



**CITY OF BURLINGTON
DEPARTMENT OF PUBLIC WORKS**

645 Pine Street, Suite A
Post Office Box 849
Burlington, VT 05402-0849
802.863.9094 VOICE
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www.burlingtonvt.gov/dpw

Chapin Spencer
DIRECTOR OF PUBLIC WORKS

M E M O R A N D U M

To: Tenzin Chokden, Clerks Office
From: Chapin Spencer, Director
Date: September 13, 2018
Re: Public Works Commission Agenda

Please find information below regarding the next Commission Meeting.

Date: **September 19, 2018**
Time: 6:30 – 9:00 p.m.
Place: **645 Pine St – Main Conference Room**

A G E N D A

ITEM

- 1 Call to Order – Welcome – Chair Comments
- 2 5 Min Agenda
- 3 10 Min Public Forum (3 minute per person time limit)
- 4 5 Min Consent Agenda
 - A Birchcliff Parkway No Parking Zone
 - B Parking Agreement for State of VT – 34 Spaces in Lakeview Garage
 - D Parking Agreement 247 Pearl St – 10 Meter Spaces to Replace Lost Space on Pearl St. (sending paperwork out later)

Non-Discrimination

The City of Burlington will not tolerate unlawful harassment or discrimination on the basis of political or religious affiliation, race, color, national origin, place of birth, ancestry, age, sex, sexual orientation, gender identity, marital status, veteran status, disability, HIV positive status or genetic information. The City is also committed to providing proper access to services, facilities, and employment opportunities. For accessibility information or alternative formats, please contact Human Resources Department at 865-7145.

- | | | |
|----|--------|--|
| 6 | 30 Min | Proposed Wastewater & Stormwater Bond
A Communication, C. Spencer & M. Moir
B Commissioner Discussion
C Public Comment
D Action Requested – Vote |
| 7 | 20 Min | Mid-Season Construction Update
A Oral Communication, C. Spencer
B Commissioner Discussion
C Public Comment
D Action Requested –None |
| 8 | 10 Min | South Union St Demonstration Project
A Oral Communication, C. Spencer
B Commissioner Discussion
C Public Comment
D Action Requested –None |
| 9 | 10 Min | October Commission Meeting Date – Potential Change |
| 10 | 5 Min | Approval of Draft Minutes of 7-18-18 |
| 11 | 10 Min | Director's Report |
| 12 | 10 Min | Commissioner Communications |
| 13 | | Adjournment & Next Meeting Date – October 17, 2018 |



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September 11, 2018

TO: Public Works Commission

FROM: Phillip Peterson, DPW Engineer Technician *PMP 9/11/18*

CC: Nicole Losch PTP, Senior Transportation Planner *NL 9/11/18*

RE: Consent Agenda Item: Birchcliff Parkway "No-Parking" Zone

Recommendation:

Staff recommends that the Commission adopt

1. No person shall park a vehicle at the following locations: On the south side of Birchcliff Parkway beginning immediately west of the driveway to 750 Pine Street and extending west for 60 feet, between the hours of 7:00 a.m. and 10:00 a.m. Monday through Friday.

Purpose & Need:

The purpose of a time dependent "No-Parking" zone in this area would allow trucks to make deliveries to The Great Northern (restaurant), and Zero Gravity Brewery. The need is to prevent dangerous situations due to the trucks entering and exiting The Great Northern (restaurant), and Zero Gravity Brewery during delivery hours.

Project Checklist:

	N/A	Yes	No	Reference
Aligns with MUTCD standards and/or established City Policy?	X			
Aligns with City plans?		X		
Followed Public Engagement Plan?		X		This project falls under INVOLVE on the Spectrum of Engagement and minimum engagement strategies were met.

Summary and Conclusion:

The Department of Public Works (DPW) received a request from Zero Gravity Brewery to create a "No-Parking" zone on Birchcliff Parkway due to truck deliveries. The staff at Zero Gravity Brewery and The Great Northern believe there is not enough space for larger trucks entering or exiting their facility onto

Birchcliff Parkway. Staff conducted a site survey and turning template analysis, which confirmed the need for a "No-Parking" zone in this area.

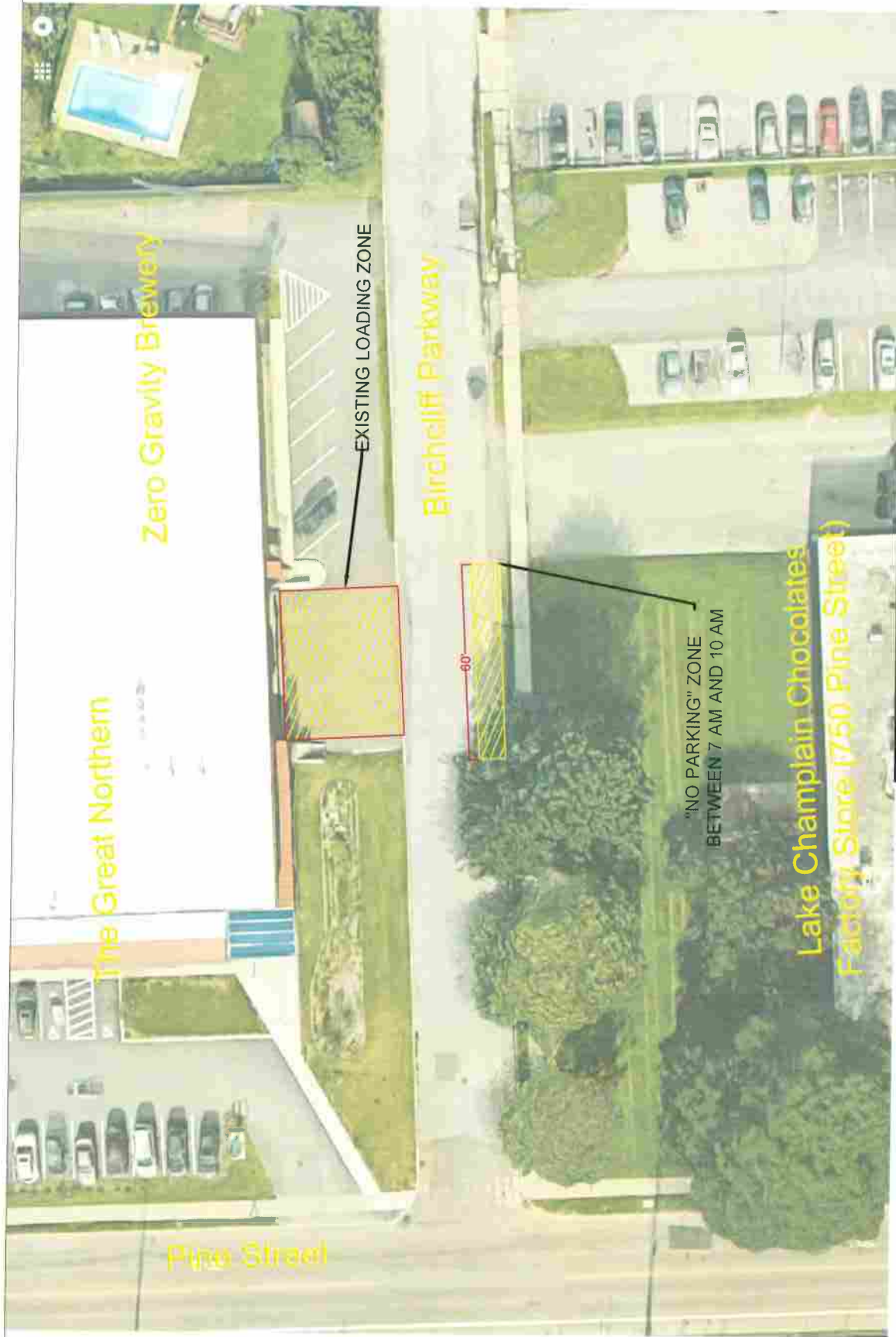
If cars are parked directly across the street from the loading docks for Zero Gravity or The Great Northern, delivery trucks cannot back into the loading docks nor can they make a safe turn onto Birchcliff Parkway after deliveries have been made. Therefore, staff recommend the "No-Parking" zone be on the south side of Birchcliff Parkway beginning immediately west of the driveway to 750 Pine Street and extending west for 60 feet, between the hours of 7:00 a.m. and 10:00 a.m. Monday through Friday.

Public Outreach:

Public outreach was conducted in accordance with the DPW Public Engagement Plan. There was no written feedback or phone calls received by DPW Staff. DPW Staff conducted informal on-site meetings with local business owners and managers to explain what was proposed. Specifically, Staff had discussions with Double G Auto, CrossFit Burlington, and Lake Champlain Chocolates. All managers and owners gave positive feedback to the proposed change.

Attachments:

1. Initial request
2. Site map



NOT TO SCALE



BIRCHCLIFF PARKWAY
PROPOSED "NO-PARKING" ZONE



**BURLINGTON
PUBLIC WORKS
ENGINEERING DIV.**
100 N. CHAMPLAIN STREET
BURLINGTON, VT 05401
PHONE: 802-255-3200 FAX: 802-255-3201

DATE	BY	APP'D	DATE
08/26/20	W. J. [illegible]	[illegible]	08/26/20
08/26/20	W. J. [illegible]	[illegible]	08/26/20
08/26/20	W. J. [illegible]	[illegible]	08/26/20

PARKING AGREEMENT
City of Burlington

This parking agreement (“Agreement”) is entered into by the City of Burlington (“City”), by and through its Department of Public Works (“DPW”), and the State of Vermont (“State”) by and through its Department of Building and General Services. The State and the City agree to the terms of this Agreement.

1. RECITALS

- A. Authority.** Authority to enter into this Agreement exists in the City Charter. Required approvals, clearance, and coordination have been accomplished from and within each Party.
- B. Consideration.** The Parties acknowledge that the mutual promises and covenants contained herein and other good and valuable consideration are sufficient and adequate to support this Contract.
- C. Purpose.** The State seeks to purchase 34 parking licenses at the College Street or Lakeview parking garages owned by the City.

2. EFFECTIVE DATE AND TERM

- A. Effective Date.** This Agreement shall not be valid or enforceable until the Effective Date. The City shall not be bound by any provision of this Agreement before the Effective Date and shall have no obligation for any performance prior to the Effective Date or after the expiration or termination of this Agreement.
- B. Term.** This Agreement and the Parties respective performance shall commence on the Effective Date and expire on October 1, 2019.
- C. Termination.** Either Party may terminate this Agreement for any reason upon giving 30 days written notice to the other Party.

3. DEFINITION

- A. “Effective Date”** means either October 1, 2018, or the date on which this Agreement is approved and signed by the City, as shown on the signature page of this Agreement, whichever date is later.
- B. “Party”** means the City or the State and “Parties” means both the City and the State.

4. GRANT OF LICENSE

- A. Use of Facilities.** The City shall provide the State with up to 34 parking licenses to be used by the State at the College Street Parking Garage or the Lakeview Parking Garage for the term of this Agreement as set forth in §2.B.
- B. Timing Restrictions.** The parking licenses granted under this Agreement shall only be valid Monday through Friday of each week. No overnight parking is permitted as part of this Agreement.

- C. **User Restrictions.** Only currently registered vehicles that are legally allowed to be operated on public streets and right of ways may be issued a parking license and utilize the parking garage privileges granted in this Agreement.
- D. **Identification of License.** All persons possessing parking licenses granted under this Agreement must display the appropriate means of identification that are issued to authorized permit holders to utilize the parking privileges granted herein. Such identification may include a card, decal, hangtag, entry on a license plate registry, or other means.

5. PAYMENT

- A. **License Fee.** The State shall pay the City \$80 per month for each parking license granted under this Agreement.
- B. **Billing.** The billable term of each issued license shall begin on the day the license is issued to the State.

6. PARKING CONDITIONS

- A. **Use of Parking Facilities.** The monthly parking licenses issue under this Agreement authorizes designated State employees to self-park and lock one vehicle in an available (i.e. not being used) parking space located within the Lakeview or College Street Parking Garage. If a license holder is unable to park in either facility due to full occupancy, the license holder shall be authorized to park in the Marketplace Garage at no additional cost. If all City-owned parking facilities are at capacity, the City and the State shall work together to develop a plan for parking in City-owned surface lots until capacity at a parking garage becomes available. Notwithstanding the foregoing, the City does not guarantee the availability of parking spaces under this Agreement and if all City-owned parking facilities are at capacity, license holders shall either wait their turn to gain entrance or find alternative parking at their own cost.
- B. **Management of Parking Facilities.** The City reserves the right to manage parking in its facilities in the best interests of the City. The State acknowledges and agrees that management of City facilities may require the holders of the parking licenses granted under this Agreement to use another parking facility or be relocated if necessary.
- C. **Removal.** The City may remove any vehicle granted parking privileges under this Agreement at the owner's sole expense if reasonable efforts were made by the City to notify the owner about the need to remove the vehicle from the premises within a reasonable time. The determination as to removal of a vehicle is at the sole discretion of the State and includes, but is not limited to, leaking of chemicals, oil, gas, or antifreeze from a vehicle. Notwithstanding the foregoing, in the event of a threat of imminent danger to life or property as determined by the City, a vehicle may be removed at the owner's sole expense without notification of the owner. The State is solely responsible for all losses, damages, claims, liabilities, judgments, costs, and expenses arising directly or indirectly during the term of this Agreement out of any act, omission, or negligence of the State or its license holders.
- D. **Acceptance of Risk.** Parking is at the State and its designated license holder's sole risk. The City shall not guard, assume care, custody, or control of any vehicle or its contents. The City shall not be responsible for any loss or damage caused to vehicles or their contents utilizing the City's parking facilities including fire, theft, damage, or loss directly resulting from the willful misconduct or negligence of the City. No bailment is created under this Agreement.

- E. Reporting.** The State shall require that as a condition of issuing a parking license granted herein, the license holder shall report any damage to the parking facility caused by the license holder's vehicle. Such damage includes, but is not limited to, the leaking of any chemicals, oil, gas, or antifreeze.
- F. Leaks.** If a vehicle is discovered to be leaking any chemical, oil, gas, or antifreeze, the City shall temporarily suspend the parking license privileges of the license holder until the license holder provides DPW with written proof that necessary repairs were made to prevent further leakage. Any suspension issued under this §6.F shall not suspend the license holder's obligation to pay the license fee set forth in §5.A. Any vehicle whose license to park is suspended may be removed at the owner's expense if the vehicle is found in a garage while the license is suspended.
- G. Limitation on Use.** The parking licenses granted herein are for the exclusive use of the assigned license holder. Parking licenses shall not be loaned, altered, transferred or sold. The State agrees that misuse of a license shall be deemed as theft of services and the licensee shall be locked out and parking privileges in the garages rescinded.
- H. Compliance.** The State shall inform its license holders that compliance with instructions for the use of licenses is a condition of its use. If a license holder fails to properly comply with use instructions the maximum daily fee will be assessed.
- I. Insurance.** The State shall ensure that all license holders possess minimum levels of automobile insurance as required by law.

7. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement and understanding of the Parties with respect to the subject matter of this Agreement. All prior representations and understandings of the Parties, oral or written, are merged into this Agreement. Prior or contemporaneous additions, deletions, or other changes to this Agreement shall not have any force or effect whatsoever, unless embodied herein.

8. MODIFICATION

Except as otherwise provided by this Agreement, any modification to this Agreement shall only be effective if agreed to in a formal amendment to this Agreement, properly executed and approved by the Parties.

9. THIRD PARTY BENEFICIARIES

This Agreement does not and is not intended to confer any rights or remedies upon any person or entity other than the Parties. Enforcement of this Agreement and all rights and obligations hereunder are reserved solely for the Parties. Any services or benefits which third parties receive as a result of this Agreement are incidental to the Agreement and do not create any right for such third parties.

10. WAIVER

A Party's failure or delay in exercising any right, power, or privilege under this Agreement, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power,

or privilege.

11. CHOICE OF LAW

Vermont law shall be applied in the interpretation, execution, and enforcement of this Agreement. Any provision included or incorporated herein by reference which conflicts with Vermont law shall be null and void. Any provision rendered null and void by operation of this provision shall not invalidate the remainder of this Agreement, to the extent capable of execution.

12. JURISDICTION

All suits or actions related to this Agreement shall be filed and proceedings held in the State of Vermont.

13. ASSIGNMENT

The State's rights and obligations under this Agreement are personal and may not be transferred or assigned without the prior written consent of the City. Any attempt at assignment or transfer without such consent shall be void. Any assignment or transfer of the State's rights and obligations approved by the City shall be subject to the provisions of this Agreement.

The remainder of this page intentionally left blank

14. SIGNATURE PAGE

Persons signing for the Parties hereby swear and affirm that they are authorized to act on behalf of their respective Party and acknowledge that the other Party is relying on their representations to that effect.

The Parties hereto have executed this Parking Agreement

STATE OF VERMONT

By: _____
Christopher Cole, Commissioner
Department of Building and General Services

Date: _____

**CITY OF BURLINGTON
Department of Public Works**

By: _____
Chapin Spencer, Director
Department of Public Works

Date: _____

Resolution Relating to
NOVEMBER 6, 2018 – SPECIAL CITY MEETING
ISSUANCE OF REVENUE BONDS
FOR WASTEWATER AND STORMWATER
UTILITY PROJECTS

RESOLUTION _____
Sponsor(s): _____
Introduced: _____
Referred to: _____

Action: _____
Date: _____
Signed by Mayor: _____

CITY OF BURLINGTON

In the year Two Thousand Eighteen

Resolved by the City Council of the City of Burlington, as follows:

- 1 That WHEREAS, the City of Burlington Department of Public Works has identified needs for various capital
2 improvements to its wastewater, stormwater and pollution control system, including capital improvements to
3 its treatment plants, wastewater collection system, stormwater collection and treatment system, improvements
4 to reduce combined sewer runoff, planning studies for programmatic improvements and improvements to its
5 pollution control and asset management systems; and
- 6 WHEREAS, the City has determined that the costs of such improvements are too great to be paid out of the
7 ordinary annual income and revenue of the Wastewater department and that, in order to fund the costs of such
8 capital improvements, it will be necessary to incur indebtedness for that purpose; and
- 9 WHEREAS, it is expected that these improvements will benefit future ratepayers; and
- 10 WHEREAS, the City expects that a total of \$29,958,000 will be required over the next five years to make
11 these capital improvements with approximately \$19,856,000 for the wastewater system and approximately
12 \$10,102,000 for the stormwater system; and
- 13 WHEREAS, the City Charter and other applicable law provides that, with at least a majority vote of the City's
14 voters, the City shall have the authority to issue bonds, from time to time, for the purpose of financing the cost
15 of any improvement to the City's public utility systems, including the City's wastewater system and the City's
16 stormwater system, with such bonds payable from the revenues of such public utilities; and
- 17 WHEREAS, the Board of Finance, at its September 5, 2018 meeting, has approved and recommended that the
18 City Council advance the proposed revenue bonding for wastewater and storm water system improvements for
19 City-wide consideration and a public vote at a City Special Meeting to be held on November 6, 2018;

Resolution Relating to

NOVEMBER 6, 2018 – SPECIAL CITY MEETING
ISSUANCE OF REVENUE BONDS
FOR WASTEWATER AND STORMWATER
UTILITY PROJECTS

20 WHEREAS, the proposed financing of such capital improvements may be through a public or private issuance
21 of bonds or notes, through the Vermont Municipal Bond Bank, or through the State of Vermont environmental
22 revolving loan fund, or a combination thereof, and may be done in one or more series, and over multiple years;

23 NOW, THEREFORE, BE IT RESOLVED that the City Council hereby requests, pursuant to Sec. 25 of the
24 City Charter, that the Mayor call a Special City Meeting to be held on November 6, 2018 and that the
25 following question be placed on the ballot of that Special City Meeting:

26 “Shall the City be authorized to issue revenue bonds or notes in one or more series, in an
27 amount not to exceed \$29,958,000 in the aggregate, to be issued pursuant to the City Charter
28 and subchapter 2 of Chapter 53 of Title 24, Vermont Statutes annotated, and payable only from
29 the net revenues of the wastewater system and stormwater system, as may be determined by the
30 City Council, for the purpose of paying for capital additions and improvements to the City’s
31 wastewater and stormwater systems, including (i) improvements to the wastewater treatment
32 plants and disinfection systems, (ii) improvements to the wastewater and stormwater collection
33 system, (iii) improvements for combined sewer runoff and overflow mitigation, treatment and
34 runoff reduction, (iv) programmatic improvements, and implementation of a pollution control
35 asset management system, and (v) funding debt service reserve funds and paying costs of
36 issuance?”

37 Estimated total Project Costs: \$29,958,000
38 City Share of Total Costs: \$29,958,000
39
40

41
42
43
44 Assistant’s initials/atty’s initials/Resolutions 2018/Name Resolution
45 Date
46 7395450_4:12576-00011

Burlington Department of Public Works Commission Meeting
Draft Minutes, 18 July 2018
53 Lavalley Lane – Main Wastewater Treatment Plant

Commissioners Present: Robert Alberry (*arrives at 6:41pm*); Tiki Archambeau (Chair); Jim Barr; Chris Gillman (Clerk); Brendan Hogan; Solveig Overby. **Commissioners Absent:** Justine Sears (Vice Chair)

Item 1 – Call to Order – Welcome – Chair Comments

DPW Director Chapin Spencer calls meeting to order at 6:37pm and states that he will moderate the meeting until the Commission's officers are elected.

Item 2 – Agenda

Commissioner Barr makes motion to accept Agenda and is seconded by Commissioner Archambeau.

Action taken: motion approved;
"Ayes" are unanimous.

Commissioner Alberry arrives

Item 2 – Nominations for Chair, Vice Chair & Secretary

Commissioner Barr nominates Commissioner Archambeau for Commission Chair, Commissioner Sears for Commission Vice Chair (with understanding that if the absent Commission Vice Chair nominee declines the position it can be re-filled at the next meeting), and Commissioner Gillman for Commission Clerk, and is seconded by Commissioner Hogan.

Discussion

Commissioners Archambeau, Gillman, and Overby all speak on the nominee for Commission Vice Chair.

Action taken: nominations approved;
"Ayes" are unanimous.

Director Spencer passes the meeting gavel to elected Chair Archambeau to run the remainder of the meeting.

Item 4 – Public Forum (3 minute per person time limit)

Andrea Todd speaks on street sweeping, the Water Resources Division's patch repairs, and GMT (Green Mountain Transit) involvement in the department.

Mark Monaghan speaks on his business venture.

Dan Girard speaks on Intervale Rd conditions.

Item 5 – Consent Agenda

A. Traffic Request Status Report

B. Complete Streets CY18 Paving – Added Streets

C. Great Streets – St. Paul Street Refine Ordinance Language

D. Great Streets – St. Paul Street Temporary Construction Parking Changes

E. Proposed Accessible Parking on Adams Court

F. Proposed Truck loading Zone on College St

G. Enforcement Authority for City-Leased & Managed Lots

Commissioner Barr makes motion to accept Consent Agenda and is seconded by Commissioner Alberry.

Discussion

Commissioner Overby speaks on Item G, specifically Appendix C and post-5:30pm parking rates; Director Spencer and Assistant DPW Director – Parking & Traffic Patrick Mulligan respond.

Action taken: motion approved.

“Ayes” are unanimous.

Item 6 – Draft ADA Transition Plan

A) Presentation by DPW Engineer Laura Wheelock and Associate Engineer Phillip Peterson who speak on the creation of an ADA (Americans with Disabilities Act) plan for the department.

B) Commission Questions

Clerk Gillman speaks on changes this plan will prioritize; Commissioner Hogan speaks on typos in the presentation and potential for penalties for non-ADA-compliant curb reconstructions; Commissioner Overby speaks on requirements in the Right of Way, public outreach, CIP abbreviation meaning, and vibrating pedestrian push buttons; Engineer Wheelock responds.

C) Public Comment

D) Commissioner Discussion

E) Action Requested – None.

