**City of Burlington**

Department of Public Works

645 Pine Street

Burlington, VT 05402

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**Chapin Spencer**

*DIRECTOR OF PUBLIC WORKS*

***Ashley Parker***

*Capital Program Director*

***Lee Perry***

*DPW Division Director Maintenance Division*

Date: May 23, 2023

To: Transportation, Energy, and Utilities Committee

From: Chapin Spencer, Director Public Works
Lee Perry, Division Director – Maintenance Division
Ashley Parker, Capital Program Director

Subject: FY24 Vehicle Purchase Recommendation

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**REQUEST:**
The Fleet Committee requests Council approval for the proposed FY'24 vehicle purchase recommendations and approval to sell at auction the vehicles being replaced.

**BACKGROUND:**

Annually, the City's interdepartmental Fleet Committee, staffed by the Department of Public Works (DPW) Fleet Manager Dave Hammond, coordinates fleet purchases for the General Fund (GF) and several enterprise/special revenue funds in order to realize cost savings and provide management oversight. As per the City of Burlington Fleet Policy, the Fleet Manager and the Maintenance Division Director meet with each Department Head, or their designee, to review their annual recommended Fleet replacements and receive input on upcoming vehicle/equipment needs. With that information, the Fleet Manager researches electric and hybrid options for each item, calculates the carbon pricing on fossil fuel options, and make his recommendations to the Fleet Committee. The Committee reviews the Fleet Manager's list of needs and provides purchase list recommendation for review and approval by the TEUC, Board of Finance, and City Council.

The Fleet Committee has identified and is recommending (7) vehicles/equipment to be replaced in FY24. Six vehicles/equipment to be replaced are for enterprise/special revenue departments and one for the City's Recycling program (funded by the Solid Waste Generation Tax). Due to limited funding being available for General Fund Fleet, the Fleet Committee significantly reduced the amount of vehicles/equipment to be replaced in FY24, and will limit purchases to only enterprise/special revenue departments (see Attachment A for Fleet Funding History). There will be no General Fund (GF) vehicle/equipment purchases in FY24 unless other funding is secured. GF Departments that are able to acquire grants or have other identified funding sources will be allowed to make requests to purchase vehicles/equipment with Chief Administrative Officer (CAO) approval in FY24. The FY24 General Fund Fleet budget is focused on supporting all FY24 General Fund Fleet lease payments for vehicles that have already been purchased.

The recommended purchase list has been reviewed by BED, who provided additional recommendations and shared available incentives which further refined the purchase list through the lens of the City's 2030 NetZero goals. The Fleet Committee has worked hard to balance two key policy goals – the City's 2030 Net Zero energy goal and the City's operations and safety goal to replace as much of the fleet that is at end of life as possible – while also managing the identified financial constraints. We are now seeking the TEUC to recommend this FY'24 fleet purchase list to the Board of Finance and City Council (see Attachment B for Fleet purchase list).

**GENERAL FUND FLEET FUNDING:**

In FY22 and FY23, it became apparent there were no funds available to support future GF Fleet needs, as previous funding strategies had been depleted. In FY23 the Fleet Team requested $715K from the GF unassigned fund balance to purchase GF fleet vehicles/equipment in urgent need of replacement. At the same time, the Fleet Team also communicated that FY24 and FY25 were going to require the same amount of GF support.

As the Team began planning for FY24, many difficult decisions needed to be made. There are $1M in lease payments that need to be covered and $2M in annual Fleet replacement with no funding to support these needs. In September 2022, the Fleet Committee formed a subcommittee to identify any possible sources of funding that could be used to cover the FY24 lease payments, as well as to discuss strategies for funding a sustainable fleet replacement plan for future fiscal years. The sub-committee met several times over the past 6 months to develop a strategy for funding FY24 lease payments, as well as exploring opportunities to create a sustainable fleet replacement

plan for future GF purchases. Recommendations for funding FY24 lease payments and long-term financing strategies were made and brought back to the full Fleet Committee for approval.

The Fleet Committee supports and recommends the following financial strategy in order to establish a more resilient funding plan for Fleet, which would kick off with the FY24 budget season, and includes the following:

- No General Fund fleet purchases in FY24 without special CAO approval (see below).
- Secure funding for FY24 existing lease payments.
- FY24 General Fund vehicle/equipment replacement requests (i.e.: no additions) need to include a funding proposal utilizing only non-fleet funding sources that have received the approval of the CAO.

**FY24 Fleet Budget Overview:**

- General Fund purchases of Fleet vehicles and equipment have been put on hold.
  -Exceptions have been considered for departments that have an identified source of funding an identified vehicle or equipment (i.e.: grant, dedicated tax revenue, etc.)
  -Current average Fleet need is ~$2M/year.
- Focus for FY24 budgeting has been on ensuring we have appropriate revenues to cover our FY24 lease payments.
  - FY24 Lease Payments = $1,037,678.33
  - FY25 & FY26 Payments = ~$1M/year

| | **GF Fleet Lease Payment Forecast FY24*** | | |
|---|---|---|---|
| **Department (GF)** | **Principal** | **Interest** | **Total** |
| Fire | $137,913.63 | $5,619.18 | $143,532.81 |
| Library | $7,782.06 | $295.78 | $8,077.84 |
| Parks | $151,435.94 | $6,375.96 | $157,811.90 |
| Parks/Admin | $14,935.50 | $184.13 | $15,119.63 |
| DPW Streets | $387,333.74 | $17,277.68 | $404,611.42 |
| DPW Streets/Admin | $29,180.61 | $466.13 | $29,646.74 |
| DPW/EQM | $6,148.59 | $338.89 | $6,487.48 |
| Police | $249,562.31 | $8,171.17 | $257,733.48 |
| Cemetery | $14,033.30 | $623.73 | $14,657.03 |
| **Annual Total:** | | | **$1,037,678.33** |

***Existing lease payments only.**

- The Fleet Committee recommends applying all leftover FY23 Gains on Assets, the remaining Fleet Reserve, a portion of the FY24 Gains on Assets, and some Police and Fire impact fees as revenues for the FY24 General Fund lease payments. This reduces the amount we owe by more than half.
- The Fleet Committee requests that the General Fund provide funding support, similar to that in FY23, for FY24 lease payments in the amount of $450,000.

| **FY24 Revenues:** | **Totals:** |
|---|---|
| Leftover Gains: | $311,688.41 |
| Leftover Fleet Reserve: | $165,000.00 |
| New Gains (FY24) | $80,000.00 |
| Police Impact Fees (portion) | $40,000.00 |
| Fire Impact Fees (portion) | $18,376.00 |
| Equipment Maintenance Transfer (GF): | $450,000.00 |
| **Total Revenues:** | **$1,065,064.41** |
| **Remaining Balance:** | **$27,386.08** |

**BUILDING A SUSTAINABLE FLEET RESERVE/FUNDING SOURCE**

- Fleet Committee is recommending that we create a central, sustainable General Fund Fleet Budget that may eventually include a Fleet Reserve, with an identifiable source of funding that replenishes annually.
- Regardless of which funding strategies are selected, there will be a need to update the Fleet Committee Policy to make sure Departments know what their role is in the future budgeting and maintenance of Fleet.
- The Fleet Team has developed additional funding strategies that may help build this reserve over time.
  - Annual Department Contributions to Fleet: Set an expected percentage or dollar amount annually for budget purposes.
  - Evaluate returning to a strategy of cash purchases for Fleet versus leasing in FY'24.
  - Evaluate and track Fleet sales to pair vehicles and departments with available gains on assets. This money could be applied to lease payments or cash purchases.
  - Pursue the New Carbon Fee Collection Opportunity: With Burlington Electric, track the revenues from this new funding source to determine funding availability for future purchase or lease of electric vehicles.
  - Implement cost sharing for the purchase of larger Fleet or other shared equipment.
  - Implement surcharges when departments fuel up to recoup the full cost of the maintenance and operation of the fuel depot. Remind departments to appropriately budget for any increases to annual fuel costs or changes in the cost of labor.
  - Pursue possibility of utilizing franchise fees.
  - Explore credit card rebates: Utilize credit cards to pay vendors and put the rebate money towards Fleet.

- Other Cost Saving Opportunities:
  - Continue Fleet reduction efforts.
  - Coordinate with HR on a strategy to evaluate additional resource needs when considering the creation of new personnel. This would allow Fleet to weigh in on the planning and budgeting for any new vehicles or equipment that are needed.
  - Departments should identify a central location for all vehicles and equipment to ensure an accurate inventory and easier access.

- At some point, we will need to consider whether future bonding can assist in the purchase of vehicles. This will be dependent on the lifespan of the vehicles in question, which could limit the impact of this solution, but it should be explored as an option for Fleet financing. <u>See updated deferred purchase list attached (through FY24).</u>

**City's NetZero by 2030 Goal – Fleet Update:**

DPW Fleet has worked to advance the electrification of the fleet where applicable. This is based on the Departments needs of the vehicle being purchased, whether the EV technology can support those needs, as well as provide a safe and efficient service to the City's residents. The Fleet Manager has also reached out to various vendors inquiring about the technology available for some of our larger fleet equipment, such as CR Woods, the Volvo heavy equipment dealer to see what EV equipment is available for a possible replacement of some of our construction equipment.

This past fall DPW demoed one of the first fully electric small bucket loaders in the United States. We tested the machine and its capabilities over 2 days. While we are not due for a replacement for some time, the demonstration proved useful in regards to the continuous run time the machine had, and how it would or would not suit our overall needs for the department. We found that with moderate daily use the battery life was acceptable, but in a scenario of continuous snow fighting operations, the 4-hour battery life would not be optimal. When the time comes for the Department to replace the existing bucket loader, we will discuss their needs and expectations, and see if the electric version will be acceptable.

The progression of the electrification of our fleet can be seen in Attachment B. It is important to note, that there are no funds allotted for General Fund vehicle replacement in the coming fiscal years, and there will be no General Fund fleet purchases until a strategy for funding these purchases is implemented. Our priority is funding the remaining General Fund fleet leases.

**In Summary:**

The Fleet team is looking to gain support from the TEUC and the City Council to develop a long-term fleet purchasing strategy that ensures the sustainability of all existing vehicles/equipment in Fleet, as well as one that brings the City closer to reaching its NetZero 2030 goals. We have reached a pivotal moment in the long-term planning of the City's fleet, where decisions on how the City funds future fleet purchases will shape its ability to continue providing the level of service required by its residents. It will also provide a more solid road map for how Fleet can meet its portion of the City's overall NetZero 2030 goals.

**Suggested Motion:**

Recommend the Board of Finance and City Council approve the proposed FY'24 Fleet Purchasing List and authorize the Department of Public Works, Fleet Maintenance, to auction the FY24 replaced vehicles/equipment through various online public auctions, or trade in to vendor where vehicle/equipment is being purchased. If there is no public interest, or the vehicle is of no value to the vendor, Fleet Maintenance will have the vehicle/equipment, hauled away for scrap at the current market price.

**ATTACHMENT A:**

**History of Burlington's Fleet Purchasing Strategy:**

Below is a brief timeline of how the purchasing strategies for the City's fleet have changed over time. It provides the framework for understanding how the past has shaped the present and may provide guidance for helping us determine a new strategy focused on long-term sustainability.

- FY12 – FY15: There was a moratorium on the purchase of new vehicles due to the City's financial challenges.

- FY16: The City began to purchase new vehicles again – this time utilizing a master lease. At this time, an informal fleet team started creating a list of vehicles needed each year to help the City forecast needs over time.

