Sustainable Rate Structure Analysis: Advisory Meeting #4

March 29, 2023

NYC Environmental Protection

Rate Structure Options

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Agenda

1. SRSA Schedule Update
2. SRSA Objectives
3. Current Rate Structure
4. Review of Rate Options
5. Next Steps

SRSA Schedule Update

- 2020 - Project Kickoff
- 2020 – 2023
  - Task 2: Data Collection and Benchmarking
  - Task 3: Revenue Requirements Analysis
  - Task 4: Rate Structure Options Analysis
- Upcoming:
  - Task 5: Implementation Options and Customer Impacts Analysis
  - Draft Analysis expected by end of 2023

SRSA Objectives

SRSA will **provide recommendations and implementation options** for DEP to achieve a more predictable, equitable, and sustainable revenue stream.

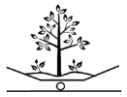
Balance competing needs including State of Good Repair, Level of Service, climate resiliency, conservation, and green infrastructure

Promote equity and customer affordability among customer classes based on characteristics of service and demographic indices

Promote rate and revenue stability

Achieve a reasonable correlation between cost of service and usage

Achieve compatibility with DEP's billing system (ease of implementation from a billing and customer service perspective, plus flexible ongoing maintenance)



Promote stormwater management and education

Current Rate Structure

- DEP's current rate structure is used to fund water, sewer, and stormwater services.
- Rates are evaluated annually and adjusted as required to meet increasing cost of providing utility service.

Utility	Current Rates*
Water	$4.30 per 100 cubic feet (CCF)
Sewer	159% of water charge
Stormwater	Covered in sewer charges

* Rates shown apply to Meter-Billed customers. Customers with use below minimum pay $0.49 / day.
Multi-family Conservation Program (MCP) and City Charge customers are under fixed rate structure (i.e., not metered).
New rates will be effective 7/1/23

Rate Options

1. **Affordability Rate Option: Lifeline Rate**
   - Discounted rate for essential volumes of water

2. **Fixed Charge**
   - Monthly charge based on meter size regardless of usage

3. **Stormwater Charge + Credit Program**
   - Properties are charged based on impervious area (contribution to stormwater system)

4. **Development Investment Charge**
   - One-time charge on initial or upsizing connection to system

5. **Combinations of Above Options**
   - Hybrid rate structure to best meet rate study objectives

Lifeline Rate Analysis

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DRAFT FOR DISCUSSION PURPOSES

Lifeline Rate Overview

What are Lifeline Rates?

- A rate structure that provides an initial “lifeline” quantity of water and sewer service at a reduced rate
- Water used beyond initial volume is charged at higher rate

How would they be determined and implemented?

- Lifeline volume based on essential indoor water needs
- Each account would receive discounted rates for the essential needs

What are the potential benefits?

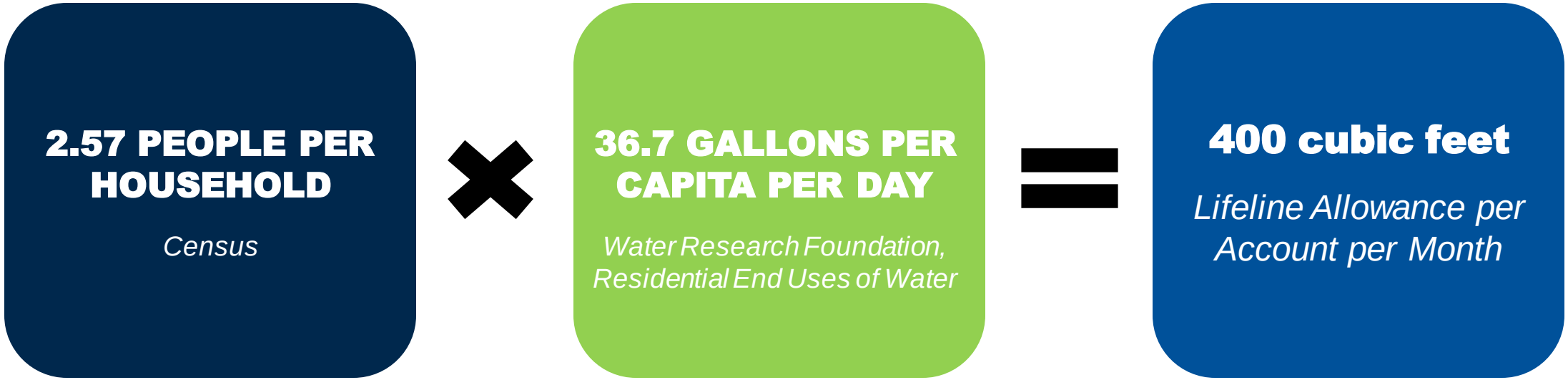
- The discounted rates reduces the cost-burden for essential water
- Usage beyond necessary amounts will incur a higher cost, discouraging excessive consumption

What are the potential downsides?