Item 7 – Update on Wastewater and Stormwater Management

A) Presentation by Director Spencer and Assistant DPW Director – Water Resources Megan Moir who speak on departmental plans concerning recent wastewater and stormwater discharges.

B) Commission Questions

Chair Archambeau speaks on the reduction of CSOs (Combined Sewer Overflows), year-to-date gallons of discharge, BOD (Biochemical Oxygen Demand) increases, untreated discharge amounts decreasing, staffing increased costs, aging PLCs (Programmable Logic Controllers), infrastructure security considerations, and wastewater recovery potential; Clerk Gillman speaks on failure assessments, historical discharge comparisons, and the disinfection system detection systems; Commissioner Hogan speaks on historical severe weather planning comparisons and demands on infiltration systems; Commissioner Overby speaks on computerized control systems, warning sensors, CSO flow meters, and infiltration bump outs for Main St; Director Spencer, Assistant Director Moir, and Stormwater Program Manager Jenna Olson respond.

C) Public Comment

Andrea Todd speaks on stormwater requirements for new developments, increased population demands, water permitting for businesses, and the new marina’s effect on the lake with Assistant Director Moir responding.

D) Commissioner Discussion

Chair Archambeau speaks on scheduled public forums and public reactions; Director Spencer and Assistant Director Moir respond.

E) Action Requested – None.

Item 8 – Approval of Draft Minutes of 6-20-18

Commissioner Alberry makes motion to accept draft minutes of 6-20-18 and is seconded by Clerk Gillman.

Action take: motion approved;

Commissioner Alberry: Aye

Chair Archambeau: Aye

Commissioner Barr: *abstains*

Clerk Gillman: Aye

Commissioner Hogan: *abstains*

Commissioner Overby: Aye

Vice Chair Sears: *abstains*

Item 9 – Director’s Report

Director Spencer reports on Commissioner Hogan’s orientation, updating the construction portal, the annual report of the Commission to the City Council, no August Commission meeting, and the annual employee party occurring August 10.

Item 10 – Commissioner Communications

Chair Archambeau speaks on the next Permit Reform Committee meeting occurring in September; Commissioner Barr speaks on potential for climbing bike lane for Colchester Ave; Commissioner Hogan speaks on joining the Commission; Director Spencer and Senior Transportation Planner Nicole Losch respond.

Item 12 – Adjournment & Next Meeting Date – September 19, 2018

Motion to adjourn made by Commissioner Barr and seconded by Clerk Gillman.

Action taken: motion approved;

“Ayes” are unanimous.

Meeting adjourned at 8:50pm.



**CITY OF BURLINGTON
DEPARTMENT OF PUBLIC WORKS**

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To: DPW Commissioners
Fr: Chapin Spencer, Director
Re: **Director's Report**
Date: September 13, 2018

TRAFFIC REQUESTS:

To save administrative effort and paper, staff is proposing to include the number of outstanding traffic requests in my Director's Report each month. As of 9/10/18, we had 51 requests in queue.

PROPOSED WASTEWATER & STORMWATER BOND:

After a number of wastewater equipment and process challenges at our plants this season, the Mayor and staff made the decision to expedite our capital planning work this summer to offer the City Council the opportunity to present voters in November with a reinvestment plan for our wastewater and stormwater systems. The Board of Finance reviewed our Proposal for a Resilient City – a \$29.9M bond that would represent Phase II of the City's Sustainable Infrastructure Plan – and they recommended approval to the City Council. They did amend the resolution to include a new whereas clause: "the City intends to study and adopt, effective FY21, an alternate rate structure for water and wastewater to relieve the cost burden on income-constrained, small users." All the materials presented to the Board of Finance are provided to the Commission for your upcoming meeting and Assistant Director Megan Moir and I will be available to answer any questions. If the Commission is so inclined, we would welcome the Commission recommending approval of the draft resolution to the full City Council. The City Council will decide whether or not to put the bond question on the November ballot at their September 24 meeting.

SOUTH UNION STREET DEMONSTRATION PROJECT:

A group of neighbors adjacent to Edmunds School, along with Local Motion, have applied to conduct the first resident-led demonstration project under the Commission-approved ordinance. As a reminder, the reason for the citizen-led demonstration projects is to allow the public to propose and test roadway treatments that may help address community concerns. This specific proposal seeks to turn South Union Street between Maple and King to one-way and install a northbound protected bike lane between Maple and Main streets. A combined bike lane / bus loading and unloading would be accommodated proximate to the Main St intersection. DPW staff is reviewing the current proposal along with the Police and Fire departments. If our departments approves a permit for their demonstration, the demonstration would happen in late September / early October. The applicants have requested to operate the demonstration for a month, but City ordinance language limits these demonstrations to one week. Based on the applicants commitment to: 1) monitor the demonstration every day to make sure all the signs, stripes and materials remain in their proper place, 2) to notify stakeholders in accordance with the requirements for a Director-approved pilot project (20-3 in City ordinance), and 3) to collect feedback from stakeholders, I am prepared to approve a two-week installation of this demonstration project under my pilot project authority. This written update is my required two-week advance notice to the Commission. If the Commission has any concerns about this additional one-week extension of the demonstration project, let me know at the September Commission meeting.

CONSTRUCTION SEASON UPDATE

Overall, we are continuing to progress well with our coordinated paving and water main / sewer main contract work. We are expecting to hit our overall production targets for sidewalk construction, street paving and water main relining. Staff is managing a very challenging situation on Austin Drive where an unanticipated pipe condition required us to terminate our contract with a relining firm and pivot quickly to an open dig replacement of the sewer force main. Staff will be prepared to provide a quick overview at the meeting and answer any questions. We very much appreciate the patience that residents and property owners have shown during this intensive construction period. Information on this season's capital reinvestments can be found on our Construction Portal here: <https://www.burlingtonvt.gov/construction>.

A POTENTIAL SPECIAL OCTOBER COMMISSION MEETING

DPW Water Resources staff are working with the Clerk/Treasurers Office on the upcoming water bond – different from the recently proposed \$30M wastewater/stormwater bond. As you may recall, for the last two years we've brought forward a request to have the Commission recommend the Council bond for water main improvements in the coming year. These recommendations have been within the total \$8.34 M that voters authorized in Nov 2016. We are needing to do that again in advance of the CY 2019 construction season. The way the bond markets work and to get the best rates, we need to get City Council approval at their Oct 15 meeting. To get the Commission's recommendation prior to the Council's action, as specified in ordinance, we'd need to have a special October Commission meeting. As such, we'd like to discuss with you having a special October meeting on Wednesday, October 10 (possibly in lieu of the regular October meeting). We will finalize our October meeting plan at the September meeting. Thank you for helping us work through this.

ANNUAL EMPLOYEE RECOGNITION & TEAM BUILDING EVENT

Thank you to Commission Chair Archambeau for attending DPW's annual employee recognition event on August 10 at Oakledge Park. Tiki took the opportunity to thank the team for their work over the past year.

Feel free to reach out with any questions prior to Wednesday's Commission meeting. Thank you.



City of Burlington
Department of Public Works
645 Pine Street
Burlington, VT 05401
802-863-9094 VOICE
802-863-0466 FAX
802-863-0450 TTY
Burlingtonvt.gov/dpw

Chapin Spencer
Director of Public Works

Memorandum

TO: Board of Finance

FROM: Chapin Spencer, Director of Public Works
Megan Moir, Assistant Director - Water Resources

DATE: September 5, 2018

RE: **Proposal for a Resilient City** -- Reinvesting in Burlington's Wastewater & Stormwater Infrastructure -- Phase II of Burlington's Sustainable Infrastructure Plan

Burlington has been undergoing a period of substantial reinvestment across assets that are vital to keeping Burlington a great place to live, work and recreate. Major progress has been made in repaving streets, rebuilding sidewalks, renovating the Bike Path, and rehabilitating water mains since 2016 when the City Council approved the 10 Year Capital Plan and voters approved two bonds funding the initial years of the capital plan. While reinvestments in our community's wastewater and stormwater systems had been understood to be a future second phase of the Sustainable Infrastructure Plan, this year's multiple system failures at our Main Wastewater Treatment Plant and the public's growing calls for improved stormwater management and green infrastructure have accelerated the development of this proposal. It is time to build on past progress to further reduce Burlington's impact on our waterways and Lake Champlain. Burlingtonians deserve and expect infrastructure that performs to modern standards. We are bringing forward the next phase of Burlington's Sustainable Infrastructure Plan to reinvest in the City's wastewater and stormwater systems in order to achieve those goals.

Background

Burlington's first wastewater treatment plant (WWTP) was constructed on the waterfront in 1953. North Plant was constructed in 1961 and East Plant in 1963. As was typical of older cities, much of Burlington had only one pipe to carry both sanitary waste and stormwater flow away from the buildings and streets. Anytime the volume in the combined sewer system exceeded the capacity of the wastewater treatment plant (or in some cases the local pipe network) a mixture of stormwater and untreated sewage would discharge to water bodies around Burlington. This was to protect the WWTPs and also to prevent the sewer system backing up into people's homes, but it obviously had

water quality impacts. To this day, there are approximately 860 communities across the United States, like Burlington, that still have combined sewer systems (<http://bit.ly/EPAcSOS>).

Since the construction of Burlington's three WWTPs in the 1950's and 1960's, each generation of Burlingtonians has left a legacy of water protection through major upgrades to the City's wastewater and stormwater management systems. In the 1970's, all three WWTPs were upgraded for additional flow capacity and treatment improvements. In the 1990's, wastewater and stormwater collection systems were separated in the New North End and sections of the Old North End and a wet weather treatment system was added to the Main WWTP. **The time is now for the current generation to make our investment.**

Up until the 1990s, as Burlington grew there were on-shore sewage discharges into the Lake during most rainstorms, and frequent beach closures (<http://bit.ly/BacT1990>). Burlington voted for a \$52 million bond to upgrade the WWTPs to improve phosphorus removal, increase hydraulic capacity, and most importantly to greatly reduce the locations, frequency and volume of untreated CSOs. The number of CSO points decreased from 12 to 5. Additionally, an estimated 170 million gallons of annual wet weather flow was being treated and disinfected at the Main WWTP's wet weather process after 1994 instead of being discharged into Lake Champlain, the Winooski River and Englesby Brook as untreated and undisinfected combined sewer overflows.

Since the 1994 upgrades, the three WWTPs have generally operated in a reliable fashion. Through the 1994 upgrades and subsequent investments since then, the frequency of untreated CSOs in Burlington has declined over time (see Appendix A). In 2016, the Legislature passed Act 86 which mandated more and quicker public communications after CSOs and permit exceedances at WWTPs. As stewards of the lake and public health, DPW Water Resources staff support this transparency. We were one of the first municipalities in the State to install monitoring equipment that provides accurate flow data for our incident reports when CSOs occur.

The additional public notification required by Act 86 and the multiple permit violations at Main WWTP this season have heightened the public's awareness and concern. Main WWTP experienced permit violations resulting from a valve failure, a computer system failure and biological disruptions from high strength industrial waste. These events all occurred during high flow episodes (storm events) and resulted in incomplete disinfection of the sewage component contained within the combined sewer/stormwater flows (while somewhat variable, sewage typically constitutes approximately 5-10% of the total volume of flow during storm events). This resulted in higher than allowable bacteria levels being discharged via the outfall pipe (2600' offshore). Beaches were closed for 48 hours following these events in accordance with Act 86. In addition, there have also been six days with intense storm events causing untreated collection system Combined Sewer Overflows, primarily into the Pine Barge Canal, but also into the Intervale Wetland and the Winooski River on at least one occasion.

With public feedback urging the City to do more to steward our water resources, the Mayor's call to put a reinvestment plan together this fall, and our own commitment to water quality, we have

accelerated the wastewater and stormwater capital planning work that was already underway. As the City Council reviewed in our FY'18 and FY'19 budget presentations, we called out our wastewater and stormwater capital planning and alerted Councilor to significant upcoming reinvestment needs that would necessitate a second phase of the Sustainable Infrastructure Plan. The potable water distribution system was included in Phase I because relining water mains always requires excavations in the roadways and we needed to ensure the water mains were repaired prior to repaving the streets to avoid expensive rework and impact to residents. Relining the wastewater and stormwater lines can happen using existing manholes and therefore does not damage the roadway surface -- providing us with more flexibility on when this work is done.

Historical Context

DPW staff has put together a water quality history document that provides additional background on the City's wastewater and stormwater management over time. This document can be viewed here: <https://www.burlingtonvt.gov/DPW/Water-Quality-History>.

Proposal for a Resilient City -- Wastewater Improvements

Overall, Phase II of the Sustainable Infrastructure Plan proposes approximately \$20M of investments into existing Wastewater infrastructure including the City's wastewater treatment plants, pump stations, collection system and pollution prevention programs. The various components of the investment are detailed below and are summarized in Appendix B.

WWTP Disinfection Upgrades -- The disinfection systems provide chemical treatment to ensure bacteria levels in the plant's effluent remain low. While we have replaced significant disinfection equipment since the 1994 upgrade (including all disinfection pumps and pump drive controllers at Main WWTP), critical pieces of equipment that are original to the upgrade 24 years ago remain in service. Three different failures in our plants' disinfection systems led to discharges that exceeded permit limits this season:

- April 16 - valve failure at Main WWTP
- July 10 - programmable logic control (PLC) failure at Main WWTP
- August 24 - feed line blockage at North WWTP

The 2017 Dubois & King Wastewater 10 Year Capital Plan identified the need to upgrade key components of the disinfection systems in FY'21. After the July 10 PLC failure, DPW Water Resources engaged two outside teams to refine and detail the recommendations so implementation could be expedited:

- Hallam ICS provided cost estimates on rehabilitating Main Plant's overall SCADA/PLC control system since the larger system is also original to the plant and in need of upgrades and we want to make sure that our upgrade of the disinfection PLC is compatible with a future global PLC upgrade.

- Dubois & King refined their rehabilitation recommendations of Main Plant's other disinfection system's equipment (pumps, drives, valves, feed lines, etc.) and evaluated the disinfection systems at North and East WWTPs as well.

For the capital upgrades, full redundancy, automatic run sequences, and PLC failure alarms will be mandatory functionality. The upgrades are projected to cost \$1,438,000 and are itemized in Appendix C.

Other WWTP Upgrades -- The City's three WWTPs are complex industrial facilities with multiple chemical, biological and mechanical processes. The disinfection system described above is just one of many essential systems that must all function together to discharge the high-quality effluent Burlingtonians demand. As mentioned in the introduction, our plants have been upgraded once a generation since they were constructed in the 1950's. It has been 24 years since the last comprehensive upgrade. DPW Water Resources had proactively prepared for the next major re-investment by completing the Wastewater 10 Year Capital Plan in 2017 and providing forecasts of upcoming capital expenditures at the FY'18 and FY'19 City Council budget presentations. Despite this proactive work, recent failures of the plants' aging equipment has caused three permit violations at our WWTPs (described above) and resulted in beach closures, and an erosion of the public trust in our stewardship of Burlington's water resources. As a result of these incidents, DPW Water Resources is proposing to accelerate our reinvestment efforts and timelines. Dubois & King was re-engaged in July to refine a number of the 10 Year Capital Plan estimates. Additionally, Water Resources Engineers and Managers reviewed and supplemented the capital projects list based on recent failures and issues. The 28 upgrades across the three WWTPs, including final design, construction oversight and construction inflation costs where appropriate, are projected to cost \$11,403,000 and are itemized in Appendix C.

Pump Stations -- Pump stations push wastewater towards the City treatment plants from low areas of the system where wastewater cannot reach the plant using gravity alone. Most of the City's sewer system is gravity-fed, but there are 25 areas that are lower than the main gravity system and must drain to a pump station which then pumps the wastewater up to the gravity-based network. Some of the current pump stations are over 50 years old and reinvestment in them has been minimal over the past decades. In past years, pump station failures have led to discharge of wastewater into adjacent water bodies and surfacing onto roadways and private property, and such events are likely to increase in future years without proactive investment. Engineering firm Dubois & King conducted an assessment of the pump stations in 2016-2017 to determine their deficiencies and likelihood of failure. Staff then evaluated the consequence of failure for each pump station to determine the overall prioritization. Phase II of the Sustainable Infrastructure Plan proposes to make substantial repairs to 10 highest risk pump stations and one leachate pump station which collects leachate from the City's old Manhattan Landfill and pumps it to Main Plant. These investments will improve the reliability of the pump stations and reduce the risk of wastewater from the collection system flowing into water bodies, streets etc. The upgrades to these 11 pump stations are projected to cost \$2,595,000 and are itemized in Appendix D.

WW Collection System Rehabilitation -- The Wastewater collection system collects sewage that comes from customers' private sewer laterals and carries it to the City's three municipal wastewater treatment plants. There are 46.5 miles of sanitary sewer pipes (wastewater only) and 46.6 miles of combined sewer pipes (wastewater and stormwater). While we do not have a comprehensive age inventory on our sewer collection system, many sewers are over 100 years old. Some of the oldest 'pipes' are constructed of brick and after intense storm events we find bricks among the screenings at the Main WWTP -- indicating that these combined sewers are falling apart. Failures in the collection system have led to discharge of wastewater into adjacent water bodies, sinkholes, backflow into adjacent buildings, and surfacing onto roadways and private property. In 2017, DPW Water Resources began a systematic assessment of the collection system and to date 20% of the system has been inspected by independent firms. Based on these inspections, past failure locations, and other proposed capital projects in the City's rights-of-way, staff has prioritized the list. Phase II of the Sustainable Infrastructure Plan proposes to reline or replace 6.7 miles of the highest priority sections (pipes marked as needing short term rehabilitation in the map in Appendix E) in the collection system at a projected cost of \$3,360,000.

Pre-Capital Investment Planning Studies -- There are two upcoming Wastewater capital investments that are not included in this Phase II proposal and require additional planning work to determine the optimal design solution.

- **Sludge Dewatering** -- The Main WWTP has presses that dewater the residual sludge -- the solid byproduct of the various treatment processes at the plant. Currently, sludge from all three plants is brought to the press room at Main WWTP where it is partially dewatered and then trucked to upstate New York where it is neutralized with lime and land applied. We seek to evaluate other options for multiple reasons: the presses at Main WWTP are nearing the end of their life; there are other emerging process and re-use options for Burlington's sludge; a number of Burlington businesses are generating significant organic waste that might make a digester feasible; and the current hauling and disposal costs (~\$750,000) are significant and could fund other solutions.
- **East Plant Process Evaluation** -- Due to the characteristics of the influent at the East Plant, there may be benefits to modifying the existing process to a sequenced batch reactor (SBR) process. Before reinvesting in certain systems at East Plant, we seek to complete a third party evaluation of the process alternatives. It is important to note that the capital upgrades in this current proposal are for elements of East Plant that would remain even if the Plant were converted to a different type of treatment plant.

Phase II of the Sustainable Infrastructure Plan proposes to dedicate \$180,000 to completing these two planning studies which are itemized at the bottom of Appendix C.

Industrial Wastewater Program -- Over the past 4 years, the organic content of the influent at Main WWTP has increased (see figure 1 below), which is due to increased high strength waste from commercial customers that handle or produce organic matter -- mainly beverage and food industries. The variable and high strength waste can disrupt the biological process of a WWTP, and this is what occurred at Main WWTP on June 2 & 4 when the plant's discharge exceeded permit limits. Breweries and cideries have been assessed a high-strength waste (BOD) surcharge since

2013 to cover the additional costs of processing their high-strength waste, but given the increasing BOD trends overall and the continued increase in brewery/cidery flow, in late 2016 Burlington Water Resources began to develop a more robust pre-treatment and pollution prevention program that would reduce the strength of the influent received at our WWTPs. The June 2 & 4 incidents demonstrated the urgency of this work, and since then we have contracted with Hoyle, Tanner & Associates to assist us with program development and have procured flow monitors and sampling equipment to initially install at the largest producers. Phase II of the Sustainable Infrastructure Plan proposes investing \$425,000 to accelerate the program development and implementation, and potentially provide pass through loans (up to \$250K) to commercial customers for their development of pre-treatment or side-streaming systems. The City values the vibrant beverage and food production industries and this program would give us the tools to partner with these producers in a way that allows them to flourish while ensuring the protection of the City's water resources.

Increasing Strength (BOD) of Wastewater in Main Plant Flow has significantly increased in recent years

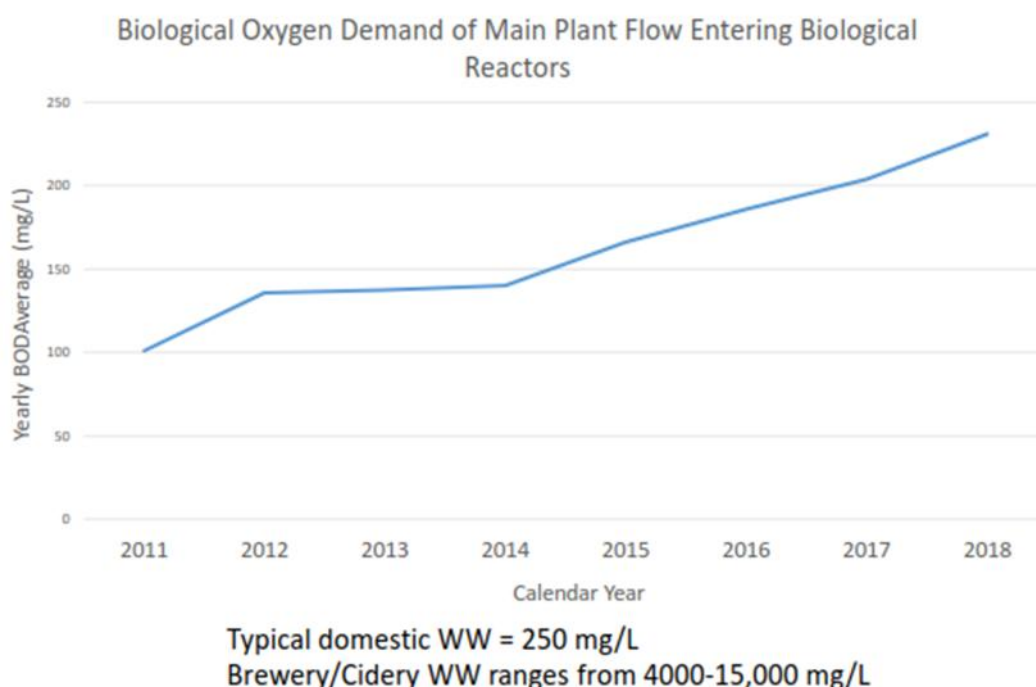


Figure 1: Increasing trend in strength (BOD) at Main WWTP

Proposal for a Resilient City -- Stormwater Improvements

Phase II of the Sustainable Infrastructure Plan proposes approximately \$10M of improvements to the City's stormwater infrastructure including construction of a diverse array of new green

infrastructure, repair of existing failing stormwater outfalls and rehabilitation of stormwater pipes. The various components of the investment are described below and are detailed in Appendix B.

Stormwater Outfalls -- Stormwater outfalls are the points where the separate storm system discharges stormwater into the City's watersheds. There are 101 outfalls in the City that are in various states of repair. Failing outfalls erode public and private property, undermine buildings and roads, and release sediment and nutrients into water bodies during storm events. 11 of the City's 101 outfalls have failed and have high risk of impact. Phase II of the Sustainable Infrastructure Plan proposes to invest \$2.3M to repair the top 5 outfalls as detailed in Appendix F.

Stormwater Collection System Rehabilitation -- The separate stormwater collection system transports stormwater from catch basins to outfalls. The City has approximately 53.1 miles of separate stormwater pipes and 3,200 catch basins. Failures in the collection system undermine roadways and utilities, create sinkholes, and release sediment and nutrients into water bodies. A GIS based risk analysis, using estimates of likelihood of failure based on pipe material (with corrugated metal pipe having a very high likelihood) and recent collapse history and consequences of failure (with a focus on recently paved streets or streets that are soon to be paved, heavy traffic volume streets etc), identified approximately 6.3 miles of the stormwater collection system in need of relining or replacement at a cost of \$3.1M. The high-risk pipes are identified in Appendix I.