- FY17: A Sustainable Infrastructure bond replaced three fire trucks for $3.3 million.

FY17 – FY18: The fleet team began creating a spreadsheet to track sustainable investment in fleet. The strategy of using master leases was working, but projections were showing financial challenges for fleet funding in out years due to increased debt payments.

- FY18: The City contracted with a fleet consultant to review how fleet was structured and recommend improvements. This resulted in a new Fleet Policy, the Fleet Committee, and a spreadsheet of needs from the consultant.

- October 24, 2019: The Fleet Policy was approved by the City Council.

- FY20: The Fleet team estimated that the sustainable fleet replacement need was approximately $2,700,000/year. Up to this point, fleet funding had been by department. As part of the Fleet Committee and Fleet Policy development, all fleet related resources were pooled across departments into one location in order to create efficiencies in purchasing and revenues.

- FY20-22: It appears due to staff transitions and focus on the pandemic that during this time, staff lost track of the strategic focus on need for General Fund money for lease payments.

- FY23: The Fleet Team requested the use of $715,000 of General Fund monies to support lease payments in FY23, as we were reaching the end of the Fleet reserve funds. At that time, the Fleet Team communicated that lease payments in FY24, & FY25 were going to require the same significant General Fund support.

- FY24: Freeze on the purchase of new vehicles for General Fund Departments and a focus on the funding of FY24 General Fund lease payments.

Over the last several fiscal years, through effective coordination and purchasing vehicles through master leases, the City was able to make significant reinvestments in its municipal fleet. Now the City is entering a very challenging multi-year fiscal year period for multiple reasons:

- As discussed above, vehicle replacement funding was pooled from Police, Public Works and Parks starting in FY20. However, not all revenues from pooling vehicle replacement funding from Police, Fire, Public Works and Parks were able to be kept each fiscal year for fleet needs due to shortfalls in General Fund operating budgets.

- Several recent revenue ballot items were not successful at the ballot box (FY'23 proposed Municipal tax increase and the fall 2021 $40M capital bond proposal).

- After multiple years of financing to purchase new vehicles, the City is now carrying significant debt service payments for vehicles previously received.

- The Fleet Team is also continuing to manage constraints within the vehicle industry related to ordering and purchasing of vehicles and equipment. This includes delays in vehicle manufacture and delivery for both internal combustion and electric vehicles.

- With funding limited to Gains, remaining Fleet Reserve, and some Impact Fees; alternative sources of funding will need to be identified to support that ~$1M/year in lease payments through FY25. There will continue to be a $2M/year need to replace Fleet, though this number will likely be higher as the deferred list has increased over the last two years.

**ATTACHMENT B: - PROGRESSION OF FLEET ELECTRIFICATION**

| Vehicle/Equipment Type | FY19 | FY20 | FY21 | FY22 | FY23 | FY24 | AVG | TOTAL |
|---|---|---|---|---|---|---|---|---|
| **ELECTRIC** | 0 | 1 | 6 | 7 | 4 | 3 | 3.5 | 21 |
| **HYBRID** | 5 | 3 | 4 | 6 | 1 | 2 | 3.5 | 21 |
| **TOTAL FLEET PURCHASE** | 13 | 16 | 28 | 24 | 18 | 7 | 17.67 | 106 |
| **% OF EV** | **0%** | **6%** | **21%** | **29%** | **22%** | **43%** | **20%** | **20%** |
| **TOTAL COST OF EV** | $0 | $23,400 | $140,627 | $504,000 | $100,000 | $124,000 | $148,671 | $892,027 |

**ATTACHMENT C: DEFERRED VEHICLE LIST**
**Please see attachment provided in packet.**

**ATTACHMENT D: VEHICLE REPLACEMENT LIST**

| Department | Equip.# | Year | Make | Model | Purchase Cost | Replacement Interval | Replacement Date |
|---|---|---|---|---|---|---|---|
| Recycling | G03 | 2017 | International | 7400 | $208,803 | 7 Years | 2024 |
| Stormwater | SW02 | 2014 | Nissan | NV200 | $21,000 | 10 Years | 2024 |
| Water Distribution | Z20 | 2013 | Dodge | 3500 | $37,000 | 10 Years | 2023 |
| Water Distribution | Z19 | 2014 | Ford | F250 | $46,375 | 10 Years | 2024 |

**ATTACHMENT E: VENDOR LIST**

| Vehicle | Vendors |
|---|---|
| EV Vehicles | Key Chevrolet, Freedom Nissan, Berlin City |
| Ford Maverick & E-Transit Van | Heritage Ford, McGee Ford, Barrette Ford |
| Gem Car | Country Club Enterprises |
| One Ton Truck | Heritage Ford, McGee Ford, Barrette Ford, Goss Dodge, Key Chevrolet |
| Recycling Truck | Allegiance Trucks, New England Kenworth, Lucky's Peterbuilt, R.R. Charlebois |

**ATTACHMENT F: COST CHART**

**Please see attachment provided in packet.**

| Department | Division | Vehicle ID | Vehicle | Recommendation | Replacement Interval | Lease Duration Years | Funds From Solid Waste Generation Tax | Funds From Water Resources | Vehicle Units | Cost of Carbon | | Total Cost | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Fossil Fuel | Hybrid/CNG | Fossil Fuel Purchase Cost | Hybrid/CNG(after rebates) | Total Vehicle Purchase Price w/ Cost of Carbon | Electric | Rebate |
| DPW | Recycling | G03 | Recycling Truck | Fossil Fuel | 7 | 7 | 1 | | 1 | $38,822 | $30,408 | $265,000 | $360,000 | $303,822 | Not Available In Our Region | N/A |
| Water Resources | Water Distribution | Z01 | Ford Transit Van | EV | 10 | 7 | | 1 | 1 | $1,163 | | | | | $60,000.00 | N/A |
| Water Resources | Water Distribution | Z20 | One Ton W/ Air Comp. | Fossil Fuel | 10 | 7 | | 1 | 1 | $8,723 | | $68,000 | | $76,723 | Not Available For This Model | N/A |
| Water Resources | Water Distribution | Add | Gem Car | EV | 10 | 7 | | 1 | 1 | $1,033 | | | | | $30,000.00 | Pending |
| Water Resources | Water Distribution | Add | Ford Maverick Pick Up | Hybrid | 10 | 7 | | 1 | 1 | $573 | | | $30,000.00 | $30,573 | | N/A |
| Water Resources | Water Resources | Add | Chevy Bolt | EV | 10 | 7 | | 1 | 1 | $969 | | | | | $34,000.00 | $2,300.00 |
| Water Resources | Storm Water | SW02 | Ford Maverick Pick Up | Hybrid | 10 | 7 | | 1 | 1 | $573 | | | $30,000.00 | $30,573 | | N/A |
| **Total** | | | | | | | 1 | 6 | 7 | $51,856 | $30,408 | $333,000 | $420,000 | $441,691 | $124,000 | $2,300 |

| **Total For Vehicles Leased Annually @ ~5.75%** | | | | **Value** | **Number of Leases** |
|---|---|---|---|---|---|
| Water Resources | $38,070.00 | 7 year | | $252,000 | 6 |
| Recycling | $40,033.93 | 7 year | | $265,000 | 1 |
| **Total** | **$78,104** | | | **$517,000** | **7** |

| FY23/24 Deferred Equipment | | | | | |
|---|---|---|---|---|---|
| **Department** | **Equip. #** | **Description** | **Year** | **Vehicle** | **Cost To Replace** |
| Fire | FB1 | Shift Command | 2018 | Suburban | $85,000.00 |
| Fire | FA4 | Ambulance | 2016 | F-450 | $339,000.00 |
| Fire | FC3 | Assistant Chief | 2017 | Explorer | $51,360.00 |
| Police | P135 | Range Trailer | 2001 | Trailer | $9,000.00 |
| Police | P1507 | Detective | 2015 | Taurus | $41,200.00 |
| Police | P1701 | Line Cruiser | 2017 | Explorer | $83,000.00 |
| Police | P1702 | Line Cruiser | 2017 | Explorer | $83,000.00 |
| Police | P1703 | Line Cruiser | 2017 | Explorer | $83,000.00 |
| Police | P1704 | Line Cruiser | 2017 | Explorer | $83,000.00 |
| Police | P1804 | Line Cruiser | 2018 | Explorer | $83,000.00 |
| Police | P1805 | Line Cruiser | 2018 | Explorer | $83,000.00 |
| Police | P1806 | Line Cruiser | 2018 | Explorer | $83,000.00 |
| Police | P1807 | Line Cruiser | 2019 | Explorer | $83,000.00 |
| Police | P1808 | Line Cruiser | 2019 | Explorer | $83,000.00 |
| Parks | PR1450 | Tractor | 2000 | John Deere 1450 | $40,000.00 |
| Parks | PR670 | Tractor | 2000 | John Deere 670 | $27,000.00 |
| Parks | PRCHIP14 | Chipper | 2014 | Brush Bandit | $68,400.00 |
| Parks | PR05 | Chip Truck | 2014 | Ford | $72,850.00 |
| Parks | PR11 | Dump Truck | 2014 | Ford | $56,100.00 |
| Parks | PR16 | Staff | 2014 | Ford | $42,156.00 |
| Parks | PR20 | Staff | 2014 | Ford | $42,156.00 |
| Parks | PR27 | Staff | 2014 | Ford | $42,156.00 |
| Parks | PR31 | Ice Resurfacer | 2016 | Zamboni | $175,000.00 |
| Parks | PR32 | Mower | 2014 | Kubota | $22,600.00 |
| Parks | PR34 | Mower | 2014 | Kubota | $38,090.00 |
| Parks | PR42 | UTV | 2014 | Kubota | $20,410.00 |
| Parks | PR43 | UTV | 2014 | Kubota | $20,410.00 |
| Parks | PR47 | Mower | 2016 | Jacobsen | $120,000.00 |
| Parks | PR52 | Trailer | 2002 | Mid-Atlantic | $9,600.00 |
| Parks | PRFMC03 | Sprayer | 2009 | FMC | $15,000.00 |
| Parks | PRSANDPR | Turf Resurfacer | 2004 | Toro | $22,800.00 |
| Streets | S30 | Dirt Screen | 2009 | SCM-40 | $50,000.00 |
| Streets | S53 | Utility Trailer | 1997 | Custom | $9,600.00 |
| Streets | S57 | Utility Trailer | 2008 | Sure Trac | $10,184.00 |
| Streets | S70 | Dump Truck | 2002 | International | $81,000.00 |
| Streets | S76 | Plow Truck | 2010 | Frieghtliner | $213,000.00 |
| Streets | S49 | Sidewalk Tractor | 2011 | Trackless | $216,000.00 |
| Traffic | T01 | Pickup | 2011 | Ford F150 | $35,123.00 |
| Traffic | T02 | Dump Truck | 2008 | Ford F350 | $111,700.00 |
| Traffic | T09 | One Ton Dump | 2010 | Ford F450 | $90,000.00 |
| Traffic | P1709 | Sedan | 2017 | Ford Focus | $34,900.00 |
| Water | Z05 | Excavator | 2013 | John Deer 75G | $145,145.00 |
| | | | | **TOTAL** | **$3,103,940.00** |

**CITY OF BURLINGTON, VERMONT**
**CITY COUNCIL TRANSPORTATION, ENERGY & UTILITIES COMMITTEE**

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**Councilor Gene Bergman,** *Ward 2*
**Councilor Hannah King,** *Ward 8*

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# Transportation, Energy and Utilities Committee of the City Council
## Tuesday May 23, 2023 - 5PM