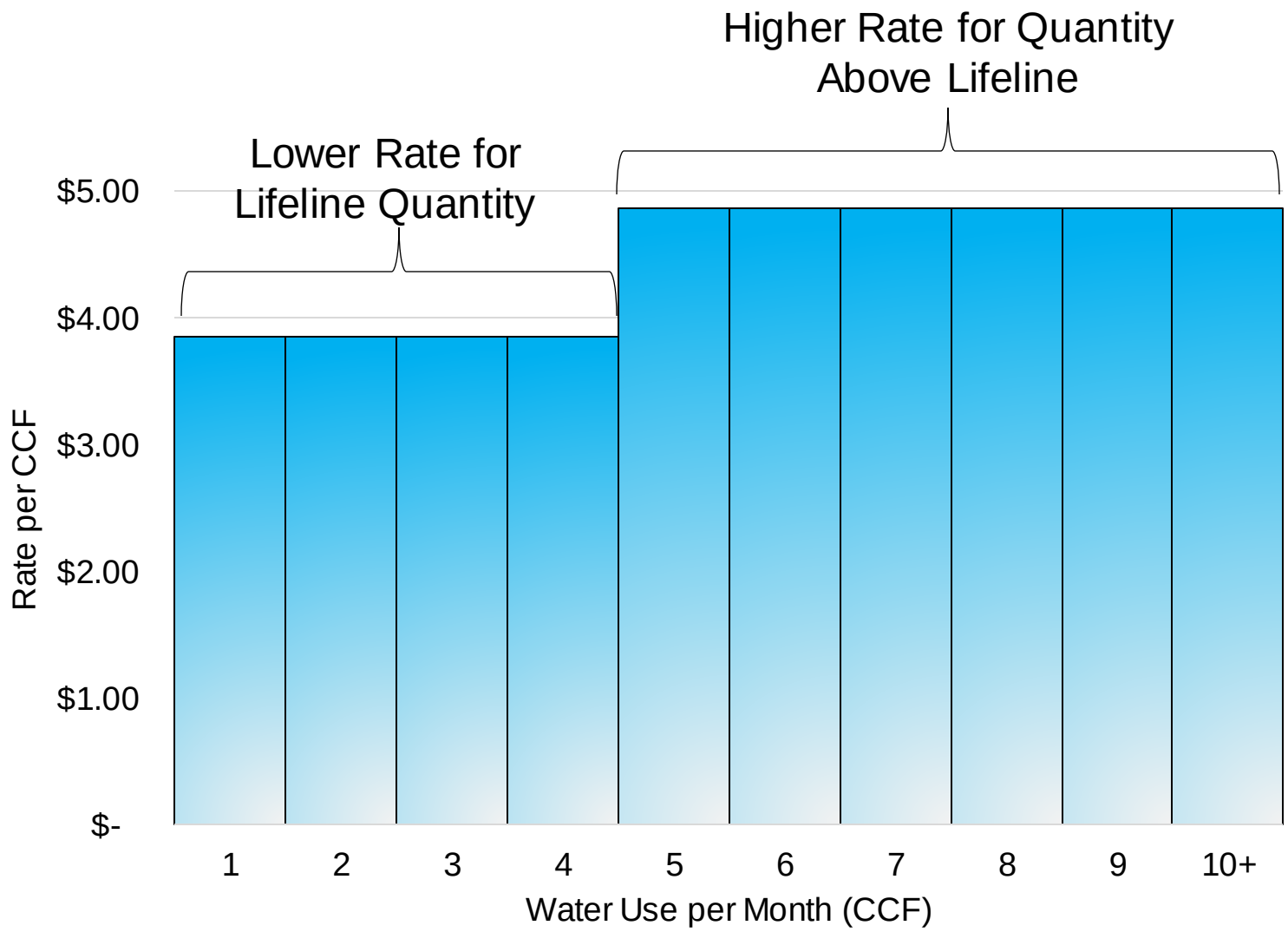
- Given available data, primarily benefits single family (offered on a per account basis rather than a per unit basis)

Lifeline Rate Calculation

- To model a lifeline structure it is necessary to determine **how much** water is provided at the "lifeline" rate
- This quantity is based on **typical indoor needs**: water for cooking, cleaning, and personal hygiene
- Analysis determined lifeline volume of **4 CCF or ~3,000 gallons per month**