Wet Weather Mitigation on Combined Sewer System -- The City has approximately 46.6 miles of combined sewer and stormwater collection system. Most of Burlington's combined sewer system connects to our Main Wastewater Treatment Plant. During intense storm events, the amount of stormwater entering the system can exceed the pipes' hydraulic capacity in the collection system causing combined sewer overflows (CSOs) at one or more of the City's 5 remaining overflow points. These high flows can also exacerbate any process or equipment challenges at the main WWTP. Strategies to reduce the quantity and the intensity of stormwater flows in the combined collection system include: rain gardens, soil cells for street trees, stormwater ponds, subsurface infiltration and detention tanks, pervious pavement and pavers, downspout disconnection, etc. Where possible, Burlington prefers implementation of green wet-weather infrastructure to maximize benefits to the community, since green infrastructure not only manages stormwater runoff, but also adds more green space, shading, pedestrian/biking accommodations, and property value improvements than typical "grey" infrastructure (storage tanks). Phase II of the Sustainable Infrastructure Plan proposes to invest \$3.3M in combined sewer stormwater reductions, with an emphasis on green infrastructure including:

- Supplementing TIF funding to install extensive green infrastructure on rehabilitated downtown streets consistent with the City's adopted Great Streets Standards
- Implementing other combined sewer reduction efforts in the Main WWTP sewershed, with focused reductions above the Pine Street CSO point

The potential combined sewer mitigation projects are listed in Appendix G. Additionally, because mitigating CSO frequency at the Pine Street Barge Canal CSO outfall is challenging due to soil/geologic conditions in the sewershed, approximately \$500,000 in additional funding is set

aside to explore the installation of a remote disinfection station at this CSO location to address potential bacteria concerns downstream in the near term.

Separate Stormwater Management -- Heightened State regulation will require parcels over 3 acres to complete an engineering feasibility analysis to reduce stormwater impacts in the short term and implement retrofits in the medium-term (3-5 years). The City has a number of parcels over three acres, many of them parks, and we need to be proactive to ensure we develop designs that will provide the greatest return on investment. Phase II of the Sustainable Infrastructure Plan proposes to invest an initial \$315,000 towards addressing this upcoming regulatory requirement that will further protect Burlington's waterways. The specific parcels are detailed in Appendix H. Additional funds will be necessary beyond 2023 once the permits are in place and the new regulatory requirements are clear.

Proposal for a Resilient City -- Overall WW & SW Improvements

Asset Management -- A robust asset management program is critical to ensuring the maximum lifespan of each City asset and to improving our capital funding need forecasting ability. Capital upgrades are expensive and can be minimized and anticipated through preventive maintenance and scheduled assessments. In the public sector, it is often easier to secure funding for periodic capital upgrades than ongoing preventative maintenance; this lack of regular maintenance can lead to premature failure of public assets and an expensive cycle of borrowing to fix broken systems. A good asset management program can deliver the lowest cost of ownership of an asset over time while also providing real-time data and metrics so policy makers can make the best decisions possible. As a component of the Sustainable Infrastructure Plan, DPW has been leading an effort to develop a formal asset management program so that we can derive the greatest long-term value from our capital investments. The department has commissioned a third party report that is nearing completion and is expected to include recommendations for enhancing DPW's current asset management systems and abilities which vary considerably across asset classes. Phase II of the Sustainable Infrastructure Plan includes \$346,000 for acquiring and implementing a Computerized Maintenance Management System (CMMS) as a critical component of the City's asset management efforts if the Council approves moving forward with enhanced asset management after reviewing the report.

Staff Capacity -- Implementing \$20M of wastewater improvements identified above will require project management resources. Existing Water Resources staff capacity is already stretched tackling a number of other areas of deferred investments and attention while also maintaining our 24/7 operations. Other areas of increased attention include:

- Managing expanded Water capital projects from November 2016 voter-approved bond
- Implementing meter-to-cash improvements following billing errors discovered in 2017 and 2018
- Managing the first-in-the-State Integrated Planning process while negotiating updated wastewater and stormwater permits

- Coordinating Water Plant operations around Burlington Harbor Marina construction
- Reviewing and coordinating with numerous large construction projects (CityPlace Burlington, Cambrian Rise, 85 North Avenue, Great Streets)

The complexity of Water Resources' regulatory and operational landscape has increased significantly over the last decade. To position the division for long-term success, DPW leadership is proposing a third-party organizational assessment that would provide structural and staffing recommendations. We will be seeking Board of Finance approval for this contract amendment at this upcoming Board of Finance meeting. While these specific recommendations won't be complete for the next 3-4 months, Phase II of the Sustainable Infrastructure Plan proposes a placeholder of 1.25 FTEs for engineering / project management support to manage the \$30M of capital and programmatic projects.

Requesting Authorization to Borrow

Proposal -- In summary, we are seeking authorization to finance up to \$30M to reinvest in the City's wastewater and stormwater systems as detailed in this memo and the appendices. The recommendations have come from the 2017 10-Year Capital Plan completed by Dubois & King, first hand knowledge of Water Resources managers and engineers, and supplemental review by multiple consulting firms. Based on the secured rate mitigation strategies detailed below, we have been able to reduce the impact on ratepayers by approximately 40% -- and additional means of mitigating the impact are being vigorously pursued which is likely to further reduce the impact of the proposed bonding.

Rate Mitigation Strategies -- Below are the many strategies we are, or will be, pursuing to reduce the impact on our ratepayers.

- Secured
 - Utilize Clean Water State Revolving Fund (SRF) Loans. Borrowing from the State Revolving Fund has a number of advantages. The interest rate/admin fee is only 2% compared to 3.9% or more for municipal bonds. In addition, there is a deferred pay back on planning, design and construction expenses until 1 year after construction is completed. The interest savings, if the full \$30M is borrowed, would likely exceed \$8M over the life of the loan.
 - Re-allocate existing Water Resources revenues to offset some debt service costs. Through careful financial oversight, DPW management has been able to methodically increase the capital funding in the annual wastewater and stormwater budgets over the last several years. By dedicating a portion of the budgeted capital funds (what we call "PayGo Capital") to debt service, we can accelerate reinvestments into these utilities while minimizing bond-driven rate increases. By reallocating an estimated annual \$237,000 in currently budgeted wastewater PayGo Capital and an estimated \$285,000 in currently budgeted stormwater PayGo Capital approximately 30% of the new bonding will be paid for by existing revenues.

- Unsecured
 - Pursue State grants/loan forgiveness subsidy
 - Determine whether TIF-funded projects have sufficient TIF funding to cover stormwater improvements without this Water Resources bonding
 - Evaluate alternative strategies to current PILOT paradigm
 - Explore having the General Fund pay the stormwater fees for the impervious surface within the City's rights-of-way
 - Consider additional fees for service from users of services (fire services to buildings, project review, connection fees)
 - Explore minimizing rate increases for residential and low-income users through alternative rate structures or affordability programs

Additional Needed Investments -- While this Proposal for a Resilient City is a broad package of wastewater and stormwater upgrades, it must be acknowledged that this is not all inclusive -- and additional water resource-related capital investments will likely be needed in the future including:

- Potential sequenced batch reactor installation at East WWTP
- Dewatering and/or digester upgrade at Main WWTP
- Additional stormwater retrofits on 3+ acre municipal parcels as required by future permit conditions
- Additional phosphorus reduction strategies at our WWTPs and in our stormwater system that are currently being evaluated as part of our integrated water quality planning effort and as required by future permit conditions
- Potable water infrastructure upgrades

What Residents & Businesses Can Do

City government alone cannot fully address our community's wastewater and stormwater challenges. There are many steps property owners, residents and business can take to help.

- **Stop private property stormwater from entering the municipal sewer:** Property owners can substantially reduce flows into the combined sewer by disconnecting downspouts and basement drains from the combined sewer. DPW Water Resources has worked with partners such as the CCRPC and Lake Champlain International to provide community resources such as Rethink Runoff (<http://rethinkrunoff.org/>) and Blue certification program (<https://www.burlingtonvt.gov/DPW/BlueBTV>).
- **Install water saving devices:** Low-flow showerheads, faucets and toilets both reduce water usage and reduce wastewater flows -- which also saves ratepayers money.
- **Scoop your pet's poop:** Dog poop is a major contributor to stormwater pollution and bacteria in our waterways. Rain and melting snow flows across yards, dog parks, down trails, etc. on its way to creeks via our streets and storm drains. Dog poop contains bacteria and is high in nitrogen and phosphorus (nutrients that negatively affect our waters). Picking up a pet's poop is a simple step we can take to reduce stormwater pollution.

- **Learn more about Burlington's water quality journey:** DPW Water Resources has put together an online resource providing a history of wastewater and stormwater investments. Read it here: <https://www.burlingtonvt.gov/DPW/Water-Quality-History>

Thank you for your consideration of this request.

Frequency of CSO events

Year	N. Champlain	Park	Gazo	Colchester	Pine Street	Notes
2005	3	12	1	UNK	UNK	
2006	1	11	3	UNK	UNK	
2007	3	8	2	UNK	UNK	
2008	2	13	?	UNK	UNK	
2009	4	8-9	?	UNK	UNK	
2010	0	5	?	2	UNK	Colchester Ave CSO discovered through mapping/outfall visits
2011	1	9	1	3	UNK	Gazo, North Champlain and Park frequency and Volume reduced by ARRA projects 2010-2012
2012	1	6	1	9	UNK	
2013	4	6	2	10 - 13	UNK	Wet year
2014	0	1	1	2	UNK	Colchester CSO improved through pipe cleaning downstream
2015	0	3	1	0	8	Pine Street Discovered through mapping
2016	0	1	0	0	5	
2017	0	1	1	0	8	
2018 YTD	1	1	2	0	6	Late 2017 conducted significant cleaning of downstream section

Note: Frequency data do not show decreases in duration or volume, particularly for Park and Gazo; nor adjust for the impact of wet/intense rainfall years such as 2011 and 2013.

UNK = Previously unidentified CSO point, no data available

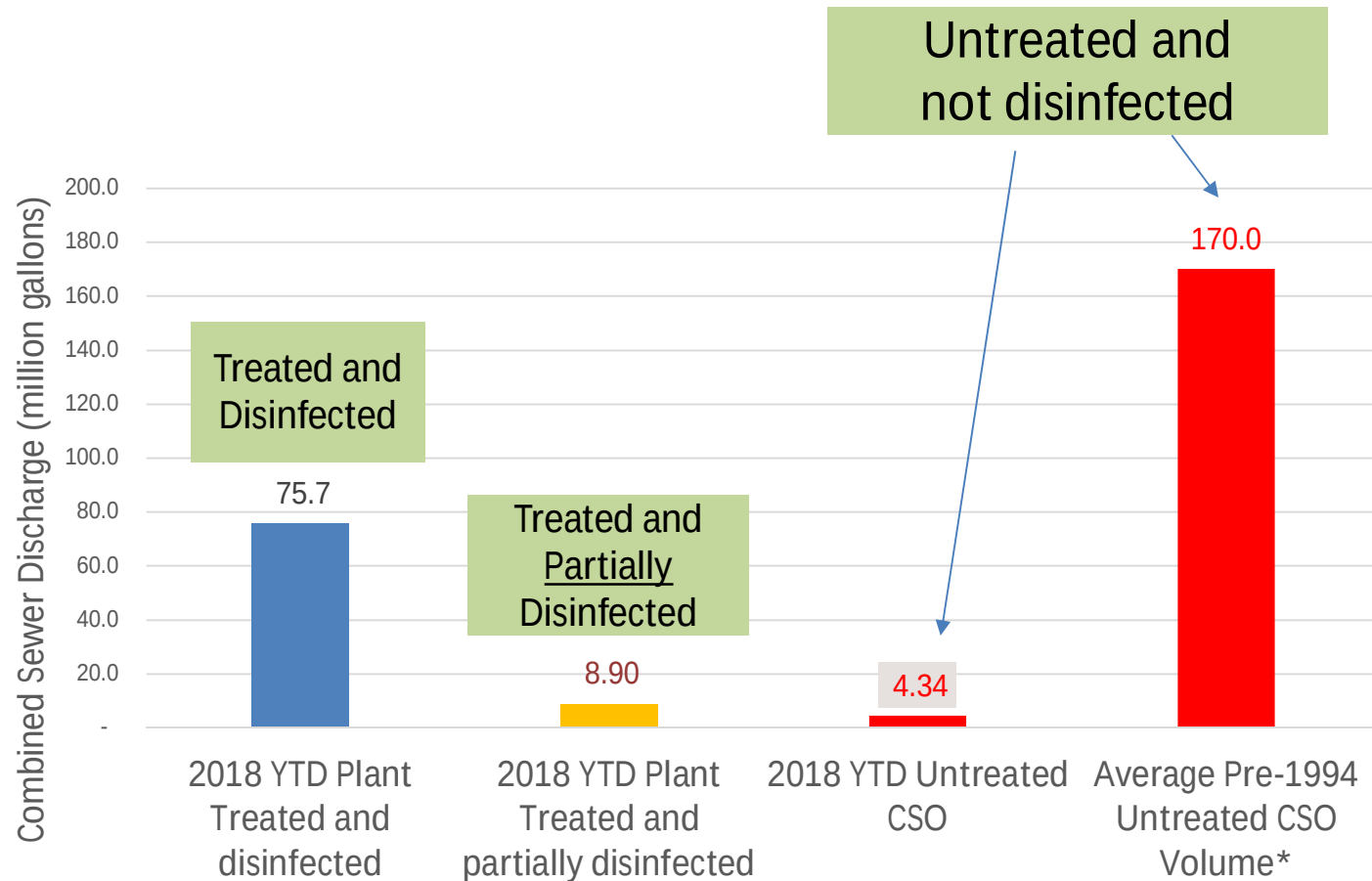
? = data not easily available, still researching

Range provided when unclear or multiple events on one day

* Gazo discharged for 55 seconds on 6/18/18

Main Wastewater Plant

Comparison of Combined Sewer Discharges Pre 1994 to 2018 Through 8/26/18



*Pre-1994 estimate is based on average annual combined sewer wet weather flows treated by Vortex between 2001 and 2017.
See <https://www.burlingtonvt.gov/DPW/Water-Quality-History>.

	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
<i>Disinfection and SCADA/PLC upgrade</i>			
Main Plant Disinfection upgrade	\$ 480,000	\$ 111,000	\$ 590,000
Main Plant SCADA/PLC upgrade (global upgrade)	--	--	\$ 350,000
North Plant Disinfection System Upgrade	\$ 173,000	\$ 40,000	\$ 213,000
East Plant Disinfection System Upgrade	\$ 173,000	\$ 40,000	\$ 213,000
North & East SCADA/PLC improvements	\$ 60,000	\$ 12,000	\$ 72,000
Disinfection and SCADA/PLC upgrades (Main, East and North)	\$ 1,236,000	\$ 203,000	\$ 1,438,000

Other WW Plant (Main, East and North) Capital Needed in next 5 years	\$ 8,793,000	\$ 1,384,000	\$ 11,403,000
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Proposed WW Planning Studies in Next 5 years to make decision for next Bond (East Plant suitability, dewatering)		\$ 180,000	\$ 180,000
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Pump Stations (10 Highest Need)	\$ 2,017,000	\$ 578,000	\$ 2,595,000
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Collection System Planning/Assessment (current planning loan)		\$ 900,000	\$ 900,000
Collection System (Sewer Rehab) WW (35,485 lf = 6.72 mi)	\$ 1,558,000	\$ 400,000	\$ 2,154,000
Collection System (Sewer Rehab) WW Subtotal (35,485 lf = 6.72 mi)	\$ 1,558,000	\$ 1,300,000	\$ 3,360,000

Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
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Industrial Wastewater Program development		\$ 175,000	\$ 175,000
Industrial Wastewater Pass through loans	\$ 250,000		\$ 250,000
Industrial WW Subtotal	\$ 250,000	\$ 175,000	\$ 425,000

City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
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Wastewater Total Request	\$ 19,856,000
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	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
Stormwater Outfalls (top 5 of 11 high risk outfalls)	\$ 1,880,000	\$ 470,000	\$ 2,350,000

SW Collection System Planning/Assessment (current planning loan)		\$ 100,000	\$ 100,000
SW Collection System	\$ 2,913,831	\$ 145,692	\$ 3,060,000
SW Collection System (33,381 linear feet = 6.3 miles)	\$ 2,913,831	\$ 245,692	\$ 3,160,000

Stormwater and Wet Weather Management

Wet-Weather Mitigation

Combined Sewer Runoff Reduction (Pine Barge Canal as priority, with other projects throughout Main Plants)	\$ 1,460,000	\$ 212,000	\$ 1,672,000
Pine Street CSO disinfection Station	\$ 400,000	\$ 100,000	\$ 500,000
Wet Weather (CSS) Mitigation and Disinfection	\$ 1,860,000	\$ 312,000	\$ 2,172,000

Great Streets (if assume SW covers \$125k of \$250k/block)			\$ 1,500,000
City Hall Park (if assume that SW may have to cover \$150K of \$300k)			\$ 150,000
Great Streets and City Hall Park SW (if assume SW pays 1/2)			\$ 1,650,000

Separate Stormwater Management

3 acre permit obligation (City parcels) EFAs		\$ 65,000	\$ 65,000
Regulatory Req'd Separate Stormwater Retrofits (between 2020-2024)	\$ 150,000	\$ 100,000	\$ 250,000
Separate SW Regulatory Obligations	\$ 150,000	\$ 165,000	\$ 315,000

Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
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City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
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Stormwater Total Request	\$ 10,102,000
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TOTAL	\$ 29,958,000
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Wastewater Plant Improvements

Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Main Plant Disinfection System Upgrade (does not include PLC)	This system controls the ability to disinfect wastewater and is require to protect public health.	Main			X	\$ 479,375.00		\$ 110,256.25	\$ 590,000
Main SCADA/PLC wholesale upgrade	This system acts as the central nervous system of the facility. Without this automation, there is more possibility for error.	Main			X	---	--	--->	\$ 350,000
North Plant Disinfection System Upgrade	This system controls the ability to disinfect wastewater and is require to protect public health.	North			X	\$ 172,750.00		\$ 39,732.50	\$ 213,000
East Plant Disinfection System Upgrade	This system controls the ability to disinfect wastewater and is require to protect public health.	East			X	\$ 172,750.00		\$ 39,732.50	\$ 213,000
North and East PLC Upgrade/optimization	This system acts as the central nervous system of the facility. Without this automation, there is more possibility for	North, East		X		\$ 60,000		\$ 12,000	\$ 72,000
Total Disinfection and PLC/SCADA									\$ 1,438,000
East plant outfall	Pipe that transports wastewater effluent to the Winooski	East	Fy20			\$ 180,000	\$ 30,600	\$ 45,000	\$ 256,000
North Influent Pump Controller	This controls the heart of the facility. Without it, North plant is not able to treat wastewater.	North	FY17	X		\$ 18,000		\$ 3,600	\$ 22,000
North/East Fire system replacement	Fire protection. North failed last fire inspection. East likely to fail	North, East		X		\$ 60,000			\$ 60,000
Upgraded Blower (Hybrid)	This is central to the biological process. This equipment will provide better control of the process, redundancy and electrical efficiency	Main				\$ 210,000		\$ 31,500	\$ 242,000

Wastewater Plant Improvements

Equipment		Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Dialers & Rain gauges		This allows for notification of problems at the facilities and better data on localized rain storms	North, East		X		\$ 12,000			\$ 12,000
Electrical component study and upgrade (Including Arc flash assessment) Find critical components that we need to have a backup on the shelf, or that needs to be replaced. i.e. foul sewer breakers.		This allows us to discover which components are failing and/or obsolete, to better manage risk and safety.	All		X		\$ 240,000		\$ 48,000	\$ 288,000
EMG Building Improvements		To management and maintain our building envelopes.	All		X		\$ 300,000		\$ 60,000	\$ 360,000
Back Up Blower		This is central to the biological process. This equipment will provide better control of the process, redundancy and electrical efficiency. But mostly for the redundancy.	Main		X		\$ 90,000		\$ 13,500	\$ 104,000
Main Plant Main Bar Rack (4 ft)		This equipment screens out debris from the influent, and is imperative for treatment and protection of equipment further down the line.	Main	FY21		X	\$ 363,576	\$ 61,808	\$ 72,715	\$ 499,000
North and East Bar Racks		This equipment screens out debris from the influent, and is imperative for treatment and protection of equipment further down the line.	North, East	FY23, 20		X	\$ 603,576	\$ 102,608	\$ 120,715	\$ 827,000
Grit							\$ -			\$ -
	Classifiers	This equipment screens out grit and course material from the influent, and is imperative for treatment and protection equipment from wear.	North, East			X	\$ 243,696		\$ 48,739	\$ 293,000
	Trolley drive upgrades		North, East		X		\$ 36,000	\$ 6,120	\$ 5,400	\$ 48,000
	Controls		North, East	FY17,18			\$ 120,000	\$ 20,400	\$ 18,000	\$ 159,000
	Complete replacement		Main	FY22		X	\$ 441,665	\$ 75,083	\$ 88,333	\$ 606,000
Main Inf. Ferric Storage		Ferric is used in phosphorus control. It is a nasty chemical, and this will change our current temporary storage, to a safe and permanent installation.	Main		X		\$ 42,000		\$ 4,200	\$ 47,000

Wastewater Plant Improvements

Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Rehab gates that do not work	The gates are used in various processes for flow control, maintenance and staff safety.	All		X		\$ 480,000	\$ 81,600	\$ 72,000	\$ 634,000
CSO pump controller and level sensor	This controls the ability to process wet weather events	Main	FY19,26	X		\$ 36,000		\$ 7,200	\$ 44,000
Rehab Rodney Hunt controller, panel, solenoids and gas cylinders	This controls various gates at main plant, including the relief gate for CSO treatment.	Main	FY18,26	X		\$ 60,000		\$ 12,000	\$ 72,000
Gas Detection systems	This is a safety system to protect staff from dangerous gasses.	All		X		\$ 24,000		\$ 4,800	\$ 29,000
Aeration Membranes of all Plants	This is part of the biological process to deliver oxygen to the bacteria so that they can treated the wastewater.	All	FY23, 19, 19	X		\$ 132,000	\$ 22,440	\$ 26,400	\$ 181,000
North and East Piston Pump Replacement (Primary Sludge pump)	These pumps provide the ability to transfer waste solids to storage for residuals management.	North, East		X		\$ 96,000			\$ 96,000
Yard Hydrant Replacement All plants	Yard hydrants are used to clean and maintain equipment and tanks.	All	FY19	X		\$ 120,000			\$ 120,000
Godwin Pump	This piece of equipment is a trailer mounted pump which can be used as a backup pump station in an emergency.	All		X		\$ 78,000			\$ 78,000
Main Plant Primaries (Has to happen)	Primaries are a part of the process in which you settle out as much of the organic material as possible. They reduce the need for more expensive secondary processing.	Main	FY20		X	\$ 1,092,050	\$ 185,649	\$ 198,582	\$ 1,477,000
Main Plant CSO Bar Rack (12ft)	This equipment screens out debris from the wet weather influent system, which is a major component of the wet weather treatment process.	Main			X	\$ 1,074,000	\$ 182,580	\$ 214,800	\$ 1,472,000

Wastewater Plant Improvements

										Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary				
Clarifiers (Primary or Secondaries) High Priority and/or East Plant redesign #	Primaries are a part of the process in which you settle out as much of the organic material as possible. They reduce the need for more expensive secondary processing. Secondaries are important for settling out biologically treated solids leaving a clean, polished effluent.	Any	FY24			\$ 2,400,000	\$ 408,000	\$ 240,000		\$ 3,048,000	
On-Shore Relief Box Culvert	This is the culvert used to discharge off shore in the case of hydraulic overload for the wet weather system. The lab building sits on top of this structure.	Main		X		\$ 240,000	\$ 40,800	\$ 48,000		\$ 329,000	
Total						\$ 8,792,563	\$ 1,217,687	\$ 1,383,485		\$ 11,403,000	