DPW Front Conference Room
645 Pine St, Burlington, VT 05482
Masks Optional

Join via Zoom, https://us02web.zoom.us/j/84603122855
To call into the meeting, including to speak during public comment:
Phone number: 312-626-6799, Webinar ID: 846 0312 2855
If you prefer to attend in a physical location, you may join us at 645 Pine St in the front conference room

## –DRAFT AGENDA–

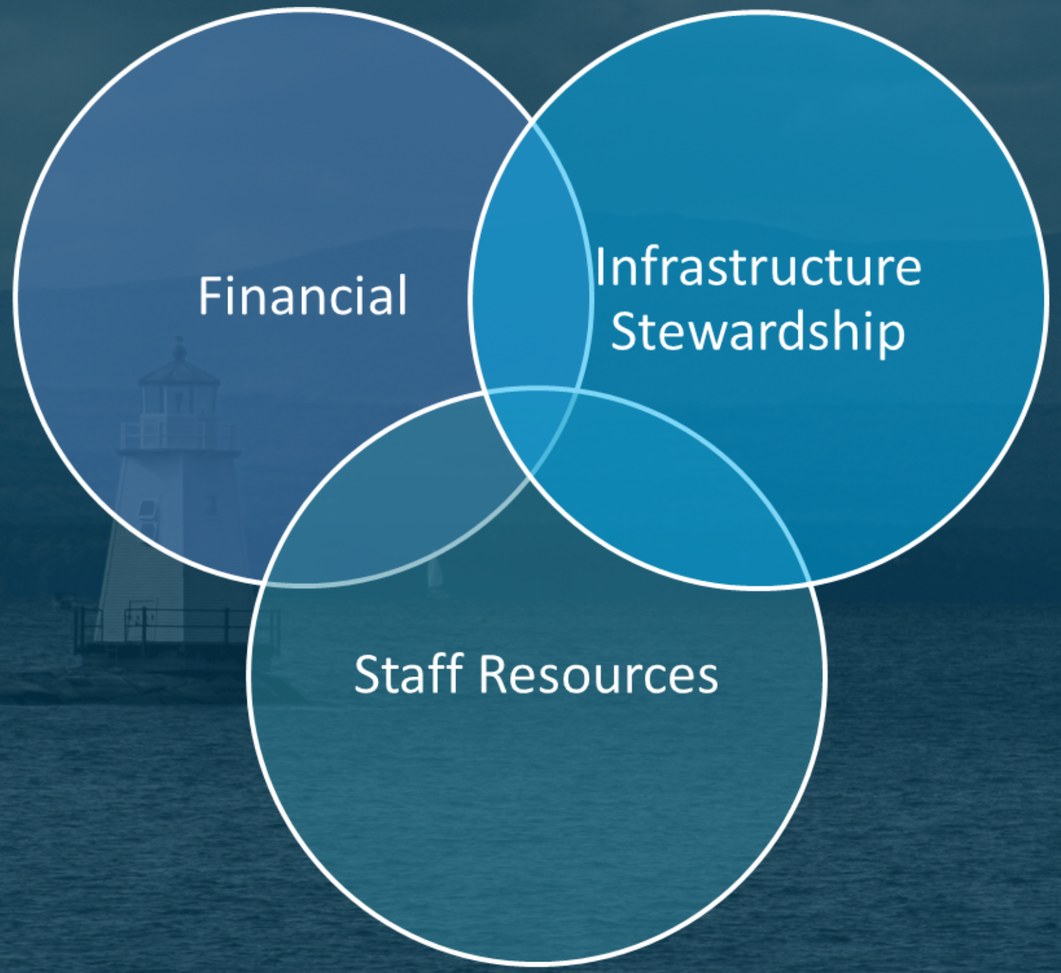
1. **Agenda**
2. **Minutes of 5.3.23**
3. **Public Forum**
4. **FY24 Fleet Purchases and Dissolution**
   - Lee Perry, Ashley Parker
   - 15 minutes
   - Memorandum
   - Cost Chart
   - Deferred Vehicle List
5. **Water Resources Organizational Assessment**
   - Chapin Spencer, Megan Moir
   - 20 minutes
6. **Ordinance on Carbon Fee**
   - Councilors
   - 20 minutes
7. **McNeil Symposium Update**
   - Chair Barlow
   - 10 minutes
8. **Expected Executive Session: 195-201 Flynn Ave Purchase and Sale Review**
   - Chapin Spencer, Lee Perry
   - 10 minutes
9. **Director's Report**
10. **Councilors' Update**
11. **Next Meeting 6/27/23**
12. **Adjourn**

# FY 24
# WATER RESOURCES BUDGET

**Megan Moir**, Division Director of Water Resources

# RESILIENCY PRINCIPLES

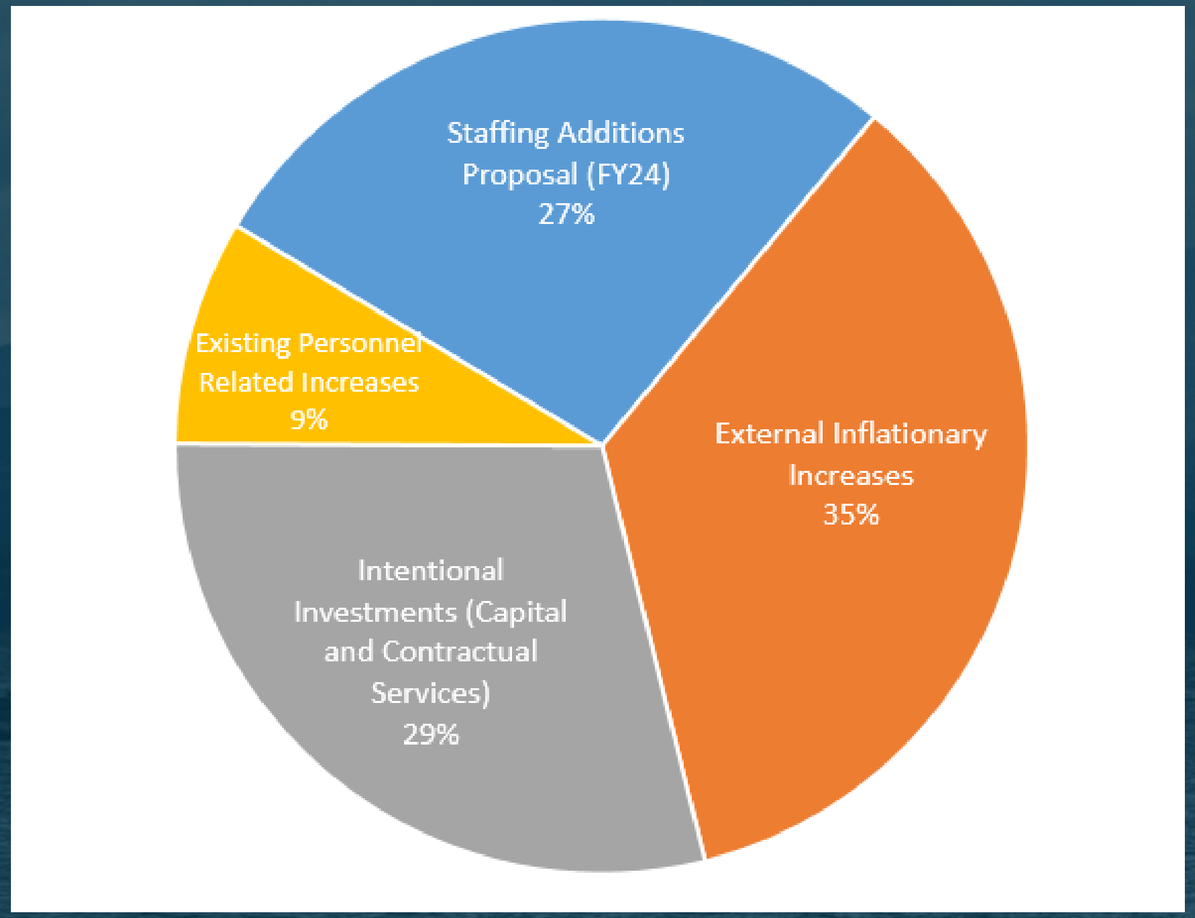
- Fully recover the costs of providing 365-24-7 service
- Rate payer affordability
- Contribute to capital reserve when possible
- Maintain healthy days of operating cash on hand
- Meet Debt Coverage Ratios

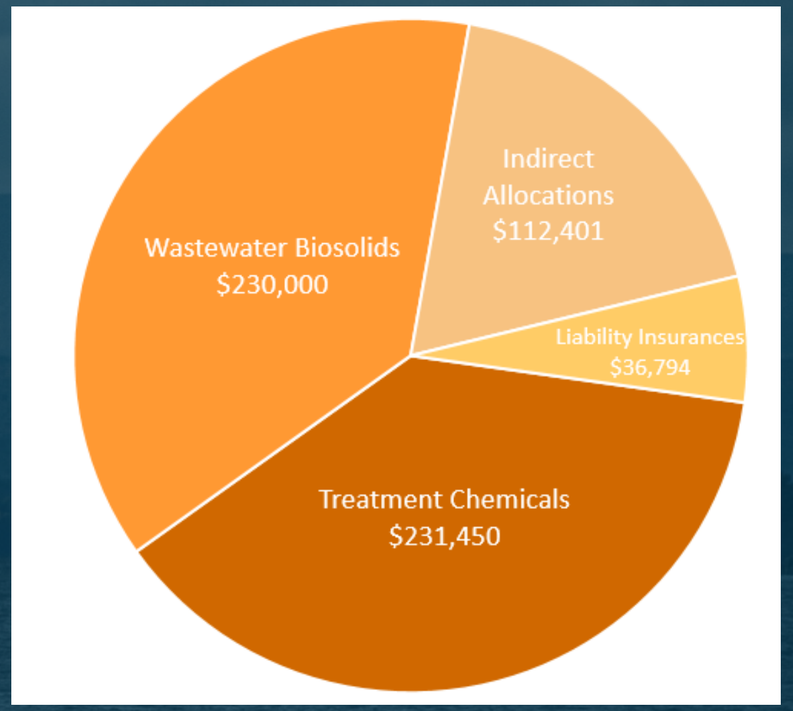



- Operation and Maintenance (preventative vs. reactive)
- Capital Renewal and Replacement
- New Infrastructure to meet new regulations

- Sufficient Staff resources to meet minimum staffing requirements for safe operations and to conduct preventative maintenance

# FY24 EXPENSE DRIVERS




**$1.739 M (8.79%) increase in overall expenses across the 3 funds**

# FY24 STAFFING PROPOSAL

- **Third Party Observations of Water Resources Organization**
  - **Aging infrastructure and a previous history of low rates of capital renewal and replacement**
  - **Lack of staff capacity to conduct needed tasks  (preventative maintenance)**
  - **Insufficient number of positions in some areas when properly accounting for labor yield (i.e. minimum staffing needs)**
  - **High regulatory burdens**
    - Lake Champlain Phosphorus  Reduction Requirements (2016)
    - Combined Sewer Policy Revision (2016 with 1272 Order in 2019)
    - Stormwater Flow Reduction Requirements for urban streams (2016)
    - Boil Water Procedure (2018)
    - Lead and Copper Rule revision (2022)

RAFTELIS

# FY24 STAFFING PROPOSAL

| Position Addition | Aged Infrastructure | Lack of staff capacity to meet service levels | Minimum Staffing Needs | High/Growing Regulatory Burden |
|---|---|---|---|---|
| 2 Water Distribution Technicians | ✓ | ✓ | ✓ | |
| Stormwater Field Specialist | | ✓ | | ✓ |
| Water Resources Project Manager | ✓ | ✓ | | |
| Wastewater Operator | ✓ | ✓ | ✓ | |
| Water Resources Utilities Coordinator | | ✓ | | ✓ |

