



Wards 4 & 7 Meeting
Wednesday, September 26, 2018 6:45-9:00pm
The Miller Center, 130 Gosse Court, Burlington
Draft Agenda

- 6:45 - 7:00 Snacks and socializing
- 7:00 - 7:10 Ground rules, Introductions, Announcements
- 7:10 - 8:00 Burlington High School Renovation Bond Request
Martine Gulick, Ward 4 School Commissioner
Mark Barlow, North District School Commissioner
Monica Ivancic, Ward 7 School Commissioner
Chair Claire Wool, Ward 6 School Commissioner
- 8:00 - 8:30 Waste Water Bond Request
Chapin Spencer, Director of Public Works
Megan Moir, Division Head of Water Resources
- 8:30 - 8:45 City Council Updates
Dave Hartnett, North District
Kurt Wright, Ward 4
Ali Dieng, Ward 7
- 8:45 - 9:00 State House Updates
Carol Ode, Chittenden 6-1
Kurt Wright, Chittenden 6-1
Jean O'Sullivan, Chittenden 6-2

Ward 4 Steering Committee

Jim Holway, Loaldo Dr., 865-4471
Jeff Clark, Cumberland Rd., 734-0993
Alex Farrell, Little Eagle Bay, 503-5242
Eric Corbman, Northshore Dr., 399-2602
David Driscoll, Killarney Dr., 598-1234

Ward 7 Steering Committee

Linda Deliduka, Village Grn. 864-5114
Chris Trombly, Sandy Ln., 238-1158
James Loop, Morrill Dr., 598-8260
Matt Hurlburt, Morrill Dr., 862-5337

GROUND RULES

Listen to others speaking. Respect the agenda. Share your opinion politely. Treat people respectfully



<https://www.burlingtonvt.gov/CEDO/Neighborhood-Services/NPAs/Wards-4-and-7-NPA>



<https://www.facebook.com/NorthEndNPA/>



<https://twitter.com/NorthEndNPAs>

Neighborhood Planning Assembly Attendees



NPA (choose one)	Wards 1 & 8	Wards 2 & 3	Wards 4 & 7	Ward 5	Ward 6	Ward 7	Ward 8	Ward 9	Ward 10	Ward 11	Ward 12	Ward 13	Ward 14	Ward 15	Ward 16	Ward 17	Ward 18	Ward 19	Ward 20	Ward 21	Ward 22	Ward 23	Ward 24	Ward 25	Ward 26	Ward 27	Ward 28	Ward 29	Ward 30	Ward 31	Ward 32	Ward 33	Ward 34	Ward 35	Ward 36	Ward 37	Ward 38	Ward 39	Ward 40
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Date of Assembly : 9.26.18 Location: Miller Ctr

Please return to your convenor, Phet Keomanyvanh,
or email to cedofd@burlingtonvt.gov

- 1 Roger R.J.
- 2 Zach Yare
- 3 Ellen Cooper
- 4 Arnie Krieger
- 5 Hansel Krieger
- 6 Gus Buchanan
- 7 Rock Point School; Jr & Sr's
- 8 DAVID DRISCOLL - WARD 4
- 9 JEFF; NANCY COMSTOCK W7
- 10 Eric Corbin W4
- 11 Peter Dottie Ireland 4
- 12 Chris Traubly 7
- 13 Megan Moir City - DPW
- 14 Ali Bieng BTVCC (7)
- 15 Kurt Lumbert 4
- 16 Chamille
- 17 Michelle Clark
- 18 Chapin Spencer, DPW
- 19 Megan Moir, DPW
- 20 Jeff Clark 4

20 Monika Ivancic

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2018
CLEAN WATER
RESILIENCY PLAN

AGENDA

- Overview Bond Proposal
- Summer Infrastructure Issues
- BTV Water Quality Progress
- Detailed Bond Proposal: Infrastructure Stabilization & Modernization
- Rate Impact & Affordability Strategies
- Questions/Resources

CITYWIDE REINVESTMENT & CONTINUED LAKE STEWARDSHIP

- Stabilize and modernize aging infrastructure
- Continuing a Citywide Legacy of natural resource protection
- The Clean Water Resiliency Plan is result of years of careful risk-based capital planning
- **\$30 M Plan**
 - \$19.9 M for Wastewater
 - \$10.1 M for Stormwater
- **\$5.36/month** increase for typical single family property owner
- Bond Vote **November 6**



Increased Capital Planning in Recent Years

Burlington Wastewater **2017**
20 Year Engineering Evaluation,
10 Year Capital Plan and
Consulting Engineering Report

Prepared For:
Burlington Department of Public Works
Burlington, Vermont 05401

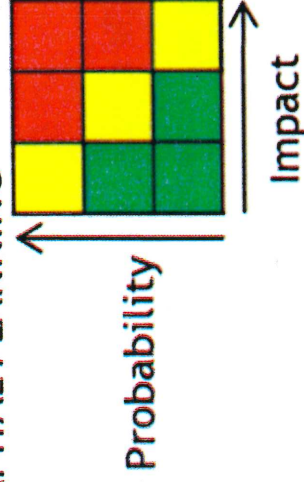


DuBois
& King
INC.

City of Burlington March 1st, 2017

- Wastewater 20 year engineering evaluation and 10 Year Capital Plan (2017)
- Asset Management /Risk based decision making (since 2013)
- Stormwater Outfall Assessment (2014-2017)
- First Phase Sewer Pipe Assessment (2017-2018)
- Integrated Planning (Long Term Planning to meet new regulatory obligations)

**FOCUS ON RISK BASED
CAPITAL PLANNING**



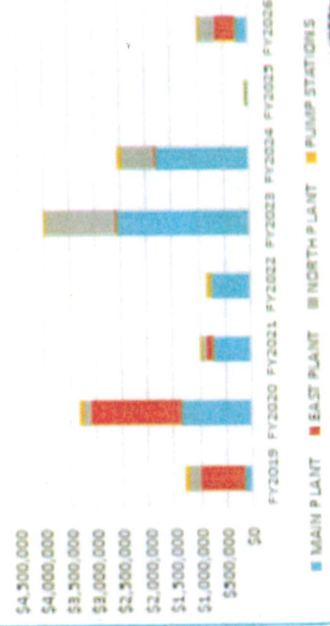
Known Need Was on Near Term Horizon

Looking ahead to FY 20 and beyond

Challenges

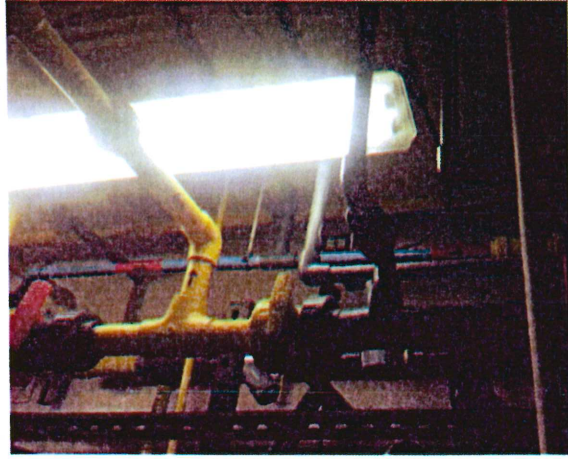
- **Water Debt**
 - Important to maintain or increase Moody's A1 rating
 - Maintain required 1.25 Debt Coverage Ratio
- **Future Water Resources Borrowing to meet Capital Deficits**
 - Water:
 - Water Bond authorization will only replace/rehabilitate ~8-10 miles of our 110 mile distribution system
 - 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



No comprehensive upgrades have been made to the **Wastewater Plants** since 1994.