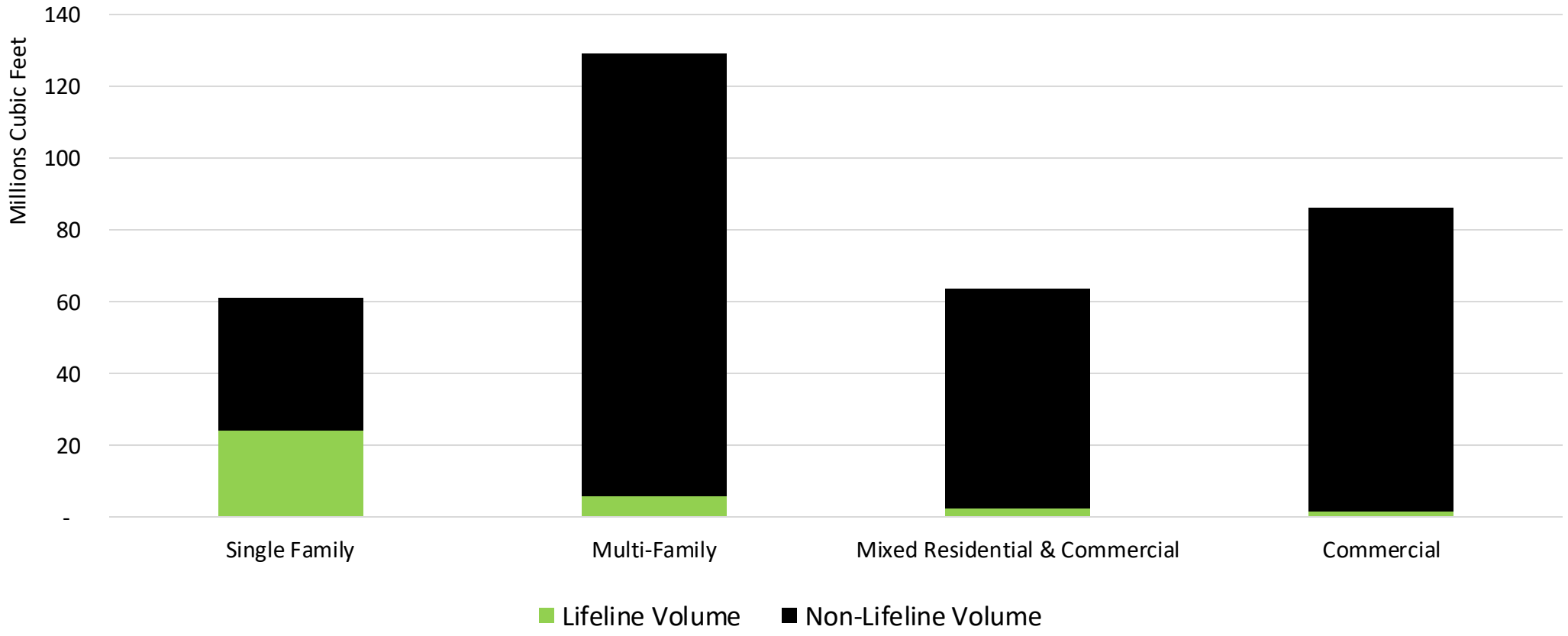
Lifeline Rate Example*



**Shown for illustrative purposes only, lifeline structure still being developed*

Lifeline Tier Volumes by Class

- Lifeline tier applied per account due to data limitations (number of multi-family units is not linked to accounts)
- Single family has more volume billed at lifeline tier, lowering the bill of low-volume single family customers



Lifeline Rate Comparison

Comparative analysis portion of study revealed that lifeline rates have been effective means of addressing customer affordability within other cities.

	DC Water	San Francisco	Detroit
Customers Applied	Single Family	Residential	All
Lifeline Tier Volume	4 CCF	4 CCF	6 CCF
Lifeline Rate (per CCF)	$3.63	$9.60	$2.50
Uniform Volumetric Rate (per CCF)	$4.74	$10.71	$4.49

Fixed Charge Analysis

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Fixed Charge Overview

What are fixed charges?

- Charges that are collected regardless of metered water use
- Reflect that fact that DEP must maintain facilities and be prepared to provide service (readiness-to-serve)
- Can apply to both water and wastewater

How would they be determined and implemented?

- Set to recover portion of fixed costs: administrative and readiness-to-serve
- Typically scaled by meter size to reflect potential demand on systems (i.e., larger the meter size the higher the fixed fee)
- Would replace the fixed charge for low-volume users currently implemented by DEP

What are the potential benefits?

- Provide a fixed revenue stream to the utility (revenue stability)
- Provide dedicated funds / can be set to provide funds for system reinvestment

What are potential downsides?

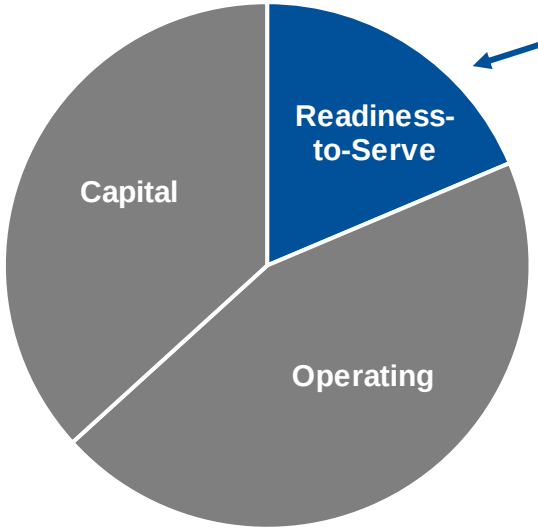
- Can impact customer affordability as more of utility bill is fixed

Fixed Charge Calculation

To develop fixed charge it is necessary to determine the cost to be recovered in the charges

Basis for Water & Wastewater Readiness-to-Serve Costs:

- Readiness-to-serve calculated as water supply and treatment plus wastewater treatment debt service
- Represents fixed cost associated with availability of service
- DEP incurs cost regardless of customer usage levels



Full **potential** costs to be recovered in fixed charge

Total Utility Costs

Fixed Charge Methodology

- Meter size data is available and would allow fixed charges to scale based on customers' potential use of the system
  - DEP's latest meter technology data will support scaling of fixed charges

Meter Size	Scaling
5/8" & 3/4"	1.00
1"	1.67
1 ½"	3.33
2"	7.33
3"	18.33
4"	29.33
6"	46.67
8"	116.67
10"	183.33

- Current fixed charge revenues would be adapted as follows:
  - Remove minimum charge
  - Maintain City Charge rate structure (based on estimated volume)
  - Maintain MCP rate structure

Fixed Charge Example

DEP has flexibility to determine amount of the readiness-to-serve (RTS) costs that could be recovered in the fixed charge

Meter Size	Partially Funding RTS*	Fully Funding RTS
5/8 x 3/4"	$12	$50
1"	$20	$83
1 1/2"	$41	$167
2"	$90	$367
3"	$225	$917
4"	$360	$1,466
6"	$572	$2,333
8"	$1,430	$5,833
10”	$2,247	$9,166

Single Family

*~24% of full RTS revenue requirement.