STUDIES

Dewatering Decision (Brewery option) Final Study		Main, All		X				\$ 120,000	\$ 120,000
Engineering evaluation of East Plant, which may include recommendations for alternative treatment strategies		East				\$ -		\$ 60,000	\$ 60,000
								Total Studies	\$ 180,000

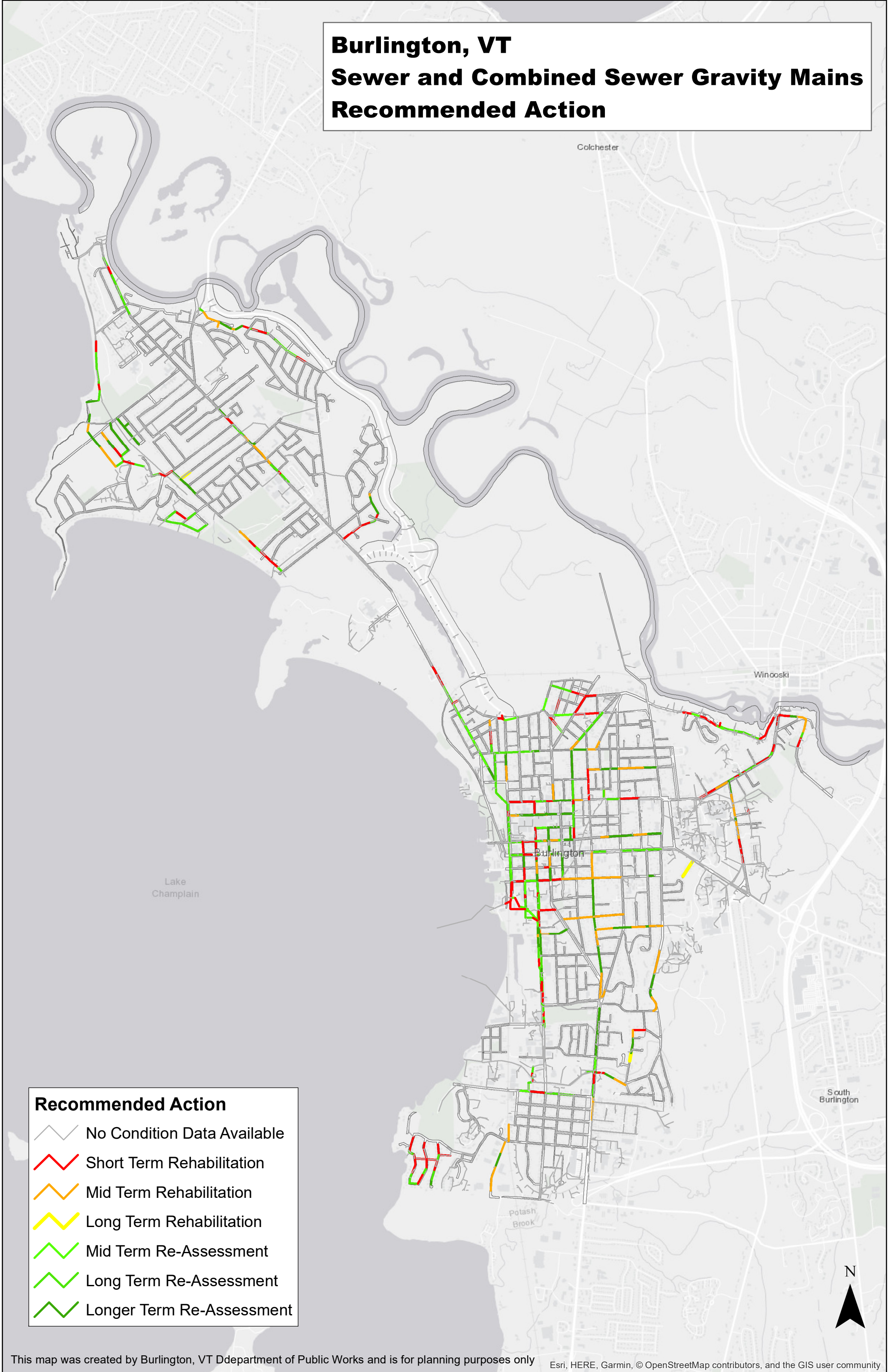
WASTEWATER PUMP STATION IMPROVEMENTS

Pump Station	Dry Pit or Submercible	Capital Planning D&K Year	D&K recommendation	Risk Totals	AEW Rank based on D&K Upgrades	FM Size/Material	Waterway Impacted by Spill?	Construction Total	Design and Oversight (30%)	Subtotal
Fletcher Place	S	2018 & 2020	VV metal and failing, valves, piping & pumps original. Controls showing safety issues	32	1	4" Steel	Yes, would have to go over an embankment	\$ 120,394	\$ 42,138	\$ 162,532.10
Crescent Beach	D	2018	WW old brick, DW failing, original valves, pumps and piping. Controls require entry to DW - Requiring a complete replacement of system	29	2	4" UNK	Yes but would have to be a large spill	\$ 270,369	\$ 94,629	\$ 364,997.54
Queen City	D	2023	WW & DW both in poor condition, valves & pumps original and should be replaced. Controls OK but may need to be relocated to surface	27	3	4" Cast	Yes but would only be from a FM or gravity break since the WW is 25ft deep	\$ 192,809	\$ 67,483	\$ 260,292.35
South Cove	D	2019	WW & DW both in poor condition, valves & piping original, pumps recently replaced but aren't submersible. Panel ok but structure is poor & needs replacement	26	4	4" PVC (relined 2018)	Yes directly on private beach	\$ 139,799	\$ 48,929	\$ 188,727.98
Flynn Avenue	D	2020	DW metal and failing, valves, piping & pumps original. Controls showing minor seal fitting issues, controls to be moved above ground	26	5	Half 6" HDPE Half 6" Cast	Yes direct access to beach	\$ 242,238	\$ 84,783	\$ 327,020.96
Water Plant	S	N/A	WW & VV both deteriorating, valves showing heavy corrosion, pumps ok but capacity could be issue, junction boxes are code violations C1 D1, seal fittings needed on conduits, controls OK	26	6	4" Ductile	Yes direct access to storm CB's that discharge to lake	\$ 196,998	\$ 68,949	\$ 265,947.44
Upper Beach	S	2022 & 2024	Hatch to be replaced, WW steel insert questionable but unknown, valves & piping original but pumps recently replaced. Controls old but ok	23	7	4" AC	No, but does have high public impact	\$ 171,668	\$ 60,084	\$ 231,751.13
Proctor Place	D	2024	WW & DW both in poor condition, valves & pumps original and should be replaced. Controls OK	21	8	6" Cast	Yes direct access to storm CB's that discharge to lake	\$ 316,350	\$ 110,723	\$ 427,072.50
Van Patten	S	2020	WW hatch poor, valve vault not sealed & submerged with GW, valves, pumps & pipes original, VFD's good, need covers	20	9	4" PVC	Yes, but over an embankment into intervale	\$ 67,522	inhouse	\$ 67,522.00
Chase Street	S	2020	Plug valves original, checks recently changed, pumps need to be replaced, panels & conduits showing corrosion	19	10	4" Cast	Yes, CB's with direct discharge into Winooski River	\$ 108,529	inhouse	\$ 108,528.50
Intervale Landfill	S	2026	Might not be the best use of our capital bond this time around	0	25		N/A	\$ 100,000	inhouse	\$ 100,000.00
Mission Control	N/A		Need to upgrade telemetry for improved staff efficiency and alarming					\$ 90,000	inhouse	\$ 90,000.00
								\$ 2,016,674	\$ 577,718	\$ 2,594,392

Burlington, VT

Sewer and Combined Sewer Gravity Mains

Recommended Action



Recommended Action

- No Condition Data Available
- Short Term Rehabilitation
- Mid Term Rehabilitation
- Long Term Rehabilitation
- Mid Term Re-Assessment
- Long Term Re-Assessment
- Longer Term Re-Assessment



High Risk Stormwater Outfall Repair

Location	Estimated Construction Cost (includes 25% cont)	Design & Oversight (25%)	Total Estimate
Manhattan Drive	\$725,000.00	\$181,250.00	\$906,250.00
505 Riverside Avenue	\$600,000.00	\$150,000.00	\$750,000.00
Northeast of Riverside Plant	\$179,906.25	\$44,976.56	\$224,882.81
North Avenue @ 127, just north of on ramp	\$245,000.00	\$61,250.00	\$306,250.00
Burlington High School	\$40,000.00	\$10,000.00	\$50,000.00
Ethan Allen Park, near Moore Drive	\$600,000.00	\$150,000.00	\$750,000.00
Englesby Brook @ Pine Street	\$100,000.00	\$25,000.00	\$125,000.00
Riverside Avenue, near Salmon Hole Park	\$60,000.00	\$15,000.00	\$75,000.00
Upper Little Eagle Bay	\$72,500.00	\$18,125.00	\$90,625.00
Leddy Park	\$120,000.00	\$30,000.00	\$150,000.00
Just west of Riverside	\$62,631.25	\$15,657.81	\$78,289.06
Total construction with 10% additional contingency ---->	\$3,085,541.25	\$701,259.38	\$3,786,800.63
Total construction for top 5, with 5% additional contingency on construction and design	\$1,879,401.56	\$469,850.39	\$2,349,251.95

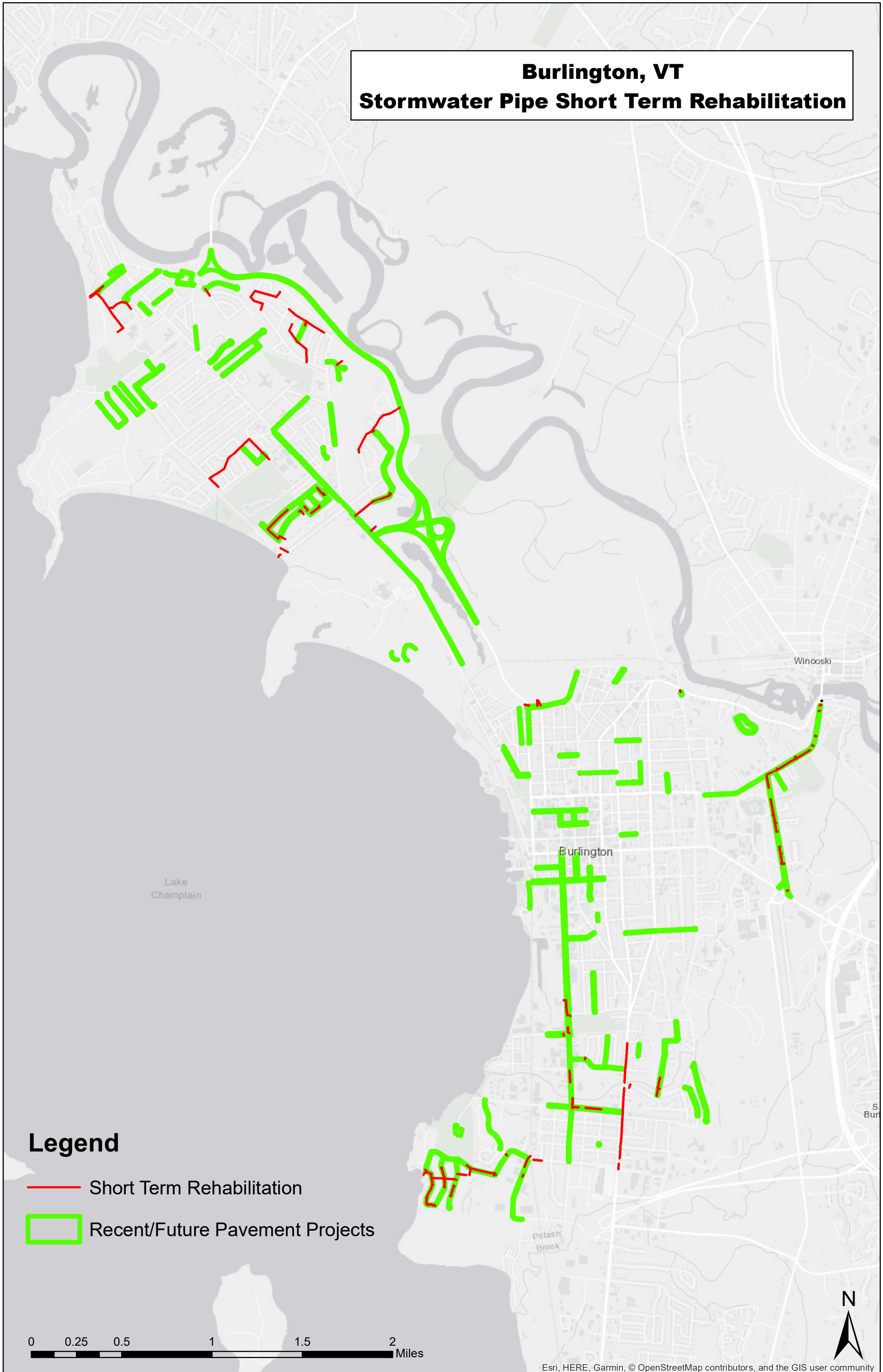
Combined Sewer Retrofit Opportunities

Project Currently Proposed	Acres of Impervious	Construction with contingency (25%)	Design/oversight	Watershed
Allen Street (below CSO)	1.13	\$105,937.50	\$10,593.75	Main Plant
Cedar Street @ Rose Street	0.5	\$62,500.00	\$6,250.00	Main Plant
Cedar Street @ LaFountain	0.62	\$77,500.00	\$7,750.00	Main Plant
North Prospect - North to Pearl	5.62	\$395,156.25	\$39,515.63	Main Plant
Cedar @ North Champlain?	2.75	\$193,359.38	\$19,335.94	Main Plant
Rose Street (above CSO)	1.61	\$150,937.50	\$15,093.75	Main Plant
Front/Summer	0.44	\$55,000.00	\$5,500.00	Main Plant
Hyde Street (near North Street)	0.31	\$38,750.00	\$3,875.00	Main Plant
Main Plant and/or Manhattan CSOs		\$1,079,140.63	\$107,914.06	
Fairmount Street	1.02	\$127,500.00	\$25,500.00	Main Plant - Above CSO
South Prospect (3 locations total)	3.19	\$299,062.50	\$59,812.50	Main Plant - Above CSO
Glen Road @ South Street	0.53	\$66,250.00	\$13,250.00	Main Plant - Above CSO
South Street	0.92	\$115,000.00	\$23,000.00	Main Plant - Above CSO
Prospect Parkway (2 sites)	0.99	\$123,750.00	\$24,750.00	Main Plant - Above CSO
Chestnut Terrace	0.26	\$32,500.00	\$6,500.00	Main Plant - Above CSO
Pine Street Barge Canal CSO		\$764,062.50	\$152,812.50	
Charlotte Street - bumpouts or subsurface or tank	1.1	\$103,125.00	\$20,625.00	Main Plant
	20.99	\$1,946,328.13	\$281,351.56	
75% of total possible opportunities, knowing that we want to wait until Integrated Plan is done to pick best bang for buck projects	12.6	\$ 1,459,746.09	\$ 211,013.67	
GREAT STREETS				
St. Paul				
Other 12 blocks		\$1,500,000.00	estimated cost is \$250K per block, use \$150K (60%)	
City Hall Park		\$150,000.00	Estimated cost is \$300K for CHP, assume 50%	
	Total Great Streets/Downtown	\$1,650,000.00		

Basis for Separate Stormwater Management 2019-2022 Budget #

3-Acre Site Compliance	Details / Notes	EFA Cost	Final Engineering & oversight	Construction Cost (Imp. * \$75000)
Alexis Drive Subdivision	3.1 acres total (1.55 acres required)	\$5,000.00	\$29,062.50	\$145,312.50
Grey Meadows Subdivision	3.87 acres total (1.94 required)	\$5,000.00	\$36,375.00	\$181,875.00
Lori Lane Subdivision	3.1 acres total (1.55 acres required)	\$5,000.00	\$29,062.50	\$145,312.50
Van Patten Parkway Subdivision	9.3 acres total (4.65 acres required)	\$5,000.00	\$87,187.50	\$435,937.50
Riverwatch	Co-permittee - EFA only	\$5,000.00		unknown
Ledgewood	Co-permittee - EFA only	\$5,000.00		unknown
Strathmore	Co-permittee - EFA only	\$5,000.00		unknown
Other City 3-Acre sites	38.06 acres impervious, across 10 sites, (outside of the CSS)	\$50,000.00	\$300,000.00	\$1,427,250
	Subtotals	\$85,000.00	\$482,000	\$2,335,688
Assume need to do remaiing EFAs (some being done in FY19) and some design by 2023, with some limited capital implementation of separate stormwater improvements. There should be grant funds available for non regulatory retrofits. USE		\$65,000.00	\$100,000.00	\$150,000

Burlington, VT
Stormwater Pipe Short Term Rehabilitation



Legend

- Short Term Rehabilitation
- Recent/Future Pavement Projects

0 0.25 0.5 1 1.5 2 Miles

DPW WATER RESOURCES

Sustainable Infrastructure Plan

Phase II

*Proposed Wastewater and
Stormwater Upgrade Bond*

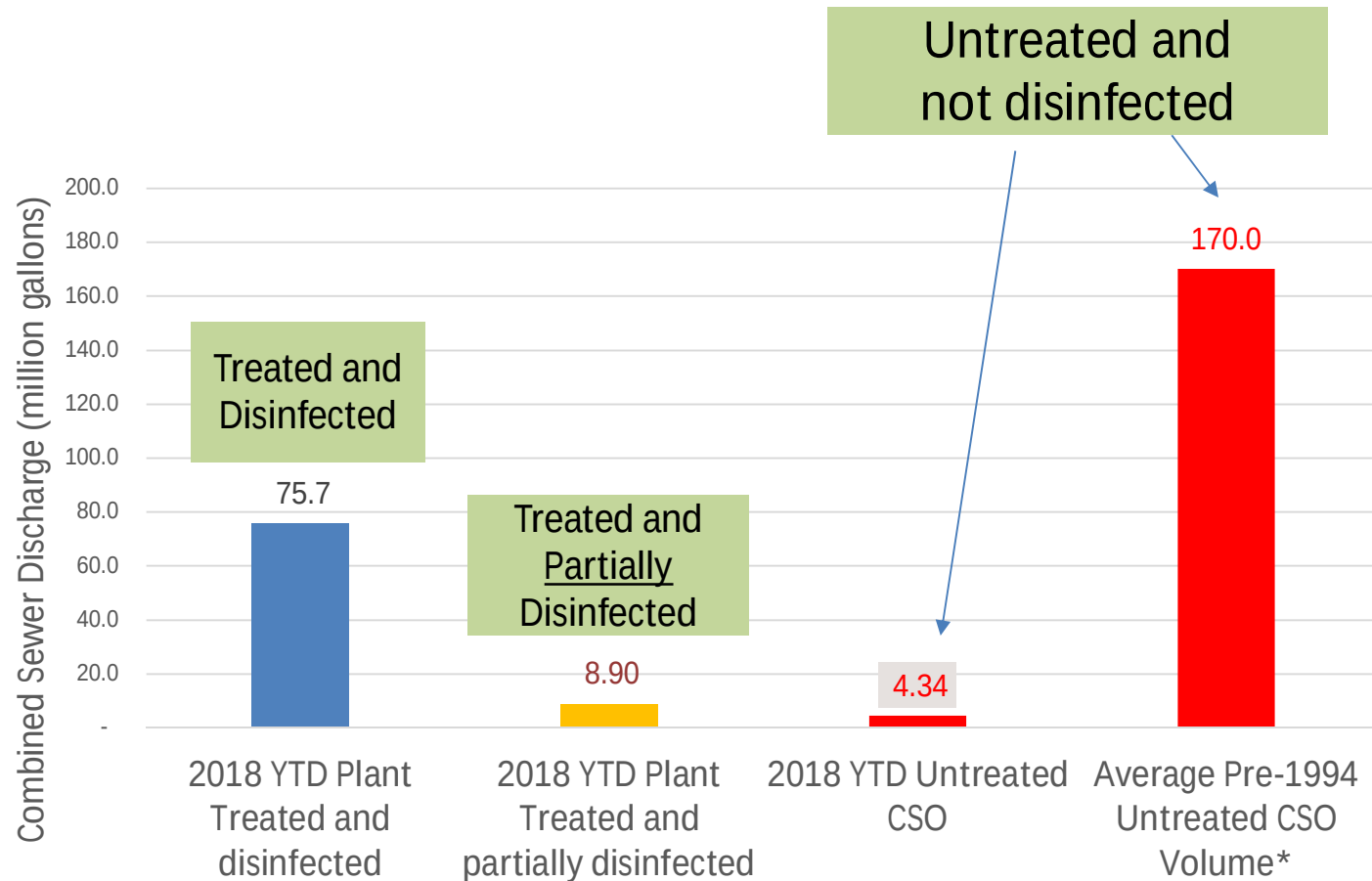
City Council Presentation

August 27, 2018 (revised for BOF 9-5-18)



Main Wastewater Plant

Comparison of Combined Sewer Discharges Pre 1994 to 2018 Through 8/26/18



*Pre-1994 estimate is based on average annual combined sewer wet weather flows treated by Vortex between 2001 and 2017.
See <https://www.burlingtonvt.gov/DPW/Water-Quality-History>.

Today's Topics

- Overall WW/SW Capital Planning
- 2018 Challenges
- Reinvestment Proposal
- Rate Impact
- Rate Mitigation Strategies
- Overall Benefits
- Next Steps
- Questions

Background on City's water quality efforts:

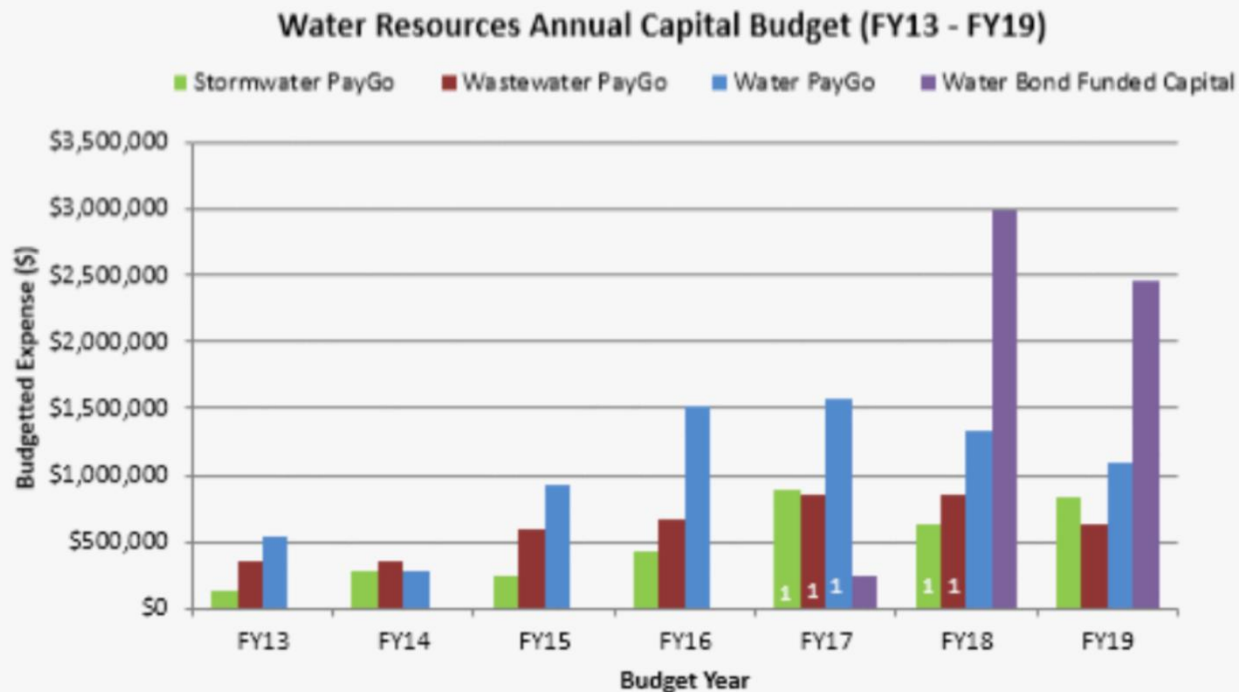
www.burlingtonvt.gov/dpw

Capital investments have increased for Wastewater and Stormwater since FY15, though not enough to keep up with system need

Key Drivers (expense side) cont'd.

