BURLINGTON PUBLIC WORKS

FY 2019 PROPOSED BUDGETS

Water

Wastewater

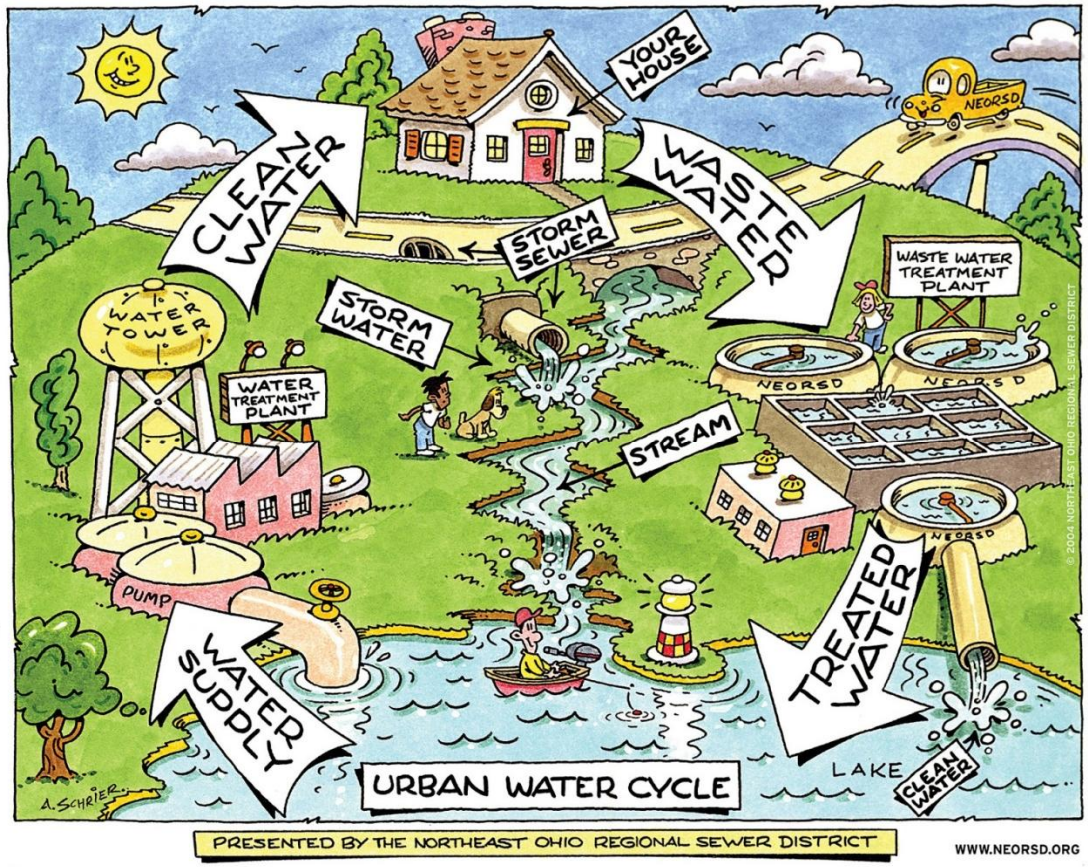
Stormwater

Water Resources

BURLINGTON, VT PUBLIC WORKS

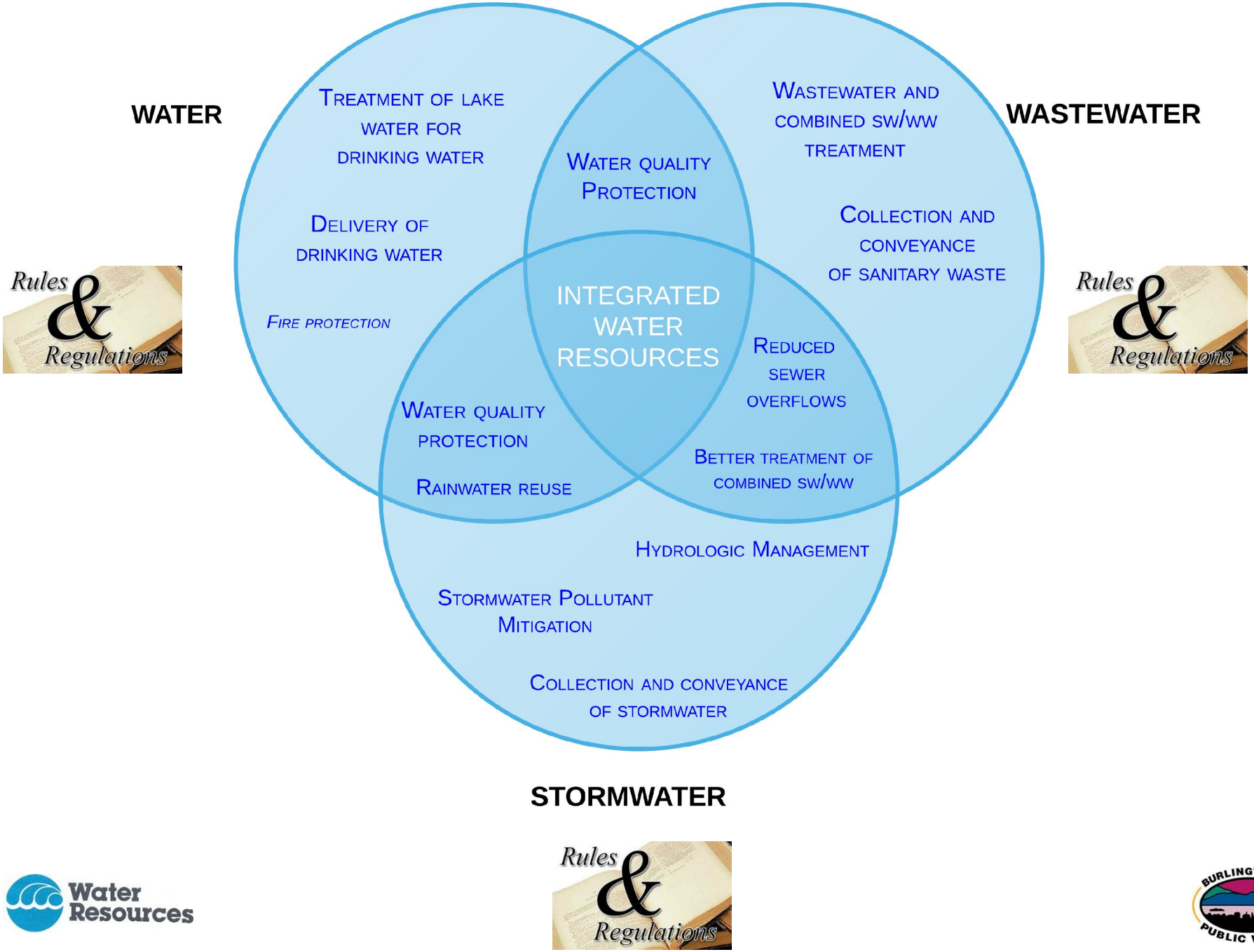
DPW MISSION STATEMENT

- We steward Burlington's infrastructure and environment by delivering efficient, effective and equitable public services.



Water Resources

BURLINGTON, VT PUBLIC WORKS



Water Resources

BURLINGTON, VT PUBLIC WORKS

Water Resources

Providing clean water and fire protection services through

- Water Supply
  - Treatment of water from Lake Champlain for drinking water
  - Distribution of water to homes, businesses and fire hydrants
  - Maintenance of water distribution system including valves, water mains & services, fire hydrants, elevated storage tanks and reservoirs
- Wastewater (Sanitary)
  - Treatment of sewage from homes and business before discharge to the Winooski River and Lake Champlain
  - Treatment of combined stormwater/wastewater to maximum extent practicable before discharge
  - Maintenance of collection system, three treatment plants, 25 pump stations
- Stormwater Management
  - Collection of stormwater runoff in combined and separate storm sewers
  - Regulatory review of increases in impervious surface or earth disturbances to mitigate (Chapter 26)
  - Watershed Planning and Retrofit design to mitigate stormwater runoff volumes and treat pollutants before discharge to waterways

Water Resources

BURLINGTON, VT PUBLIC WORKS

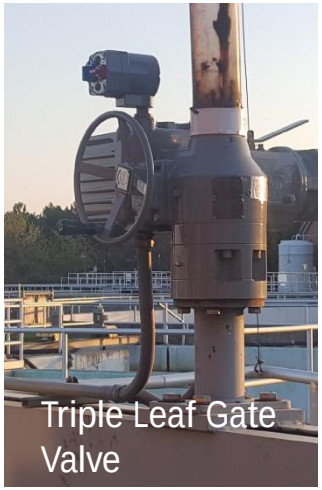
Water Resources, by the Numbers

- 1 water plant and finished water pump house
- 2 pump houses (finished water and reservoir)
- 110 miles of water mains
- 2 Reservoirs (7MG storage)
- 2 Water Towers (UVM 500,000 gallons; Redstone 150,000 gallons)