Following are a number of examples of the impacts of underinvestment



Disinfection system pipes: Multiple repairs (different color pipes)



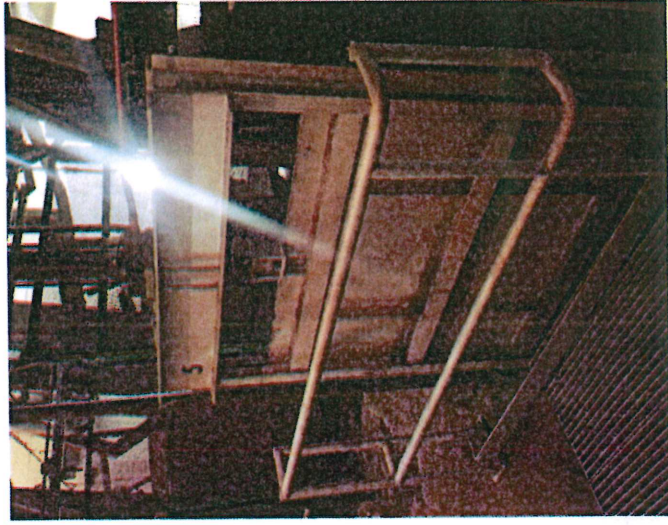
Disinfection system control panel: only one switch (hand-off-auto) works. Other control panels have obsolete parts that we cannot



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

No comprehensive upgrades have been made to the **Wastewater Plants** since 1994.

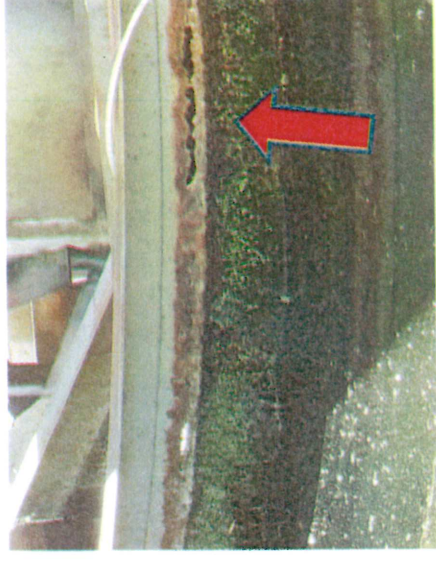
Following are a number of examples of the impacts of underinvestment



