, as long as no freight trains would typically be waiting to enter the yards during the hour or so before Amtrak's expected arrivals. The New England Central RR (NECR)

delivers freight cars to VRS either in the middle of the day or more generally very late at night--both times when Amtrak would NOT be at Union Station even if running quite late. Of course from their perspective it would be ideal to have more "holding/passing tracks" anywhere outside of the yards--but that doesn't in and of itself justify what they propose from King to College. Indeed, a side benefit of building the new 1200 Amtrak siding at the McNeil site is that it also might be used by freight trains waiting to enter the yards during the daytime, when Amtrak would not be present.

If the upgrade on the waterfront is not required by the arrival of Amtrak, then I still fail to understand not only why the taxpayers should pay for it, but also why a new (and of necessity very short) passing track King to College is the choice for added capacity that could much more easily be acquired by, for example, lengthening an existing passing track south of the Burlington yards, or building a new one in a rural setting? If VRS had several miles of true double track between say Shelburne and Middlebury (or Rutland), this would offer much more fluidity than a very short added passing track on the waterfront.

Also and again, what is outlined in Joe Flynn's memo is much more severe than what is usually required for operations over PTC exempted track. VRS was very proud of a GPS based system they had developed to communicate the alignment of the switches at sidings and passing tracks in the absence of full Centralized Traffic Control (CTC) signals and PTC. This was supposed to meet Amtrak's demand for PTC equivalency.

But even if the long track territories outlined in Joe Flynn's letter are imposed by the Feds, the new passing track at MSL is not essential if the freights are not scheduled to stand by outside of the yards (and specifically north of the yards) near the same times as Amtrak would make its brief stops.

--

Carl H. Fowler

Vice Chair: Rail Passengers Association

President: CHF Rail Consulting LLC

Member: Vermont Rail Advisory Council

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(All opinions expressed are my own)

Carl H. Fowler

Comments on the Possible Use of the McNeil Plant Site for the ETHAN ALLEN Service Facility

December 17, 2019

Since the last meeting of the Transportation Committee to review the Storage Facility location dispute, ***VTRANS has identified what may be a very good short-term solution to the Amtrak Burlington Storage Facility issue, the construction of a siding/service track adjacent to the McNeil Power Plant*** in the semi-rural Intervale area. The Vermont Rail Advisory Council ranked this location Number One and the use of Union station Number Six at its recent meeting.

This is an enticing idea—but with the following caveats:

1. ***The McNeil site should be seen only as an interim location***. The long-deferred Vermont State Rail Plan Priority to repair the full length of the Burlington-Essex Jct. NECR branch line should remain a priority to be addressed as soon as Amtrak service to Burlington actually begins. The new McNeil siding could be used by freight trains once no longer required for Amtrak purposes, or it might serve regional/commuter passenger trains.

2. ***Even if the state ultimately decides to send only one train to Montreal, it is essential to unite the two Vermont passenger rail routes so that ridership can flow from both sides of the state to/from Canada.*** To do this requires the upgrade of the track from Burlington to Essex Jct. to meet passenger service operational standards. Passengers could change trains at Essex Junction or St. Albans to reach points on both Vermont lines. Far better, of course, is direct service over both routes.

3. ***If the McNeil project is built the only work needed at Union Station is to raise at least 300 feet of the existing platform 8 inches above the railhead, to meet ADA rules.***

4. ***It is absolutely essential that if the McNeil service siding is built that the passing track project at Union Station be abandoned***. If the ETHAN ALLEN train does not block the mainline into the VRS yards, then the situation there will be exactly as it is now—which means that since VRS can currently operate its line with only one track on the waterfront, it will still be able to function with only a single track.

5. ***The inferred threat that the construction of this unneeded second track is somehow a condition of VRS to bring the ETHAN ALLEN and Amtrak to Burlington should be rejected by the city and VTRANS***—which is the true owner of the former Rutland RR mainline used by VRS. If necessary VTRANS should fight this demand all the way to the Federal Railroad Administration (FRA) and/or the Surface Transportation Board (STB).

6. ***The decision to build the McNeil service site and the fate of the waterfront area at Union Station are inseparable.*** The city must express its opposition to the construction of the passing track on the waterfront in unambiguous terms.

7. ***There is a real danger that VTRANs could still approve public funding for the passing track and put the service facility at Union Station.*** There could be a claim that the combined cost of BOTH McNeil and the passing track would be so high that the Amtrak service facility would end up at Union station after all.