- 10,000+ water meters
- 900 fire hydrants
- 3 Wastewater Treatment Plants
- 49 miles of sanitary sewer
- 45 miles of combined sanitary / storm sewer
- 37 miles of storm sewer
- 25 pump stations
- 102 storm water outfalls
- 3200 catch basins
- 2 post-closure landfills
- 1 methane powered generating station

Water Resources

FY18 Water Resources Work

New Hydrant in Maple Street Water Capital Reinvesment Project



Triple Leaf Gate Valve

Main Plant Sludge Transfer Pump Replacement

Water Plant Back-Up Blower for Filtration Backwashing System

Stormwater Outfall Capital Planning

Sludge Tanker

King Street Infiltration System

Water Resources

PUBLIC WORKS

High Level FY'19 Budget Goals:

Balance Near Term Operational and Capital Needs with Long Term Capital Needs, Utility Financial Health and Rate Payer Affordability

Near Term Operational and Capital Needs

- Ensure sufficient resources to maintain smooth and safe water, wastewater and stormwater operations and strong regulatory compliance
- Address revenue shortfall discovered during meter billing review and provide sufficient resources to continue improvements to revenue assurance (meter to cash) program
- Continue increased water main capital reinvestment levels to reduce water main breaks, tap water discoloration and unplanned water service disruptions, and support pavement sustainability

Water Resources

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High Level FY'19 Budget Goals:

Balance Near Term Operational and Capital Needs with Long Term Capital Needs, Utility Financial Health and Rate Payer Affordability

Long Term Capital Needs, Financial Health and Rate Payer Affordability

- Meet debt service requirements for existing and future planned Water and Wastewater bonds.

