



WTD Capacity Charge Rate Structure Study

Presented to:

Metropolitan Water Pollution Abatement Advisory Committee

June 26 2019

Background

- Current capacity charge allocation to different building types in place since 1990
- Rate Structure Study evaluates how the capacity charge is allocated to *newly connecting structures*

Rate Structure Study Goals

- Accuracy: best reflection of wastewater consumption for each type of building
- Administrative feasibility: availability of necessary information when the structure connects to sewer

Current Capacity Charge Rate Structure

<u>Building Type</u>	<u>Residential Customer Equivalent (RCE)</u>
Single Detached Dwelling Unit	1 RCE per unit
Multi-family building (2-4 units)	0.8 RCE per unit
Multi-family building (5 or more units)	0.64 RCE per unit
Interim classification: Attached and Detached Accessory Dwelling Unit (ADU)	0.6 RCE per unit
Special Designations: Senior citizen, low income, special purpose housing	0.32 RCE per dwelling unit
Micro-housing, group housing, dorms, homeless shelters	RCEs based on number and type of plumbing fixtures
Commercial and industrial property	RCEs based on number and type of plumbing fixtures

Study Approach

- Consultant support for quantitative study and survey
- MWPAAC Work Group to provide recommendation to the WTD Director
- Literature review and survey of metrics and methods

Quantitative Results

- Local area data analysis of water consumption (2006-2015)
- Review of assessor data
- Characteristics of the data tested included: bedrooms, bathrooms, lot size, number of units, building stories, square footage (average living space per unit), water meter size
- Survey of 15 agencies regarding options for a revised rate structure