For more information see the Raftelis report and come to the May/June TEUC meeting

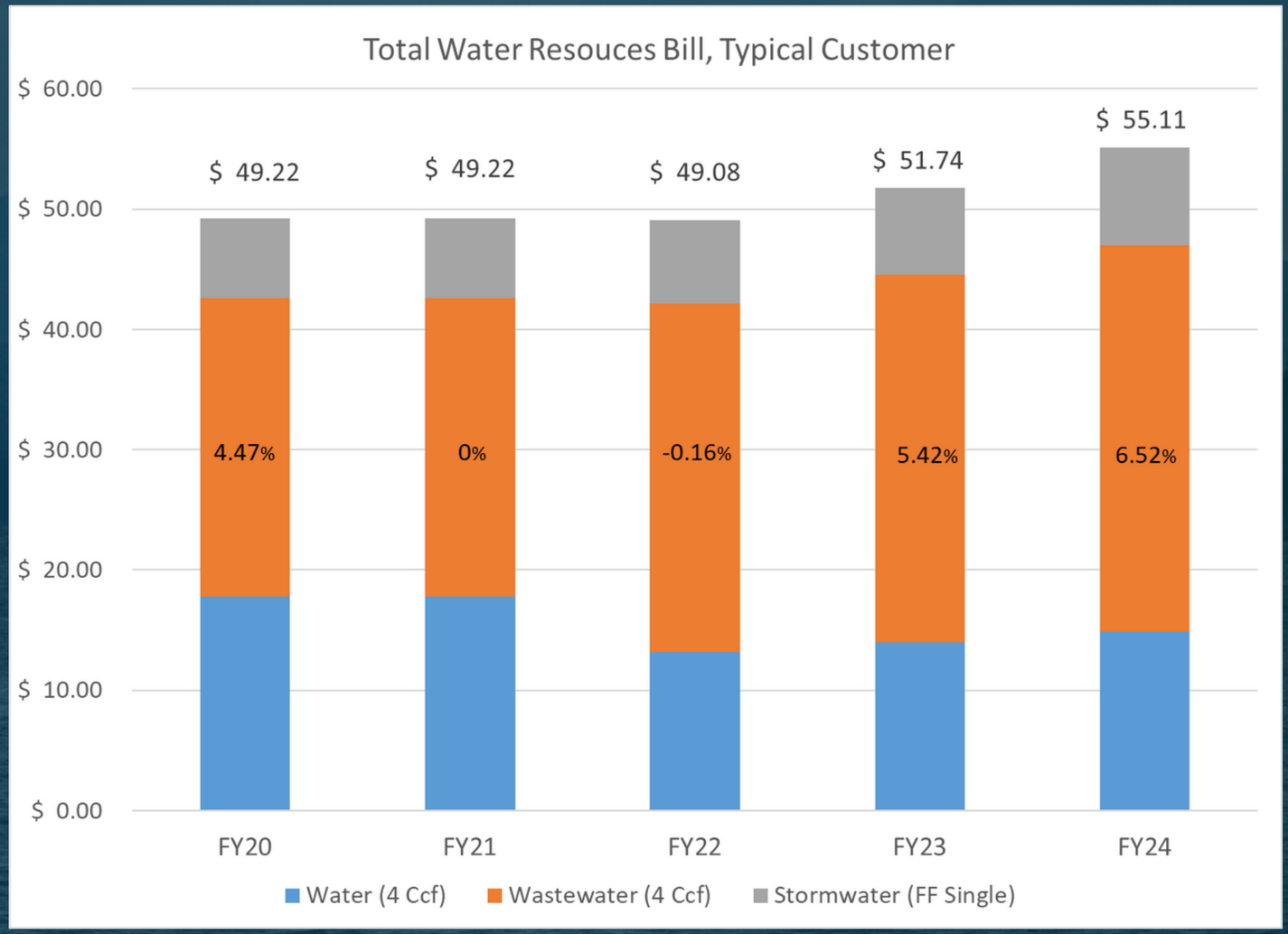
# RATE INCREASE MITIGATION

- **Expense:**
  - Line by line review and adjusted budget to reflect actual expense trend over last 3 year
    - e.g. Electricity at Water Plant, North Plant and East Plant (-$40K)
  - Carried forward personnel vacancy savings from FY23
  - Line by line projection of FY23 final expenses, apply carry forward to FY24

- **Revenue**
  - Trend of increasing volume of sludge processing for other communities
  - Continued phasing in of the private fire protection fee
  - Updated FY24 projected billable usage based on FY22 data
    - Water usage increased slightly (due to wholesale volume sold to CFD2)
    - Wastewater decreased slightly
  - Planned use of $100K of Stormwater Fund Balance (healthy days of cash on hand)

# PROPOSED TYPICAL BILL IMPACTS

- Proposed typical bill increase 6.52%
- Typical Monthly Customer Bill $55.11/month
- WRAP Discount Customer Bill $46.12/month
- Overall rate increase since FY21 is 12.1%
- Note, CPI % change July 2020 - April 2023 = 17.1%



# PROPOSED FY24 RATE TABLE

**Rate Change Comparison (FY 24 rates effective 7/1/23)**

| | METER BASE CHARGE WATER | | METER BASE CHARGE SEWER | | PRIVATE FIRE BASE CHARGE (5 year phase in) | | |
|---|---|---|---|---|---|---|---|
| METER SIZE | FY 23 | FY 24 | FY 23 | FY 24 | PIPE SIZE | FY 23 | FY 24 |
| 5/8" | $3.51 | $3.74 | $5.00 | $5.25 | | | |
| 3/4" | $5.27 | $5.61 | $7.49 | $7.87 | | | |
| 1" | $8.78 | $9.34 | $12.49 | $13.12 | | | |
| 1.5" | $17.54 | $18.65 | $24.99 | $26.24 | 1.5" | $18.60 | $27.90 |
| 2" | $28.07 | $29.84 | $39.98 | $41.98 | 2" | $18.60 | $27.90 |
| 3" | $52.63 | $55.95 | $74.96 | $78.71 | 3" | $18.60 | $27.90 |
| 4" | $87.70 | $93.23 | $124.93 | $131.18 | 4" | $18.60 | $27.90 |
| 6" | $175.40 | $186.46 | $249.85 | $262.35 | 6" | $54.00 | $81.00 |
| 8" | $280.63 | $298.31 | $399.75 | $419.74 | 8" | $115.08 | $172.62 |
| 10" | $403.41 | $428.84 | $574.64 | $660.84 | 10" | $206.96 | $310.44 |
| | | | | | Hydrant | $54.00 | $81.00 |

| | VOLUMETRIC RATES WATER | | VOLUMETRIC RATES SEWER | | STORMWATER | | |
|---|---|---|---|---|---|---|---|
| METER CLASSIFICATION | FY 23 | FY 24 | FY 23 | FY 24 | Type | FY 23 | FY 24 |
| **Single Unit Residential (RES, R2-S, R3-S, RC-S)** | | | | | **Flat Fee** | | |
| Tier 1 (0 - 400 CF) | $2.62 | $2.79 | $6.39 | $6.71 | Single Family | $7.19 | $8.12 |
| Tier 2 (401 CF and higher) | $6.54 | $6.96 | $6.39 | $6.71 | | | |
| **Duplex (R2)** | | | | | | | |
| Tier 1 (0 - 600 CF) | $2.62 | $2.79 | $6.39 | $6.71 | Duplex | $7.15 | $8.07 |
| Tier 2 (601 CF and higher) | $6.54 | $6.96 | $6.39 | $6.71 | | | |
| **Triplex (R3)** | | | | | | | |
| Tier 1 (0 - 900 CF) | $2.62 | $2.79 | $6.39 | $6.71 | Triplex | $8.24 | $9.30 |
| Tier 2 (901 CF and higher) | $6.54 | $6.96 | $6.39 | $6.71 | | | |
| **Multi-Family Residential (MRU)** | $4.48 | $4.77 | $6.39 | $6.71 | **Directly Assessed (Per ISU)** | | |
| **Mixed Residential & Commercial (MIX)** | $4.48 | $4.77 | $6.39 | $6.71 | All Other | $2.69 | $3.04 |
| **Commercial (COM)** | $4.48 | $4.77 | $6.39 | $6.71 | | | |
| **City (CITY)** | $4.48 | $4.77 | $6.39 | $6.71 | | | |
| **Irrigation (IRR)** | $7.84 | $8.34 | N/A | N/A | | | |
| **Process Water for Heating or Cooling (PW)** | $5.07 | $5.39 | N/A | N/A | | | |

# SIGNIFICANT CAPITAL INVESTMENT IS NEEDED FOR FY25 AND BEYOND

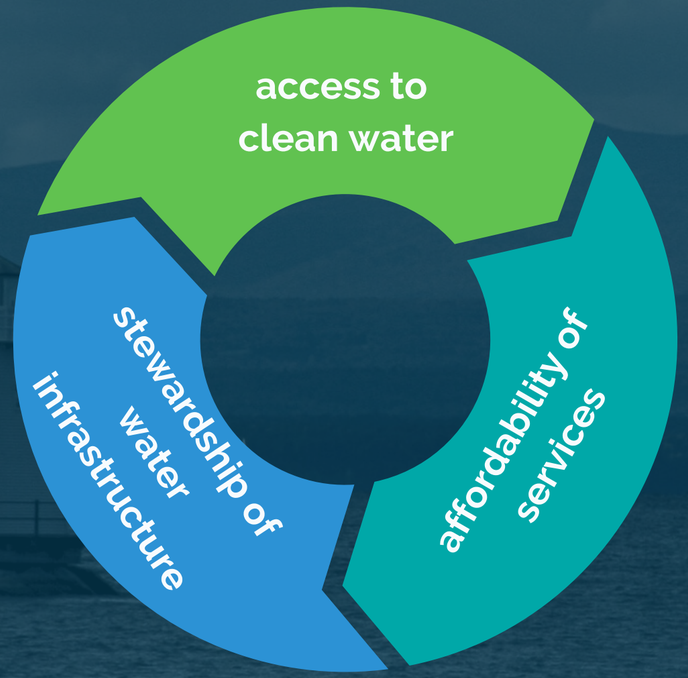
- Wastewater Comprehensive Upgrade
- Wastewater Tertiary Phosphorus Removal
- Combined Sewer Overflow Reduction
- Collection System Relining/Replacement
- Stormwater Outfall Repair
- Stormwater Retrofits
- Drinking Water Reservoir Pump Station
- Drinking Water Plant Upgrades
- Drinking Water Main Relining/Replacement

**Bipartisan Infrastructure Law will not provide significant funding source...**

# RATEPAYER **AFFORDABILITY**

## WRAP

- **Fixed Fee Waiver**
  - Low-income
  - 65+
  - Non-Profit Housing Organization
- **Rebates**
  - Sewer lateral inspections
  - WaterSense fixtures




## RATE STRUCTURE ADJUSTMENTS

- **Lifeline** rate tier
- **User class**-based rates

Studying enhancements to WRAP in first half of FY24 alongside Capital Financial Planning

# QUESTIONS?


WATER'S WORTH IT.
YOU NEED WATER. WATER NEEDS YOU.
Water Environment Federation

RAFTELIS

# MEMO

**To:** Megan Moir, Division Director – Water Resources
**From:** J. Scott Parker, Senior Manager
**Date:** May 8, 2023
**Re:** Staffing Recommendation Summary

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## Executive Summary

Raftelis was tasked to review the scope and possible addition of several staff positions in the Burlington, Vermont, Water Resources Division's (Division) FY24 budget to address identified staffing and operational objectives. An initial group of staff additions was provided to Raftelis as part of a preliminary recommendation from Division staff. Raftelis then evaluated the positions by conducting a review of the Division's current responsibilities, staffing levels, previous organizational and staffing studies and other materials, and interviews with several staff assigned with carrying out its mission. From there, a list of major observations on the current situation in Burlington was developed, and the bulleted list below summarizes the four defining challenges that Burlington faces:

- Aging infrastructure and a history of low rates of capital renewal and replacement
- A lack of staff capacity to conduct needed tasks
- Insufficient number of positions in some areas when properly accounting for labor yield
- High regulatory burdens

Each of the potential positions was then evaluated as to how it addresses those challenges. Raftelis' analysis is informed by knowledge of industry best practices, as well as experience gained through working with dozens of other high performing, yet challenged utilities across the country who are facing a variety of challenges similar to Burlington. As a result of this analysis, Raftelis recommends the addition of six (6) positions, most of which were contained within the original recommendation list. It should be noted that these recommendations for the new staff are generally not to provide new capabilities to the Division, but rather to add capacity to better meet required service levels. This memo concludes with a discussion of future considerations based on observations noted during this evaluation and expected service level commitments.