- Maintain neutral or surplus oriented annual budget to support maintenance of O&M days of cash on hand near current levels while addressing UVM repayments

- Balance cash financed (PayGo) capital expenditures with debt financed capital expenditures
  - Maintain sufficient PayGo capital funding to meet immediate needs of Wastewater system (plants, pump stations and sewers) and Stormwater system (outfalls, sewers, coordinated treatment retrofits)
  - Briefly postpone (1-2 years) some Wastewater and Stormwater capital and include these costs as part of upcoming Stormwater and Wastewater borrowing
  - Leverage existing Water Bond authorization for reservoir roof refurbishment ($200K, 20+ asset)

Water Resources

BURLINGTON, VT PUBLIC WORKS

Key Drivers (revenue side)

- Water/Wastewater:
  - Loss of volumetric (usage) revenue in Water and Wastewater due to correction of meter billing issue (offset mildly by positive corrections)
    - Responsible for 55% and 52% of Water and Wastewater Rate increase
- Wastewater:
  - Loss of Hadley Road (South Burlington) customers in December 2018 ($110,000)
    - 22% of rate increase in Wastewater
- Stormwater:
  - Increase of utility revenue in stormwater due to reassessment of measured impervious surface (~$86K)
  - Increase in revenue due to $250K FHWA stormwater grant for outfall repair and $25K "utility support" grant from VTRANS

Water Resources

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Key Drivers (expense side)

- Revenue Assurance Improvement Project
  - Utility Management Consultant Assistance (á W $20K and á WW $20K)
  - Placeholder to implement recommendations of Revenue Assurance Improvements (á $40 K each W and WW)
- Personnel
  - Reallocate more Water Resources Staff Technical Services FTEs to Water and WW (á W $10K, á WW $23K, net neutral with â SW)
  - Add a SW and a WW summer intern/seasonal to Water Resources intern program (á SW and WW $13K)
- Meet SW engineering need with consulting engineer á SW $55K SW
- Safety equipment (á $17K WW, á $10K W)
- Biosolids CSWD contract (á $39K WW)
- Water Debt Service (á W $157K)
  - Interest Payments for $2M Series 2018A bond (May 2018) - $92K
    - Full P+I Load due in FY20 = $157K
  - Estimated Interest Payment for $1.8M anticipated Series 2018B (Fall 2018)- $44K
    - Full P+ I Load due in FY20 = $143K

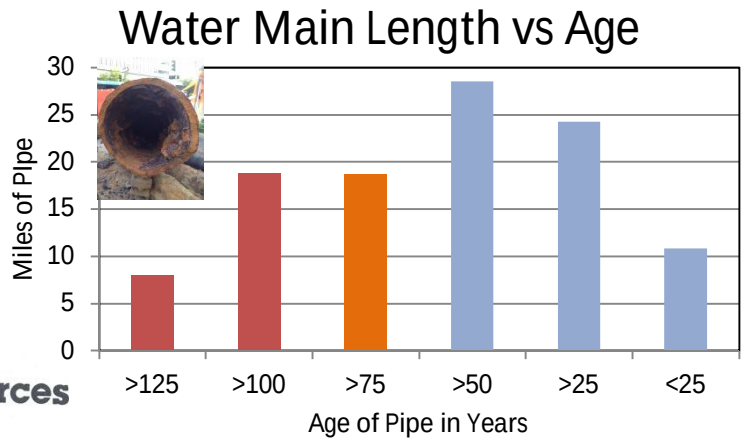
Water Resources

BURLINGTON, VT PUBLIC WORKS

Water Distribution Reinvestment

- Bond – 88% YES
- $2M Series 2018A

Year 2 Streets		
Street	Rehab Work	# of miles
Flynn Avenue - North Main (Pine to Shelburne)	Relining	1.31
Flynn Avenue - South Main (Pine to Shelburne)		
Flynn Avenue - Pine to 255 Flynn Ave		
Charlotte Street		
Hillcrest Drive		
Allen Street		
Maple Street (S. Willard to S. Prospect)		
Church Street (Maple to Adams)	Replace	0.54
Ethan Allen Parkway (N. Ave to Lopes)		
Birch Court		
Cayuga Court Services		



3-1-2018

Water Main Break Rates In the USA and Canada: A Comprehensive Study

Steven Folkman
Utah State University

Findings:

- Break Rates Have Increased 27% in the Past 6 Years
- 82% of Cast Iron Pipes are Over 50 Years Old and are Experiencing a 46% Increase in Break Rates
  - 75% of Burlington's Pipes are Cast Iron!