8. ***This potential outcome is a trap, which the city must carefully consider before agreeing to support any added rail capacity on the waterfront***. The McNeil project is estimated to cost at least $1.5M. The true cost of the Union Station passing track, combined with the needed gates, signals, switches and the bike-path relocation, is likely to reach at least $2M. Building both doubles costs. But remember, if McNeil service facility is built the passing track is unneeded. This is the key point!

9. ***The public is entitled to much more information as to why VTRANS/VRS persist in contending that no additional capacity can be engineered within the footprint of the current yards or elsewhere on the line south of the waterfront***. Why have the state and VRS failed to consider other mitigations to address VRS capacity concerns, such as lengthening existing passing tracks south of Burlington, or even building a section of double track in a rural area, to relieve pressure in the yards?

10. ***Neither the city of Burlington, the residents and users of the waterfront area, nor the eventual riders of the ETHAN ALLEN train, should be held hostage to a desire to provide a new siding for VRS to use for its freight and tourist trains, if the Amtrak train is serviced at a location that does not block the mainline on the waterfront.*** It is completely unreasonable to ask the taxpayers to fund a passing track project whose intended need (to allow freight trains to pass the stored Amtrak equipment) no longer exists.

11. ***If Amtrak is serviced in the Intervale at a new McNeil plant siding, it will not in any meaningful way obstruct VRS.*** Total time for the daily station stops at Union Station should not exceed 15 minutes for each of the two daily stops and will probably be less. ***This does not justify funding a multi-million-dollar new passing track with public grants.***

The idea of servicing Amtrak at the Intervale/McNeill location is excellent as a short-term solution and should be fully developed by VTRANS and endorsed by the city of Burlington. Of course, this must be done in consultation with the New England Central RR. Time exists to accomplish this project before the Amtrak service can reach Burlington in 2021 (or more likely 2022).

Chittenden County
I-89 2050 Study

Getting the Conversation Started

First Round of Public Outreach for the Chittenden County I-89 2050 Study

THURSDAY
Jan 30

6-8 PM | South Burlington City Hall
575 Dorset Street

THURSDAY
Feb 13

6-8 PM | Williston Town Hall
7900 Williston Road

WEDNESDAY
Mar 11

6-8 PM | Winooski City Hall
27 W Allen Street

Share your thoughts and ideas for the I-89 corridor through Chittenden County. Join us in-person or watch a live stream video of any of the three meetings directly from the project website.

Dinner will be provided!

Transportation and childcare are available upon request with sufficient notice. Please contact Diane Meyehoff: diane@thirdsectorassociates.com or 802-865-17

ABOUT THE PROJECT

The Chittenden County Regional Planning Commission (CCRPC) and Vermont Agency of Transportation (VTrans) are conducting a comprehensive study of Interstate 89 within Chittenden County to create a vision and identify improvements for 2020 to 2050. The intent is to assess the safety and capacity of Interstate 89, identify existing and future needs, develop and evaluate improvements, examine impacts of new or expanded interchanges, and develop an action plan.

CONNECT WITH US!

www.**envision89**.com

Scan this code using a QR reader on your smartphone and visit envision89.com to stay up to date on the latest project news.

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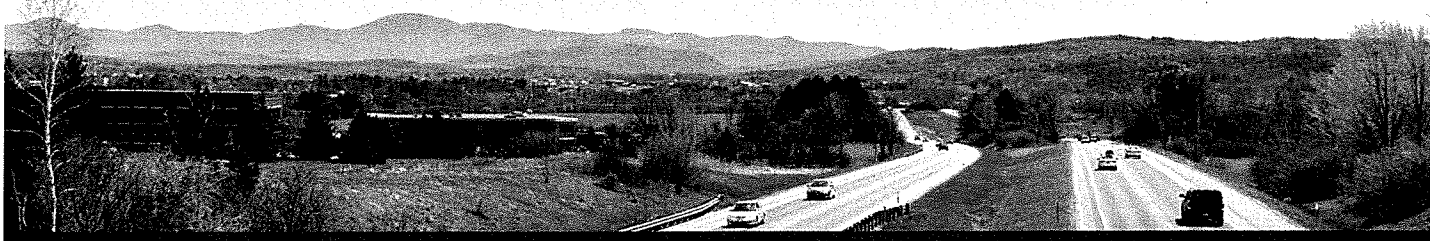