Fixed Charge Comparison – 3/4” Meter

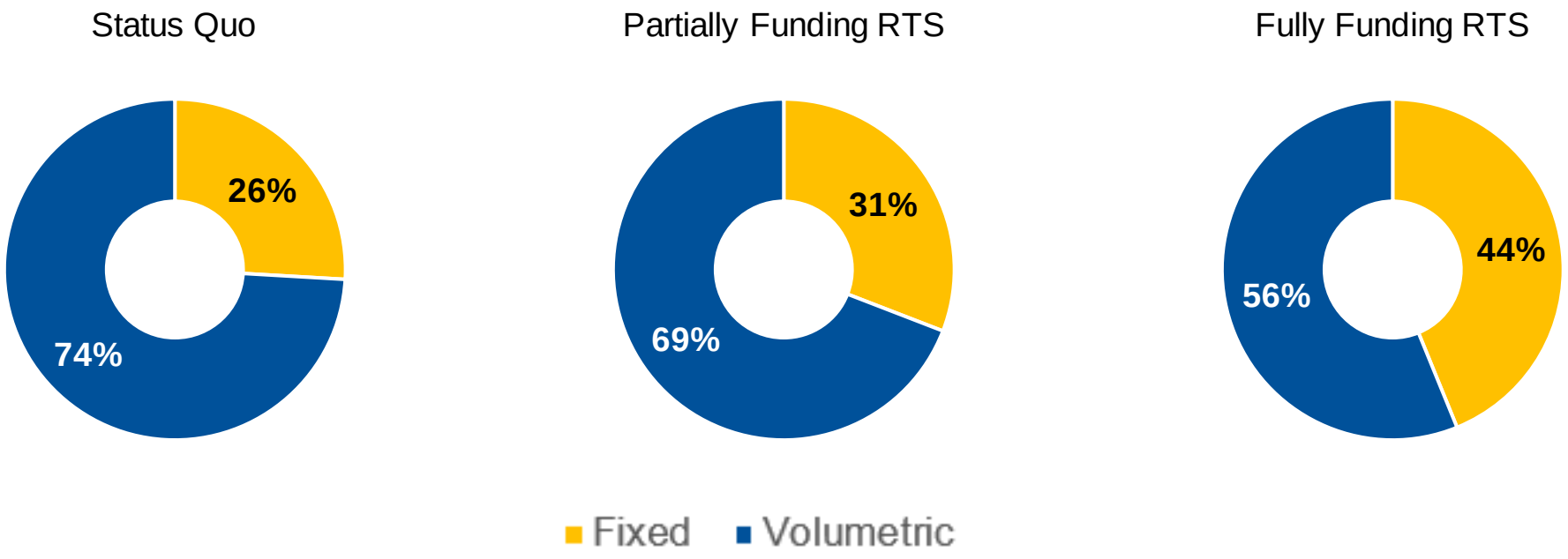
Comparative analysis portion of study revealed fixed charges are very common among the comparison utilities with meter size typically used to scale the charges.

	Water Fixed Charge	Sewer Fixed Charge	Total	Method of Assessing
Tampa	$3.00	$3.00	$6.00	Meter Size
DC Water	$8.78	$2.48	$11.26	Meter Size
Philadelphia	$5.21	$7.01	$12.22	Meter Size
Atlanta	$6.56	$6.56	$13.12	Flat Fee
San Francisco	$14.19	$3.60	$17.79	Meter Size
Houston	$5.74	$12.19	$17.93	Meter Size
Seattle	$18.45	-	$18.45	N/A
Ft. Lauderdale	$7.01	$12.12	$19.13	Meter Size
Baltimore	$13.87	$11.96	$25.83	Meter Size
Ithaca	$37.44*	$23.20*	$60.64	Meter Size

**Includes 4 CCF*

Fixed Charges Provide Revenue Stability

- Fixed charge results in more revenue stability and less need for rate increases due to ongoing water conservation
- The larger the fixed charge the more revenue stability provided



Stormwater Charge Analysis

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Stormwater Charge & Credit Program Overview

What are stormwater charges and credits?

- Charges that are intended to recover all or portion of the cost of providing stormwater management (currently recovered in sewer rates)
- Credits are ongoing reductions in stormwater charges for onsite stormwater management

How would they be determined and implemented?

- Stormwater charges are typically assessed based on the amount of impervious area on a parcel
- Administered via online portal to handle credits & disputes

What are the potential benefits?