Water Resources

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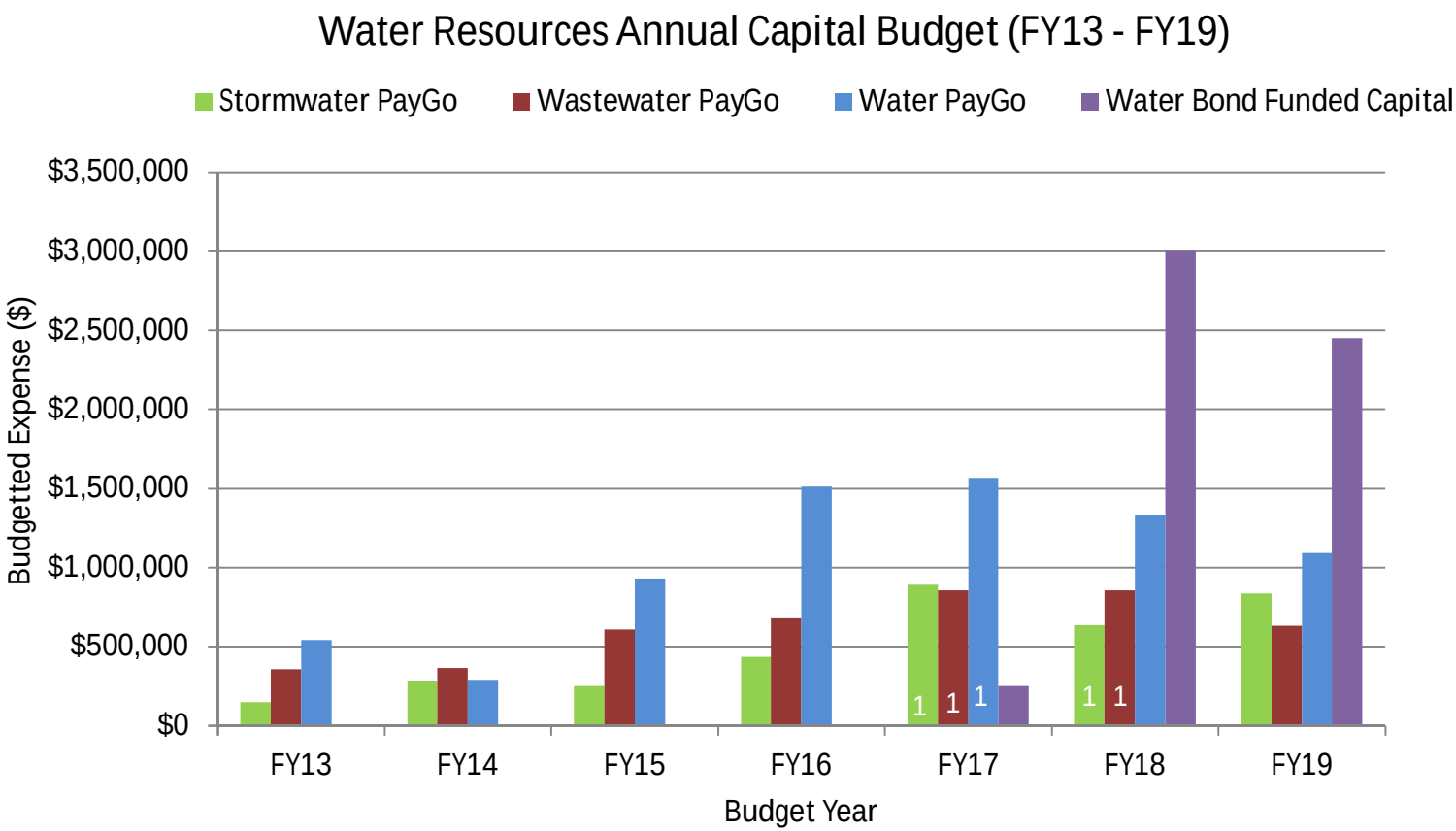
RA12
MM4
MM5

Key Drivers (expense side) cont'd.