FY19 Budget
Presentation Slide

- Continued focus on capital improvements

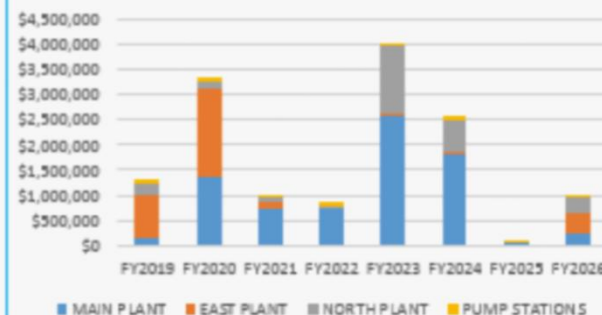


Quickly approaching need for significant existing infrastructure upgrades, as was included in FY18 & FY19 Budget Presentations:

Looking ahead to FY 20 and beyond *Challenges*

- **Water Debt**
 - Important to maintain or increase Moody's A1 rating
 - Maintain required 1.25 Debt Coverage Ratio
- **Future Water Resources Borrowing to meet Capital Deficits**
 - Water:
 - Water Bond authorization will only replace/rehabilitate ~8-10 miles of our 110 mile distribution system
 - High Service Tanks: At a minimum, Redstone Storage tank maintenance (~\$500k) due in FY2021 (likely sooner); UVM tank maintenance (\$1M) in FY27
 - Wastewater:
 - ★ Replacement of **existing treatment system components** at WWTPs and **pump stations** (\$8-10M)
 - ★ Collection System capital needs (~\$1M/year for 5 years)
 - Lake Champlain TMDL possible plant upgrades
 - Biosolids management
 - Stormwater
 - ★ Collection System capital needs (~\$1M/year for 5 years)
 - ★ Outfall Repair (\$3 M to fix top 11 worst outfalls)
 - Lake Champlain TMDL impervious retrofits
 - Combined Sewer Overflow Management
- **Revenue**
 - Conservation/Water efficiency
 - Lose rest of Hadley Road in FY2020 (\$110K)

WASTEWATER PLANT & PUMP STATION
CAPITAL ROLLUP BY FISCAL YEAR



Sustainable Infrastructure Plan

- Phase I – Voter approval Nov. 2016
- Drinking Water infrastructure was prioritized in first phase due to:
 - Higher need for advanced coordination with expanded paving program
 - “Frost-pocalypse” in 2014/2015 and increasing water main breaks on newly paved streets



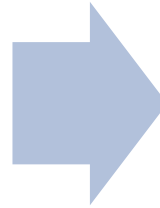
- Current request: Phase II – Address Wastewater and Stormwater existing infrastructure capital needs; maintain steady progress on known stormwater/wet-weather issues in parallel with integrated planning study
- Future: Phase III – Address WW and SW enhancements

2018: Challenges and Solutions

Mitigating Future Risk

Wastewater permit violations & beach closures caused by infrastructure failure

April 16 valve failure and July 10 PLC failure @ Main Plant ; August 24 chemical feed line blockage @ North Plant



Accelerate WW capital improvements for all high risk assets

Wastewater permit violations & beach closures caused by impact of high strength waste on biological treatment system

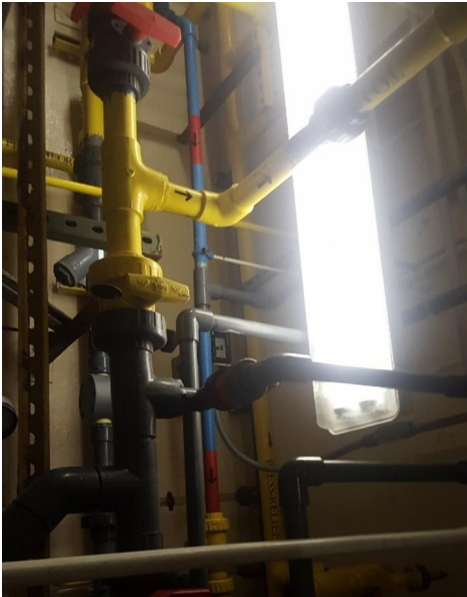
June 2 & 4 @ Main Plant



Accelerate and expand development of industrial wastewater program (require high strength users to divert high strength waste away from sewer system)

No significant upgrades have been made to the system since 1994.

Following are a number of examples of the impacts of underinvestment



Disinfection system pipes: Multiple repairs (different color pipes)



Disinfection system control panel: only one switch (hand-off-auto) works. Other control panels have obsolete parts that cannot obtain anymore..



Bromine pumps: 24 years old; critical to disinfection of wet weather

No significant upgrades have been made to the system since 1994.

Following are a number of examples of the impacts of underinvestment



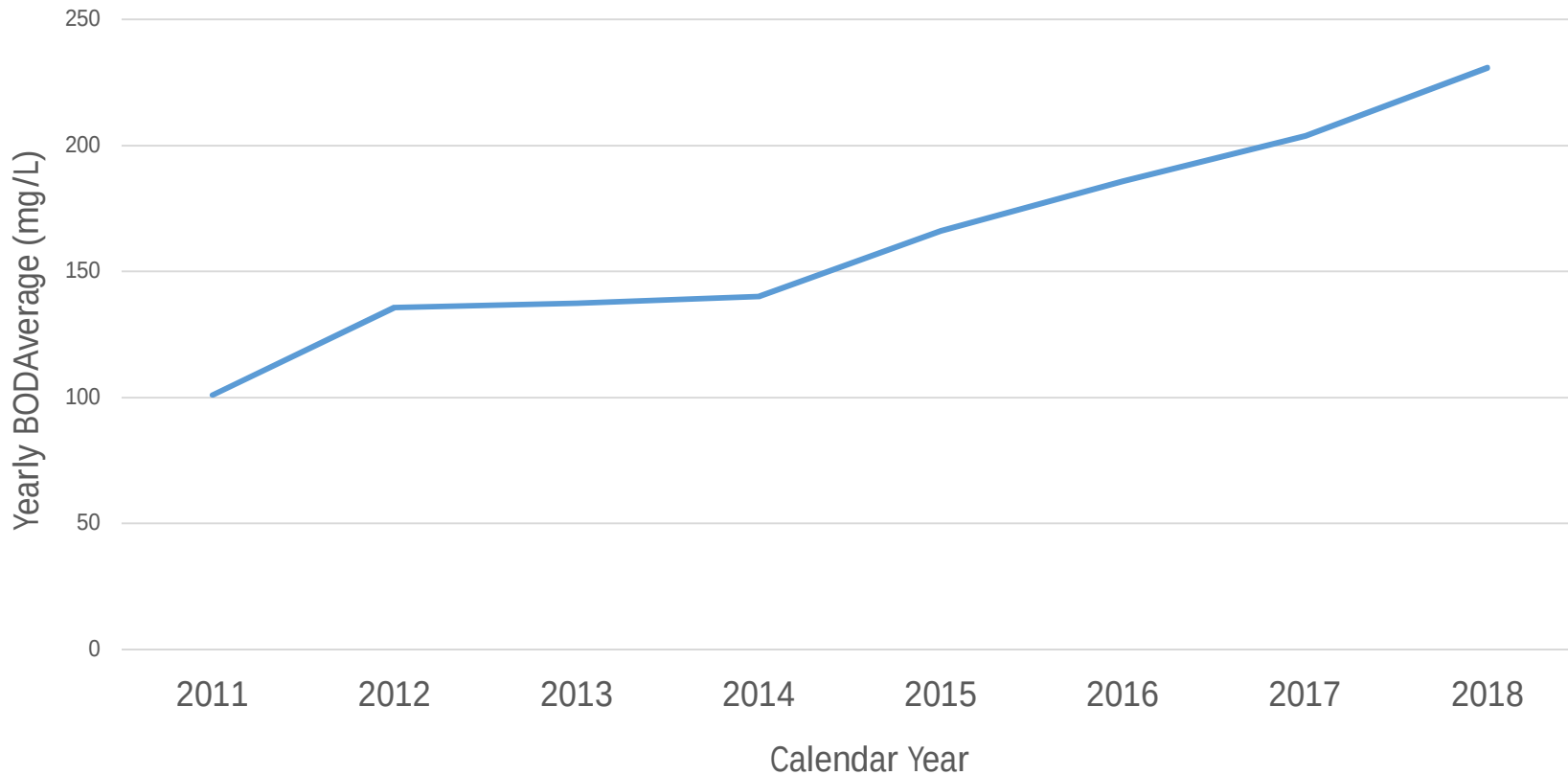
Headworks: Automatic gate that is no longer automatic



Corroded metal components: Full of bandaids and patches or not easily repairable.

Increasing Strength (BOD) of Wastewater in Main Plant Flow has significantly increased in recent years

Biological Oxygen Demand of Main Plant Flow Entering Biological Reactors



Typical domestic WW = 250 mg/L

Brewery/Cidery WW ranges from 4000-15,000 mg/L

2018: Challenges and Solutions

Mitigating Future Risk

Impact of combined sewer flow on Main Plant during process/system challenges
(April 16, June 2&4, July 10)

&

Collection system combined sewer overflows (Jan 12, April 16, June 18, July 25, Aug 7, Aug 17)



Ensure continued progress on design and implementation of combined sewer runoff reduction retrofits

&

Accelerate feasibility evaluation and possible implementation of satellite disinfection for Pine Barge Canal CSO

2018: Challenges and Solutions

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Mitigating Future Risk

Potential failure of high risk assets:

- sewer pump stations
- sanitary, combined & stormwater pipes
- stormwater outfalls



Ensure adequate funding for capital improvements on high risk pump stations, collection system and outfall assets

Additional regulatory obligations anticipated for separate storm sewer runoff



Ensure adequate funding for evaluation, design and implementation of retrofits in the separate storm sewer system

Sustainable Infrastructure Plan – Wastewater Proposal

	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
Disinfection and SCADA/PLC upgrades (Main, East and North)	\$ 1,236,000	\$ 203,000	\$ 1,438,000
Other WW Plant (Main, East and North) Capital Needed in next 5 years	\$ 8,793,000	\$ 1,384,000	\$ 11,403,000
Proposed WW Planning Studies in Next 5 years to make decision for next Bond (East Plant suitability, dewatering)		\$ 180,000	\$ 180,000
Pump Stations (10 Highest Need)	\$ * 2,017,000	\$ 578,000	\$ 2,595,000
Collection System Planning/Assessment (current planning loan)		\$ 997,204	\$ 997,204
Collection System (Sewer Rehab) WW (35,485 lf = 6.72 mi)	\$ * 1,798,500	\$ 400,000	\$ 2,199,000
Collection System (Sewer Rehab) WW Subtotal (35,485 lf = 6.72 mi)	\$ 1,798,500	\$ 1,398,000	\$ 3,360,000
Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
Industrial Wastewater Program development		\$ 175,000	\$ 175,000
Industrial Wastewater Pass through loans	\$ 250,000		\$ 250,000
Industrial WW Subtotal	\$ 250,000	\$ 175,000	\$ 425,000
City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
	Wastewater Total Request		\$ 19,856,000

Sustainable Infrastructure Plan – Stormwater Proposal

	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
Stormwater Outfalls (top 5 of 11 high risk outfalls)	\$ * 1,880,000	\$ * 470,000	\$ 2,350,000
SW Collection System (33,381 linear feet = 6.3 miles)	\$ * 2,913,831	\$ 245,692	\$ 3,160,000
<u>Stormwater and Wet Weather Management</u>			
<i>Wet-Weather Mitigation</i>			
Combined Sewer Runoff Reduction (Pine Barge Canal as priority, with other projects throughout Main Plants)	\$ * 1,460,000	\$ 212,000	\$ 1,672,000
Pine Street CSO disinfection Station	\$ 400,000	\$ 100,000	\$ 500,000
Wet Weather (CSS) Mitigation and Disinfection	\$ 1,860,000	\$ 312,000	\$ 2,172,000
Great Streets and City Hall Park SW (if assume SW pays 1/2)			\$ 1,650,000
<i>Separate Stormwater Management</i>			
3 acre permit obligation (City parcels) EFAs		\$ 65,000	\$ 65,000
Regulatory Req'd Separate Stormwater Retrofits (between 2020-2024)	\$ 150,000	\$ 100,000	\$ 250,000
Separate SW Regulatory Obligations	\$ 150,000	\$ 165,000	\$ 315,000
Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
Stormwater Total Request			\$ 10,102,000

*construction inflation applied



WW and SW TOTAL = \$29,958,000

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Mitigating the impact of the proposed \$30 M bond

Overall ~40% mitigation of rate payers cost

– Utilize Clean Water State Revolving Fund (SRF) Loans

- 2% admin fee vs. 3.9%+ municipal bond interest
- Deferred Pay back on planning/design \$ until after construction
- 1 year deferred pay back on construction
- 30 year payback eligible on longer term assets (collection system)
- Higher administrative burden (approval process, Davis Bacon, Buy America Iron/Steel)

Ø \$8.18M in interest savings over life of loan (\$37M vs \$45M total payback)

Ø Single family savings = ~\$19.44/year

– Use existing PayGo Capital to offset some debt service costs

- Maintain sufficient amount for unplanned and/or smaller capital needs
- Maintain sufficient amount to re-purpose for improved staffing resiliency

Ø Funds ~\$13.3M of total \$37.4M in total debt service costs

Ø Approximately 30% of new bonding will be paid for by existing revenues

Ø Typical single family savings = ~\$26.40/year

Additional Rate Impact Minimization Strategies

- Mitigate Total Debt Service Amount
 - State Grants/Loan Forgiveness Subsidy
 - Loan forgiveness % varies from year to year (often capped)
 - Upcoming Green Infrastructure CSO grants (\$1.25-\$2.5 M across 5 CSO communities)
 - Pollution Control Grants (up to 35%, depends on priority ranking of project, priority can be improved through sponsorship of natural resource projects)
 - Determine whether TIF funded projects should fully fund stormwater improvements

Additional Rate Impact Minimization Strategies

- Find \$ to Cover Remaining Debt Service
 - Work with City General Fund to evaluate alternative strategies to current PILOT paradigm
 - Wastewater PILOT = \$1.1 M/Annually
 - Develop appropriate additional fees for service from users of services (fire service, project review, connection fees)

Additional Rate Impact Minimization Strategies

- Minimize Rate Increases for Residential Users and Low Income Users
 - Evaluate alternative rate structures
 - Create affordability programs

Rate Impact Minimization Commitments

- Commitment to secure at least \$1 M worth of grants/loan forgiveness or other offsets to bond principal
- Commitment to find additional annual funding to offset debt service and other operational rate increase drivers, through new sources of revenue or expense decreases
- Commitment to propose ways to minimize impact to single family/residential rate payers and low income rate payers through alternative rate structures and affordability programs
- Reminder: All SRF loan applications and executions require City Council approval, so there will be opportunity to review the outcome of mitigation strategies prior to incurring debt

Estimated Wastewater Rate Impact due to Bond

Fiscal Year	Amount Borrowed	CUMULATIVE				
		Annual Cumulative Debt Service (DS)	DS Payment Remaining after use allowable portion of PayGo Capital (\$237K)	WW Monthly Increase per typical single family (6 Ccf)	Monthly Typical Bill Single Family WW Bill (6 Ccf)	% increase (year over year)
FY19	\$ 1,438,000	\$ -	N/A	N/A	\$ 34.92	N/A
FY20	\$ 4,604,500	\$ (87,943)	\$ -	\$ -	\$ 34.92	0%
FY21	\$ 4,604,500	\$ (355,674)	\$ (118,674)	\$ 0.60	\$ 35.52	1.7%
FY22	\$ 4,604,500	\$ (623,404)	\$ (386,404)	\$ 1.80	\$ 36.72	3.4%
FY23	\$ 4,604,500	\$ (891,135)	\$ (654,135)	\$ 3.06	\$ 37.98	3.4%
FY24	\$ -	\$ (1,158,865)	\$ (921,865)	\$ 4.26	\$ 39.18	3.2%
Total:	\$ 19,856,000					

- No rate increase required by this bonding until FY'21
- After 5 years, total 12.2% increase over FY19 bill (~\$51.12/year increase)

AVAILABLE PAYGO CALCULATION			
		PayGo capital in annual budget (without grants)	\$ 632,000
		Amount reserved for PayGo capital and operational resiliency improvements	\$ (395,000)
		Remaining funds available for debt service payment each year:	\$ 237,000

Estimated Stormwater Rate Impact due to Bond

Fiscal Year	Amount borrowed	CUMULATIVE				
		Annual Cumulative Debt Service (DS)	DS Payment Remaining after use allowable portion of PayGo Capital (\$285K)	SW Monthly Increase per Single Family (2.67 ISUs)	Monthly Typical Single Family SW Bill	% increase (year over year)
FY19	\$ -	\$ -	N/A	N/A	\$ 6.60	N/A
FY20	\$ 2,525,500	\$ -	\$ -	\$ -	\$ 6.60	0%
FY21	\$ 2,525,500	\$ (141,411)	\$ -	\$ -	\$ 6.60	0.0%
FY22	\$ 2,525,500	\$ (282,822)	\$ -	\$ -	\$ 6.60	0.0%
FY23	\$ 2,525,500	\$ (424,233)	\$ (139,233)	\$ 0.57	\$ 7.17	8.6%
FY24	\$ -	\$ (565,644)	\$ (280,644)	\$ 1.10	\$ 7.70	7.4%
Total :	\$ 10,102,000					

- No rate increase required by this bonding until FY'23
- After 5 years, total 16.7% increase over FY'19 bill (\$13.20/year increase)

AVAILABLE PAYGO CALCULATION			
		PayGo capital in annual budget (without grants)	\$ 610,000
		Amount reserved for PayGo capital and operational resiliency improvements	\$ (325,000)
		Remaining funds available for debt service payment each year:	\$ 285,000

Additional Needed Investments

- Near term requests
 - Anticipate requesting BOF approval (9/5) of contract amendment for Resiliency Plan/ 3rd party reorganization and staffing recommendations
 - ensure proper operations (including emergent situations) and permit compliance
 - fully implement increased capital investment
 - Keep pace of coordination with public and private infrastructure projects
 - Anticipate requesting BOF/CC approval (~November 2018) of amendments to Integrated Planning Study scope and existing SRF planning loan
- Drinking Water not included in this bond proposal
 - additional \$ money will likely be needed for continued work on distribution system and newly identified challenges at both high service water tanks
- Beyond 2020/2021
 - Capital needs driven by outcome of Integrated Plan and other regulatory requirements
 - Phosphorus upgrades at WW Plants
 - Combined sewer reduction projects (large and small scale)
 - Separate stormwater runoff management
 - Additional investment in remaining high risk collection system and stormwater outfalls

Summary

- Overall costs:
 - No bond driven rate impact for WW or SW in FY20
 - Maximum bond-driven rate impact for typical residential customer after 5 years =
 - \$64.32/year or \$5.36/month for WW and SW portion of bill
 - Likely less due to pursuit of grants and other rate mitigation strategies
 - Currently applied rate impact mitigation strategies save rate payers approximately 40%
- Overall benefits
 - Fewer permit violations and beach closures
 - Upgraded disinfection systems in all three plants
 - Major rehabilitation to all other critical systems
 - More green infrastructure and stormwater runoff reductions in combined sewer system

Potential Next Steps

- Gather Council feedback
- September 5: Board of Finance
- September 11: City Council - vote
- September 17: Water Quality Town Hall
- September 19: DPW Commission
- September/October: NPA Tour
- November 6: Bond vote

Questions/Feedback

Future questions?

Chapin Spencer, Director, cspencer@burlingtonvt.gov

Megan Moir, Assistant Director – WR, mmoir@burlingtonvt.gov

Rob Goulding, Public Information Mgr, rgoulding@burlingtonvt.gov

Thank you to the Water Resources “Nerd Herd” for their daily dedication to water resources and for helping to pull this plan together!

We greatly appreciate you: Matt Dow, Nate Lavalley, Steve Roy, Jenna Olson, Ashley Walenty, Martin Lee, Steve Perron, Natty King



Answers to Questions Received

- Question about math on subtotal for WW collection system (design amount > 25%):
 - This is because we have an outstanding \$1M Planning assessment loan that has to be included in the bond in order to roll it into the SRF construction loan (standard practice)
 - Also did change where contingency was applied (to construction # and at roll up, subtotal did not change)

	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
Collection System Planning/Assessment (current planning loan)		\$ 997,204	\$ 997,204
Collection System (Sewer Rehab) WW (35,485 lf = 6.72 mi)	\$ 1,798,500	\$ 400,000	\$ 2,199,000
Collection System (Sewer Rehab) WW Subtotal (35,485 lf = 6.72 mi)	\$ 1,798,500	\$ 1,398,000	\$ 3,360,000

Answers to Questions Received

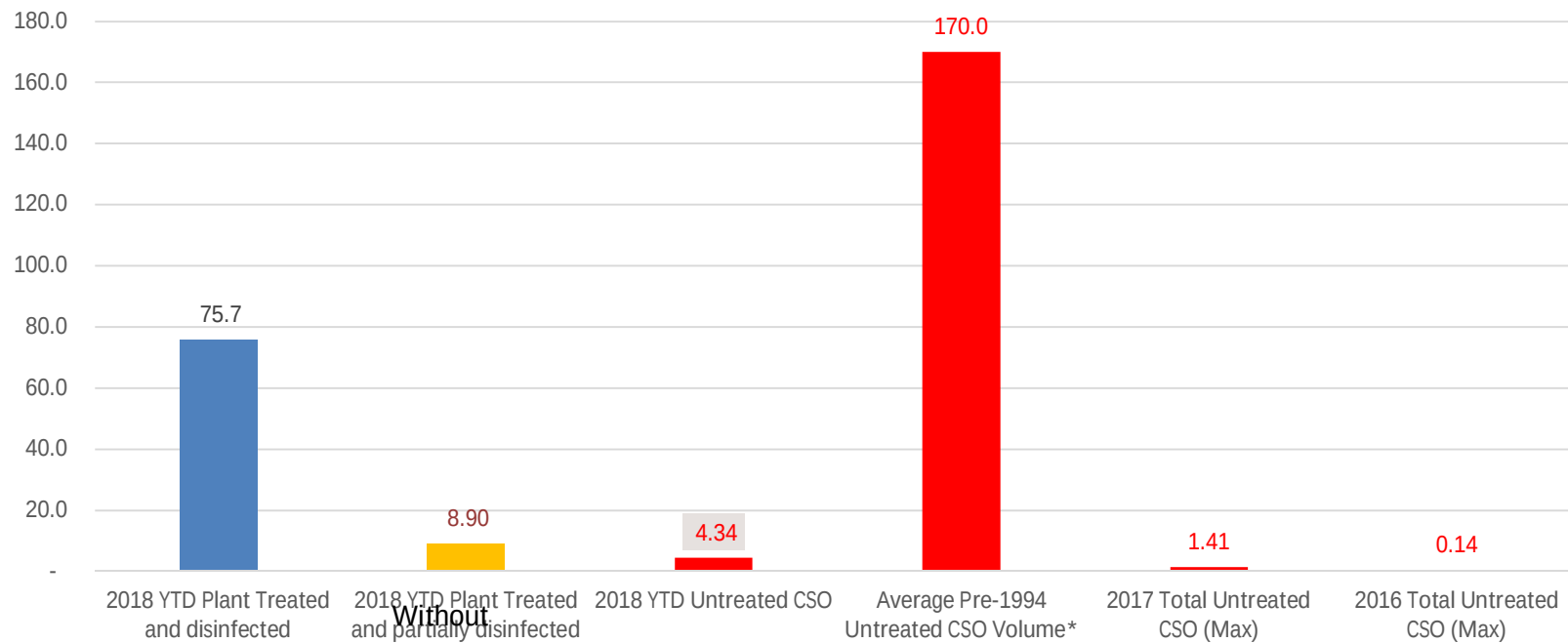
- Long term trajectory of existing debt service

Existing Debt Service		<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>			
		<i>Projected</i>	<i>Projected</i>	<i>Projected</i>	<u>FY 2026</u>	<u>FY 2027</u>	<u>FY 2028</u>
					<i>Projected</i>	<i>Projected</i>	<i>Projected</i>
2014 Series 1 & 2	Ends 2034	\$ 1,158,077	\$ 1,143,153	\$ 1,124,897	\$ 1,001,178	\$ 972,524	\$ 943,064
ARRA AR1-013-02 (ARRA Turbo Blower)	Ends 2033	3,189	3,189	3,189	3,189	3,189	3,188
RF1-103-2 (Siphon)	Ends 2027	93,922	93,922	93,922	93,922	93,922	-
RF1-069-3 (Digester)	Ends 2028	98,758	98,758	98,758	98,758	98,758	98,758

- First expiration of DS (~\$94K not until FY28)

Untreated CSOs: 2018 compared to 2017 and 2016

Comparison of Combined Sewer Discharges



Without 7/10 PLC failure, untreated CSO #
would be 1.04 M gallons, less than 2017.