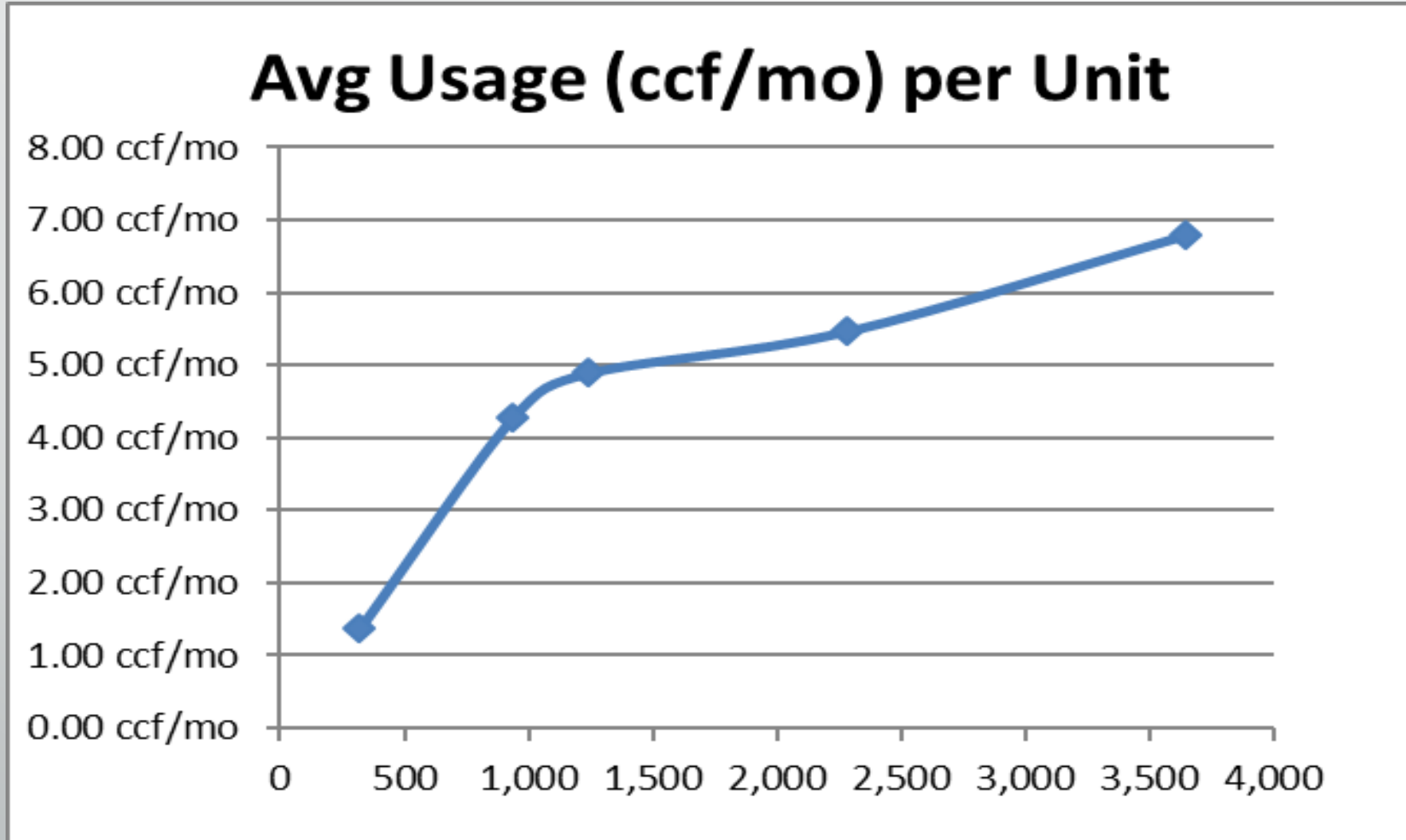
Residential Options Analyzed

- Status Quo with updated equivalence factors (e.g., estimated water usage for fixtures based on Universal Plumbing Code, average persons per household, etc.)
 - Multifamily grouped by number of units
 - Single Detached Dwelling units (i.e., single family residences) into one class
- Option 2a: Multifamily as one class
 - Multifamily grouped into one class
 - Single Detached Dwelling units grouped into large, medium, and small based on square footage
- Option 2b: Segment Multifamily
 - Multifamily grouped by into large, medium, and small classes
 - Single Detached Dwelling units grouped into large, medium, and small based on square footage

Pros and Cons of Residential RCE-style Options

Option	Pro	Con
Updated Status Quo Approach	Mostly uses existing administrative structure	New emerging structure types
		Requires updating of equivalencies
Option 2a--Segment Single Detached Dwelling Units	Reduces disparity of demand in class	New data needed on square footage range to define classes
Option 2b--Segment multifamily	Reduces disparity of demand in class	New emerging structure types