In accordance with provisions of the Americans with Disabilities Act (ADA) of 1990, the CCRPC will ensure public meeting sites are accessible to all people. Requests for free interpretive or translation services, assistive devices, or other requested accommodations, should be made to Diane Meyerhoff, Third Sector Associates, at 802-865-1794 or diane@thirdsectorassociates.com, at least 3 business days prior to the meeting for which services are requested.

vhb CHITTENDEN COUNTY RPC VTrans

Comments: 12/16/19

No Case for second track

If the Amtrak is serviced and overnights at a McNeil's siding, the Amtrak train will only be at Union Station for 10 to 15 minutes to unload its passengers before continuing north to this siding. Amtrak will return to the station in the morning for 15 to 20 minutes to load its passengers for its departure south. If there is only the existing single track in front of Union Station, Amtrak
will only be paused on it briefly once in the PM and once in the AM. The proposed 2 track will not have an additional passenger platform therefore only there will still only be one track that is capable of allowing passengers to get on or off a train.

With no improved loading and unloading a 2nd track offers no advantage or relief for these brief stops should scheduling conflicts arise during the Amtrak arrival or departure. So an additional track offers this Amtrak service no advantages. Given the short time that the Ethan Allen will be stopped at the Union Station there is no need to have a passing track for freight, which can await a short pause in the rail-yard a block away, before Amtrak continues on to its overnight siding at McNeil. Amtrak's departure in mornings will take place at given early time, a time that freight traffic can easily be scheduled around.

With no discernible need of a 2nd track that can be attributed to Amtrak service, the State of Vermont is under no obligation to pay to provide VRS with a 2nd track between College St and King St.. There is no need to tear up the existing bike path path which offers a sensible pedestrian and emergence vehicle access East of the existing and only necessary rail track at Union Station.

Rick Moulton

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Councilor Maxwell Tracy, Chair *WARD 2*
Councilor Jack Hanson, *East District*
Councilor Franklin Paulino, *North District*

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Transportation, Energy and Utilities Committee of the City Council
Tuesday, December 17, 2019 5:00 PM

Burlington Department of Public Works – Front Conference Room
645 Pine Street – Burlington, VT

–AGENDA–

1. **Councilor Tracy called the meeting to order at 5:09 pm.**
    a. Motion to move item 8 to item 4.
    b. All in favor.
2. **Minutes of 11/19/2019**
    a. Motion to accept – all in favor.
3. **Public Forum**
    a. **History of the Burlington Waterfront DVD shared during public forum.**
        i. Melinda Moultan, we want to protect the waterfront for the people.
    b. Vermont Rail Service (VRS) is on a dangerous track with their proposal on developing rail on the waterfront. I appeal to the city to understand the two locations are not the same. The city of Burlington should be opposed to the development along the waterfront. The city needs to go on record that McNeil is a good place to service the train. We do not want to see the reindustrialization of the waterfront, and this is what will happen.
    c. Carl Fowler comments, see attached.
    d. Rick Moulton comments, see attached.
    e. Main Street Landing will be providing a communication to City Council. The Vermont Rail Council, has unanimously decided the main street landing plan is the worst choice.
    f. Laura Allen, I love the train, I am excited that Amtrak is coming. There is no uncoupling or coupling on the stretch of track where people think, that work takes place in the actually yard. The freight service that would come through would be once a night, it's not as big of a deal as what people think.
    g. Burlington Segway, we do not support any of the changes VRS proposes. I am very much opposed to a second track for VRS.
    h. Nicole Losch, there will be an I89 study, www.envision89.com, see attached.
4. **Waterfront Rail Update**
    a. Chapin Spencer, DPW presenting, see attachments.