- Continued focus on capital improvements



Note 1: Included use of cash reserve

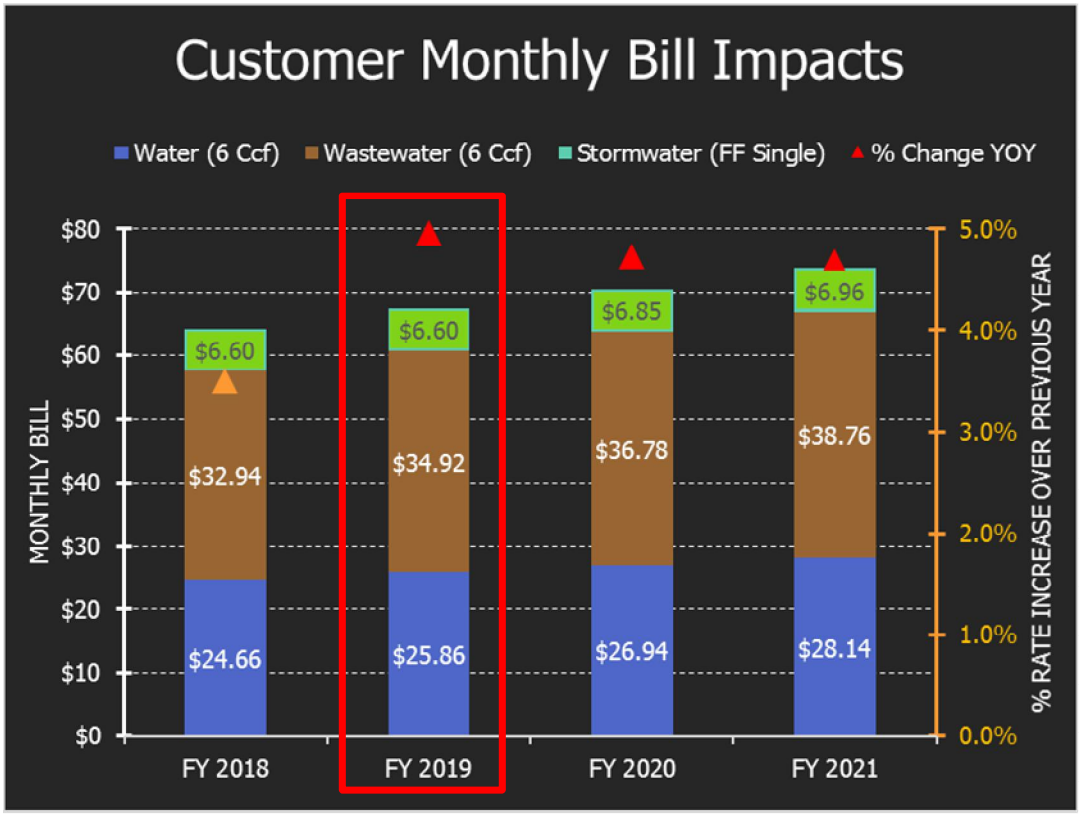
Water Resources

BURLINGTON, VT PUBLIC WORKS

Slide 12

BA12	Does this "1" belong on the bond-funded piece? Beth Anderson, 5/13/2018
MM4	No Megan Moir, 5/15/2018
MM5	Correcetd Megan Moir, 5/15/2018

Proposed FY19 Water Resources Rates



Average Customer Impacts

- FY19 Total monthly bill = $67.38
- Bill increases over FY18
  - $3.18/month
  - $38.16/year

Note: Bill amounts do not include 3.5% Franchise Fee collected on Utility charges per City Charter.

- Monthly bill based on single family home with average water usage (600 cf or 4500 gallons per month)
- 4.95% increase on overall Water Resources bill due to necessary rate increases in Water and Wastewater
  - Some commercial customers may see an increase or decrease in their stormwater bill due to impervious reassessment, <u>not</u> due to any increase in the stormwater rate.

Water Resources

Water Resources Proposed FY'19 Budgets:

Stormwater				
	FY 17 Budget	FY18 Budget	FY19 Budget	Change from FY18
Revenues	$1,595,751	$1,584,222	$1,945,581	$361,359
Expenses	$1,844,638	$1,605,638	$1,934,471	$328,932
Net to Reserve	($248,887)	($21,416)	$11,110	
Wastewater				
	FY 17 Budget	FY 18 Budget	FY19 Budget	Change from FY18
Revenues	$7,889,750	$7,825,160	$7,931,697	$106,537
Expenses	$8,062,168	$8,040,988	$7,926,265	($114,723)
Net to Reserve	($172,418)	($215,828)	$5,432	
Water				
	FY 17 Budget	FY 18 Budget	FY19 Budget	Change from FY 19
Revenues	$6,509,265	$6,678,702	$6,912,914	$234,212
Expenses	$7,027,297	$6,684,661	$6,880,223	$195,562
Net to Reserve	($136,194)	($5,959)	$32,691	

Fund	Estimated Cash at FY18 End*	Estimated Cash at FY19 End**	O&M Days Cash on Hand at FY19 End
Stormwater	$ 290,558	$ 301,669	108
Wastewater	$1,524,661	$ 1,367,391	84
Water	$2,178,899	$ 2,102,840	143

Estimates based on Auditors calculation of available cash (most conservative)

Notes:

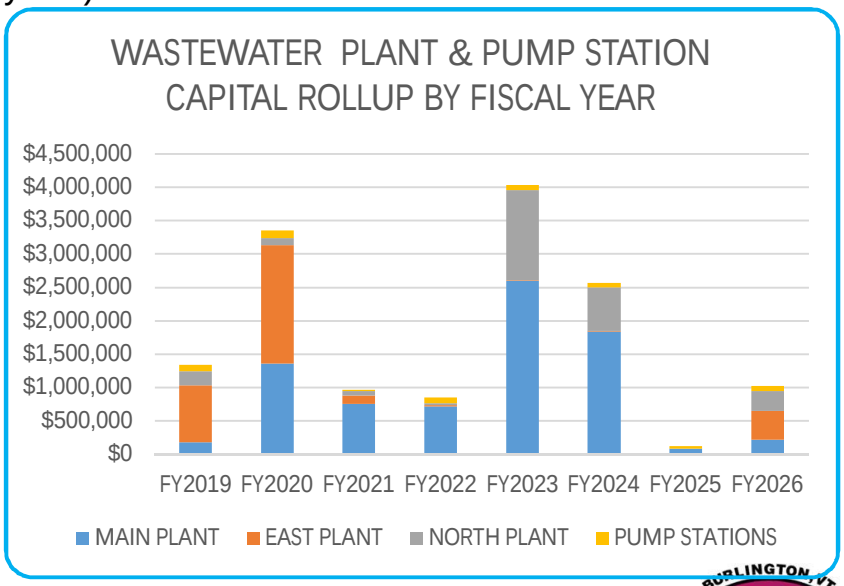
*Includes estimate of impact of net usage decrease due to billing configuration errors

** Includes estimated repayment of overbilling

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)