## Background

Water Resources is a division of the City of Burlington, Vermont, Department of Public Works (DPW). The Water Resources Division manages the City of Burlington's water and wastewater systems, as well as its Stormwater Program. The water system in Burlington has a long history of serving the citizens of the community. In 1867, the Burlington City Council adopted a plan to create Burlington City Water Works, to combat waterborne diseases. Using the abundance of Lake Champlain, the City's water system

grew with its population, and in 1880 and 1888, two reservoirs were added with a combined capacity of 7 million gallons. In the early 1900s, the City moved forward with a rapid sand filtration plant to serve approximately 20,700 residents. This plant was expanded in 1948. The City added its first wastewater treatment plant in 1953, and two additional wastewater plants were built in the early 1960s. All three plants upgraded to secondary treatment by 1973 and received a second upgrade in the early 1990s. A new water treatment plant and concrete reservoir covers were completed in 1982 and 1984, respectively.

The Burlington Stormwater Program was initiated in 2009 as part of an ongoing effort to meet state and federal water quality standards for Lake Champlain and other local rivers and streams. Importantly, the City contains substantial amounts of combined sanitary and storm sewers, which requires a wet weather treatment process at the Main Wastewater Treatment Plant (WWTP) to handle the large influx of flows to the plant during wet weather events.

The general responsibilities of the Water Resources Division include, but are not limited to, the following:

- Operating and maintaining the water treatment facility and three wastewater treatment facilities 24 hours a day, 7 days a week, 365 days a year
- Staffing the water treatment facility 24 hours a day, 7 days per week, and the wastewater facilities 7:00 AM – 3:00 PM, Monday through Friday, with on-call coverage and additional shifts over the weekend and as additionally needed during storm flow events
- Maintaining regulatory compliance reporting for water, wastewater, and stormwater
- Operating and maintaining the water distribution and wastewater and stormwater collection networks
- Capital planning, project management, and capital construction
- Developing and managing stormwater programming to reduce pollution related to stormwater runoff and to reduce combined sewer overflows (CSOs)
- Completing the water resources project review process for development permits
- Performing routine sample collections and monitoring, including monitoring for illicit discharges
- Billing customers for water, wastewater, and stormwater
- Handling customer inquiries and outreach regarding billing, water quality, etc.
- Conducting financial management, analysis and forecasting, and budgeting for Water Resources
- Developing and managing grants, loans and other issuances of debt
- Performing meter-related duties, including installation, reading, testing, and maintenance
- Updating infrastructure mapping and marking waterlines in a timely manner for DigSafe
- Providing public outreach (facility tours, school visits, etc.)
- Developing and publishing of water quality reports

In 2019, the Division contracted with Raftelis to conduct an organizational and staffing assessment, which recommended several new positions to enable the Division to operate more effectively and efficiently. The study recommended nine positions to be added to the Division. Table 1 lists the recommended positions, the risks they were intended to address, and the current status of those recommended positions.

*Table 1: Current Status of Positions Recommended in 2019 Staffing Study*

| Recommended Position | Risks Addressed | Current Status |
|---|---|---|
| **Water Resources Engineer** | Reduces system failures and minimizes operating costs by increasing the ability to deliver critical capital projects and providing a resource to help with program activities such as optimizing operations activities (flushing, IPP, WWTP optimization, metering etc.) | Approved |
| **Water Resources Policy & Programs Manager** | Insufficient resources for water quality program development and oversight lead to infrastructure failures and regulatory compliance issues (Integrated Planning, Industrial Pollution Prevention, Backflow program, FROG program, project review program etc.) | Approved |
| **Customer Care II Position** | Provides an administrative resource to deal with the neglected activities such as meter replacements, backflow and various other customer service activities, which have already led to revenue losses (meters) and additional system risks (backflow). Allows Billing Manager to focus on higher level revenue assurance and financial functions. | Approved |
| **Water Resources Technician/Environmental Compliance Officer**[1] | Insufficient resources for water quality program inspection, oversight, and enforcement activities lead to infrastructure failures and regulatory compliance issues; insufficient field resources for flow metering program needed for hydraulic/hydrologic model; insufficient resources for sampling program (up to 2 years) needed to evaluate impact of CSOs on Pine Barge Canal | Approved |
| **Wastewater Operator-in-Training** | Mitigates the anticipated staff losses due to pending retirements and provides a resource to address the backlog of O&M issues; adds resources for increased process sampling needs at Plants (important to optimization), assists with Industrial Pollution Prevention. | Approved |
| **Water Resources Project Management Support (Limited Service)**[2] | The many capital projects associated with the $30 million bond referendum surpass the Engineering Group's capacity for capital project management, which slows the installation of critical infrastructure. Project accounting and logistical project management support are needed to ensure success. | Not Approved |
| **Engineering Technician** | Reduces the amount of technician-level work currently being done by engineers, who can more productively spend their time on capital delivery, planning and system optimization. | Not Approved |

| Recommended Position | Risks Addressed | Current Status |
|---|---|---|
| | | |
| **Customer Care Position I (Part-time)** | Provides an administrative resource to deal with the neglected activities such as meter replacements, backflow and various other customer service activities, which have already led to revenue losses (meters) and additional system risks (backflow). | Not Approved |
| **Wastewater Maintenance** | Mitigates the anticipated staff losses due to pending retirements and allows maintenance staff to address their backlog, which will in turn reduce failures and associated problems. | Approved |
| [1] Approved in an adjusted form as a Water Resources GIS & Field Specialist.<br>[2] Some of this need was met on a part-time, limited basis, but this position is being eliminated due to City limitations on temporary employment. | | |

Though not all of the positions recommended in the 2019 study have been added, several others have been added or approved in response to changing operational needs. Table 2 lists other new positions that have been added since 2019 outside of the study recommendations.

*Table 2: Other New Positions Added Since 2019 Staffing Study*

| Added Position | Risks Addressed |
|---|---|
| **Director of Engineering and Operations** | Reduces direct reports to the Division Director, better aligns operations, asset management, and engineering functions. |
| **Senior Financial and Administrative Analyst** | Provides needed financial expertise and administrative support within Water Resources and for Traffic and Parking Division. |
| **Financial and Administrative Assistant** | Supports needed financial expertise and administrative support within Water Resources and Traffic and Parking Division. Provides back up support for Water Resources Billing Team. |
| **Risk and Resiliency Specialist – Water Resources** | Retains vital experience and expertise within the Division in an advisory role. Will be re-absorbed in FY25. |
| **Wastewater Operator Assistant** | Provides necessary labor in wastewater operations and creates workforce development opportunity. |

Given the passage of time, the partial implementation of the assessment's recommendations, changing operational needs and looming regulatory requirements, the Division requested Raftelis to evaluate and update its staffing needs. Currently, there are 54 full-time equivalent (FTE) positions in the Division. There is a modest amount of labor sharing between Water Resources and the DPW Streets Division, which provides some maintenance and construction services for the Stormwater and Wastewater systems, and paving and concrete support for the Water systems. Figure 1 presents the Division's current org chart.

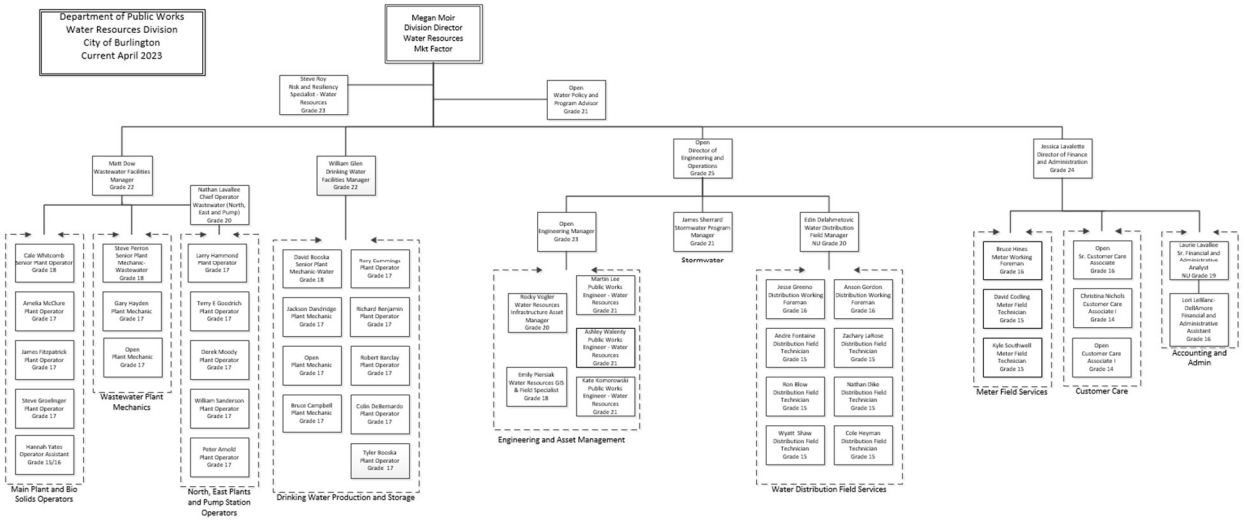


*Figure 1: Current Division of Water Resources Organization Chart*

# CURRENT OBSERVATIONS

## *BURLINGTON HAS AGING INFRASTRUCTURE AND A HISTORY OF LOW RATES OF CAPITAL RENEWAL AND REPLACEMENT*

In a review of documents provided by Burlington, Raftelis noted that from 1996 to 2008, there was a single 6.5% rate increase in 2005. During that time, overall inflation rose 32.2%.[1] Since 2008, the City has had a consistent record of annual rate increases, providing for some additional investment in the system. While there are always legitimate concerns regarding bill affordability, it should be noted that in 2023, 500 cubic feet (cf) of usage in Burlington results in a water bill of $20.53 and a sewer bill of $36.95. In 2020, the last year for which data is available, the American Water Works Association (AWWA)'s national rate survey found an average bill of $29.21 for water and $37.56 for sewer for that same 500 cf of usage[2]. Put differently, current City rates are approximately 16% less than the national average rates were three years ago.