b. Councilor Paulino: Would VRS agree that the McNeil solution Mr. Fowler illuminated is a possibility? This is discussed in the letter from VRS to VTrans. Is VRS willing to assist financially to the relocation of the bike path? This would be on the Cities dime. Have they considered a second track within their own railyard? The different systems will not allow this. It seems like VRS is going to do what they want. It is as if you get to lease a one-bedroom apartment and then change it into a two-bedroom place without the owner's consent? This doesn't make any sense.
c. Councilor Tracy: my concern is the location of rail close to residential housing. There should be discussion around environmental justice for this issue. We can ask the state regarding this review; sound evaluations have been done. We have not received any communication which does not indicate a disproportionate amount of residents affected by this change; this is a good questions and we will follow up with VTrans. The city should do outreach regarding environmental impact; sound, vibration, air pollution etc. There are several stakeholders, do we have any sense of how they feel? The city is not aware of any public outreach VTrans and or VRS has done.
d. Councilor Hanson: What are the funding sources? The city is managing the bike path, however we are unsure what the split is between state and feral funds. It would make sense that the TEUC would sponsor any resolutions to deal with this project. The city should take a positon against the second track at Union Station. We need to perform outreach in the Intervale area; we need to engage with those folks. I don't think we can guarantee that the second track at Union Station will be prevented, it's obviously not within our control.
e. What's the anticipated cost for the relocation of the bike path removal? Chapin Spencer: The city is not going to have to take on that cost. Cindi Wight: we are not sure what the total cost will be for the relocation for the bike path.
f. Who from the City is communicating with VRS? The mayor's office has been the primary source of contact for VRS.

5. 2019 Snow and Ice Plan

a. Lee Perry, DPW presenting, see attachment.
b. Councilor Hanson: Has implementation begun? Yes. How is the feedback from snow crews? Good, it's just as efficient as before. It would be great to have another update in January.
c. Councilor Tracy: The old sidewalk plows kept breaking down. Was there an experiment with liquid deicer? It did not seem to work out.
d. Councilor Paulino: I am impressed with the new sidewalk plows.
e. Chapin we are looking at being able to track plow locations and when streets get plowed. We are working through it, but there are several details which need to be worked out.

6. Traffic Calming Program Update

a. Phillip Peterson, DPW presenting, see attachment.
b. Councilor Paulino: Plattsburg Ave and North Ave, it is a tough intersection. Are there things that can be done? Ethan Allen Pkwy and North Ave needs work. DPW and Parks are working together on plans for this intersection. DPW Staff are planning on having a neighborhood meeting sometime in January.
c. Councilor Hanson: Are there any plans for North Prospect? Nicole would know. Mansfield and Loomis, what is going on? There is a meeting for the neighborhood this evening. What do we want to do with the existing quick builds? There are some which will become permanent.
d. Councilor Tracy: Residents do not like the way the quick builds look. We need to make sure we collaborate on stormwater projects with the bump outs and curb extensions. Streamlining the traffic calming program should be done in parallel with Vision Zero. We are using a data driving approach. We are looking at how we can collect data from the hospital as well as the police. Manhattan Drive, the radar sign is up. Intervale Ave and Archibald. There are plans in the works. There are safety concerns from residents at Archibald and Intervale.
e. Action: Informative, no action needed.

7. Asset Management Resolution

a. Martha Keenan, DPW presenting, see attachment.
b. Councilor Hanson: I fully support this resolution. I see the value and the potential. We need as many specific examples to provide to the public.
c. Action requested, TEUC vote to sponsor for City Council.
    i. All in favor, this resolution has been approved. This will be presented to the 1.6.19 City Council meeting.

8. Climate Change Resolution

a. TEUC Led discussion, see attached.
b. Councilor Hanson: If we can get more people out of cars and into mass transit we can reduce greenhouse gasses. We need to subsidize mass transit, and this will shift behaviors. We need to take the science seriously, we need to take every opportunity to reduce greenhouse gas emissions. The main intention would be to open up the gates to be able to open up funds to use toward reducing greenhouse gasses.
c. Councilor Paulino: I support this, I have reservations about how this will support these revenues.
d. Councilor Tracy: Can DPW bring a study forward by February? Chapin Spencer: we would appreciate more time, perhaps March or April 2020. Tracy: I support this resolution as well.
e. Action requested, TEUC vote to sponsor for City Council.
    i. All in favor, this resolution has been approved, with an amendment that DPW can have the traffic financial report by the March TEUC meeting. This will be presented to the 1.6.19 City Council meeting.

9. Councilors' Update

a. Councilor Paulino: Briefing on potholes, is there technology we can use?

b. Councilor Hanson: Can Channel 17 come to the TEUC, we will present financials at the next. Can we do Facebook Live? The Halloween mudslide, I would like a briefing on that; can we discuss that situation. Norm Baldwin will provide an update in January. Who is in charge of outreach for the Vermont Rail situation? Can BHA follow up with residents on Riverside?

c. Next TEUC meeting; 1.16.19

10. Adjourn

a. Meeting adjourned at 7:27 pm.