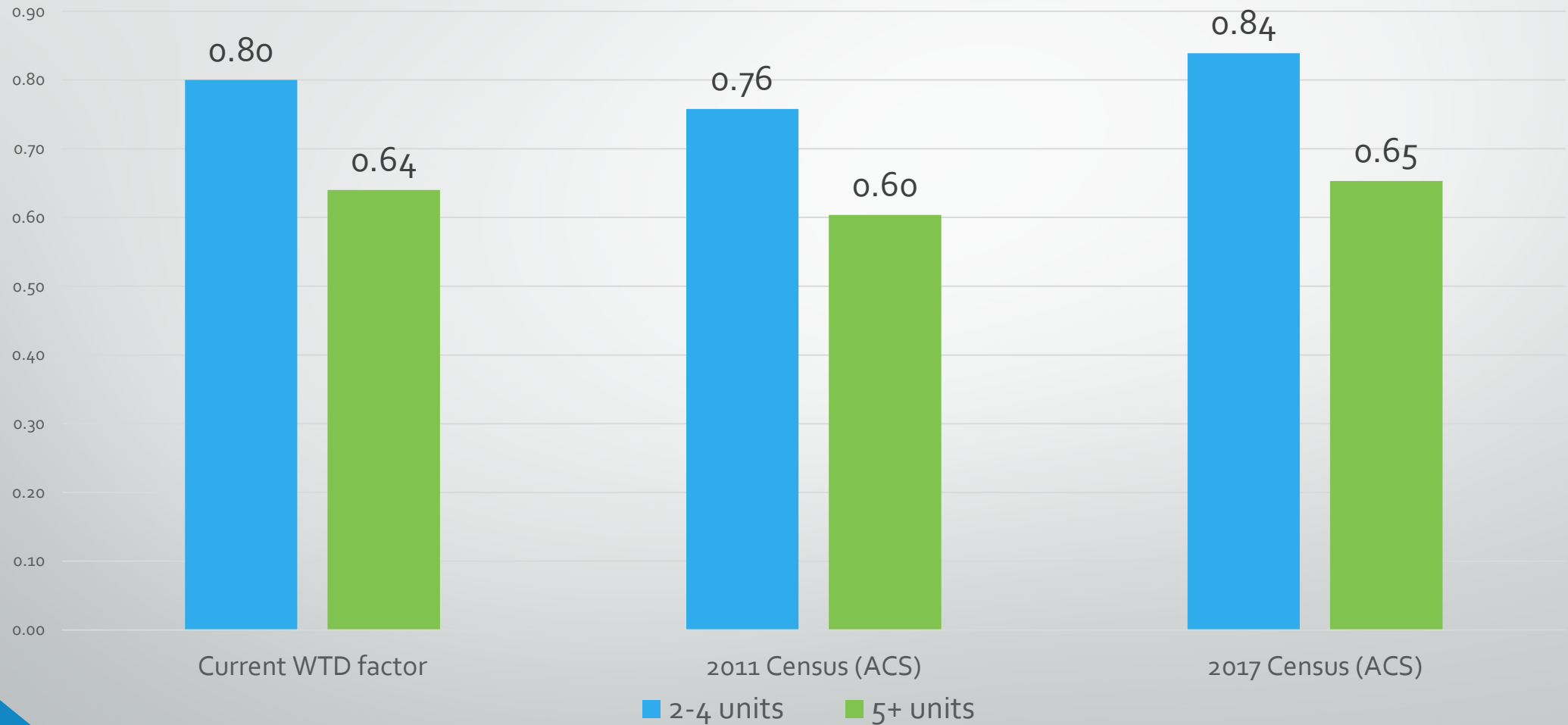
Study Findings: Square Footage as a Predictor of Residential Water Use



Single and Multifamily Combined

Multifamily RCE Equivalency Factors Using Census (ACS*) Data

Comparison, WTD Conversion Factors with Census (ACS) Persons per Household



*American Community Survey

Residential Options Analyzed, cont.

- Square Footage
 - Option 3a: Uniform Charge per Square Foot
 - Option 3b: Declining Block Rate per Square Foot charge
 - Option 3c: Per Square Foot Charge Capped at 3,000 square feet
 - Option 3d: Per Square Foot Charge Capped at 2,400 square feet
- Fixture Count for Residential (current commercial approach)
 - Administratively complex because of lack of fixture count info at time of sewer connection
 - Districts may serve multiple municipalities, requiring information from multiple land use authorities

Pros and Cons of Residential Square Footage-Based Options

<u>Option</u>	<u>Pro</u>	<u>Con</u>
Option 3a--Uniform Rate	Simplest per-square foot structure	<i>Demand/sf is not a straight line</i>
Option 3b--Block Rate	Good predictor of water use	Complex to administer
Option 3c--Cap 3,000	Better fit to data than straightline Option 3a	Complex to administer
Option 3d--Cap 2,400	Better fit to data than straightline Option 3a	Complex to administer