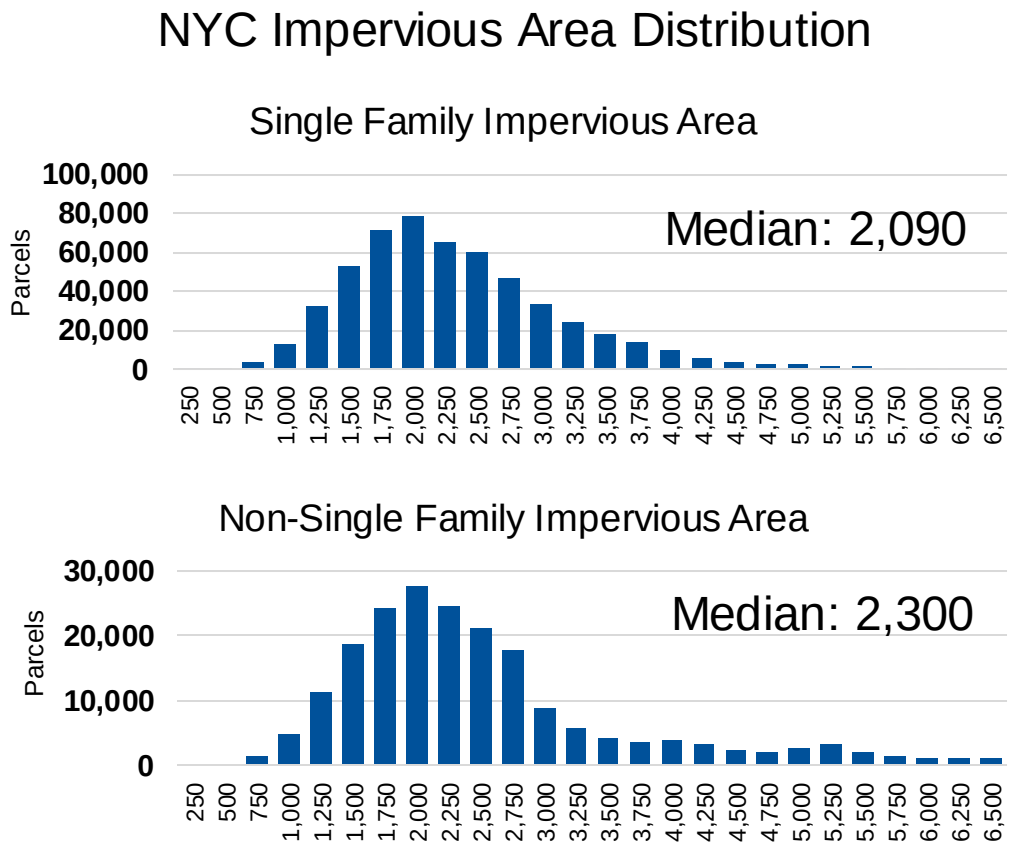
- Provides additional stable funding for stormwater system with rates proportional to use of system
- Promotes stormwater management and education

What are the potential downsides?

- More administratively challenging; need for customer outreach and understanding

NYC Impervious Area Data

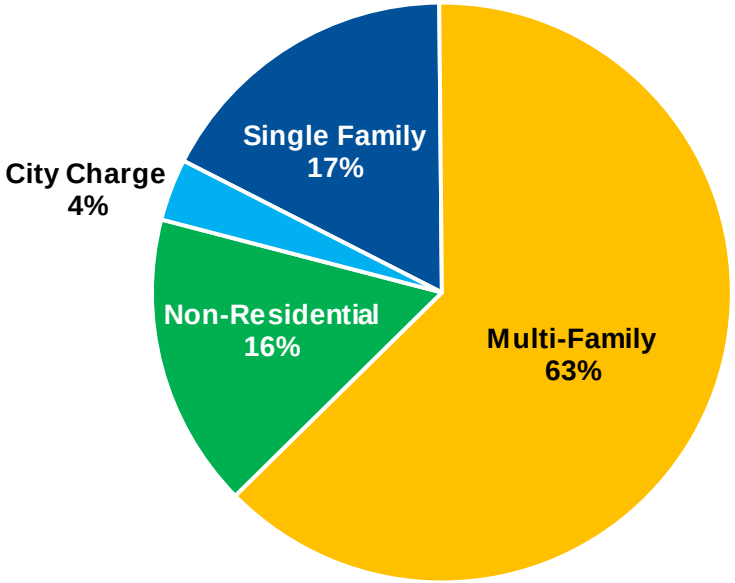
- Impervious area analysis completed in 2020 for all parcels
- Data is available on OpenData
- City-wide impervious area data allows for parcels to be billed for stormwater <u>proportionally</u> based on contribution to runoff



Stormwater Cost Recovery

Current Stormwater Funding

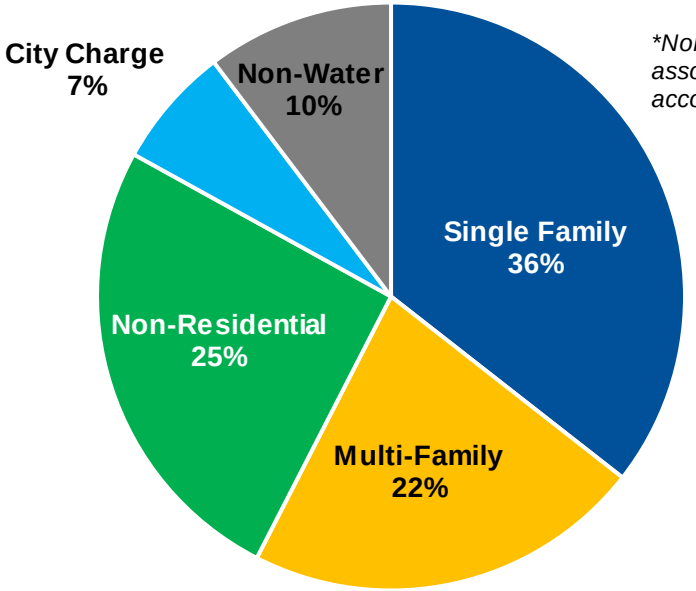
Water Use by Customer Type



Stormwater costs are **currently** funded from sewer rates, assessed based on metered volume.