While the Division faces many challenges, ultimately, its defining challenge is that it is tasked with operating older infrastructure that has suffered from extended periods of underinvestment in an era of increased regulation and high customer expectations. The cascading impacts of the funding lull from 1996 – 2008 appear to still have an impact on how the Division delivers its service to citizens to this day. As mentioned in the previous section, the city is home to a pipeline network that includes pipes from the 19th century, made of a variety of materials and including both combined and separate storm sewers. It has 25 lift stations of various ages, and multiple requirements related to the conveyance and treatment of stormwater, including green infrastructure. Utilities often require millions, sometimes even billions, of dollars of asset investment to bring reliable service to customers. Not raising rates to at least maintain

[1] Federal Reserve Band of Minneapolis, "Consumer Price Index, 1913-." https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1913-

[2] The City of Burlington charges a separate stormwater fee, though some stormwater-related costs are recovered through the wastewater fee. The AWWA rate survey does not track stormwater fees given the wide variability as to how local governments recover stormwater-related costs: flat fees, rates based on impervious area, ad valorem taxes, embedded within wastewater charges, etc.

pace with inflation for extended periods of time is an indication that a utility is not appropriately reinvesting in its system and is "living off depreciation," meaning that it is using up the value of its assets faster than they are being rehabilitated or replaced. The purpose of the depreciation expense is to recover the utility's investment in its assets incrementally throughout their service life. Once a utility enters a re-investment deficit it can take decades to exit it due to the nature and expense of assets involved with providing water, sewer and stormwater service. These assets are often complex, buried and, as a general rule, expensive to operate, maintain and rehabilitate. As they age and near the end of their useful lives, they require more attention (i.e., reactive maintenance activities), and, ultimately, greater investment of resources to continue to provide the service for which they were designed. If proper reinvestment is unavailable, utilities are forced into a situation where reactive maintenance needs crowd out the ability to conduct preventative maintenance, leading to even more reactive maintenance, emergency repairs, and, ultimately, less resources to properly fund capital replacement. This appears to be the situation in Burlington, and it has a direct impact on the nature and scale of tasks that current staff are forced to deal with. It also limits the ability of staff to adequately plan or make the current system run more efficiently, which leads to our second observation below.

### *BURLINGTON HAS A LACK OF STAFF CAPACITY TO CONDUCT NEEDED TASKS*

As mentioned above, the Division is charged with operating a utility that has aging infrastructure. In addition, staff are subject to an expanding regulatory environment and serves a customer base that has high expectations. As a result, staff appear to frequently be in reaction mode, which crowds out the capacity to conduct preventative maintenance, strains engineering staff in the ability to deliver capital planning and project delivery needs, and taxes utility finances through needed capital replacement and personnel costs necessary to maintain such a system. In our interviews with staff, tours of facilities, and reviews of Division documents, the overall impression is of a well-managed utility with capable employees who have sufficient expertise to know how to properly operate and maintain the utility systems. Nevertheless, largely due to a lack of resources as compared with their scope of work, Division professionals lack the bandwidth to accomplish all that they should (and want to) be doing.

An example of a lack of staff capacity is in the area of asset management. The Division has both qualified staff and a high-quality Asset Management Plan that was developed in 2017 and which laid out a roadmap of activities that could make the more efficient and effective in its delivery of service to customers. Also in 2017, the Division instituted the practice of lining certain high-risk water mains. This activity not only extends the life of water main assets, but also has a lower impact on customers than traditional methods of pipeline rehabilitation that require digging up and replacing whole lengths of pipe. The results to this point have been promising. Water main breaks have declined by 34% since the program began, as represented in Figure 2 below:

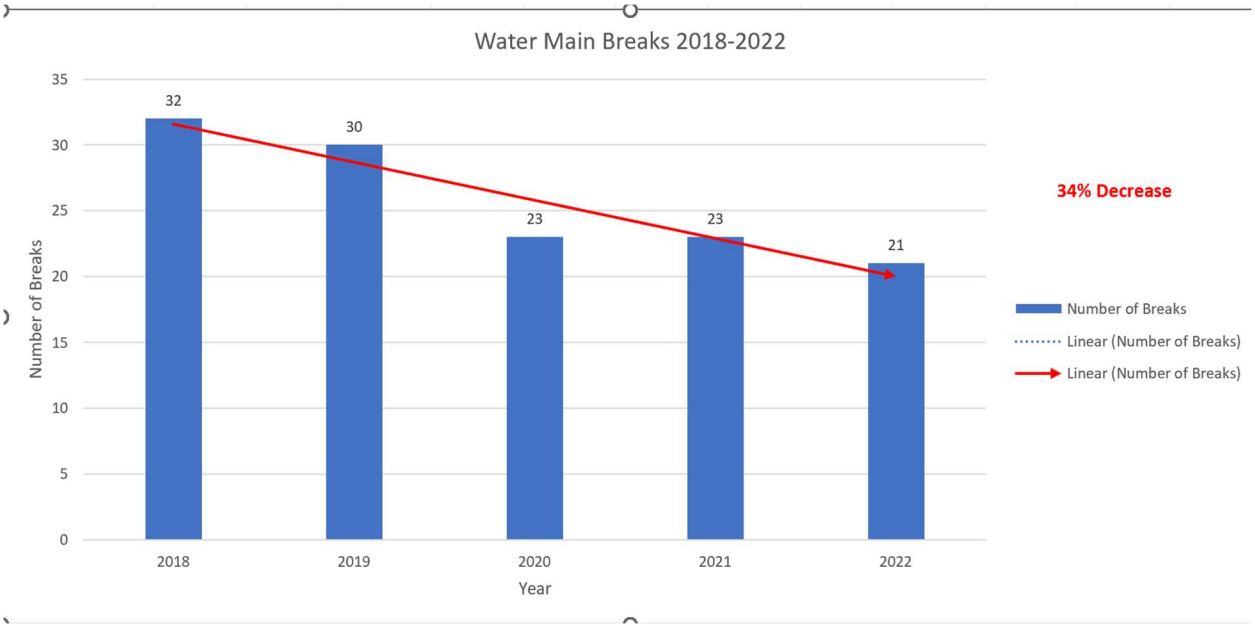


*Figure 2: Water Main Breaks, 2018 – 2022*

Water main lining is an excellent example of an asset management activity in that it represents an efficient and effective solution to a problem that made the organization more reliable to its customers with minimal service disruption. Asset Management tasks typically address systemic issues within a utility and require participation from many business lines, including operations, engineering, finance, customer service and data and technology. Full implementation of an asset management plan can take several years and relies heavily on the presence of high-quality information to properly contextualize opportunities and measure the results of actions. Unfortunately, the Division is still developing the basic tools and data necessary to fully implement the plan. The Division has only recently begun implementing Vueworks as its Computerized Maintenance Management System (CMMS), which is a vital tool for organizing asset information. The GIS system, also a vital component of an asset management system, is known to have missing or incomplete data, even though the presence of many paper records is known to exist and are utilized within the Division. Incorporating those paper maps and other sources of information into these critical systems is mostly a matter of the ability to commit staff time to the maps' entry into the systems. Unfortunately, that time does not currently exist because more pressing, reactive needs must be addressed by those who need to be involved in the process. As a result, the condition of many assets appears to be unknown, and the systems are not able to be utilized to their fullest extent to help the organization in its quest to deliver its level of service effectively and efficiently. Based on our observations, it is common across most of the business lines in the Division that staff know what to do and how to do it, but simply do not have the resources necessary to accomplish what is needed beyond the reactive level.

The situation described above is not unique within the Division. Other activities that are "not getting done" that, with additional resources, could lead to a higher level of service include the development of a well-maintained capital plan (a driver behind the creation of the engineering manager position); backflow compliance (including implementing updated backflow ordinance); annual hydrant flushing; documentation of water line replacement/install inspections; inspection of diversion manhole weirs; impervious surface billing updates; post-construction stormwater BMP inspections; regular creation/update of SOPs; implementation of a customer assistance program for sewer lateral replacements; hydrant flow testing for both operational and hydraulic model recalibration; and, comprehensive valve exercising and proactive valve replacement.

The lack of staff capacity often manifests itself in reduced efficiency. In smaller utilities staff often wear "many hats" (e.g., a small utility may have the person who handles billing also handle most of the in-house IT needs). This model breaks down, however, when tasks become more complex, the scale and scope of work grows or level of service expectations are higher, all of which appear to be the case in Burlington. Several examples were observed where higher-skilled positions conduct lesser-skilled activities because there is no one to delegate those activities to. For instance, engineers must spend time conducting right of way investigations or basic contract management instead of designing projects or reviewing plans. Rather than working on implementing the asset management plan, the asset manager may need to assist in televising sewer lines. Having sufficient staff capacity provides value by getting the best use out of individuals with specialized skill sets.

### *CURRENT STAFFING IN SOME OPERATIONAL UNITS DOES NOT PROPERLY ACCOUNT FOR LABOR YIELD RATES*

In other cases, the lack of labor capacity that is observed is based on a common misperception of how to staff work crews. For example, assume that an organization determines that a crew of four people is required to safely, efficiently, and effectively work at a pace such that its annual work goals will be met. Following that determination, the organization approves four positions to be filled for this workgroup. However, this staffing model ignores the true labor yield of one FTE position operating in a team-oriented workgroup. Depending on the timing and amount of vacation, sick leave, and training, this workgroup that is intended to operate as a team of four should expect to be short-handed on a regular basis, limiting its ability to complete tasks. Additionally, position vacancies are a fact of life. Statistically, an organization with just a 5% vacancy rate should assume that one of its four positions in this workgroup would be vacant 2.4 months out of the year.

The deficiencies caused by this staffing model are illustrated by how operators are staffed at Main WWTP. At the plant, daily duties rotate among four operators. Each day one operator operates the plant, one dewaters biosolids, one performs labs, and one conducts preventative maintenance (PM) activities. If for any reason (sick leave, vacation, training, etc.) the plant is short-staffed, PM activities are not completed that day. Any time there is a significant rain event, the wet weather treatment train must be staffed, requiring a plant that normally operates a single daytime weekday shift to transition into 24-hour operations. As a result, an operator may have to work their normal daytime shift and then continue operating the plant overnight, at which point they must miss their regularly scheduled shift the following day so that they can go home for much needed rest, leaving the plant short-staffed. While such operations are not the norm, they are not rare, either. As a team-based work crew, Water Distribution is also observed to have the same productivity challenges caused by the same staffing deficiencies.