Frequency of CSO events

Year	N. Champlain	Park	Gazo	Colchester	Pine Street	Notes
2005	3	12	1	UNK	UNK	
2006	1	11	3	UNK	UNK	
2007	3	8	2	UNK	UNK	
2008	2	13	?	UNK	UNK	
2009	4	8-9	?	UNK	UNK	
2010	0	5	?	2	UNK	Colchester Ave CSO discovered through mapping/outfall visits
2011	1	9	1	3	UNK	Gazo, North Champlain and Park frequency and Volume reduced by ARRA projects 2010-2012
2012	1	6	1	9	UNK	
2013	4	6	2	10 - 13	UNK	Wet year
2014	0	1	1	2	UNK	Colchester CSO improved through pipe cleaning downstream
2015	0	3	1	0	8	Pine Street Discovered through mapping
2016	0	1	0	0	5	
2017	0	1	1	0	8	
2018 YTD	1	1	2	0	6	Late 2017 conducted significant cleaning of downstream section

Note: Frequency data do not show decreases in duration or volume, particularly for Park and Gazo; nor adjust for the impact of wet/intense rainfall years such as 2011 and 2013.

UNK = Previously unidentified CSO point, no data available

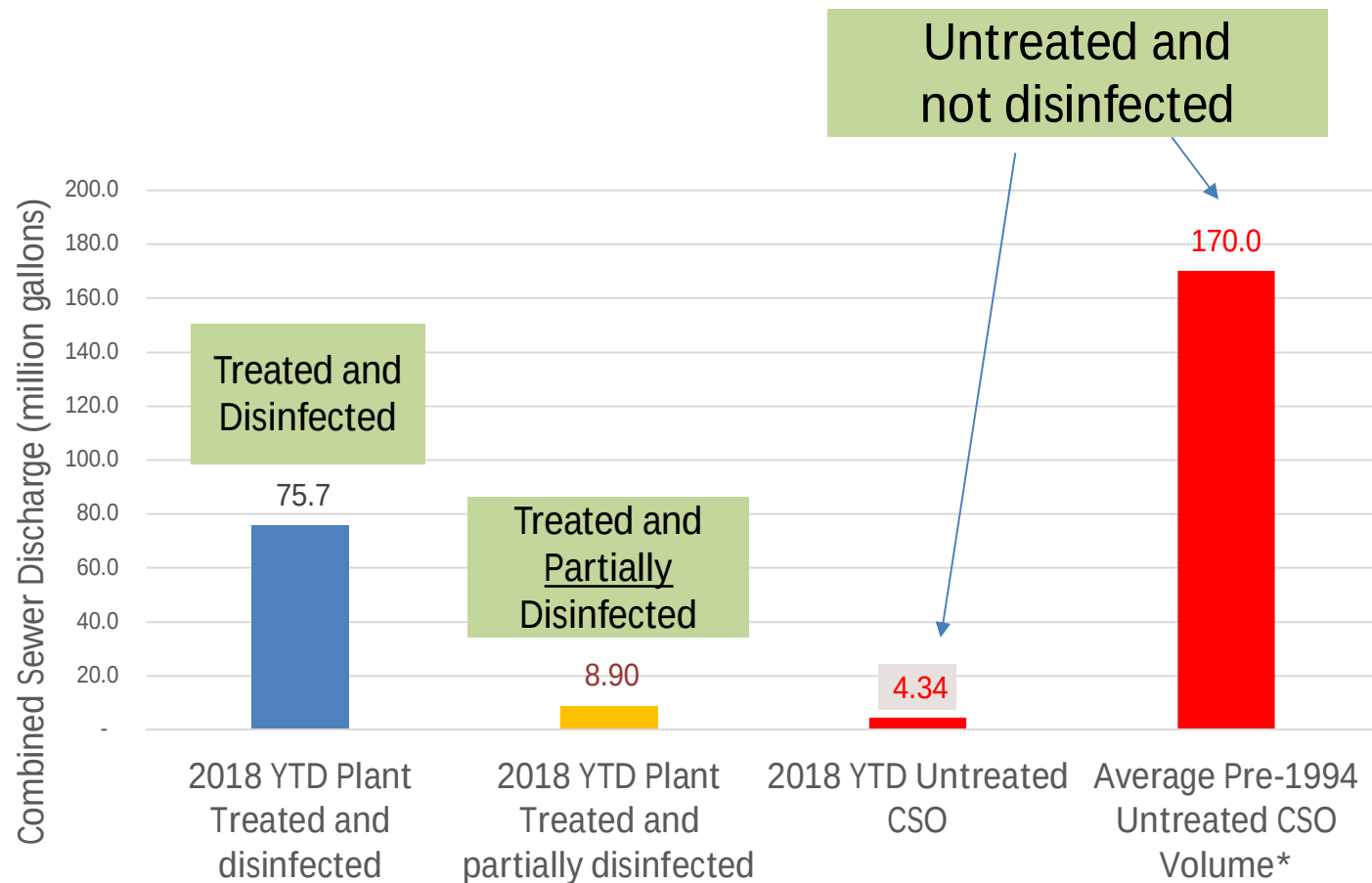
? = data not easily available, still researching

Range provided when unclear or multiple events on one day

* Gazo discharged for 55 seconds on 6/18/18

Main Wastewater Plant

Comparison of Combined Sewer Discharges Pre 1994 to 2018 Through 8/26/18



*Pre-1994 estimate is based on average annual combined sewer wet weather flows treated by Vortex between 2001 and 2017.
See <https://www.burlingtonvt.gov/DPW/Water-Quality-History>.

	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
<i>Disinfection and SCADA/PLC upgrade</i>			
Main Plant Disinfection upgrade	\$ 480,000	\$ 111,000	\$ 590,000
Main Plant SCADA/PLC upgrade (global upgrade)	--	--	\$ 350,000
North Plant Disinfection System Upgrade	\$ 173,000	\$ 40,000	\$ 213,000
East Plant Disinfection System Upgrade	\$ 173,000	\$ 40,000	\$ 213,000
North & East SCADA/PLC improvements	\$ 60,000	\$ 12,000	\$ 72,000
Disinfection and SCADA/PLC upgrades (Main, East and North)	\$ 1,236,000	\$ 203,000	\$ 1,438,000

Other WW Plant (Main, East and North) Capital Needed in next 5 years	\$ 8,793,000	\$ 1,384,000	\$ 11,403,000
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Proposed WW Planning Studies in Next 5 years to make decision for next Bond (East Plant suitability, dewatering)		\$ 180,000	\$ 180,000
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Pump Stations (10 Highest Need)	\$ 2,017,000	\$ 578,000	\$ 2,595,000
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Collection System Planning/Assessment (current planning loan)		\$ 900,000	\$ 900,000
Collection System (Sewer Rehab) WW (35,485 lf = 6.72 mi)	\$ 1,558,000	\$ 400,000	\$ 2,154,000
Collection System (Sewer Rehab) WW Subtotal (35,485 lf = 6.72 mi)	\$ 1,558,000	\$ 1,300,000	\$ 3,360,000

Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
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Industrial Wastewater Program development		\$ 175,000	\$ 175,000
Industrial Wastewater Pass through loans	\$ 250,000		\$ 250,000
Industrial WW Subtotal	\$ 250,000	\$ 175,000	\$ 425,000

City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
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Wastewater Total Request	\$ 19,856,000
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	Construction Cost (with ~20-25% contingency generally)	Design & Oversight (15-25% of construction cost)	Total
Stormwater Outfalls (top 5 of 11 high risk outfalls)	\$ 1,880,000	\$ 470,000	\$ 2,350,000

SW Collection System Planning/Assessment (current planning loan)		\$ 100,000	\$ 100,000
SW Collection System	\$ 2,913,831	\$ 145,692	\$ 3,060,000
SW Collection System (33,381 linear feet = 6.3 miles)	\$ 2,913,831	\$ 245,692	\$ 3,160,000

Stormwater and Wet Weather Management

Wet-Weather Mitigation

Combined Sewer Runoff Reduction (Pine Barge Canal as priority, with other projects throughout Main Plants)	\$ 1,460,000	\$ 212,000	\$ 1,672,000
Pine Street CSO disinfection Station	\$ 400,000	\$ 100,000	\$ 500,000
Wet Weather (CSS) Mitigation and Disinfection	\$ 1,860,000	\$ 312,000	\$ 2,172,000

Great Streets (if assume SW covers \$125k of \$250k/block)			\$ 1,500,000
City Hall Park (if assume that SW may have to cover \$150K of \$300k)			\$ 150,000
Great Streets and City Hall Park SW (if assume SW pays 1/2)			\$ 1,650,000

Separate Stormwater Management

3 acre permit obligation (City parcels) EFAs		\$ 65,000	\$ 65,000
Regulatory Req'd Separate Stormwater Retrofits (between 2020-2024)	\$ 150,000	\$ 100,000	\$ 250,000
Separate SW Regulatory Obligations	\$ 150,000	\$ 165,000	\$ 315,000

Asset Management CMMS (50% share with SW)	\$ 113,000	\$ 60,000	\$ 173,000
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City Project Management Staff (0.625 FTE x 4 years)		\$ 282,000	\$ 282,000
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Stormwater Total Request	\$ 10,102,000
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TOTAL	\$ 29,958,000
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Wastewater Plant Improvements

Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Main Plant Disinfection System Upgrade (does not include PLC)	This system controls the ability to disinfect wastewater and is require to protect public health.	Main			X	\$ 479,375.00		\$ 110,256.25	\$ 590,000
Main SCADA/PLC wholesale upgrade	This system acts as the central nervous system of the facility. Without this automation, there is more possibility for error.	Main			X	---	--	--->	\$ 350,000
North Plant Disinfection System Upgrade	This system controls the ability to disinfect wastewater and is require to protect public health.	North			X	\$ 172,750.00		\$ 39,732.50	\$ 213,000
East Plant Disinfection System Upgrade	This system controls the ability to disinfect wastewater and is require to protect public health.	East			X	\$ 172,750.00		\$ 39,732.50	\$ 213,000
North and East PLC Upgrade/optimization	This system acts as the central nervous system of the facility. Without this automation, there is more possibility for	North, East		X		\$ 60,000		\$ 12,000	\$ 72,000
Total Disinfection and PLC/SCADA									\$ 1,438,000
East plant outfall	Pipe that transports wastewater effluent to the Winooski	East	Fy20			\$ 180,000	\$ 30,600	\$ 45,000	\$ 256,000
North Influent Pump Controller	This controls the heart of the facility. Without it, North plant is not able to treat wastewater.	North	FY17	X		\$ 18,000		\$ 3,600	\$ 22,000
North/East Fire system replacement	Fire protection. North failed last fire inspection. East likely to fail	North, East		X		\$ 60,000			\$ 60,000
Upgraded Blower (Hybrid)	This is central to the biological process. This equipment will provide better control of the process, redundancy and electrical efficiency	Main				\$ 210,000		\$ 31,500	\$ 242,000

Wastewater Plant Improvements

Equipment		Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Dialers & Rain gauges		This allows for notification of problems at the facilities and better data on localized rain storms	North, East		X		\$ 12,000			\$ 12,000
Electrical component study and upgrade (Including Arc flash assessment) Find critical components that we need to have a backup on the shelf, or that needs to be replaced. i.e. foul sewer breakers.		This allows us to discover which components are failing and/or obsolete, to better manage risk and safety.	All		X		\$ 240,000		\$ 48,000	\$ 288,000
EMG Building Improvements		To management and maintain our building envelopes.	All		X		\$ 300,000		\$ 60,000	\$ 360,000
Back Up Blower		This is central to the biological process. This equipment will provide better control of the process, redundancy and electrical efficiency. But mostly for the redundancy.	Main		X		\$ 90,000		\$ 13,500	\$ 104,000
Main Plant Main Bar Rack (4 ft)		This equipment screens out debris from the influent, and is imperative for treatment and protection of equipment further down the line.	Main	FY21		X	\$ 363,576	\$ 61,808	\$ 72,715	\$ 499,000
North and East Bar Racks		This equipment screens out debris from the influent, and is imperative for treatment and protection of equipment further down the line.	North, East	FY23, 20		X	\$ 603,576	\$ 102,608	\$ 120,715	\$ 827,000
Grit							\$ -			\$ -
	Classifiers	This equipment screens out grit and course material from the influent, and is imperative for treatment and protection equipment from wear.	North, East			X	\$ 243,696		\$ 48,739	\$ 293,000
	Trolley drive upgrades		North, East		X		\$ 36,000	\$ 6,120	\$ 5,400	\$ 48,000
	Controls		North, East	FY17,18			\$ 120,000	\$ 20,400	\$ 18,000	\$ 159,000
	Complete replacement		Main	FY22		X	\$ 441,665	\$ 75,083	\$ 88,333	\$ 606,000
Main Inf. Ferric Storage		Ferric is used in phosphorus control. It is a nasty chemical, and this will change our current temporary storage, to a safe and permanent installation.	Main		X		\$ 42,000		\$ 4,200	\$ 47,000

Wastewater Plant Improvements

Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary	Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Rehab gates that do not work	The gates are used in various processes for flow control, maintenance and staff safety.	All		X		\$ 480,000	\$ 81,600	\$ 72,000	\$ 634,000
CSO pump controller and level sensor	This controls the ability to process wet weather events	Main	FY19,26	X		\$ 36,000		\$ 7,200	\$ 44,000
Rehab Rodney Hunt controller, panel, solenoids and gas cylinders	This controls various gates at main plant, including the relief gate for CSO treatment.	Main	FY18,26	X		\$ 60,000		\$ 12,000	\$ 72,000
Gas Detection systems	This is a safety system to protect staff from dangerous gasses.	All		X		\$ 24,000		\$ 4,800	\$ 29,000
Aeration Membranes of all Plants	This is part of the biological process to deliver oxygen to the bacteria so that they can treated the wastewater.	All	FY23, 19, 19	X		\$ 132,000	\$ 22,440	\$ 26,400	\$ 181,000
North and East Piston Pump Replacement (Primary Sludge pump)	These pumps provide the ability to transfer waste solids to storage for residuals management.	North, East		X		\$ 96,000			\$ 96,000
Yard Hydrant Replacement All plants	Yard hydrants are used to clean and maintain equipment and tanks.	All	FY19	X		\$ 120,000			\$ 120,000
Godwin Pump	This piece of equipment is a trailer mounted pump which can be used as a backup pump station in an emergency.	All		X		\$ 78,000			\$ 78,000
Main Plant Primaries (Has to happen)	Primaries are a part of the process in which you settle out as much of the organic material as possible. They reduce the need for more expensive secondary processing.	Main	FY20		X	\$ 1,092,050	\$ 185,649	\$ 198,582	\$ 1,477,000
Main Plant CSO Bar Rack (12ft)	This equipment screens out debris from the wet weather influent system, which is a major component of the wet weather treatment process.	Main			X	\$ 1,074,000	\$ 182,580	\$ 214,800	\$ 1,472,000

Wastewater Plant Improvements

										Design + Mgt 15% to 25% depending on size and complexity) based on non adjusted construction total	SUBTOTAL
Equipment	Description	Facility	D and K 2016 report	Estimate	Revised Consultant Estimate (2018)	Construction Total (with contingency)	ENR (inflation) adjustment as necessary				
Clarifiers (Primary or Secondaries) High Priority and/or East Plant redesign #	Primaries are a part of the process in which you settle out as much of the organic material as possible. They reduce the need for more expensive secondary processing. Secondaries are important for settling out biologically treated solids leaving a clean, polished effluent.	Any	FY24			\$ 2,400,000	\$ 408,000	\$ 240,000		\$ 3,048,000	
On-Shore Relief Box Culvert	This is the culvert used to discharge off shore in the case of hydraulic overload for the wet weather system. The lab building sits on top of this structure.	Main		X		\$ 240,000	\$ 40,800	\$ 48,000		\$ 329,000	
Total						\$ 8,792,563	\$ 1,217,687	\$ 1,383,485		\$ 11,403,000	

STUDIES

Dewatering Decision (Brewery option) Final Study		Main, All		X				\$ 120,000	\$ 120,000
Engineering evaluation of East Plant, which may include recommendations for alternative treatment strategies		East				\$ -		\$ 60,000	\$ 60,000
								Total Studies	\$ 180,000

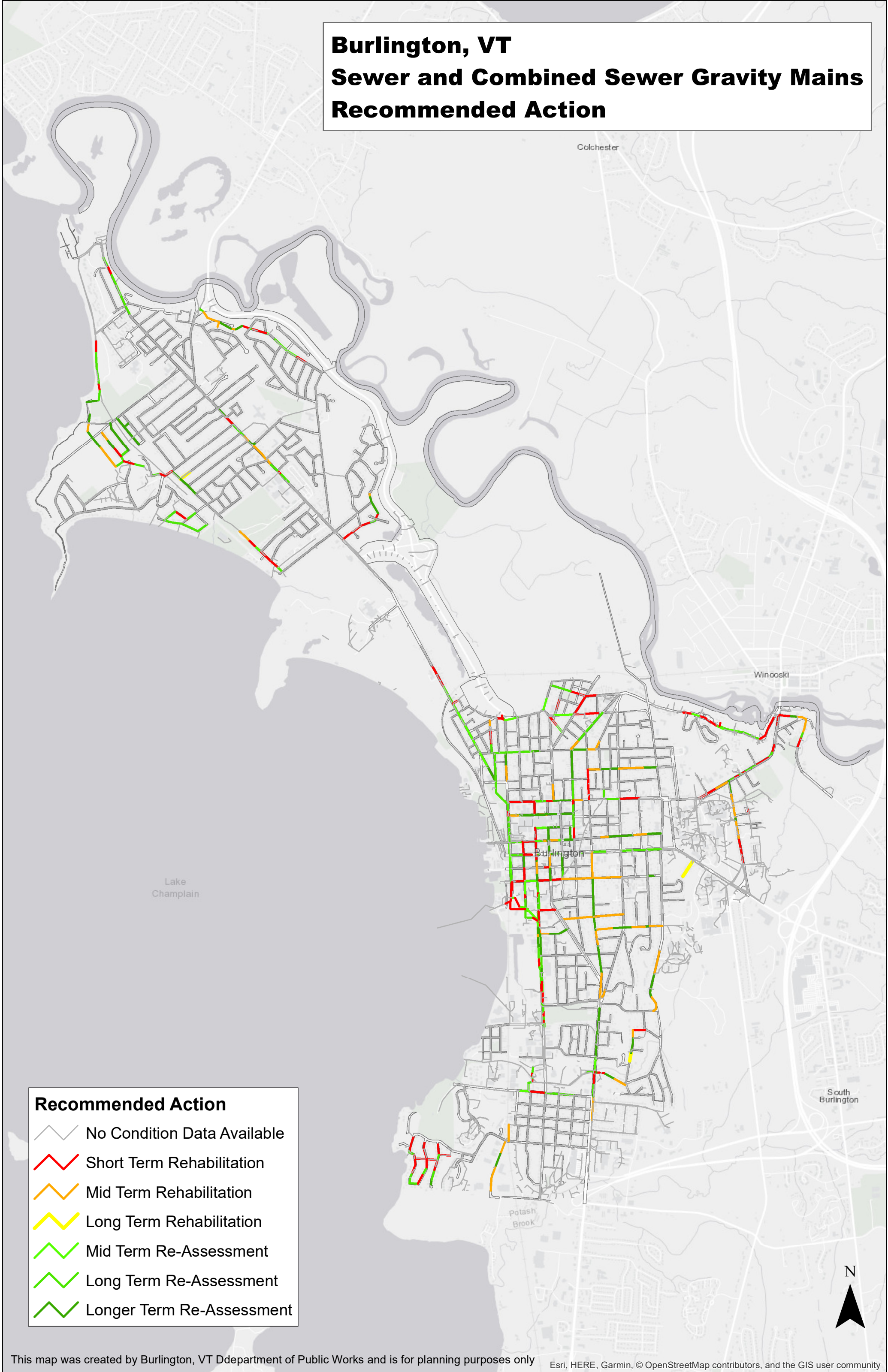
WASTEWATER PUMP STATION IMPROVEMENTS

Pump Station	Dry Pit or Submercible	Capital Planning D&K Year	D&K recommendation	Risk Totals	AEW Rank based on D&K Upgrades	FM Size/Material	Waterway Impacted by Spill?	Construction Total	Design and Oversight (30%)	Subtotal
Fletcher Place	S	2018 & 2020	VV metal and failing, valves, piping & pumps original. Controls showing safety issues	32	1	4" Steel	Yes, would have to go over an embankment	\$ 120,394	\$ 42,138	\$ 162,532.10
Crescent Beach	D	2018	WW old brick, DW failing, original valves, pumps and piping. Controls require entry to DW - Requiring a complete replacement of system	29	2	4" UNK	Yes but would have to be a large spill	\$ 270,369	\$ 94,629	\$ 364,997.54
Queen City	D	2023	WW & DW both in poor condition, valves & pumps original and should be replaced. Controls OK but may need to be relocated to surface	27	3	4" Cast	Yes but would only be from a FM or gravity break since the WW is 25ft deep	\$ 192,809	\$ 67,483	\$ 260,292.35
South Cove	D	2019	WW & DW both in poor condition, valves & piping original, pumps recently replaced but aren't submersible. Panel ok but structure is poor & needs replacement	26	4	4" PVC (relined 2018)	Yes directly on private beach	\$ 139,799	\$ 48,929	\$ 188,727.98
Flynn Avenue	D	2020	DW metal and failing, valves, piping & pumps original. Controls showing minor seal fitting issues, controls to be moved above ground	26	5	Half 6" HDPE Half 6" Cast	Yes direct access to beach	\$ 242,238	\$ 84,783	\$ 327,020.96
Water Plant	S	N/A	WW & VV both deteriorating, valves showing heavy corrosion, pumps ok but capacity could be issue, junction boxes are code violations C1 D1, seal fittings needed on conduits, controls OK	26	6	4" Ductile	Yes direct access to storm CB's that discharge to lake	\$ 196,998	\$ 68,949	\$ 265,947.44
Upper Beach	S	2022 & 2024	Hatch to be replaced, WW steel insert questionable but unknown, valves & piping original but pumps recently replaced. Controls old but ok	23	7	4" AC	No, but does have high public impact	\$ 171,668	\$ 60,084	\$ 231,751.13
Proctor Place	D	2024	WW & DW both in poor condition, valves & pumps original and should be replaced. Controls OK	21	8	6" Cast	Yes direct access to storm CB's that discharge to lake	\$ 316,350	\$ 110,723	\$ 427,072.50
Van Patten	S	2020	WW hatch poor, valve vault not sealed & submerged with GW, valves, pumps & pipes original, VFD's good, need covers	20	9	4" PVC	Yes, but over an embankment into intervale	\$ 67,522	inhouse	\$ 67,522.00
Chase Street	S	2020	Plug valves original, checks recently changed, pumps need to be replaced, panels & conduits showing corrosion	19	10	4" Cast	Yes, CB's with direct discharge into Winooski River	\$ 108,529	inhouse	\$ 108,528.50
Intervale Landfill	S	2026	Might not be the best use of our capital bond this time around	0	25		N/A	\$ 100,000	inhouse	\$ 100,000.00
Mission Control	N/A		Need to upgrade telemetry for improved staff efficiency and alarming					\$ 90,000	inhouse	\$ 90,000.00
								\$ 2,016,674	\$ 577,718	\$ 2,594,392