Headworks: Automatic gate that is no longer automatic



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

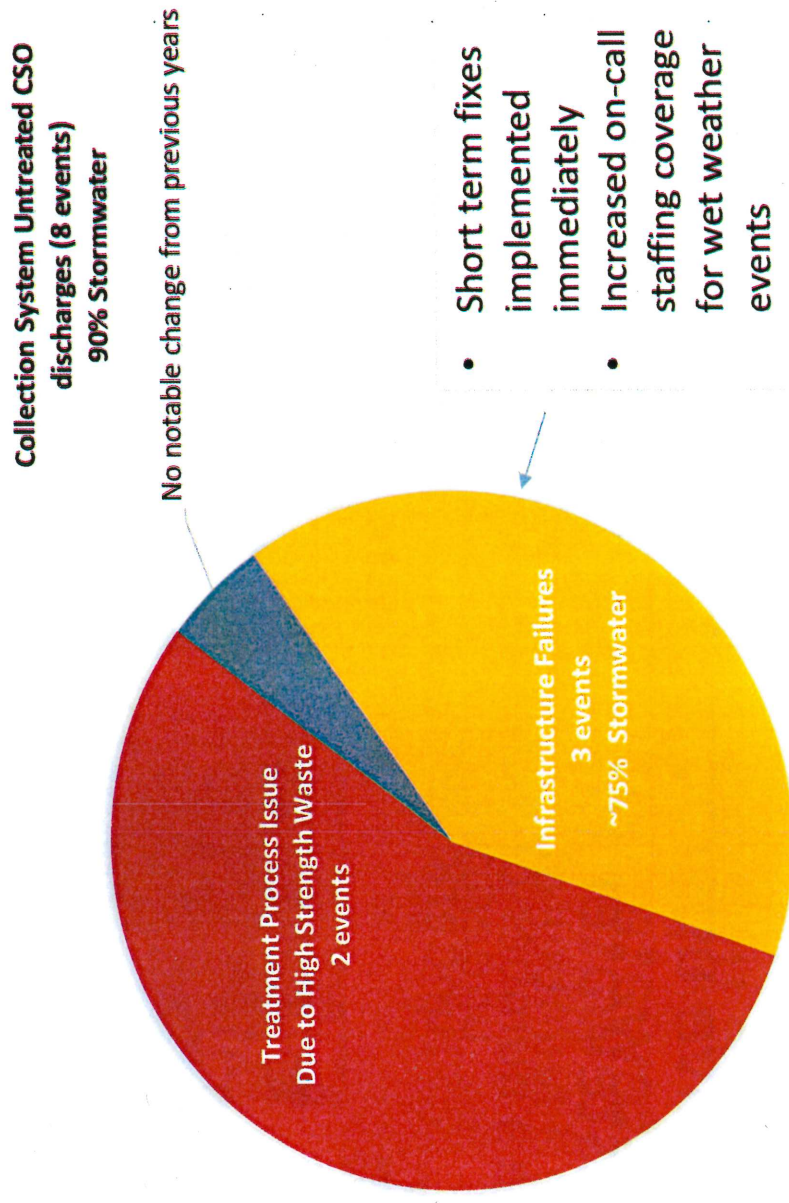


ACTING NOW

2018 Permit Violations and Beach Closures

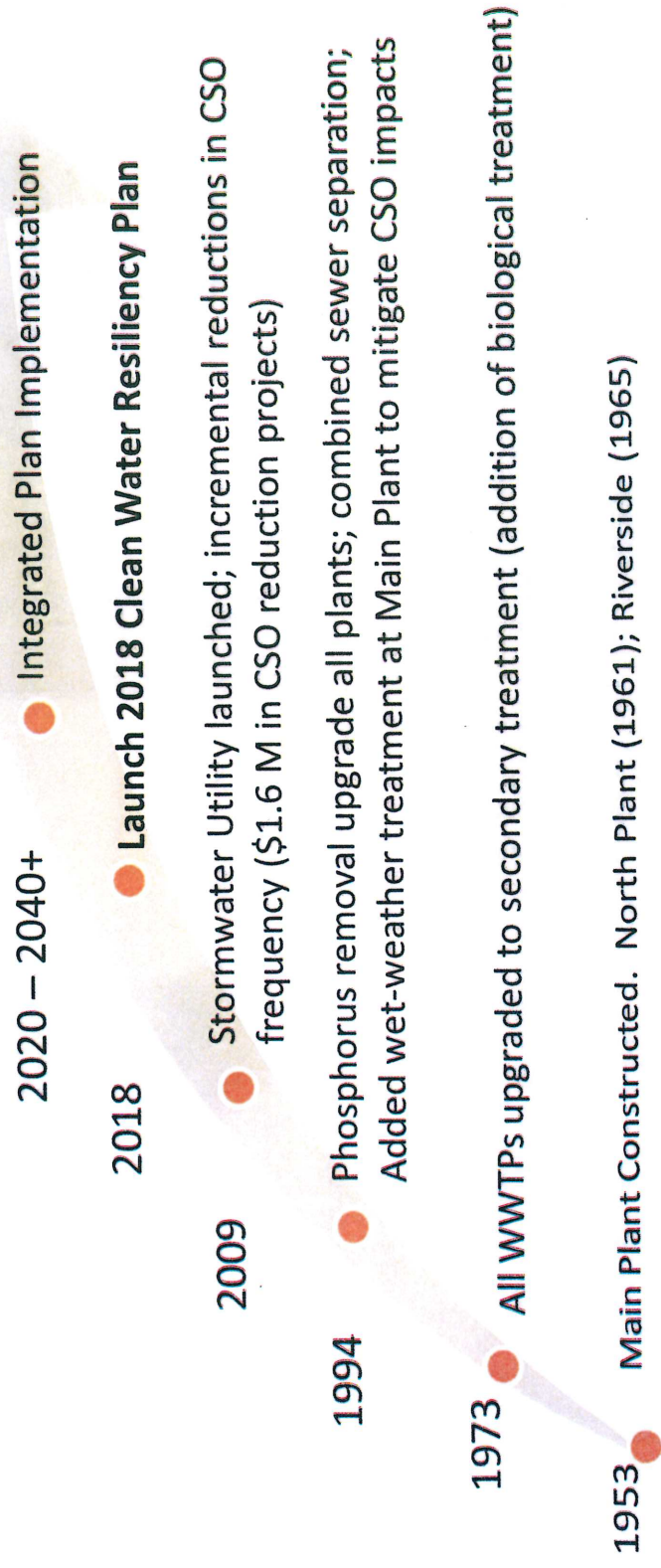
CAUSES OF UNDISINFECTED DISCHARGES 2018

TOTAL = 13 MG

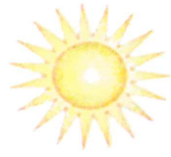


Clear Progress on Clean Water

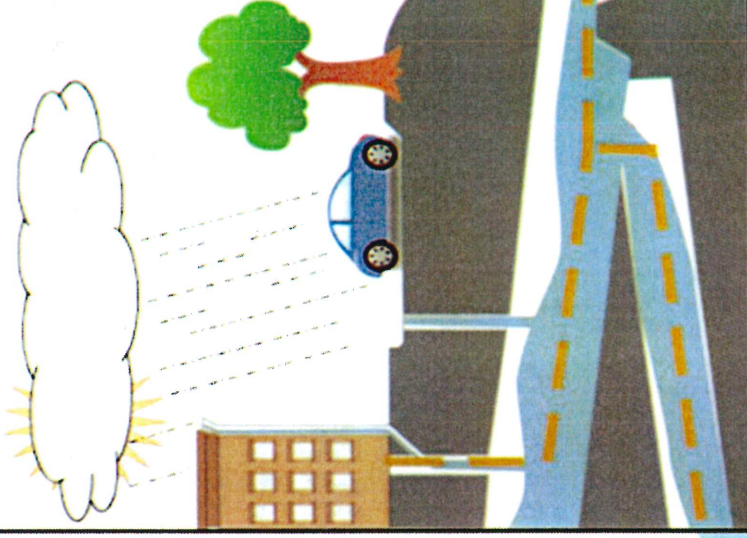
See <http://bit.ly/WaterResHist>
for the history of Burlington Water Resources



An Inherited Challenge: Our Combined Sewers



Under normal conditions, wastewater goes directly to the wastewater treatment plant



When a large rain event occurs, stormwater joins wastewater and excess flows get discharged into nearby streams

This prevents sewage backups into properties and onto roadways/sidewalks

Before 1994: Large Volumes of Combined Sewer Overflow Discharged Annually into Lake Champlain

Prior to 1994 more than 170 Million Gallons of an untreated mixture of stormwater and sewage discharged annually into Lake Champlain, Englesby Brook, Winooski River



Up until early 1990s – 11+ CSO

Gazo Ave

Manhattan @ Park St

Manhattan @ N Champlain St

Colchester Ave (not ID'ed until 2010)

Pine St @ Lakeside (not ID'ed until 2015)

Bottom of Maple St

Bottom of College St

Howard St

Marble Ave

Englesby Brook (multiple points)

Main WWTP (shoreline discharge with no treatment or disinfection)

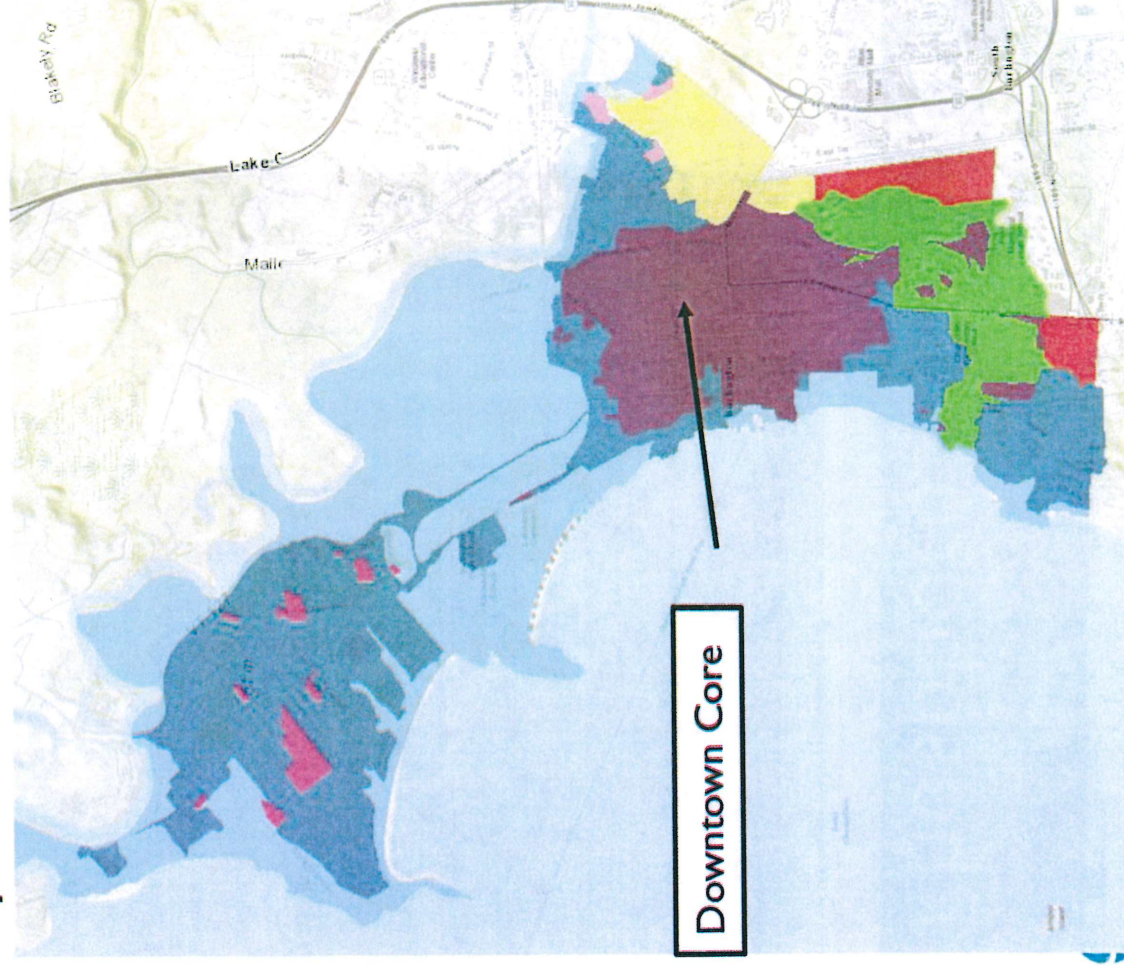
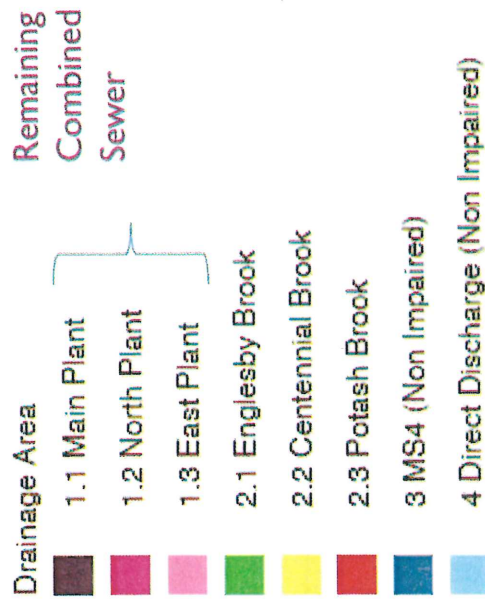
1994 \$52M Improvements: Collection System – CSO Elimination *Through sewer separation (unfortunately without treatment)*