### *BURLINGTON HAS HIGH REGULATORY BURDENS*

Water, wastewater, and stormwater utilities are highly regulated industries for a host of good reasons. Any organization charged with the health, welfare and safety of a community's citizens and environment should be held to the highest possible standards in service to those who choose to live and work there. As science evolves, regulations increase in response. Since 2016 alone, Burlington has had to respond to multiple examples of increased regulation:

1. Adoption of the Lake Champlain Phosphorus Total Maximum Daily Load (TMDL) which requires significant reductions of phosphorus from wastewater and stormwater sources (2016)

2. Combined Sewer Policy requires additional measures for the monitoring and control of all combined sewer overflows (2016) including construction and operation and maintenance of stormwater best management practices (BMPs)
3. Stormwater Flow TMDLs require construction, operation and maintenance of flow reduction BMPs in Centennial, Englesby, and Potash Brook watersheds
4. Boil Water Procedure (2018) requires additional measures and risk evaluation during water main breaks to determine if a boil water notification is necessary
5. Lead and Copper Rule Revision (2022) requires inventorying of all water service lines[3] in the City

It is obvious that Burlington has and continues to take this responsibility seriously. For example, the community has adopted stringent stormwater review requirements under Article III of its Chapter 26 Ordinance. In particular, Section 26-3-26 Appendix E contains specific language regarding post-construction stormwater management and includes requirements for Stormwater design plans; operation, maintenance and repair plans; landscaping and stabilization requirements; access to stormwater systems for inspections during and after construction; and penalties and enforcement procedures. While the intention of this ordinance is to assure that the water that reaches receiving streams is as clean as possible and is in line with National Pollution Discharge Elimination System (NPEDES) Phase II requirements, there are a number of field work activities associated with program compliance that are either not being addressed or are in danger of falling further behind due to the lack of staffing resources. A short list of items that that are currently not occurring that are required to meet compliance with all City and State regulations, including:

- Public and Private Stormwater BMPs inspections and compliance
- Water quality sampling of surface water and wastewater
- Illicit Discharge Detection and Elimination (IDDE) inspections (dry and wet weather)
- Outfall inspections (annual and as needed)
- See Click Fix and Vueworks Service Request Site Visits including drainage complaints

The lack of compliance oversight threatens to limit the effectiveness of the Chapter 26 Ordinance and other Burlington Stormwater program requirements, which will have a direct impact on the health of Burlington's waterways. Moreover, BMP implementation (and maintaining BMPs in working order) is a specific requirement of multiple regulatory requirements including the Stormwater Flow Total Maximum Daily Loads (TMDL) for Centennial, Englesby and Potash Brooks, the Lake Champlain Phosphorus TMDL and the 1272 Order issued to the City requiring Long Term Control of CSOs. If the City is not able to demonstrate proper operation and maintenance of these BMPs, it will not meet its compliance milestones and could be in violation of State requirements.

## RECOMMENDED POSITIONS

Raftelis was tasked to review several positions in the Division's FY24 budget to address the issues listed above and other operational objectives. The bulleted list below summarizes the major observations noted in the Current Observations section above. Each of the recommended positions that follow will list the major observations that the position seeks to address.

[3] The City has approximately 10,000 water service lines, of which only 4,600 are mapped with a known material. While there are no known lead service lines in the City, in order to comply with the Lead and Copper rule, Water Resources must complete an inventory of the remaining 5,600 connections by October 2024.

- Aging infrastructure and a history of low rates of capital renewal and replacement
- A lack of staff capacity to conduct needed tasks
- Insufficient number of positions in some areas when properly accounting for labor yield
- High regulatory burdens

We have conducted organizational assessments across the country for a wide variety of utilities in a range of operating environments, ranging from the island-wide water and wastewater utility serving Puerto Rico, to a water utility serving a desert island off the coast of California, to Anchorage, Alaska, to Burlington and dozens of points in between. We advise utilities in some of the fastest growing communities in the U.S. and in communities with population loss. Our clients' infrastructure ranges from cutting edge to failing. All of these experiences inform our recommendations, which are a mixture of industry best practices, expected levels of service, and community standards. When Raftelis recommends a new position, it is never the result of a formula or a simple comparison to a peer utility (e.g., Utility A has one GIS Specialist, therefore Utility B should have one GIS Specialist). Instead, recommendations for new positions are made because it addresses an identified need for that utility based on that utility's need relative to their operational context. As noted above, Burlington is unique in several ways, and we consider its specific operating environment in our recommendations.

The recommended positions are:

**Stormwater Field Specialist**
*Addresses: High regulatory burdens; lack of staff capacity to conduct needed tasks*

The Division recently reclassified the Stormwater Program Coordinator to a Stormwater Program Manager position and moved it under the Director of Operations and Engineering to better integrate with the Engineering/Asset Management group. This position will ultimately be responsible for the full stormwater utility/program. As was noted above, there is a need for field inspections and compliance activities as spelled out in regulations set forth in the National Pollution Discharge Elimination System (NPEDES) Phase II requirements. The six minimum control measures set out in the NPDES permit include Public Education and Outreach; Public Involvement and Participation; Illicit Discharge, Detection and Elimination (IDDE); Construction Site Stormwater Runoff Control; Pollution Prevention & Good Housekeeping for Municipal Operations; and Post-Construction Stormwater Management for New Development & Redevelopment. Related to the last measure, the City has adopted stringent stormwater review requirements under Article III of its Chapter 26 Ordinance. In particular, Section 26-3-26 Appendix E contains specific language regarding post-construction stormwater management, and includes requirements for Stormwater design plans; operation, maintenance and repair plans; landscaping and stabilization requirements; access to stormwater systems for inspections during and after construction; and penalties and enforcement procedures. While the Stormwater Program is currently compliant with inspection and maintenance of publicly owned BMPs and is reviewing new private projects to ensure that projects include post-construction stormwater management measures, the long-term tracking, compliance and enforcement of private BMP program does not exist.

Looking forward, it is anticipated that there will not only be more installation of green infrastructure, but also the current private installations may reach failure more quickly since they have not been inspected and kept up to date. In both cases, there will be more need for this type of work, and for that reason, it is recommended that a Stormwater Field Specialist position be created with a focus on the following areas:

- Inspections
- Leading the IDDE Program
- Responding to SCF/VueWorks/Public Service Request outreach

- Water Quality Sampling
- Additional GIS and Condition Assessment Support (Currently provided by the WR GIS and Field Specialist)

**Wastewater Operator**
*Addresses: Aging infrastructure / low rates of capital renewal and replacement; properly accounting for labor yield rates; lack of staff capacity to conduct needed tasks*

The current approved number of wastewater operators does not account for the true yield of one FTE position. For example, the approved number of operators at Main WWTP is sufficient to carry out assigned duties without utilizing overtime pay, but only if no operators are out on training, vacation time, sick leave, and there are no overnight wet weather events. Obviously, those are normal occurrences that result in increased overtime expenses. For example, in the first nine months of FY23, wastewater treatment alone tallied almost 2,000 hours of overtime, which is nearly the equivalent hours assigned to a single full-time position in a year. Assuming a non-management staff of 11 employees in this section, three weeks' vacation per employee, and two weeks' sick leave, this would equate to a missing 1.5 FTEs of labor efforts. Accounting for the expected 20 – 60 hours of training needed each year would represent the loss of another 0.1 to 0.3 FTEs.

Aside from the current minimum staffing levels, touring the Main WWTP makes clear that this is a "high touch" plant requiring significant hands-on operation, particularly given the age of the infrastructure. Wet weather events necessitate the operation of the wet weather treatment train, which requires a near-constant level of activity by an operator. When those wet weather events occur at night, an operator must staff the plant overnight following the completion of his or her shift. If the plant is short-staffed, fewer PMs are completed, further contributing to the reactive maintenance cycle.

**Distribution Field Technicians (2)**
*Addresses: Aging infrastructure / lack of capital renewal and replacement; Properly accounting for labor yield rates; lack of staff capacity to conduct needed tasks*

The Division currently staffs two crews of four distribution field technicians. Similar to the situation with wastewater operators, the approved number of distribution field technicians neglects the true labor yield of one FTE position. If just one individual is out for training, time off, illness, or a position is vacant, the effectiveness of at least one crew is compromised. Staff estimate that they are typically short two people every two weeks. Aside from the expectation that out of a crew of eight, absences are likely to be a regular occurrence, it does not appear that two crews of four are sufficient to handle desired levels of service. Crews struggle to complete the annual hydrant flushing program while managing their other demands. There have been multiple examples where main breaks have had to be repaired by contractors, at a higher cost to the City, due to lack of personnel. Most significantly, there is no valve exercising program. The Division estimates that there are 4,000 – 5,000 isolation valves within the distribution system. These valves are in place so that, should there be a need for repairs or pipeline replacement, a minimal number of customers must have their service interrupted. Valve exercising is a form of maintenance that prevents valves from freezing in place and provides an indication of the valves' functionality. Given their age, lack of exercise program, and the high salt environment (most valves are located in the roadway), it is likely that the overall condition of the valves is poor. (For example, on the morning of our interviews with staff, distribution had operated 10 valves and found three to be leaking.) This means that once a valve testing program gets underway, there is likely to be even more work to repair or replace these valves. Given the labor needs, we recommend the addition of two distribution field techs. These additions will minimize the time when the two primary crews are short-staffed and will provide capacity to conduct additional needed maintenance beyond what is currently achievable. The Director of Engineering and Operations (added in early 2023) will work closely with the Distribution

Field Manager to ensure that these staff are being programmed appropriately to meet the intended service levels. During the wintertime, these two FTEs will be available to supplement crews during winter main breaks but can otherwise be assigned to support the meter technician team with meter replacement (approximately 7,000 meters are past their useful life).

**Water Resources Project Manager**
*Addresses: Aging infrastructure / low rates of capital renewal and replacement; lack of staff capacity to conduct needed tasks*

All utilities require engineering services, and there is a broad spectrum in how utilities choose to obtain these engineering services. Some utilities use contract engineers for all their needs (design, contract management, construction management, project management). Others provide most of their engineering in-house (though large, specialized projects such as treatment plants are usually still contracted out). The Division has elected to bring much of its engineering work in-house which, given the intimate knowledge of the system gained by in-house engineers, is completely supportable. Given the magnitude of capital needs of the Division, however, engineering resources are stretched. A not-insignificant amount of their time is spent on activities that need not be handled by engineers, such as researching right of ways, contract administration, public notices, presentations to Council, etc. In order to adequately address the full range of administrative as well as engineering duties associated with capital project delivery, we recommend that the Division add a Water Resources Project Manager. This position would handle some of the non-engineering duties currently performed by the engineers, as well as contract administration, grant administration, and public communications. We believe that this position can act as a force multiplier for the engineering group and would not be as costly as adding another engineer. This need was identified in the 2019 staffing study.

**Water Resources Utilities Coordinator**
*Addresses: High regulatory burden; lack of staff capacity to conduct needed tasks*

Utilities commonly have a role dedicated to the protection of the utility's infrastructure from other developers and construction activities. This involves reviewing plans and coordinating construction activity that may affect the infrastructure and inspecting any infrastructure, particularly water service lines, that may tie into the utility's system. While the distribution team attempts to provide construction oversight to water system construction, the Division's ability to provide consistent oversight has been limited and there have been occasions in which American Water Works Association (AWWA) standards were determined to have been ignored by contractors because of lack of oversight. Failure to properly inspect connections to a utility's system can risk the use of improper materials, future leaks and breaks, and water quality issues. In addition, this position will reduce the burden on the Water Resource engineering team by providing technical assistance and review of smaller scale development projects. In essence, this role will fulfill multiple elements of the "Engineering Tech" position identified in the 2019 study.

We recommend that the Division add a Water Resources Utilities Coordinator not just to reduce the risk to the Division's infrastructure, but also to address an on-going need for GIS assistance. As the employee overseeing new connections, the Utilities Coordinator will be uniquely positioned to properly map new features into the GIS system, which is reported to have significant omissions and inaccuracies. While there is a GIS & Field Specialist position, that position is focused on GIS data analysis and on supporting the asset manager with condition assessments of the breadth of existing Water Resources infrastructure, and it will be more efficient to have another field-based position who remains focused on mapping new infrastructure. In the near term the Utilities Coordinator will be tasked with updating the service line inventory for the remaining 5,600 service lines to achieve compliance with the Lead and Copper Rule. This will involve not only involve a review of internal records, but also inspection of any service lines for

which records do not exist. Assuming there are no additional requirements under that Rule, the Division will also be evaluating whether or not the role could address additional regulatory compliance duties that are not currently being met such as backflow inspection compliance.