Stormwater System Contribution

Impervious Area by Customer Type



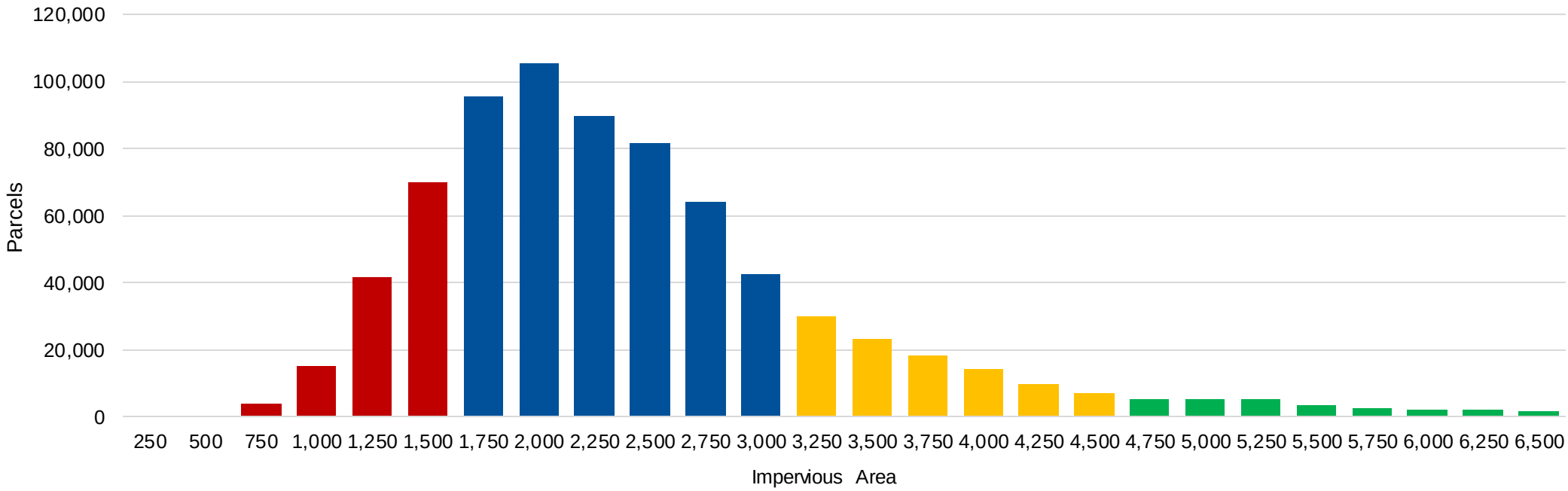
**Non-Water reflects parcels not associated with an existing utility account.*

Stormwater costs assessed based on impervious area and **proportional** to contributions to system.

Example Stormwater Charge Methodology

Example stormwater charge structure

- Bill parcels in 3 tiers based on impervious area to reduce administrative burden
- Bill large parcels based on measured area