Commercial and Multi-Use Options

Status Quo Update

- Fixture Units plus Estimated Additional Flows

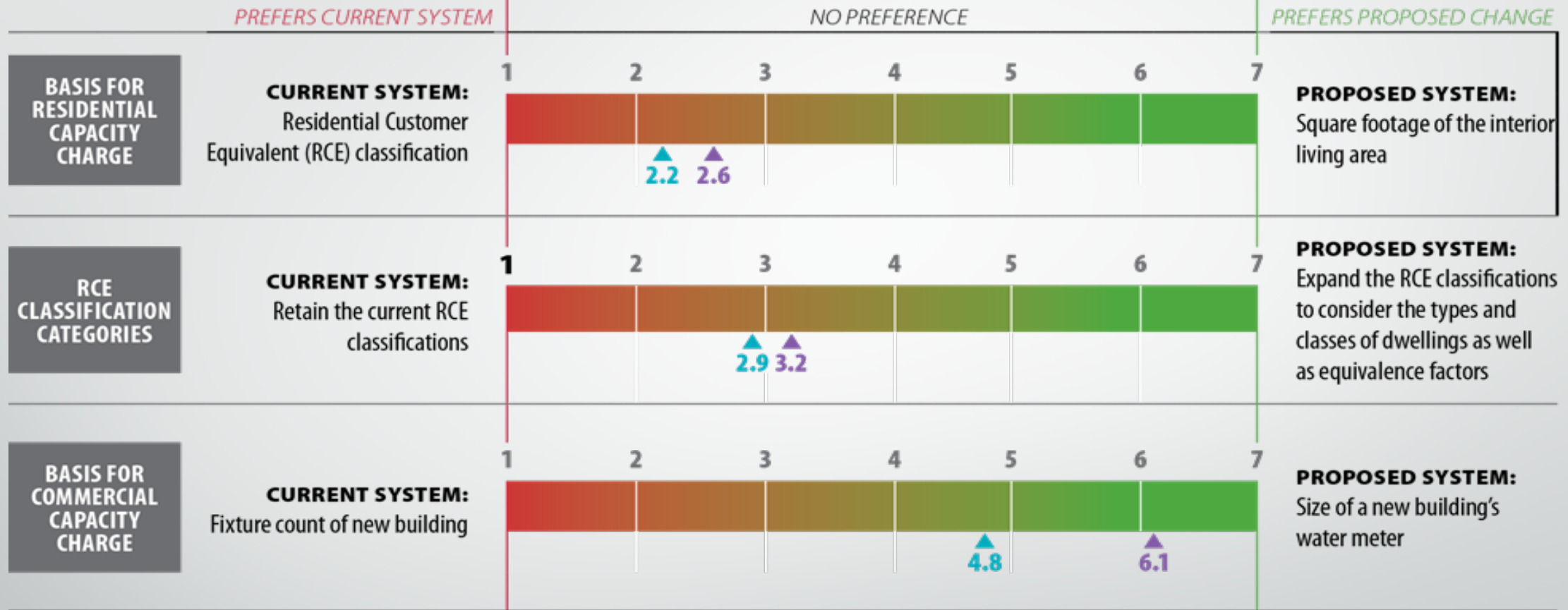
Meter Size

- Standard American Water Works Association tables used to convert meter size to meter capacity equivalents (MCEs)

Pros and Cons of Commercial Options

<u>Option</u>	<u>Pro</u>	<u>Con</u>
Status Quo, Fixture Units Plus Additional flows	Uses mostly existing administrative structure	Needs verification and updating
Meter Size	Simpler data needs than status quo	Needs additional study
	Easier to administer once system is in place	Larger meter sizes do not correlate well with water use
	Slightly better water use predictor than fixture unit counts, except for largest sizes	More research and data needed

Preferences of 15 Local Agency Respondents



KEY: ▲ Average preference ranking of cities ▲ Average preference ranking of special purpose districts

- Respondents favored keeping current system metrics basis rather than using square footage
- Respondents favored keeping existing classification system rather than new categories
- Respondents generally preferred to use water meter size over fixture unit counts for commercial

Next Steps

July:

Work Group recommendation development

August:

- Work Group recommendation to MWPAAC Rates and Finance
- MWPAAC action on Recommendation Letter at Aug. 28 MWPAAC general meeting

September:

- DNRP submits proposed legislation to Executive's Office
- Executive transmits proposed legislation to Council

Questions?

David Clark, Project Manager

david.clark@kingcounty.gov; 206-477-7663

Tom Lienesch, Economist

tom.Lienesch@kingcounty.gov; 206-477-5367