Water Resources

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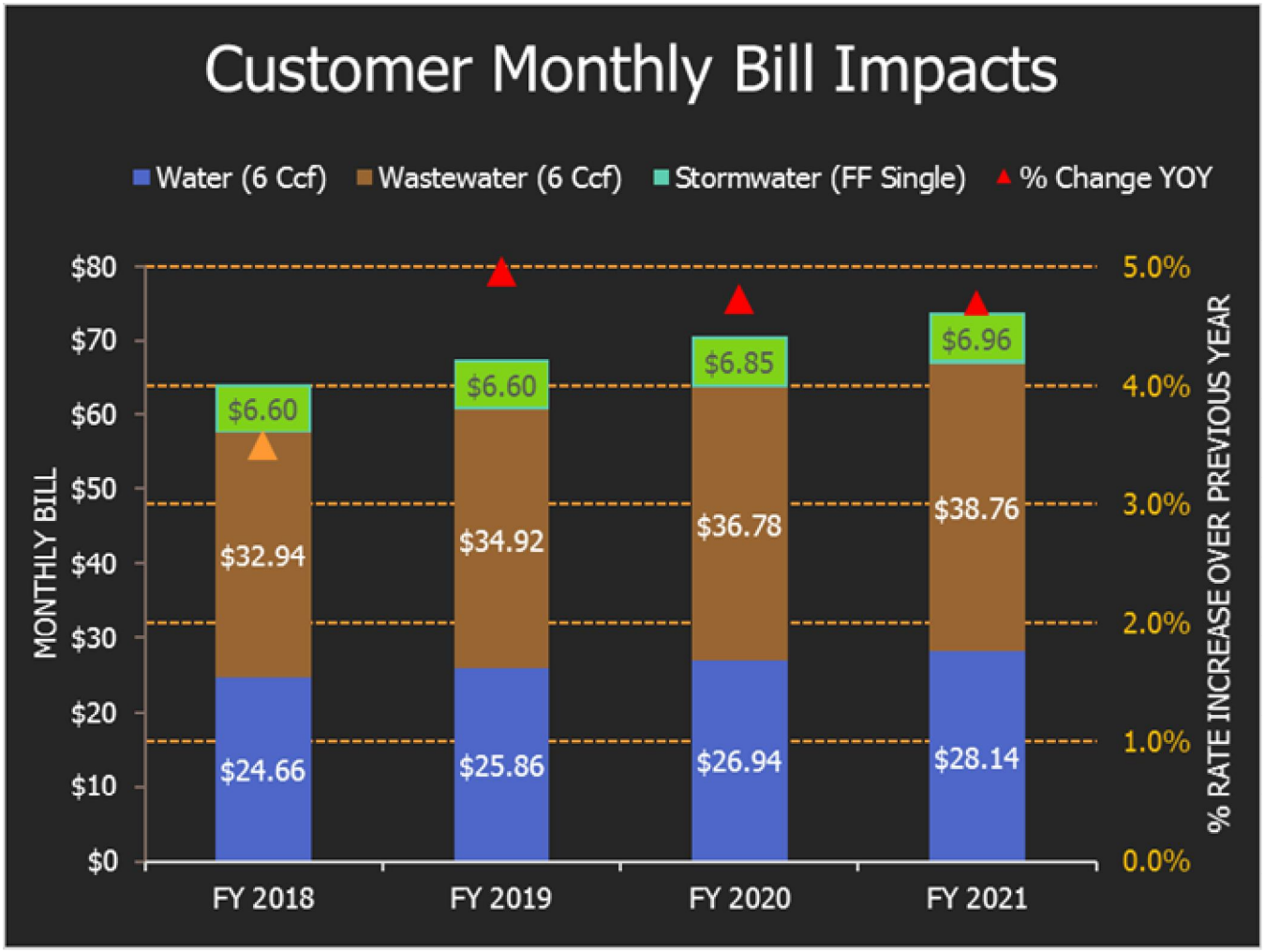
Looking ahead to Rate Impacts in FY 20 and 21