Unfortunately we now know that untreated stormwater runoff can have long term chronic impacts such as nutrient loading and

Complete Separation Not Deemed Feasible/Cost Effective, Particularly in the Downtown Core and Because Of Likely Long-Term Water Quality Impacts

Impacts



- 26% of sewer land area is served by a **combined sewer**
 - Main WWTP Plant
- Combined Sewer Area has **very high %** imperviousness (~57%)

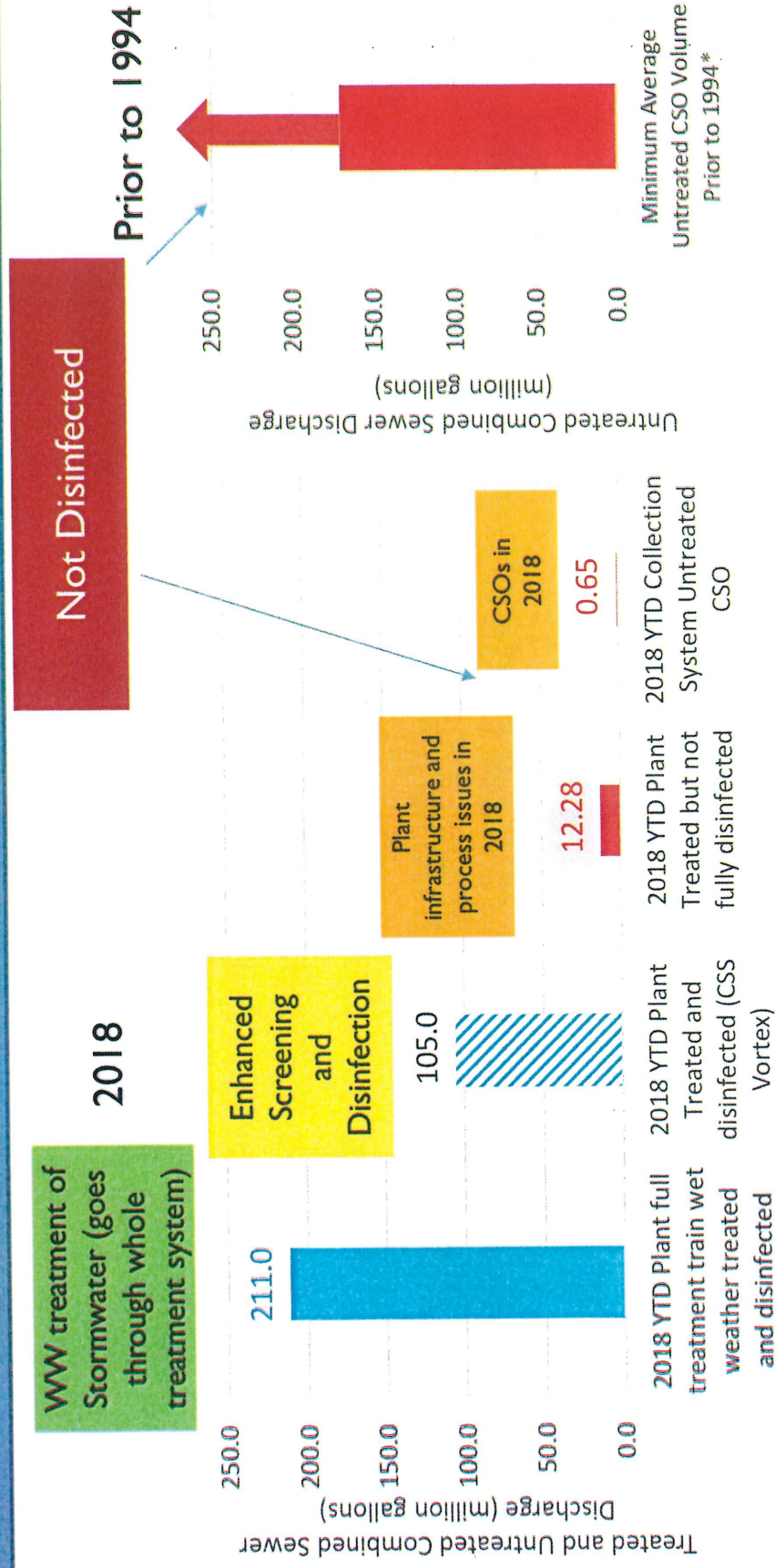
1994 \$52 M Bond: Phosphorus Removal and CSO Treatment



- Installed a CSO screening and disinfection system "The Vortex"
 - treats combined sewer flow that reaches the plant but exceeds the capacity of the overall plant
 - Screens solids and sends them to the plant for treatment
 - Uses quick acting disinfection agent to bring discharges well within Vermont WQ Standards.

Main Wastewater Plant

Comparison of Combined Sewer Discharges from Pre 1994 to 2018 (through 9/26/18)



- Wastewater and a large volume of stormwater receive premium treatment at the Main Facility
- Overall, the volume and frequency of untreated collection system combined sewer overflows is significantly decreased from the 1990s and has decreased further since 2009

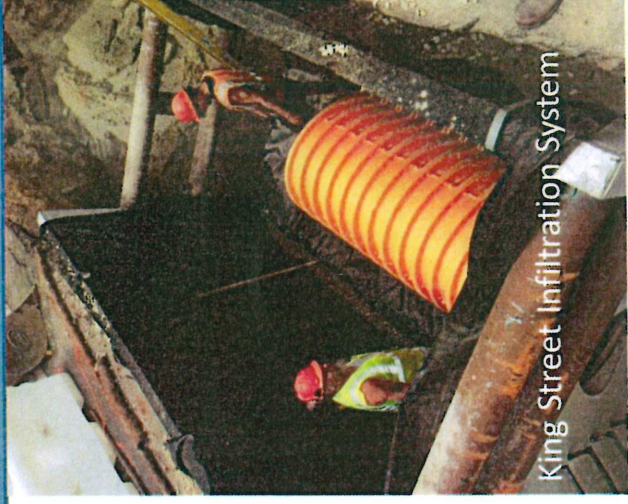
Since 2009: Improved Stormwater & Wet Weather Management

- Launched Stormwater utility in 2009 – 2nd in state
- Increased regulatory review of development projects (Chapter 26 of City Ordinance)
 - Required to manage at least 50% of existing impervious
 - Required to manage 100% of new impervious
 - Large projects required to take additional SW off Combined Sewer system to offset their projected WW flows (Cambrian Rise, City Place Burlington, etc.)