Burlington, VT

Sewer and Combined Sewer Gravity Mains

Recommended Action



Recommended Action

- No Condition Data Available
- Short Term Rehabilitation
- Mid Term Rehabilitation
- Long Term Rehabilitation
- Mid Term Re-Assessment
- Long Term Re-Assessment
- Longer Term Re-Assessment

High Risk Stormwater Outfall Repair

Location	Estimated Construction Cost (includes 25% cont)	Design & Oversight (25%)	Total Estimate
Manhattan Drive	\$725,000.00	\$181,250.00	\$906,250.00
505 Riverside Avenue	\$600,000.00	\$150,000.00	\$750,000.00
Northeast of Riverside Plant	\$179,906.25	\$44,976.56	\$224,882.81
North Avenue @ 127, just north of on ramp	\$245,000.00	\$61,250.00	\$306,250.00
Burlington High School	\$40,000.00	\$10,000.00	\$50,000.00
Ethan Allen Park, near Moore Drive	\$600,000.00	\$150,000.00	\$750,000.00
Englesby Brook @ Pine Street	\$100,000.00	\$25,000.00	\$125,000.00
Riverside Avenue, near Salmon Hole Park	\$60,000.00	\$15,000.00	\$75,000.00
Upper Little Eagle Bay	\$72,500.00	\$18,125.00	\$90,625.00
Leddy Park	\$120,000.00	\$30,000.00	\$150,000.00
Just west of Riverside	\$62,631.25	\$15,657.81	\$78,289.06
Total construction with 10% additional contingency ---->	\$3,085,541.25	\$701,259.38	\$3,786,800.63
Total construction for top 5, with 5% additional contingency on construction and design	\$1,879,401.56	\$469,850.39	\$2,349,251.95

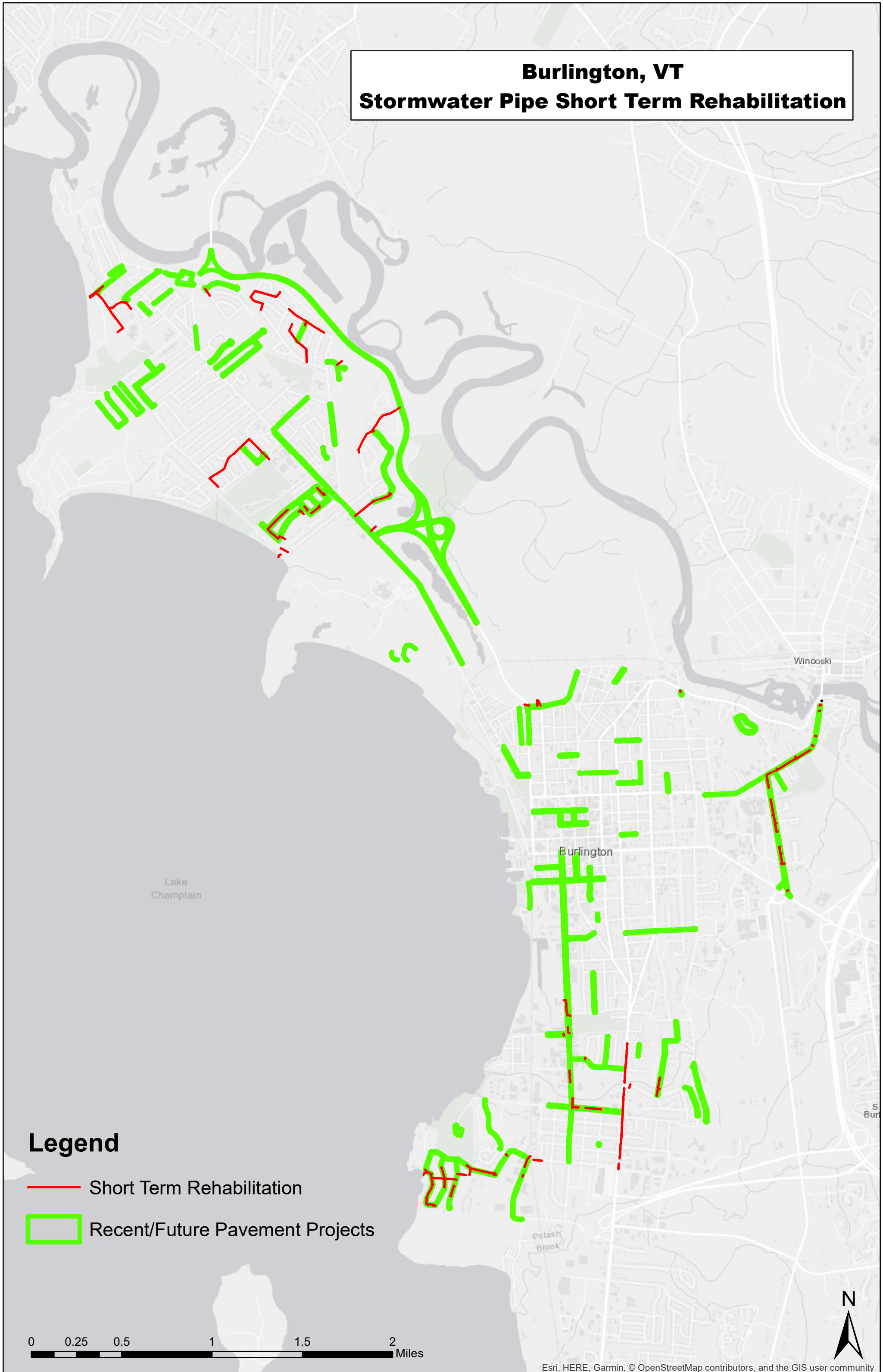
Combined Sewer Retrofit Opportunities

Project Currently Proposed	Acres of Impervious	Construction with contingency (25%)	Design/oversight	Watershed
Allen Street (below CSO)	1.13	\$105,937.50	\$10,593.75	Main Plant
Cedar Street @ Rose Street	0.5	\$62,500.00	\$6,250.00	Main Plant
Cedar Street @ LaFountain	0.62	\$77,500.00	\$7,750.00	Main Plant
North Prospect - North to Pearl	5.62	\$395,156.25	\$39,515.63	Main Plant
Cedar @ North Champlain?	2.75	\$193,359.38	\$19,335.94	Main Plant
Rose Street (above CSO)	1.61	\$150,937.50	\$15,093.75	Main Plant
Front/Summer	0.44	\$55,000.00	\$5,500.00	Main Plant
Hyde Street (near North Street)	0.31	\$38,750.00	\$3,875.00	Main Plant
Main Plant and/or Manhattan CSOs		\$1,079,140.63	\$107,914.06	
Fairmount Street	1.02	\$127,500.00	\$25,500.00	Main Plant - Above CSO
South Prospect (3 locations total)	3.19	\$299,062.50	\$59,812.50	Main Plant - Above CSO
Glen Road @ South Street	0.53	\$66,250.00	\$13,250.00	Main Plant - Above CSO
South Street	0.92	\$115,000.00	\$23,000.00	Main Plant - Above CSO
Prospect Parkway (2 sites)	0.99	\$123,750.00	\$24,750.00	Main Plant - Above CSO
Chestnut Terrace	0.26	\$32,500.00	\$6,500.00	Main Plant - Above CSO
Pine Street Barge Canal CSO		\$764,062.50	\$152,812.50	
Charlotte Street - bumpouts or subsurface or tank	1.1	\$103,125.00	\$20,625.00	Main Plant
	20.99	\$1,946,328.13	\$281,351.56	
75% of total possible opportunities, knowing that we want to wait until Integrated Plan is done to pick best bang for buck projects	12.6	\$ 1,459,746.09	\$ 211,013.67	
GREAT STREETS				
St. Paul				
Other 12 blocks		\$1,500,000.00	estimated cost is \$250K per block, use \$150K (60%)	
City Hall Park		\$150,000.00	Estimated cost is \$300K for CHP, assume 50%	
	Total Great Streets/Downtown	\$1,650,000.00		

Basis for Separate Stormwater Management 2019-2022 Budget #

3-Acre Site Compliance	Details / Notes	EFA Cost	Final Engineering & oversight	Construction Cost (Imp. * \$75000)
Alexis Drive Subdivision	3.1 acres total (1.55 acres required)	\$5,000.00	\$29,062.50	\$145,312.50
Grey Meadows Subdivision	3.87 acres total (1.94 acres required)	\$5,000.00	\$36,375.00	\$181,875.00
Lori Lane Subdivision	3.1 acres total (1.55 acres required)	\$5,000.00	\$29,062.50	\$145,312.50
Van Patten Parkway Subdivision	9.3 acres total (4.65 acres required)	\$5,000.00	\$87,187.50	\$435,937.50
Riverwatch	Co-permittee - EFA only	\$5,000.00		unknown
Ledgewood	Co-permittee - EFA only	\$5,000.00		unknown
Strathmore	Co-permittee - EFA only	\$5,000.00		unknown
Other City 3-Acre sites	38.06 acres impervious, across 10 sites, (outside of the CSS)	\$50,000.00	\$300,000.00	\$1,427,250
	Subtotals	\$85,000.00	\$482,000	\$2,335,688
Assume need to do remaiing EFAs (some being done in FY19) and some design by 2023, with some limited capital implementation of separate stormwater improvements. There should be grant funds available for non regulatory retrofits. USE		\$65,000.00	\$100,000.00	\$150,000

Burlington, VT
Stormwater Pipe Short Term Rehabilitation



Legend

- Short Term Rehabilitation
- Recent/Future Pavement Projects

0 0.25 0.5 1 1.5 2 Miles

**PUBLIC PARKING ALLOCATION AGREEMENT
247 PEARL STREET.**

This Public Parking Allocation Agreement (“Agreement”) is entered into between the City of Burlington, through its Department of Public Works (“City”), and 247 Pearl LLC (“Company”). The Company and the City agree to the terms and conditions of this Agreement.

1. RECITALS

- A. Authority.** Authority to enter into this Agreement exists in the City Charter. Required approvals, clearance, and coordination have been accomplished from and within each Party.
- B. Consideration.** The Parties acknowledge that the mutual promises and covenants contained herein and other good and valuable consideration are sufficient and adequate to support this Agreement.
- C. Purpose.** The City seeks to offer public parking spaces in a private parking facility owned by the Company at 247 Pearl Street in Burlington, Vermont. This Agreement outlines the scope and management of those public spaces.

2. EFFECTIVE DATE AND TERM

- A. Effective Date.** This Agreement shall not be valid or enforceable until the Effective Date. The City shall not be bound by any provision of this Agreement before the Effective Date and shall have no obligation for any performance prior to the Effective Date or after the expiration or termination of this Agreement.
- B. Term.** This Agreement and the Parties respective performance shall commence on the Effective Date and expire 5 years after the Effective Date.
- C. Renewal.** This Agreement shall automatically renew for one additional 5 year term unless either Party provides written notice to the other Party no later than 90 days prior to the expiration of this Agreement.
- D. Termination.** Either Party may terminate this Agreement upon issuing written notice to the other Party. The notice shall specify the effective date of the termination.

3. DEFINITIONS

- A. “Effective Date”** means the date on which this Agreement is approved and signed by the City, as shown on the signature page of this Agreement.
- B. “Facility”** means the parking facility owned by the Company located at 247 Pearl Street in Burlington, Vermont.
- C. “Party”** means the City or Company and “Parties” means both the City and Company.

4. GRANT OF PUBLIC SPACES

- A. Allocation.** The Company shall allocate a total of 10 parking spaces in the Facility to the City for use by the public (“Public Spaces”). The location of these Public Spaces is demonstrated in Attachment 1. The Company shall allow public use of such Public Spaces between the hours of 9

a.m. and 6 p.m., Monday through Friday.

- B. Management.** The City shall be solely responsible for management of the Public Spaces. To that end, the City shall install and maintain coin operated meters at the Public Spaces. The City may also give the public access to the ParkMobile phone application to remit payment for use of the Public Spaces. The City shall also install and maintain exterior and interior signage necessary to alert the public of the hours, rates, conditions, and locations of Public Spaces within the Facility.
- C. Rates.** The City shall charge customers in an amount similar to amounts charged by the City at City-owned parking facilities. The Parties agree to make all efforts to establish rates for the Public Spaces in a manner designed to achieve an approximate 85% utilization rate.
- D. Enforcement.** The City shall enforce compliance with conditions of use established by the City for use of the Public Spaces. The Company shall grant the Burlington Police Department the right to enter any portion of the Facility to enforce the conditions for use on behalf of the City.
- E. Restrictions.** The City shall comply with all restrictions imposed on the Company for the operation of the Facility by the Certificate of Completion recorded in the City's Land Records at book 1368, pages 197-201.

5. PARKING FACILITY

- A. Responsibility.** Notwithstanding the grant of Public Spaces set forth in **§4.A**, the Company shall remain solely responsible for management of all other parking spaces and the Parking Facility. The City shall not hold any other responsibility or obligation not set forth in this Agreement.
- B. Maintenance.** The Company shall—at its sole cost—be solely responsible for the repair and maintenance of the Parking Facility and all spaces contained therein, excluding the meters described in **§4.B**. This responsibility includes:
 - i. Appearance.** The Company shall keep the Facility, its parking areas, driveways, pedestrian entrances, and stairways in a clean and presentable condition that is equal to the conditions of City-owned parking facilities. The Company shall sweep, remove trash, and empty trash receptacles on a daily basis.
 - ii. Facility Improvements.** The Company shall maintain all paving, painting, line striping, lighting, curbs, and all other improvements required for operation of the facility in good repair at a quality equal to such operations at parking facilities owned by the City.
 - iii. Removal of Dangerous Conditions.** The Company shall immediately remove snow, ice, graffiti, and all other dangerous conditions from all portions of the Facility.
 - iv. Notification.** The Company shall advise the City within a reasonable time period of any planned renovation or improvements to the Facility that impacts the Public Spaces, or use of the Public Spaces. If renovation or improvements occur, the Company shall provide appropriate signage and work with the City to provide applicable notification to the public.

6. SHARE OF REVENUE

The City shall share with the Company fifty percent (50%) of all revenues collected from the Public Spaces. The City shall remit the Company's share to the Company on a monthly basis and issue the

Company its share within thirty days after the closing of each month. The City shall also provide the Company with a monthly transaction report.

7. UTILITIES

The Company shall be solely responsibility for the payment of all utilities associated with the Facility.

8. INFORMATION EXCHANGE

Each Party agrees, upon reasonable request of the other Party, to respond promptly to requests for information or documentation relative to obligations assumed under this Agreement.

9. INDEMNIFICATION

The Company shall indemnify, defend, and hold harmless the City, its officers, agents, and employees, from and against any and all claims, damages, liabilities, costs, or expenses of every kind and nature, arising out of the Company's negligent acts and/or omissions in the performance of this Agreement. The Company shall further indemnify, defend, and hold harmless the City, its officers, agents, and employees from any and all claims, damages, liabilities, costs, or expenses of every kind and nature, resulting from, or consequent to, any hazardous material or hazardous material contamination at the Facility.

10. INSURANCE

Prior to the Effective Date, each Party shall obtain insurance coverage in accordance with this **§10**. Such coverage shall be procured from an insurance company registered and licensed to do business in the State of Vermont and having an A.M. Best insurance rating of at least A-, financial size category VII or greater (www.ambest.com). The Company's certificate of insurance coverage shall be documented on forms acceptable to the City and list the City as an additional insured. The insurance policies cannot be cancelled during the term of this Agreement without at least 30 days' notice.

A. General Liability and Property Damage. With respect to all operations performed, each Party shall carry General Liability and Property Damage Insurance providing all major divisions of coverage including, but not limited to:

- i.** Premises – Operations
- ii.** Products and Completed Operations
- iii.** Personal Injury Liability
- iv.** Contractual Liability
- v.** Medical Expenses

Coverage limits shall not be less than:

- | | |
|---|-------------|
| i. General Aggregate | \$2,000,000 |
| ii. Product/Completed Operations | \$2,000,000 |
| iii. Personal & Advertising Injury | \$1,000,000 |
| iv. Each Occurrence | \$1,000,000 |

v. Fire Damage (any one fire) \$ 250,000

vi. Med. Expense (any one person) \$ 5,000

B. Workers Compensation Insurance. With respect to all operations performed, each Party shall carry Workers Compensation Insurance in accordance with the laws of the State of Vermont. The Parties shall also ensure that all subcontractors carry Workers Compensation Insurance for all Work performed by them. Minimum limits for employer's liability is as follows:

i. Bodily Injury by Accident: \$1,000,000 each accident

ii. Bodily Injury by Disease: \$1,000,000 policy limit
\$1,000,000 each employee

C. Automobile Liability Insurance. The Parties shall carry Automobile Liability Insurance covering all motor vehicles—including owned, hired, borrowed, and non-owned vehicles—used in connection with this Agreement. Each policy shall provide coverage with a limit not less than \$1,000,000 – Combined Single Limit for each occurrence

D. Umbrella Liability. Each Party shall obtain the following minimum umbrella liability coverage:

\$1,000,000 Each Event Limit

\$1,000,000 General Aggregate Limit

E. Inland Marine/Property Insurance. The Company shall obtain Inland Marine/Property Insurance coverage with limits applicable to the property at risk whether Building, Improvements and Betterments, Business Personal Property or Equipment.

F. Garage Keepers Legal Liability. The Company shall obtain Garage Keepers Legal Liability coverage insuring against physical damage to automobiles in the care, custody, and control of the Company At a minimum amount of \$100,000 for each event.

G. Monies and Securities Coverage. The Company shall obtain Monies and Securities coverage at the following minimum amounts: \$50,000 inside/on premise and \$50,000 outside premise/in-transit.

11. ACCEPTANCE OF RISK

The City shall not be liable for any loss or damage caused by members of the public to the Facility while using Public Spaces. The City does not guard, assume care, custody, or control of any vehicle using the Facility, or their contents.

12. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement and understanding of the Parties with respect to the subject matter of this Agreement. All prior representations and understandings of the Parties—oral or written—are merged into this Agreement. Prior or contemporaneous additions, deletions, or other changes to this Agreement shall not have any force or effect whatsoever, unless embodied herein.

13. MODIFICATION

Except as otherwise provided by this Agreement, any modification to this Agreement shall only be

effective if agreed to in a formal written amendment to this Agreement, properly executed and approved by the Parties.

14. THIRD PARTY BENEFICIARIES

This Agreement does not confer any rights or remedies upon any person or entity other than the Parties. Enforcement of this Agreement and all rights and obligations hereunder are reserved solely for the Parties. Any services or benefits which third parties receive as a result of this Agreement are incidental to the Agreement and do not create any right for such third parties.

15. WAIVER

A Party's failure or delay in exercising any right, power, or privilege under this Agreement, whether explicit or by lack of enforcement, shall not operate as a waiver, nor shall any single or partial exercise of any right, power, or privilege preclude any other or further exercise of such right, power, or privilege.

16. CHOICE OF LAW

Vermont law shall be applied in the interpretation, execution, and enforcement of this Agreement. Any provision included or incorporated herein by reference which conflicts with Vermont law shall be null and void. Any provision rendered null and void by operation of this provision shall not invalidate the remainder of this Agreement, to the extent capable of execution.

17. JURISDICTION

All suits or actions related to this Agreement shall be filed and proceedings held in the State of Vermont.

18. BINDING NATURE

This Agreement shall be binding on and shall benefit the parties hereto and their respective successors and assigns.

The remainder of this page intentionally left blank

19. SIGNATURE PAGE

Persons signing for the Parties hereby swear and affirm that they are authorized to act on behalf of their respective Party and acknowledge that the other Party is relying on their representations to that effect.

The Parties hereto have executed this Parking Allocation Agreement

247 PEARL LLC

By: _____

Erik Hoekstra

Date: _____

**CITY OF BURLINGTON
Department of Public Works**

By: _____

Chapin Spencer, Director
Department of Public Works

Date: _____



**CITY OF BURLINGTON
DEPARTMENT OF PUBLIC WORKS**

645 Pine St. Suite A
Post Office Box 849
Burlington, VT 05402-0849
802.863.9094 X3
802.863.0466 FAX
802.863.0450 TTY

Chapin Spencer
DIRECTOR OF PUBLIC WORKS

MEMORANDUM

TO: DPW Commission
FROM: Chapin Spencer, Director
Patrick Mulligan, Assistant Director – Parking & Traffic
DATE: September 19, 2018
RE: Amendments to Appendix C, Rules and Regulations of the Traffic Commission
§§ 18 and 19: Designate 247 Pearl Street lot as a City Leased/Managed Lot and
Set Hourly Rate at \$0.40/hour

Recommendation:

Staff recommends that the Commission (1) amend Appendix C § 18 to include the new parking known as 247 Pearl Street and (2) amend Appendix C § 19 to set hourly rate for the new lot at \$0.40/hour in accordance with the agreement between 247 Pearl St and the City of Burlington, Vermont Regarding Management of Public Parking Allocation at 247 Pearl Street.

Background:

A lane realignment project commenced on Pearl Street from Hungerford Terrace west to Battery Street. The realignment provided for better traffic flow and safer street crossings. During this realignment process, some on-street parking was removed and or relocate from the south side of Pearl Street to the north side of Pearl Street. In order to accommodate some of this removal of on-street space an agreement was sought to provide metered off-street space in a private lot to accommodate businesses in the area. The result is the agreement with 247 Pearl Street.

The Department of Public Works (DPW) staff has negotiated a management agreement with 247 Pearl Street to have the City manage ten (10) public parking spaces. The benefits to the City include:

- Ensure public ease of use by having consistency of operations, signage, rates and pay-by-sell provider.
- Have ability to manage rates in a way that ensures a high level of utilization.
- Revenue opportunity for Traffic Fund (operational revenues) and General Fund (enforcement revenues)

We propose managing the parking lot using ten (10) double head, coin operated parking meters. A Parkmobile pay-by-phone zone will be created for this specific lot. Since we already own the

parking meters, there are no ongoing operational costs involved with this operation. The spaces will be provided Monday –Friday, 9:00 am – 6:00 pm.

In order for the City to manage this new lot in accordance with the Agreement Appendix C needs to be amended to (1) include the new parking lot known as 247 pearl Street and (2) designate an hourly rate of \$0.40/hour for the new parking lot know as 247 Pearl Street. Specifically, Staff recommends the following amendments.

18 Parking facility designations.

(b) Leased lot locations:

(1) The city-owned lot on the west side of Elmwood Avenue near the intersection of Grant Street, known as the Elmwood Avenue Lot.

(2) The city-owned lot located on Main Street that is adjacent to the metered lot on the northeast corner of Main and Winooski.

(3) The city-owned lot at the intersection of College Street and Lake Street on the northwest corner, known as the Pease Grain lot.

(4) The city-leased and managed lot located on St. Paul Street between King Street and Maple Street known as 194 St. Paul Street Lot.