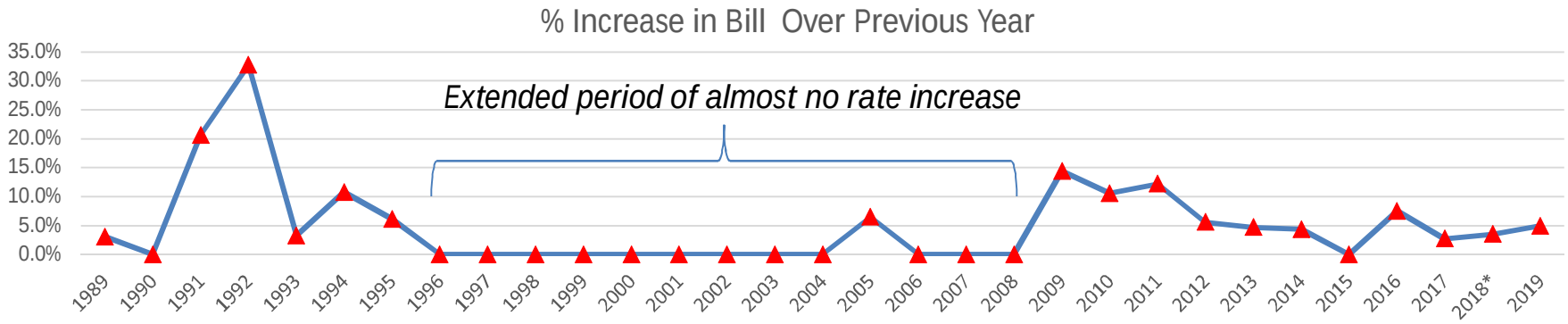
Challenges

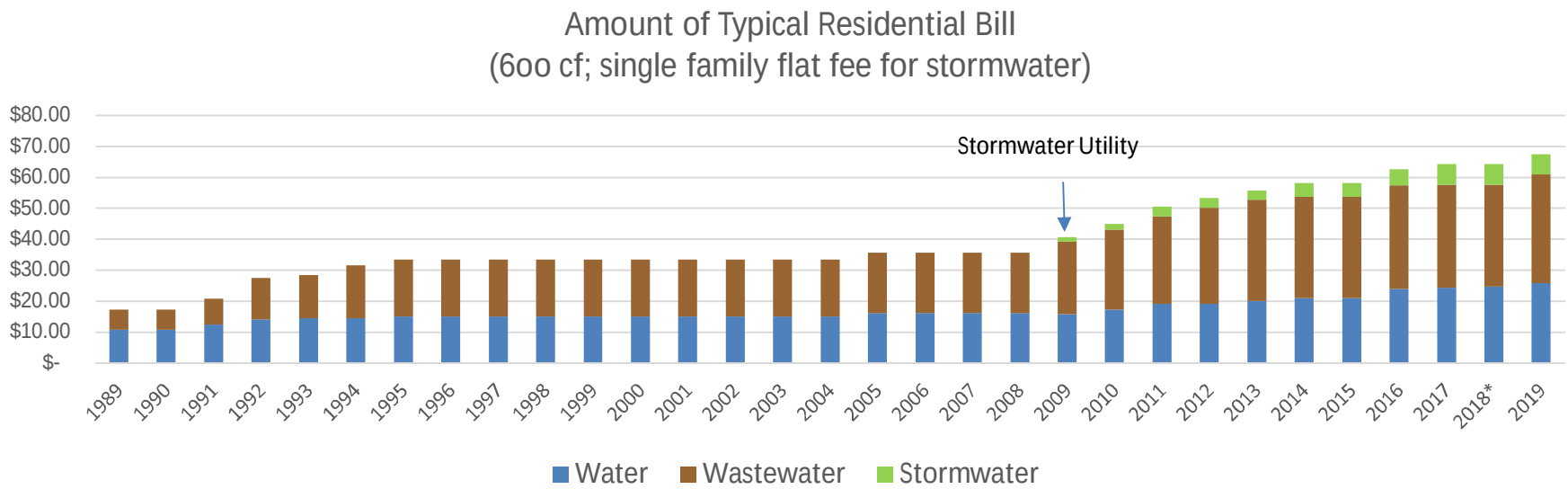


- Projecting possible 4-5% rate increases in FY20 and FY21

Water Resources

Burlington Water Resources Rates since 1989





In a 2013 study, Michigan State University Institute of Public Utilities calculated that the average annual percent change (2003 – 2013) in CPI for water/sewer was 5.5%

Water Resources

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Looking ahead to FY 20 and beyond

Opportunities

- Revenue Income Changes in Customer Base and usage
  - Revenue base for W, WW and SW likely to go up FY20 – FY22 (usage models are conservative) and temper conservation trends and loss of revenue
  - Revenue Assurance Program improvements
    - Possible modest initial investments à robust, accurate, increased revenue streams

- Financial Planning:
  - Continue examining alternative rate structures which may reduce impact on residential customer
  - Explore opportunities for full cost recovery (i.e. standby charge for fire services, wastewater surcharges etc.)
  - Focus financial planning efforts on balancing PayGo capital with Debt Financed Capital
    - Financing Plan for additional Water and new Wastewater and Stormwater Capital
  - Strive for predictable and modest increases vs. wide variability of rate increases

- Financial Capability Assessment (as part of Integrated Planning)
  - Inform compliance schedules for Lake Champlain TMDL
  - Inform need to develop income sensitive assistance programs

- Asset Management Investment
  - Continuing asset management planning
  - Waiting for General Fund to complete asset management assessment currently underway

Water Resources

BURLINGTON, VT PUBLIC WORKS

Summary

- Request approval of FY 19 rates

	FY2019					
Utility	Proposed FY19 Rate	Monthly Increase for Home Owner	Monthly Cost for the Average Home Owner	Annual Increase for Home Owner	Annual Cost for the Average Home Owner	% Increase
Stormwater	$6.60 per month for single family homes/ $2.47 per ISU	$0.00	$6.60	$0.00	$79.20	
Wastewater	$5.82 per 100 cubic feet	$1.98	$34.92	$23.76	$419.04	
Water	$4.31 per 100 cubic feet	$1.20	$25.86	$14.40	$310.32	
Total Utility		$3.18	$67.38	$38.16	$808.56	4.95%

Does not include 3.5% franchise fee surcharge assessed on bill total per City Charter

- Stormwater $2.47/ISU (no change from FY18)
- Wastewater $5.82/100 cf
- Water $4.31/100 cf

Water Resources

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Questions ?