Tier 1:
128,000 parcels (16%)
0.6 ERUs

Tier 2:
480,000 parcels (61%)
1.0 ERUs

Tier 3:
104,000 parcels (13%)
1.7 ERUs

Measured
77,000 parcels (10%)
1.0 x ERU equivalents

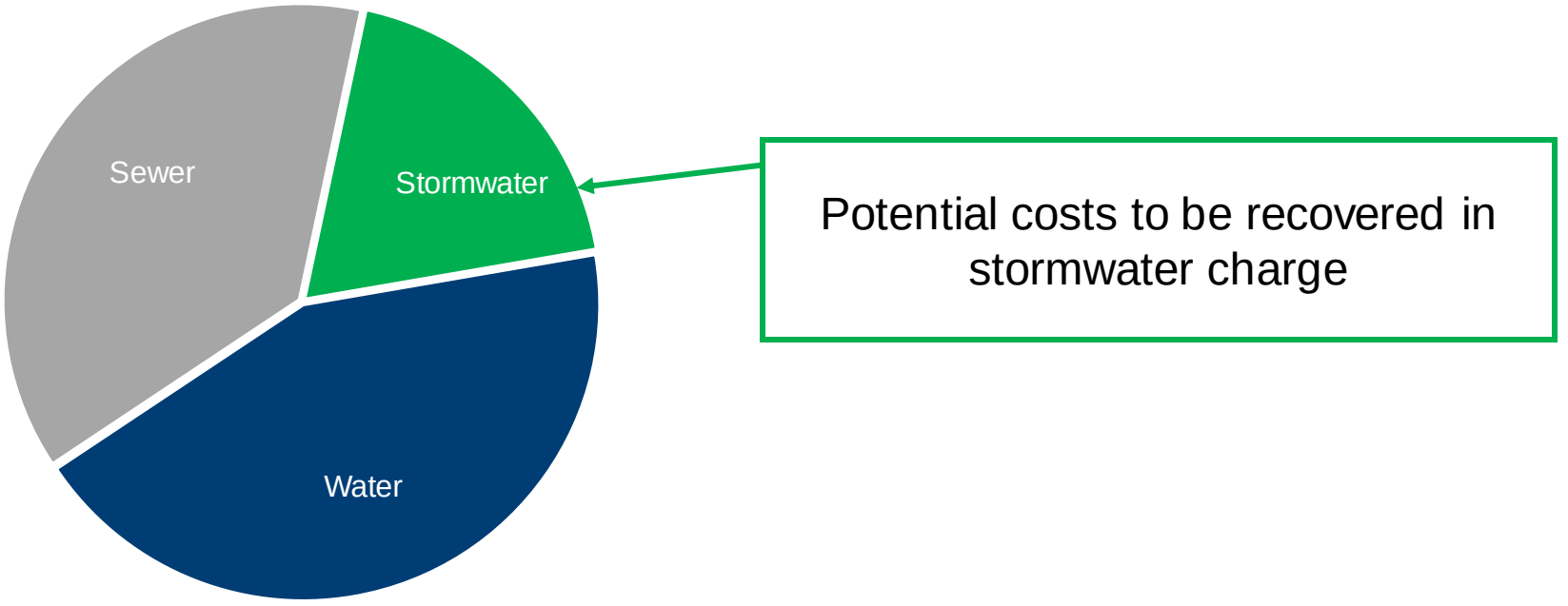
ERU = Equivalent Residential Unit, billing unit for stormwater charge

Stormwater Charge Calculation

To develop stormwater charge it is necessary to determine the cost to be recovered in the charge

Basis for Stormwater Costs:

- Portion of wastewater treatment operating & capital costs
- Portion of combined sewer + storm sewer operating & capital costs
- Green infrastructure and long-term control plan costs included in 10-year CIP



Total Costs by Service

Stormwater Charge Example

- DEP has flexibility to determine amount of the stormwater costs that could be recovered in the stormwater charge

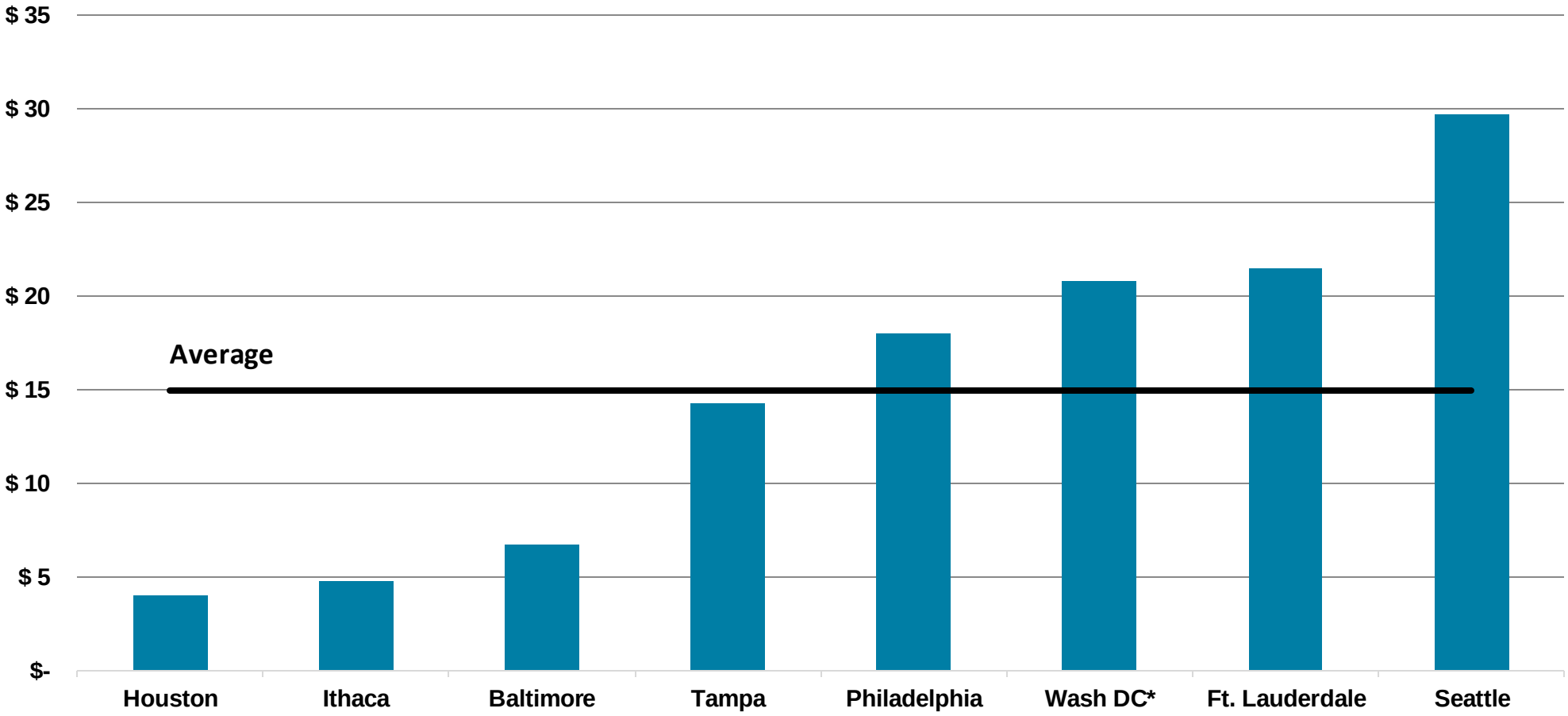
- Example range of stormwater charges provided for illustration purposes