Recent Wet Weather Mitigation Projects



Grant Street Infiltration System



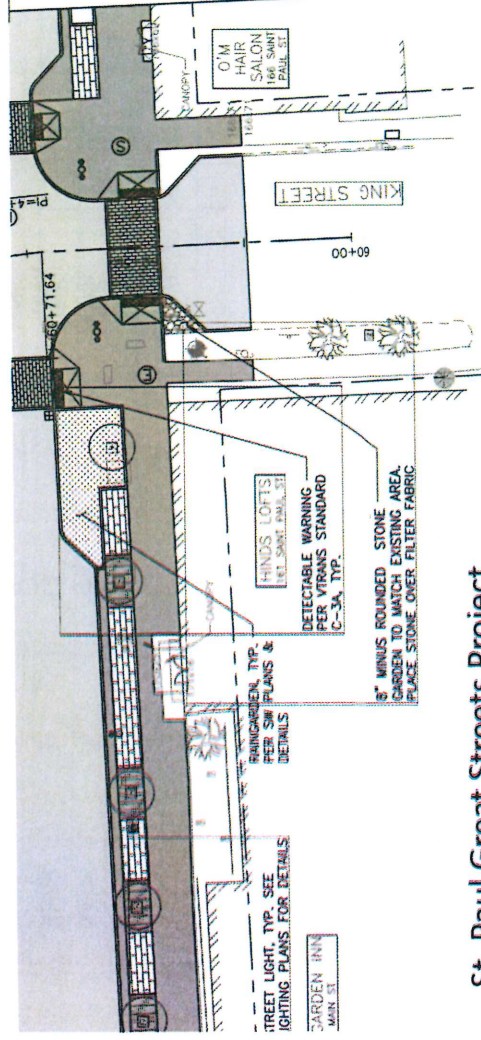
King Street Infiltration System



Upper North Infiltration Bumpouts

Additional Implementation:

- Hyde Street Bioretention
- S. Winooski SW Sidewalk
- Park Street Infiltration System
- Russell Street Infiltration System
- North Ave Infiltration System
- Allen Street Infiltration System
- Booth Street Bumpouts
- Possible Separate SW Outfall for Railway Enterprise Project



Collection System – Improving Untreated CSO Trends

Frequency of Untreated CSOs 2005 through 9/26/18

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
2012	1	6	1	9	UNK	reduced by ARRA projects 2010-2012
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	0	1	8	

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.

Recent installations of flow meters at Pine, Park, Gazo are now providing volumetric data

UNK = Previously unidentified CSO point, no data available
 ? = data not easily available, still researching
 Range provided when unclear or multiple events on one day

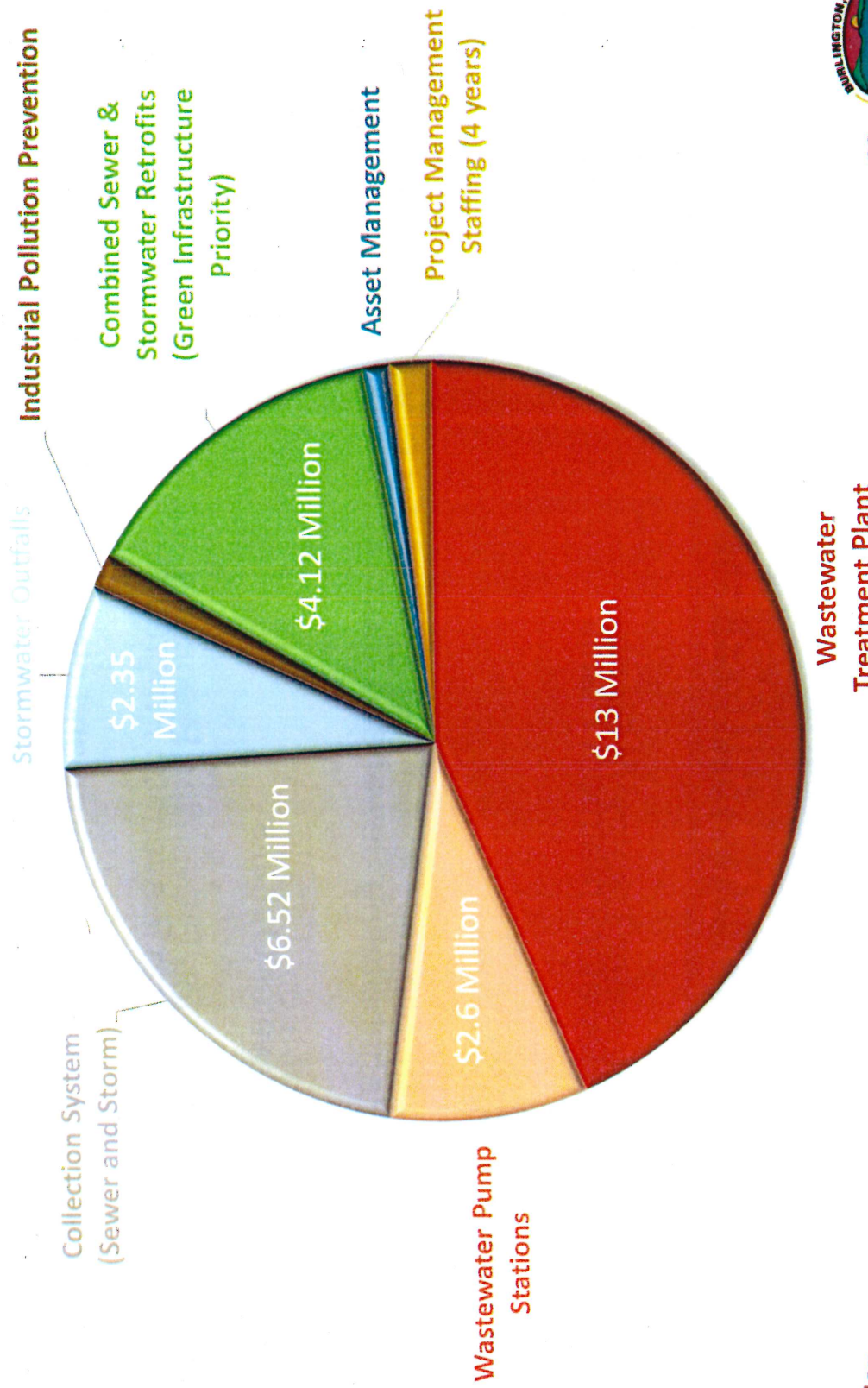
Clean Water Resiliency Plan and Bond

7 Points to Stabilize and Upgrade

1. Investing in Wastewater Treatment Plants
2. Updating Pump Stations
3. Relining and Rehabilitating Sewer and Stormwater Pipes
4. Repairing Stormwater Outfalls
5. Implementing Pollution Prevention Programs
6. Constructing Green Infrastructure and other Retrofits for Combined Sewer and Separate Stormwater Management
7. Completing Integrated Planning