(5) The city-leased and managed lot located on Pearl Street between Hungerford Terrace and North Union Street know as 247 Pearl Street

19 Parking rates.

(b) The rate of charge for parking in metered city lots shall be as follows:

Location Rate per Hour

(1) Main Street and South
Winooski Avenue \$1.50

(2) College Street
(Library):

One-hour meters 1.00

Ten-hour meters 0.40

(3) Pearl Street and Pine Street

Three-hour meters \$1.00

Ten-hour meters 0.40

(4) 194 St. Paul Street lot 1.50

(5) 247 Pearl Street lot \$0.40

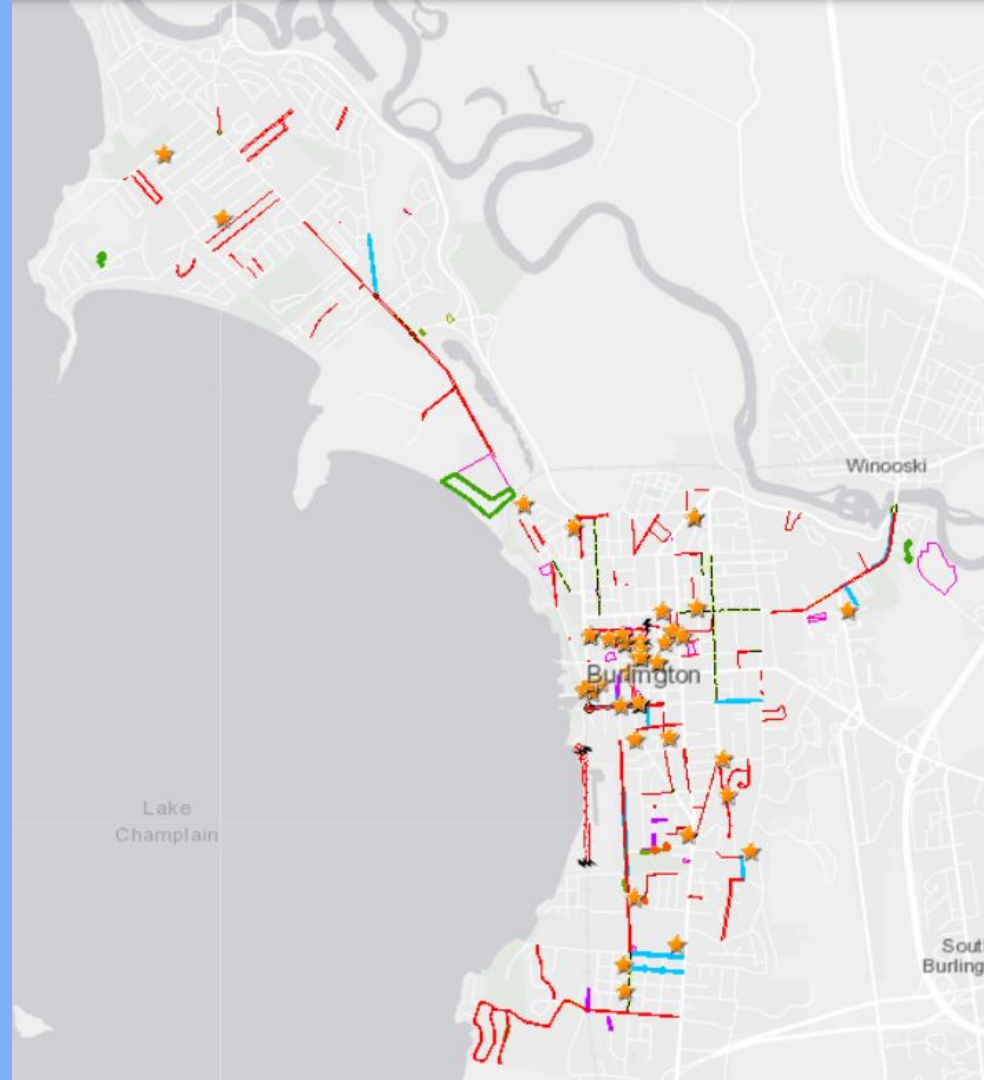
Material underlined add.

Thank you for your consideration of this request. Do not hesitate to contact me with any questions.



DPW COMMISSION
SEPTEMBER 19, 2018

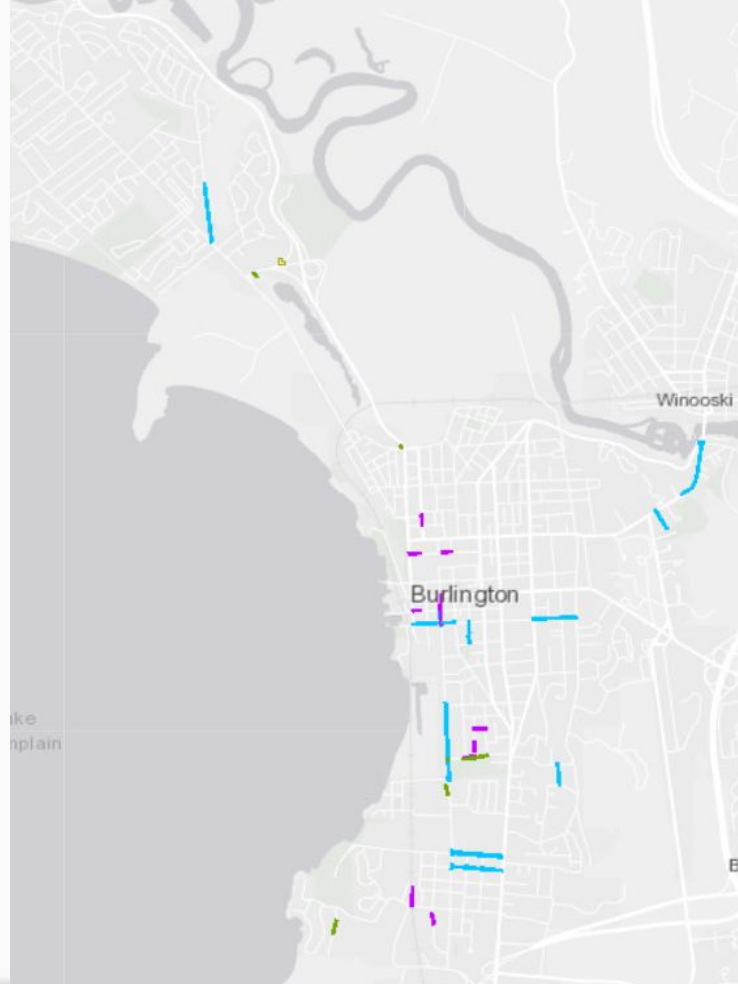
Sustainable Infrastructure Plan *Late Season Update*



CAPITAL REINVESTMENT	Past Annual Investment	2017 Final	2018 Max Target	2018 YTD, <i>including projects underway</i>
Paving	~ 3 miles	5.13 miles	7.84 miles* <i>(includes 1.44mi patching)</i>	5.4 miles
Sidewalk Reconstruction	~ 1 mile	3.0 miles total	3.71 miles*	2.02 miles
Water Main Relining	As needed	1.78 miles	2.38 miles*	2.1 miles
Water Main Replacement	As needed	0.44 miles	1.5 miles*	1.5 miles
Curb	As needed	0.62 mile	0.68 miles*	0.55 miles
Sewer/Stormwater Pipe Rehab	As needed	\$165k	\$307k (1.01 mi)	\$272K
PREVENTATIVE MAINTENANCE	Past Annual Investment	2017 Final	2018 Max Target	2018 YTD
Crack Sealing	0	5.46 miles	5.0 miles	>5.0 miles
Sidewalk Cutting	0	\$50k	\$50K	Underway this week

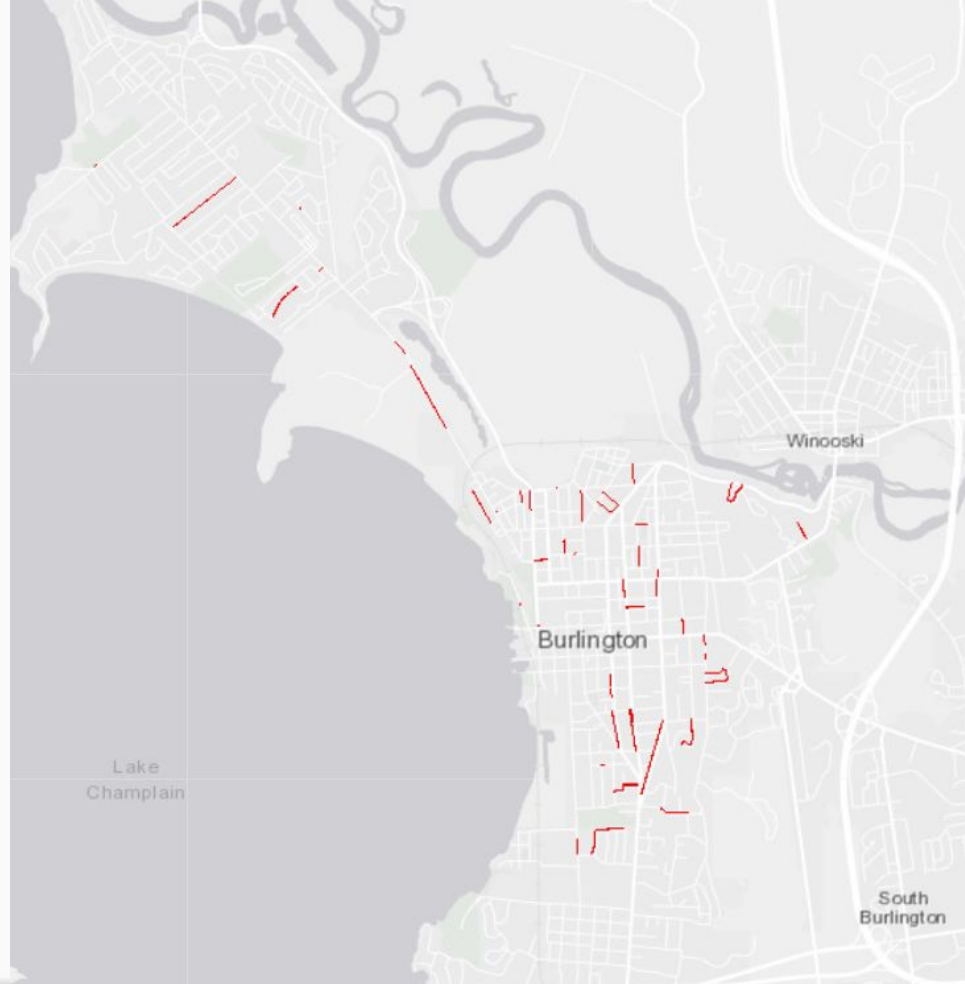
*This work includes carryover from prior construction year

2018 CAPITAL CONSTRUCTION TARGETS

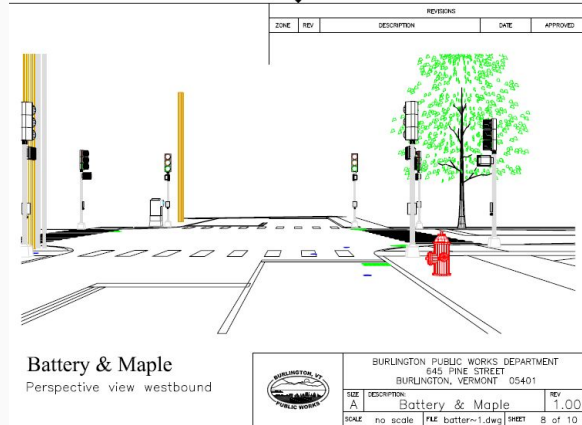




PAVING AND PATCHING PROJECTS 2018



SIDEWALKS 2018



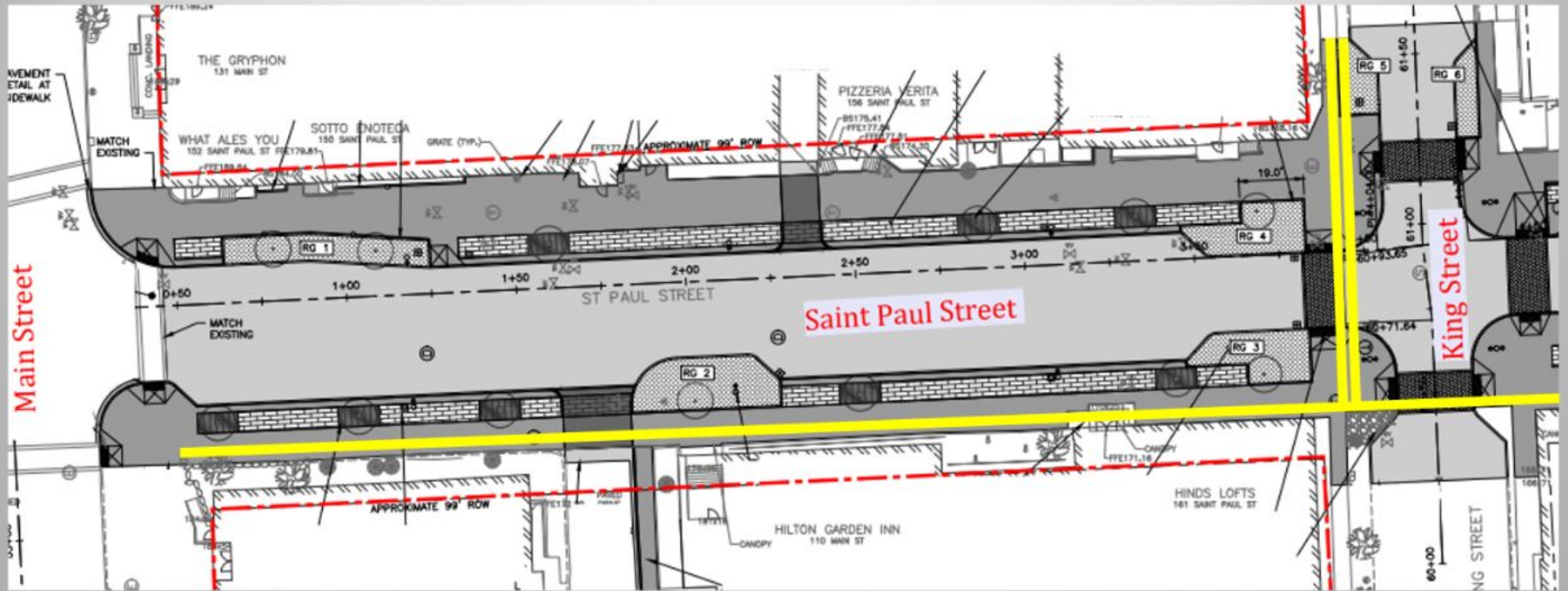
Sample of Improvement Projects

- Maple & Battery: Pedestrian-Actuated Traffic Signals
- Colchester/Barrett: Pedestrian Signals (upcoming)
- Flashing Beacon Crosswalk at Fletcher Pl and Colchester
- Climbing Bike Lane on Colchester (upcoming)
- Quick-Build at Howard/Winooski/St. Paul; Main & S Champlain
- ONE Greenway



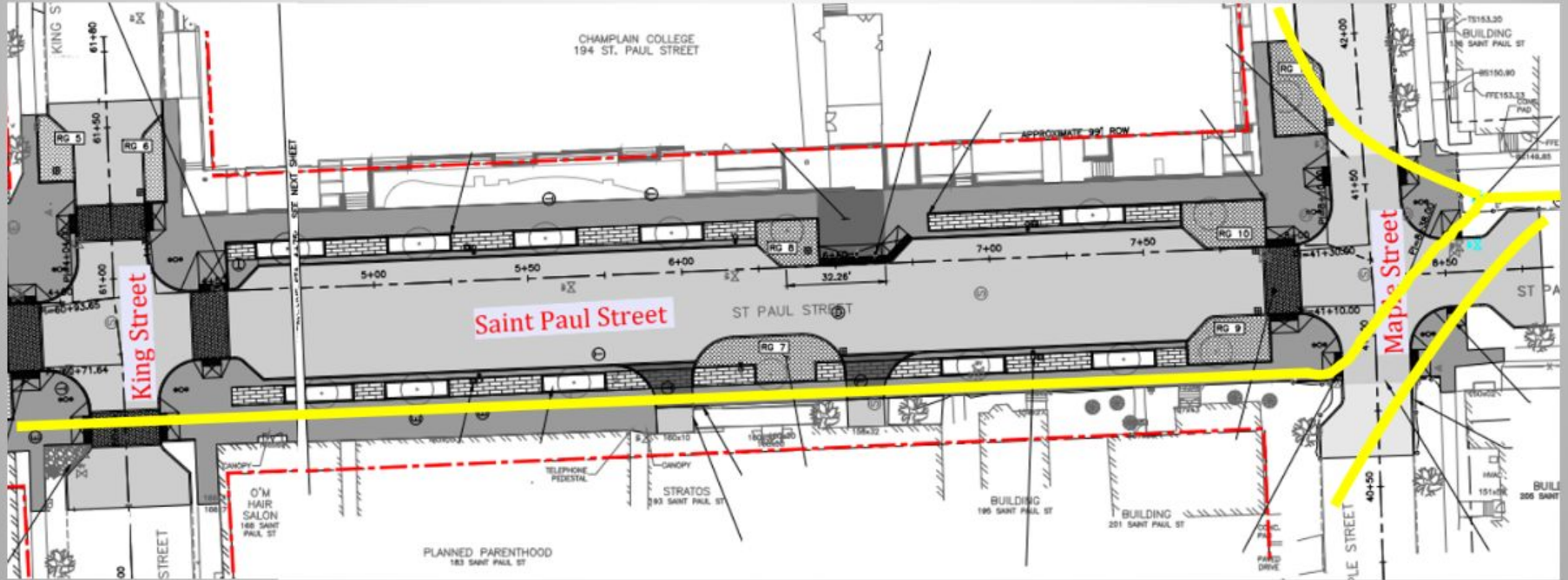
ST PAUL STREET: GREAT STREETS KICKS OFF

St. Paul –Main to King Plan



ST PAUL STREET: GREAT STREETS KICKS OFF

St. Paul –King to Maple Plan



ST PAUL STREET: GREAT STREETS KICKS OFF

Community Resources

- **BTV Construction Portal, including a map or list of all 2018 paving, sidewalk and water projects:** burlingtonvt.gov/construction
- **Report non-emergency maintenance requests:** SeeClickFix.com
- **DPW Customer Service:** 802-863-9094
- **Water Resources, including 24/7 urgent support:**
802-863-4501/water-resources@burlingtonvt.gov
- **Sustainable Infrastructure Plan & Construction Season Info:**
burlingtonvt.gov/DPW/Reinvestment
- **Robert Goulding, Public Information Manager,**
RGoulding@burlingtonvt.gov, 802-881-2278

Burlington Department of Public Works Commission Meeting
Draft Minutes September 19, 2018
645 Pine Street – Main Conference Room

Commissioners Present: Jim Barr, Justine Sears, Chris Gillman, Brendan Hogan,
Bob Alberry by phone.

Commissioners Absent: Tiki Archambeau, Solveig Overby

Item 1 – Call to Order – Welcome – Chair Comments

Commissioner Gillman called the meeting to order at 6:40 p.m.

Item 2 – Agenda

Commissioner Barr makes a motion to approve the agenda

Commissioner Gillman seconds.

Ayes are unanimous

Item 3 – Public Forum

Dave Hartnett spoke about stormwater/wastewater bond proposal, residential parking, greenway projects and the condition of the streets in the New North End.

Caryn Long spoke about the planters and bollards in the area of Loomis Street.

Mr. Mahnke spoke about traffic and pedestrian safety improvements as things are getting worse in Ward 1.

Item 4 – Consent Agenda

A. Birchcliff Parkway

B. Parking Agreement for State of Vermont – 34 spaces Lakeview Garage

C. Parking Agreement 247 Pearl Street – 10 Meter Spaces to Replace Lost Space on Pearl Street.

Commissioner Barr made a motion to accept Consent Agenda

Commissioner Gillman seconded

Ayes are unanimous

Item 6 – Proposed Wastewater & Stormwater Bond

A. Presentation by Director Spencer and Assistant Director Megan Moir. The Board of Finance has recommended that this be placed on the November ballot. Assistant Director Moir gave a verbal presentation of the recommended stormwater and wastewater investments.

B. Commissioner Discussion – Commissioner Sears stated that Chair Archambeau wanted to wait to vote on this issue as he wanted to review the material. Commissioners Hogan and Gillman asked questions about the proposal.

C. There was no public comments

D. Commissioner Gillman moved to recommend the city council approve the resolution which would place this proposed bond on the November 2018 ballot.

E. Seconded by Commissioner Barr

Commissioner Alberry – Aye
Commissioner Barr – Aye
Commissioner Hogan – Aye
Commissioner Gillman – Aye
Vice Chair Sears – Abstains

Item 7 – Mid Season Construction Update

Director Spencer presented on the status of the Department's 2018 reinvestment goals. The Department is on track to achieve the overall production goals for paving, sidewalks, water mains, and curbing set earlier in the year.

Commissioner Discussion: Commissioner Barr is looking forward to the traffic calming in Ward 2. There is a temporary crosswalk at Colchester Avenue and the Chase Mill.

Item 8 – South Union Street Demonstration Project – Director Spencer

Director Spencer stated that residents have requested to host a South Union Street Demonstration Project where they propose to turn one block of Maple Street into a one-way street by Edmunds School and extended the protected bike lane for a one week trial period. Edmunds School administration is supportive. They asked if we could extend this project for as parents, staff and school children feel it is safer travels to and from school and they want more time to experience the changes. Director Spencer notified the Commission that he planned to allow an extension of the demonstration project for one additional week under his pilot authority unless there is concern from the Commission.

Commissioner Discussion: Commissioners Barr and Hogan expressed support for extending this for another week.

Item 9 – October Commissioner Meeting

Director Spencer floated the possibility of a potential date change for the October meeting as we may need Commission action on a Water Bond prior to the October 15 Council meeting to obtain favorable borrowing terms. Director Spencer asked if Commissioners would consider a special meeting, whether the Commission would prefer one or two meetings, and what Commissioners could make a conceptual October 10 date. Many Commissioners expressed a preference for one meeting instead of two, would prefer the regular 10/17 date, but many could make a 10/10 meeting if needed.

Item 10 – Approval of Minutes

Commissioner Barr made a motion to accept. Commissioner Hogan seconded.

Commissioner Barr – Aye
Commissioner Alberry – Aye
Commissioner Hogan – Aye
Commissioner Gillman – Aye

Item 11 – Director's Report

Director Spencer stated that he is recommending including the outstanding Traffic Requests report in the Director's Report reduce the time to develop a separate report. He reported on upcoming potential Residential Permit Parking process changes and potential parking changes on narrow streets.

Commissioner Gillman stated that he would still want a periodic report on outstanding traffic requests. The Commission and Director discussed developing a biannual report to the Commission to supplement the summary in the monthly Director's Report.

Item 12 – Commissioner Communication

Commissioner Hogan asked about See Click Fix and asked if this was a preferred means for feedback from the residence of the city. He asked about what was being done for pedestrian safety while accessing Callahan Park -- specifically getting a crosswalk near Locust Terrace to cross to the park.

Commissioner Sears asked about getting a pedestrian signal at the North Champlain Street and Manhattan Drive intersection as cars travel fast through there and it is sometimes hard to see vehicles coming.

Item 13 – Adjournment

Commissioner Barr motioned for adjournment

Commissioner Hogan seconded

All were in favor.

Meeting adjourned at 8:30 p.m.

Burlington Department of Public Works Commission Meeting
Final Minutes September 19, 2018
645 Pine Street – Main Conference Room

Commissioners Present: Jim Barr, Justine Sears, Chris Gillman, Brendan Hogan,
Bob Alberry by phone.

Commissioners Absent: Tiki Archambeau, Solveig Overby

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Commissioner Hogan – Aye
Commissioner Gillman – Aye
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Commissioner Sears asked about getting a pedestrian signal at the North Champlain Street and Manhattan Drive intersection as cars travel fast through there and it is sometimes hard to see vehicles coming.

Item 13 – Adjournment

Commissioner Barr motioned for adjournment

Commissioner Hogan seconded

All were in favor.

Meeting adjourned at 8:30 p.m.