Billing Tier	Tier Range (sq. ft.)	Percentage of Parcels	Partially Funding Stormwater*	Fully Funding Stormwater
Tier 1	0 - 1,500	16%	$7	$32
Tier 2	1,501 - 3,000	61%	$12	$53
Tier 3	3,001 - 4,500	13%	$20	$90
Measured	> 4,500	10%	$6 per 1,000 sq. ft.	$25 per 1,000 sq. ft.

*~23% of full stormwater revenue requirement.

Stormwater Charge Comparison

Based on defined typical single-family residential property for each community



Notes:
*Include DC stormwater charge and clean rivers impervious area charge (CRIAC)

Development Investment Charges

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Development Investment Charge Overview

What are development investment charges?

- One-time charge that is assessed to new customer joining the water and/or sewer system to recover portion of cost of capital investments required to serve
- Also often applied to redevelopment that requires an increase in capacity within the utility system

How would they be determined and implemented?

- Investment charges are typically based on the cost of historical capital investments
- Charges are often assessed based on the size of customer connection (i.e., meter size)

What are the potential benefits?

- Charges provide alignment with cost of service ("growth pays for growth")
- Can provide additional funds to meet capital needs of the system

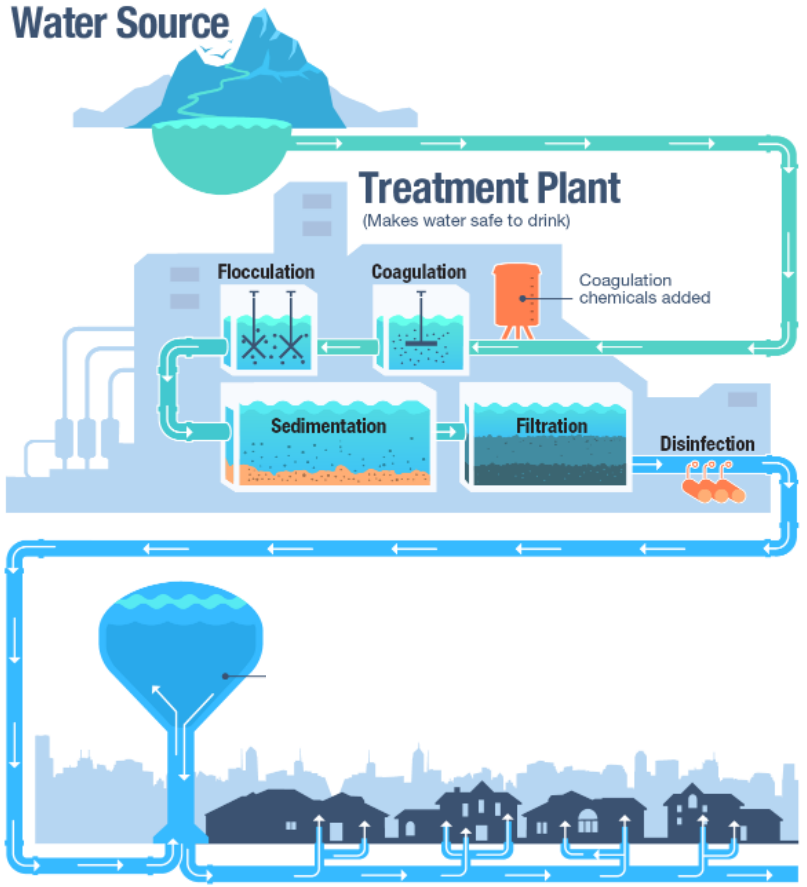
What are the potential disadvantages?

- Potential for increased costs for new development

Development Investment Charge Approach

New Charge: Buy-In Infrastructure Charge

Standardize Approach: Local Facility Charge



*Source: CDC.gov

Developer Investment Charge Comparison

Utility	Buy-In Infrastructure Water Charge*	Buy-In Infrastructure Sewer Charge*
Atlanta	-	-
Baltimore	-	-
DC Water	$1,135	$2,809
Ft. Lauderdale	$1,977	$1,888
Houston	$1,618	$1,199
Ithaca	-	-
Philadelphia	-	-
San Francisco	$2,066	$5,196
Seattle	$1,700	$13,050**
Tampa	$1,713	$1,796

**Charges shown for base connection / defined as 5/8" or 3/4" metered connection*
***King County total capacity charge (assessed monthly over a 15-year period)*

Next Steps

1) Model 3- and 5-year phasing plans
2) Stormwater credit and customer affordability programs
3) Evaluate detailed customer impacts
4) Evaluate against SRSA objectives