\$30 M Clean Water Resiliency Bond

Portfolio of Investments over next 4 – 5 years

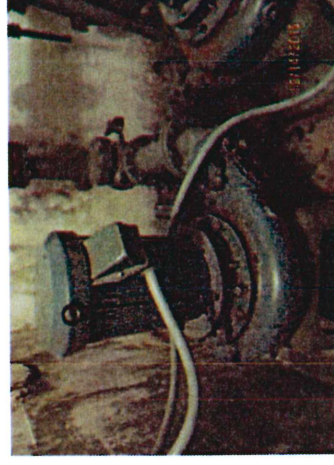


Wastewater Treatment Plant Investment Highlights

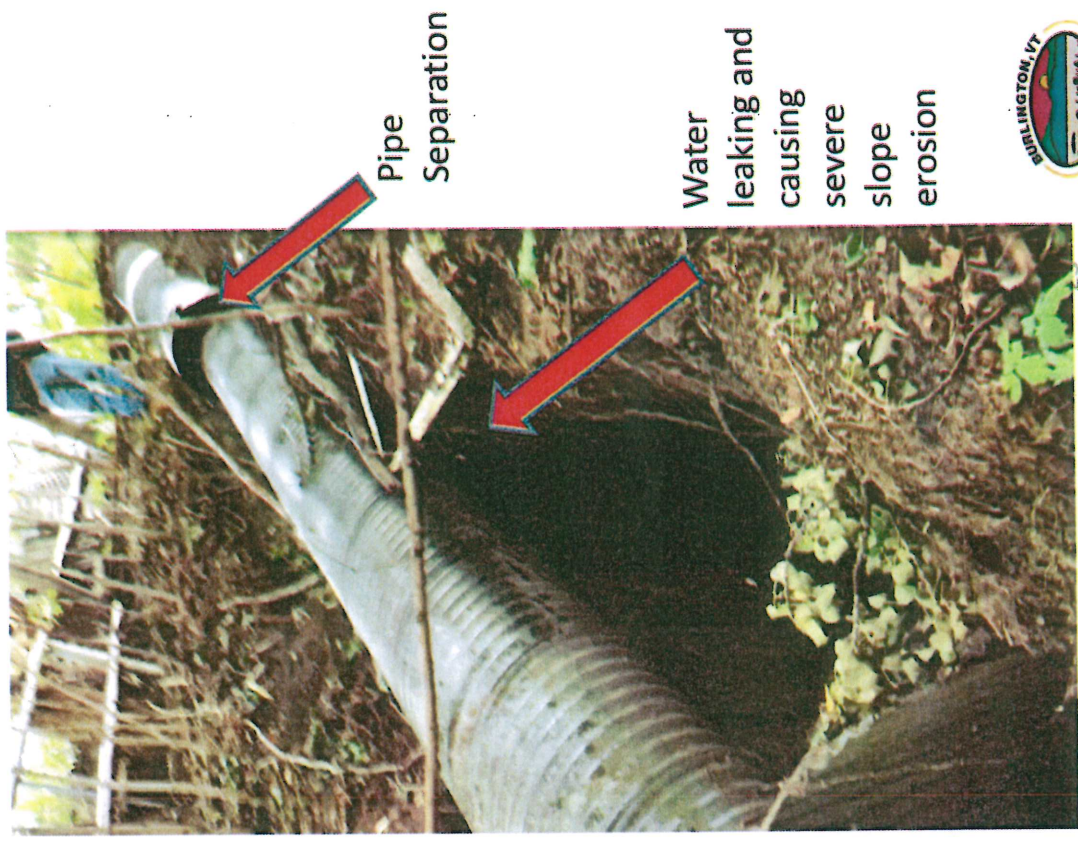
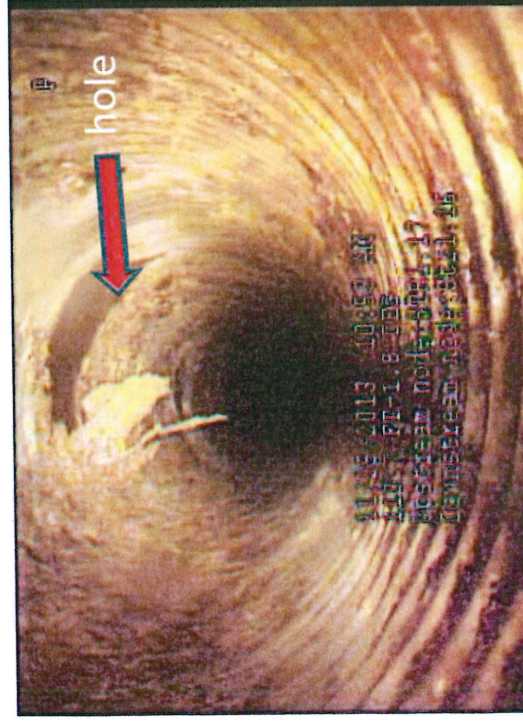
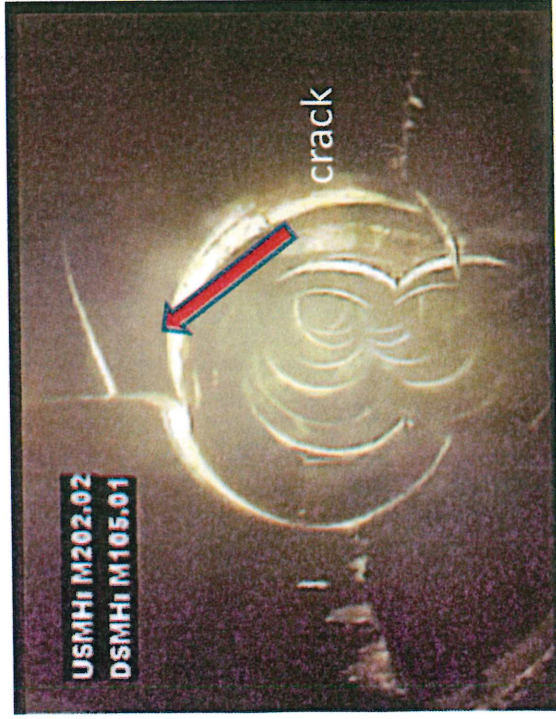
- Disinfection Systems (completion early – mid 2019)
 - Computerized Controls (SCADA and PLCs)
 - Mechanicals (pumps, valves, piping)
- Screening/Grit Systems
- Aeration System (supports biological treatment)
 - membranes
 - upgraded blowers
- Clarifiers (settles out solids)

11 Critical Pump Stations

- 4 of high priority pump stations were built in 1960s and have not had wholesale upgrades
- Several have original pumps, valves and piping
- Corroded metal
- Safety issues – control location require confined space entry
- Do not meet VT requirements for on-site storage

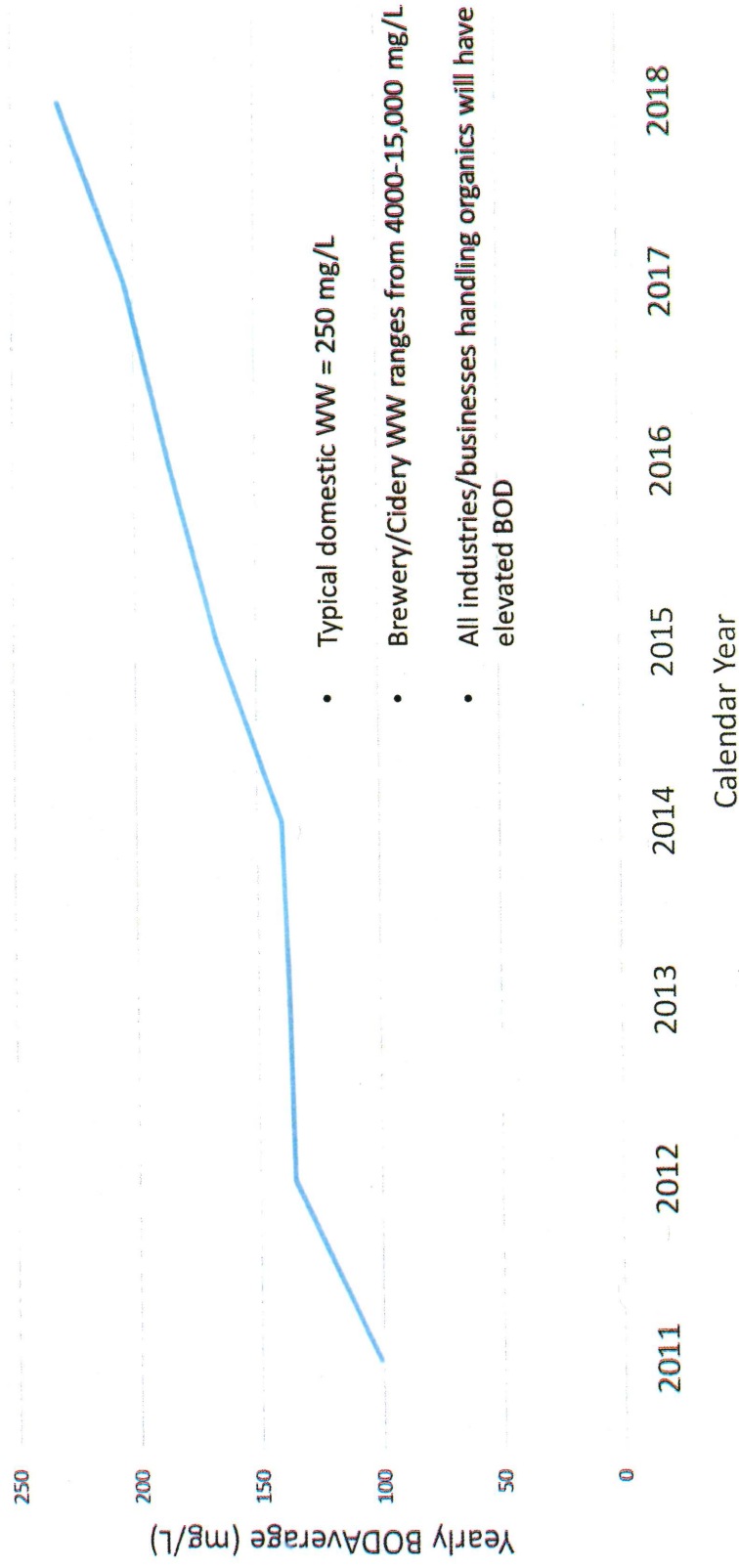


13 miles of Collection System Pipes & 5 Stormwater Outfalls



Implementation of Multi-Tiered Industrial Pollution Prevention Program to Address Increasing Strength of Wastewater