## Future Considerations

The staffing recommendations made above are intended to address the most pressing current needs. However, during our interviews with staff and after our tour of facilities, we also identified other, longer-term issues that the Water Resources Division may seek to address in the future. While the following items do not reflect a full organizational or operational assessment, we would be remiss not to mention them as considerations for the coming years.

One future consideration is the eventual need to hire a position focused on regulatory compliance. Currently, the Division lacks the capacity to administer common regulatory programs. For example, there is no backflow prevention inspection program, which, once established, would require administration. Backflow prevention devices are necessary to protect the integrity of the water distribution system and should be inspected regularly to ensure proper installation and operation. The inspection program can be done such that the actual inspections are conducted by private plumbers, but the program would still require notifying account holders of required inspections and tracking compliance. This individual would also be ideally suited to administer a pretreatment program. Given the size of the City; the number of restaurants, breweries, and other potential high-strength wastewater dischargers; and the environmental sensitivity of the receiving waters, the current lack of a pretreatment program poses risks to the Division and its ability to meet regulations.

Another consideration is working to contract out more engineering work. Currently, engineering staff perform in-house design, project review, management, administration and some inspection duties, which is somewhat unusual in similarly sized water utilities. Staff cited the reason for this was a combination of the time required to bring outside engineers up to speed on the “quirks” of the Burlington system as well as the smaller pool of potential candidates. This model certainly assures high-quality work, but it is very time intensive. Given the amount, size and complexity of projects expected in the coming years, it would be advisable to review if this model still works. Filling the project manager position mentioned in this report will be of some benefit, but there may be more opportunities to contract out other elements of their work. For example, engineering staff could be intentional about the development of potential design firms and contractors by initially issuing RFQs on smaller jobs with the intention of “training” local engineers on the peculiarities of their system.

It appears there may be an opportunity to hire a wastewater laborer. Currently, the North and East WWTPs must truck their biosolids sludge to Main WWTP for dewatering. The loading, transport, and unloading of the biosolids is reported to be nearly a full-time activity. Hiring a wastewater laborer to conduct such duties could effectively free up an operator for conducting actual operations for which they are trained, unlike biosolids transport, which is an unskilled activity not requiring licensure. The advantage to this approach would be cost savings from adding a new position at a lower pay grade than an operator. Looking into the future, the major rehabilitation of the Main Plant may provide opportunities for more efficient utilization of staff, based on the decisions incorporated into the ultimate design. If, following the renovation of the Main Plant, the East Plant is converted to a lift station that only conveys wastewater to Main Plant, there may be an opportunity for the addition of a belt press at North Plant, thereby eliminating the need to truck non-dewatered biosolids around the City and potentially saving on labor and trucking costs. For this reason, it is imperative that operations staff continue to be included in the design of the new facility. More staff and a better designed facility could eliminate overtime costs, improve safety for staff, and improve operational efficiencies.

The lack of preventative maintenance activities on the distribution and collection systems have been noted, namely activities such as valve exercising, sewer jet cleaning, and CCTV inspections. It is not uncommon for these activities to fall by the wayside when operating in more reactive maintenance modes. However, these activities can be contracted out, either on a short-term or long-term basis. If these activities are contracted on a short-term basis, it would be with the intention that the contractors would provide the necessary "boost" to move from reactive to planned maintenance activities. Contracting out these activities with the intention to not bring these activities in-house may reflect the decision that these needed activities will be assured of being completed, will aid the Division in shifting from a reactive to planned mode, but the Division will still lack the resources to take on these duties after their initial completion. Finally, contracting out sewer line cleaning and inspection may be more cost effective than conducting them in-house, as the Division would not need to own, operate, and maintain the required trucks, jetting equipment, TV equipment, and software on a permanent basis.

As mentioned earlier, Stormwater pays for some level of labor from the Streets Division to assist in the maintenance of their assets. However, staff report that historically Streets staff have struggled to complete their annual stormwater workplans. There is an argument to be made to bring those activities in-house to the Water Resources Division with their own staff, particularly as the regulatory and maintenance needs of stormwater grow. Bringing stormwater maintenance activities in-house would provide greater lines of communication within the stormwater function and produce greater levels of accountability.

Finally, one of the required duties of the Division, which was not contained among the list of general responsibilities in the Background section, is maintaining its buildings and their environs. Facilities, like pipes, motors and pumps are expensive, long-lived assets that must be maintained to a certain level of service if the maximum value is to be extracted from them. There is currently no staff member within the Division identified as having that responsibility, nor does anyone have the particular skills or qualifications to do so. Resources should be committed within either the Facilities department of the City or assigned to the Division to address this issue.

McNeil symposium format_GB proposed amendment for 5/23/23 TEUC meeting with proviso that we run this by the presenters to test practicality

1. Limit opening to chair and time to up to 3 minutes (**3 min**) (saves up to 2 minutes)
2. Limit Springer opening to up to 5 minutes (**5 min**) (saves up to 5 minutes)
3. Keep time for panel Qs & As to 60 minutes but know that have saved 8 minutes above for spillover
4. Identify BED panelist answering the question posed and set clear time limits to answers for each question, dependent on the complexity of the question
5. Limit Q1 BED answer to 3 minutes, each academic 3 minutes to comment upon, allow any BED panelist to comment on academics' comment 3 minutes (**12 min** max)
6. Limit Q2 BED answer to 5-7 minutes (given the subparts and complexity), each academic 5-7 minutes to comment upon, allow any BED panelist to comment on academics' comment 5-7 minutes (**28 min** max)
7. Limit Q3 BED answer to 3-5 minutes (given the subparts and complexity), each academic 3-5 minutes to comment upon, allow any BED panelist to comment on academics' comment 3-5 minutes (**20 min** max)
8. Eliminate Q4, 5, those related to district energy because they don't involve the expertise of the academics and can be done at a TEUC meeting or another format
9. Keep the precurated public Q&A to 30 minutes as proposed (**30 min** max)
10. Add a public group discussion/question time as proposed on 5/3/23 by Councilor King (**20 min**)
11. Keep open public forum and panelist responses to 60 minutes (30 min public, 30 min response) but break into 3 sections so we have 10 minutes of public comment and panelists can have 10 minutes to respond, in order to limit the number of questions or comments panelists are needing to keep track of for practicality's sake. (**60 min** max)
12. Limit closing to 2 minutes (**2 min**)

The total time is 160 minutes, 2 hr. and 40 minutes, 10 minutes short of the proposal on 5/3/23. If we have 3 hrs (180 minutes) this gives us 20 minutes of slack for when people run over.

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**Councilor Gene Bergman,** *Ward 2*
**Councilor Hannah King,** *Ward 8*

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# Transportation, Energy and Utilities Committee of the City Council
## Tuesday May 23, 2023 - 5PM

DPW Front Conference Room
645 Pine St, Burlington, VT 05482

## –DRAFT MINNUTES–
**Meeting begins 5:00PM**

1. **Agenda**

Councilor Bergman moves to adopt amended agenda as shown below. Seconded by Councilor King. All in favor. Passes unanimously.

2. **Minutes of 5.3.23**

Councilor King moves to accept minutes. Seconded by Councilor Bergman. All in favor. Passes unanimously.

3. **McNeil Symposium Update**
   - Chair Barlow

Chair Mark Barlow – Scheduled for June 13th at Contois 6:30 – 9:30PM time block. We would like to live stream it in addition to recording – will coordinate with BCA and CCTV.

Councilor Bergman – Two of three outside biomass experts are able to attend and looking to get travel expenses compensated. BED has a number of folks to join. Still working on exact format, see last meeting for questions.

MB and Councilor Hannah King support question set up.

MB – Main objective of meeting is to have scientific underpinning around our discussion on policy decisions we are making for McNeil. Would like to provide ample opportunity to panelists to provide information. Post questions and biographies ahead of meeting to save on time.

HK – Will make draft program

MB – Community questions submit ahead of time and can be answered after programmed questions.

**Chapin Spencer joins at 5:16PM**

Amend number 8 to illuminate question 5 and altering question 4.

Councilor Bergman moves to accept format with edits discussed. All in favor.

4. **Water Resources Organizational Assessment**
   - Chapin Spencer, Megan Moir
   - Presentation
   - Memo

Presentation from Megan Moir.

**Councilor Gene Bergman leaves 5:34PM**

Chair Mark Barlow – Are there any positions that we are adding as a result of current state of the system that as we made these improvements we would lose?

MM – Potentially the project manager and Plant Operator. Will need positions for 4-5 years.

Director Chapin Spencer – Will be part of budget approval process. Wanted to provide opportunity for public and councilor input tonight.

Item closes 5:42

5. **Public Forum**

Ashley Adams – McNeil. Submit email with recommendations to councilors on format. Need time for academics to present. Will there be opportunity for public input on format?
Chair Mark Barlow – we will post with material from tonight's meeting. Voted on it tonight but will have some ability to adjust.
Ashley Adams – Important to require citations for any assertions during course of meeting and make them publicly accessible after meeting.

Steve Goodkind – Who chairs the symposium?
MB – TEUC committee

Nick Persanpiery, Ward 2 – Renewable primary heating system ordinance. Definition of renewable sources of heat need to be considered regarding GHG emissions.

Connor Warts, 350 VT – Support what Nick is saying. Striking biofules would protect future development before these energy types grow in popularity.

Peter Duval – Underhill resident – appreciate the layout of the TEUCs webpage. Bikeshare – E-Bikes are not regulated in US. Should look to Europe's standards.
McNeil – New York and New Hampshire regulations for wood fire powerplants vs Vermont. Fuel Supply – mostly out of state. What is risk that NY will take being burdened with biogenic emissions.

Pike Porter – BTV Slide show regarding Airport emissions from a previous meeting looking at 2019 emissions, have questions about how the airport came up with numbers.

Close public comment at 6:02PM

6. **FY24 Fleet Purchases and Dissolution**
   - Lee Perry, Ashley Parker
   - Memorandum
   - Cost Chart
   - Deferred Vehicle List

Lee provides overview of Memo

Councilor King moves to recommend the Board of Finance and City Council approve the proposed FY'24 Fleet Purchasing List and authorize the Department of Public Works, Fleet Maintenance, to auction the FY24 replaced vehicles/equipment through various online public auctions, or trade in to vendor where vehicle/equipment is being purchased. If there is no public interest, or the vehicle is of no value to the

vendor, Fleet Maintenance will have the vehicle/equipment, hauled away for scrap at the current market price.

Seconded by Chair Barlow
Item closes 6:12 PM

7. ~~**Ordinance on Carbon Fee**~~
   - ~~Councilors~~
   - ~~20 minutes~~

Motion to postpone to June meeting by Councilor King, Bergman Seconds. All in favor.

8. **Director's Report**

Chapin Spencer – Champlain parkway update for middle section.

9. **Councilors' Update**

Barlow – appreciate NNE patching.
Chapin Spencer - Ward 4/7 NPA tomorrow will discuss more about work here.

10. **Next Meeting 6/27/23**

11. **Expected Executive Session: 195-201 Flynn Ave Purchase and Sale Review**
    - Chapin Spencer, Lee Perry
    - 10 minutes

Councilor King moves to enter executive session, seconded by Chair Barlow.

Chapin Spencer – Looking at option for City to purchase this property for a potential CSWD drop off facility or soil management for City. Have talked to Ward 5 NPA about this. Would like to discuss negotiation and terms.

Motion to leave executive session made by Councilor King, second by Chair Barlow.

12. **Adjourn**

Motion to adjourn meeting made by Councilor King, second by Chair Barlow. Meeting adjourned at 6:46pm.