Water Resources

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SUPPLEMENTARY INFORMATION

National Context of Water Resources Utility Rates

Water Resources

National Context: We Are "Normal"

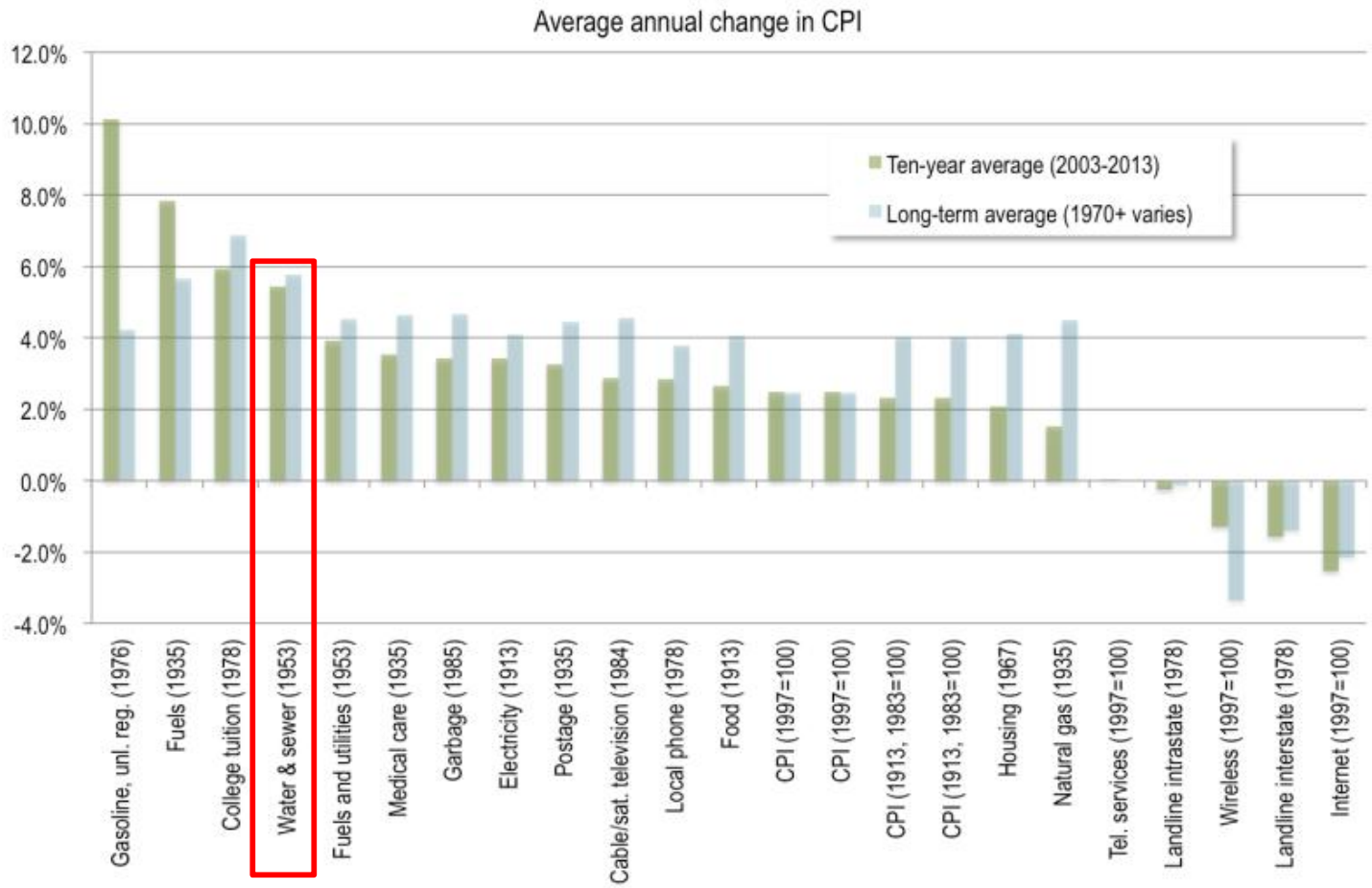

Exhibit 6. Average percentage change in the Consumer Price Index (CPI) for utilities and other major household expenditures: long-term and 2003-2013. The long-term average is based on the available data. Year (*) indicates start of series.

https://www.financingsustainablewater.org/sites/www.financingsustainablewater.org/files/resource_pdfs/IPU_MSU_Consumer%20Price%20Index%20for%20Utilities%202013%20%282014%29.pdf

National Context: We Are "Normal"

- http://www.circleofblue.org/2017/water-management/pricing/price-water-2017-four-percent-increase-30-large-u-s-cities/
  - *2016 National Survey (of Larger Systems) "The average cost of residential drinking water service for a family of four using 100 gallons per person per day rose 4 percent last year [2016], according to Circle of Blue's annual survey of 30 large U.S. cities. It was the smallest increase since the survey began in 2010."* [Ranging from 4-9% since 2010]

- Economies of Scale are VERY important https://www.awwa.org/publications/connections/connections-story/articleid/4575/water-rates-revealed-for-small-medium-large-utilities.aspx
  - Small Utilities like Burlington(< 20MGD water sold/Wastewater Treated) typically:
    - "had the highest water rates when compared to large and medium-sized utilities."
    - More density (vertical) = more water users = more water usage = larger user base to spread cost over (cost per user goes down); more water usage does not immediately equate to more pipes, more Plant personnel etc. (Our water plant in particular and our WWTPs could technically produce/treat more water)

Water Resources

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