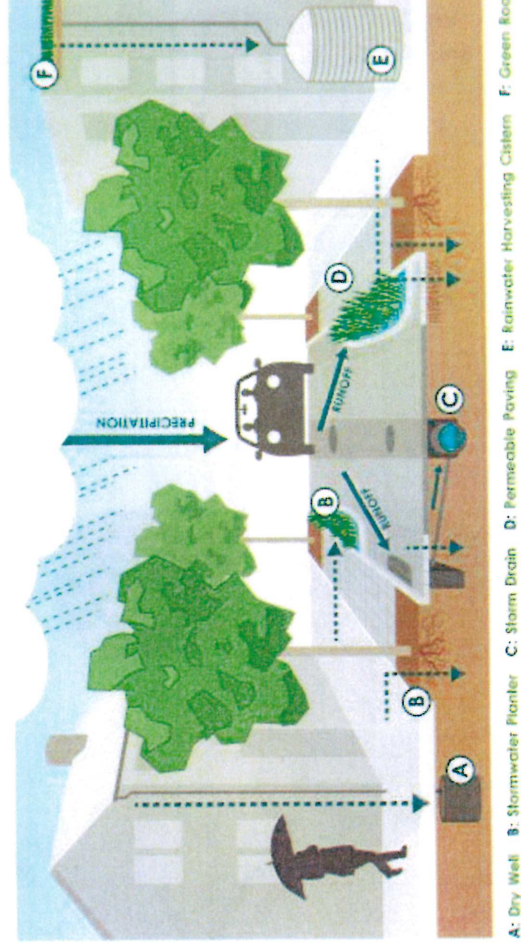
Biological Oxygen Demand of Main Plant Flow Entering Biological Reactors



- Develop robust industrial wastewater pollution prevention program
- Tiered approach to address larger discharges as well as cumulative impact of smaller businesses

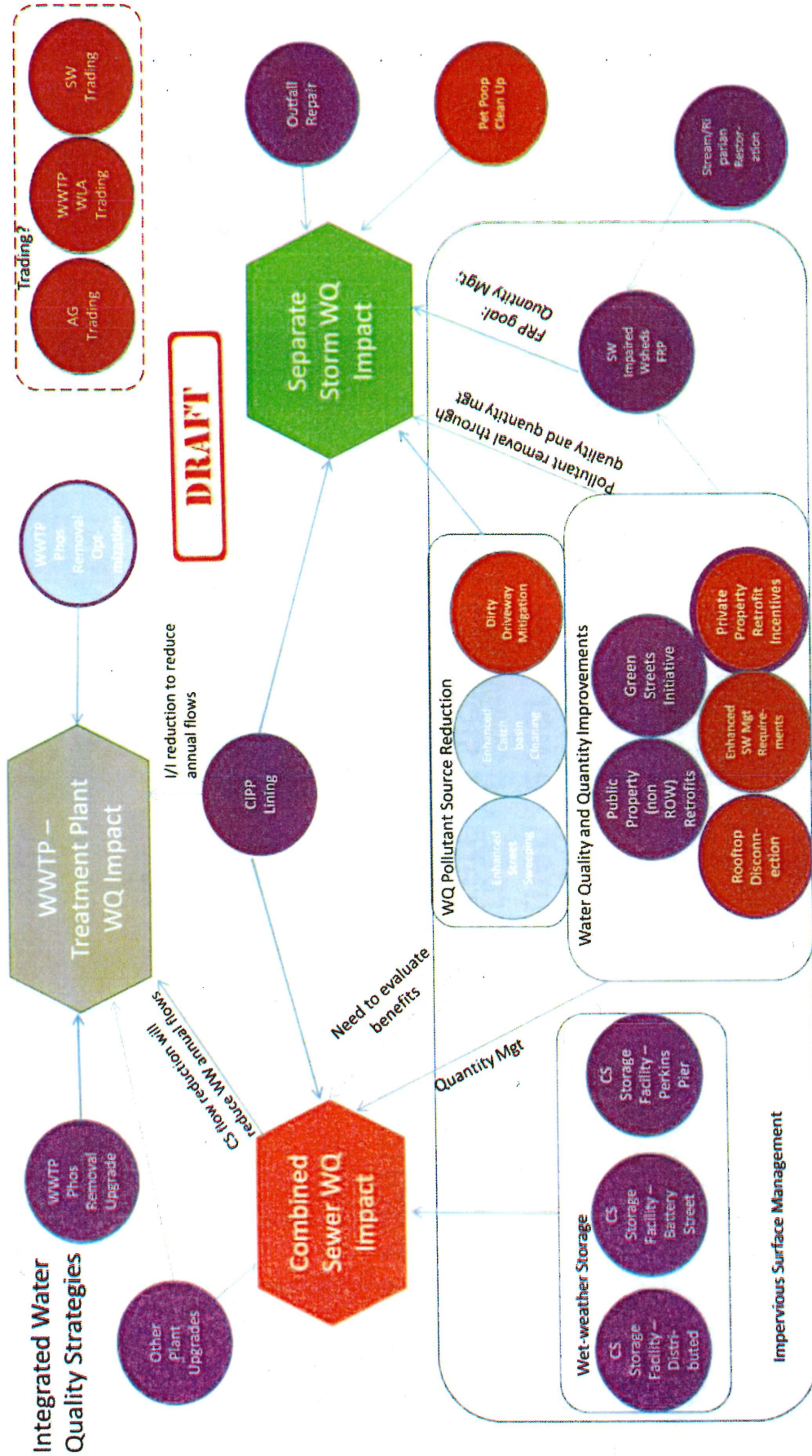
Continue Progress on Combined Sewer Mitigation and Stormwater Treatment Retrofits (~10-12 impervious acres)

- Mitigate impact of untreated collection system combined sewer overflows and combined sewer flows to Main Plant
 - Capture and infiltrate or slow down storm events
 - Prioritize Green Stormwater Infrastructure



- Pine Street CSO: Evaluate feasibility of disinfection station to reduce bacteria inputs

CONTINUE INTEGRATED PLANNING WHAT SOLUTIONS WILL HAVE THE MOST COST EFFECTIVE IMPACT ON LONG TERM WATER QUALITY?



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)
- \$8.18M in interest savings over life of loan (\$37M vs \$45M total payback)
- 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
- Funds ~\$13.3M of total \$37.4M in total debt service costs
- Approximately 30% of new bonding will be paid for by existing revenues
- Typical single family savings = ~\$26.40/year



Summary of Ratepayer Costs and Cost Mitigation

- Overall costs:
 - No bond driven rate impact until FY21
 - 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
 - Rate mitigation strategies save rate payers approximately 40%
 - Use of Vermont Clean Water State Revolving Fund (2% admin fee v.s 3.9% bond rate)
 - Leverage existing capital line in annual budget to pay some of debt service.
 - Additional State grants may be available to further mitigate costs
 - Evaluation of alternative rate structures and affordability programs by FY21

Summary of Bond Benefits

- Minimize permit violations and beach closures
- Upgrade disinfection systems in all three plants
- Major rehabilitation of all other critical clean water systems
- More green infrastructure and stormwater runoff reductions in combined sewer system and separate stormwater system

Additional Investments Are Needed

- **Beyond 2022**
 - **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
- **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
- **Staff Assessment due for completion mid November**
 - 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**

Addressing Common Questions

- There HAS been clear progress in reducing our footprint on the Lake over time.
- We have > 1 million gallons of sewage processing capacity at our plants
 - However, reducing stormwater peak flows at the plant does help improve the treatment of stormwater and reduce phosphorus output
- Collection System CSOs (a legacy of our old city) are caused by intense rainstorms
- CSO volume are typically more than 90% stormwater
- 2018 unpermitted discharges and CSOs are not a key driver of Cyanobacteria

Resources

Chapin Spencer, Director, cspencer@burlingtonvt.gov
Megan Moir, Assistant Director – WR, mmoir@burlingtonvt.gov
Rob Goulding, Public Information Mgr, rgoulding@burlingtonvt.gov

Visit the Clean Water Resiliency Plan web page:

<http://burlingtonvt.gov/DPW/cwrp>

Wards 4 & 7 Meeting
130 Gosse Court, Miller Center
September 26, 2018
Draft minutes

Steering Committee member present: Linda Deliduka, Jeff Clark, Chris Trombly, James Loop
Eric Corbman, Matt Hurlburt, David Driscoll

Start: 7:00pm

Introductions and Announcements

-Jeff Comstock: Nov 14th (Wednesday after election day), Community discussion on basics of VT education funding system. Voter election/awareness discussion, non-partisan. Will include time for questions.

-Yankee-Red Sox game projected at Leddy Park for free on Friday, 9/28. Food, entertainment. 6 PM, game begins at 7 PM.

-Rock Point School hosting 5k race on October 20th. Registration at 8 am, race at 9am. Fundraising effort for COTS.

BHS Renovation Bond Request

Monica Ivancic: City Council met Monday with school commissioners, Board of Finance, city councilors, mayor met to put together proposal for renovation of BHS.

-BHS has not been renovated since it was built

-\$70 million project

-Inaccessibility issues for handicapped students, non-secure grounds, excessive entrances, crumbling infrastructure. Current building compartmentalizes student work.

-M.O.U between BHS and City of Burlington explains how it will be managed. Project manager will be hired, School Board will oversee everything

-Cap on bonds discussed- would not decrease bond rating.

-Will be put on ballot in November.

-Property tax increases are inevitable.

-2013: Black River Design was awarded an architectural contract for project

-2017: design work continued, BHS ReEnvisioning Committee formed.

Responses:

-What happens if it doesn't pass? (Response: Will get put back on ballot in March).

-How many stories will the building be? Fire concerns. (Five stories, unsure about compliance with fire code- specifically, evacuating handicapped people during drills or fires).

-Will it cost more than \$70 million? There is only \$4 million left in city bonding budget. (Response: MOU states project cannot exceed 70 million).

- Everyone should tour, the need is very apparent.
- Dave Driscoll: is tearing down current buildings included in budget? (Response: unsure.) Recently approved \$19 mil school improvement bond, can it be allocated towards this project? (Response: that money is for deferred maintenance of other buildings.)
- \$70 million for bigger lockers seems to be trivial reason for building new school. (Response: project is more about integrating different academic disciplines.)
- Are there measures in this construction for energy efficiency which will reduce future expenses? (Response: there will be better insulation, maintenance costs will decrease. Building is heated by woodchips. Future plan will not include solar or geothermal.)
- They should stress accessibility and security, nothing else. Makes for stronger argument.
- There should be a “school night” held here (Miller Center) with mayor, administration, Black River Design, and property manager of BHS. Public has a lot of questions, direct conversation is needed.
- When would construction start? (Response: Breaking ground in spring of 2021, would be complete by start of school year.)
- Better schools with attract new businesses- looking at this as a school issue is short-sighted. A better school will grow Burlington.
- Ongoing construction will be a disruption to students. (Response: old buildings will be available to students during construction.)

Waste Water Bond Request

burlingtonvt.gov/DPW/cwrp

- 2018 Clean Water Resiliency Plan- proposal to stabilize and modernize waste water system. Plan has been developed over several years (stormwater assessment, sewer pipe assessment).
- In 2017, 20-year engineering evaluation and 10-year capital plan
- \$20 mil wastewater, \$10 mil for stormwater.
- Average single family property owner would see waste water/storm water bill increase of \$5.36/month (not tax increase)
- Investments are spread over city.
- No comprehensive upgrades to wastewater treatment plant since 1994.
- 13 million gallons of undisinfected discharges in 2018.
 - 3 infrastructure failures
 - 2 treatment process issue events
- 7 Point Plan to Stabilize and Upgrade
- Clean Water Town Hall upcoming

Responses:

- What is high strength waste? (Response: higher concentration of organics. When breweries let grains go down, etc.)

-Why isn't city demanding that new developments treat their own water? (Response: There is still have capacity for these new developments).

-Does Burlington Wastewater Management have authority to implement curb-less construction project standards? (Response: Burlington is compact, and plows a lot, which makes curbs necessary.)

-Who permits so many breweries to operate on Pine Street? When was sewer treatment plant built on lake? (Response: Cumulatively, the breweries have increased flow, none of them have caused problems individually. Dry-weather capacity is 5.3 million gallons, built in 1994.)

-Are storm water and waste water regulated together at state-level? (Response: no, they are separate permit systems, which raises difficulties for an ecological system.)

-What is life span/toxicity of sewage in lake water? (Response: Generally speaking, short durations are an acute problem that last for a few days. Long term issues are phosphorus build-up, algal blooms.)

-

City Council and Representative Updates

-Tomorrow night at Contois Auditorium is stormwater treatment presentation

-Dave Hartnett:

NPAs have seen decrease in funding

Important avenue to city government for people

Discouraged by decreased impact of NPAs

All-wards NPA created a resolution to present in January about funding city NPAs (about \$10,000 total.)

-City early-reading initiative

Kurt Wright:

Wants large-ticket items on March ballot, as opposed to November. Exception for storm water issue, which is pressing.

Attended school board meetings, meetings with mayor regarding school bond.

Ultimately, cannot support its placement on the ballot in November. Issue of his magnitude would benefit from more public support, four more months of planning.

Passed debt-policy issue, created a cap.

Passed with Councilor Hartnett a Senior Center Study Committee

Passed resolution for permit reform. Streamlines system and eliminates redundancy. Ad-hoc committee will meet Tuesday and present to City Council soon.

Lake Champlain clean-up proposal that deals with phosphorus levels

Voted for controversial gun measure- state's attorney didn't prosecute or press charges after gun fight outside of Nectar's.

Ali Dieng:

Safety concerns regarding car break-ins

Voted for high school bond, was unable to vote for storm water/waste water bond because it's on the backs of taxpayers.

Memorial Auditorium should be sold to solve housing shortage

Carol Ode:

Health care costs are being addressed- 40 thousand people in VT on Medicaid are part of special program where Medicaid allocates money per patient rather than per expense. Preventative measure to keep people healthy, rather than returning to E.R. Saved VT over \$2 million last year trying this method.

Overdose concerns- people were given Narcan and then kept in ER for two hours, and then re-released. This left people with drug cravings and no additional help. New protocol is Narcan, drugs to stave off cravings, and social work assistance.

VT has preserved \$9 million in the past year for disabled who live at home. Helps to pay rent, helps with medical assistance. Allows people to stay in their homes.

Meeting End: 9:00pm

Minutes taken by Hannah Carpino, CEDO intern