

Water Rates Review

November, 2017

Workshop Objective

To receive Council's input and direction on the rate structure to be implemented for mock billing in 2018

Workshop Agenda

1. Review rate setting objectives
2. Overview of water use in 2016/2017
3. Review rate options
 - Flat rate
 - Fixed charge
 - Minimum charge
4. Recommendations

Rate Setting Objectives

Conservation

- ▶ Pricing (rate) to encourage water conservation

Equity

- ▶ Fair to all types of users
- ▶ Defendable approach

Revenue Stability

- ▶ Revenues generated are predictable
- ▶ Providing sufficient and sustainable revenue to the utility

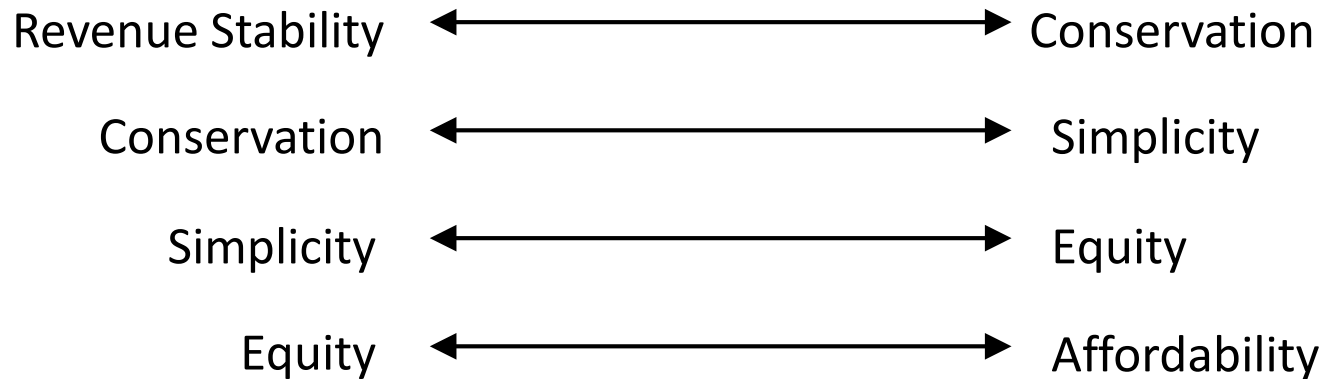
Affordability

- ▶ Charges are reasonable and not punitive

Simplicity

- ▶ Easy for customer to understand
- ▶ Efficient to administer

The Trade-offs Between Principles



METERED WATER USE 2016/2017

2017 WATER METERED ACCOUNTS SUMMARY

Residential Accounts	1744
Non-Residential Accounts	290

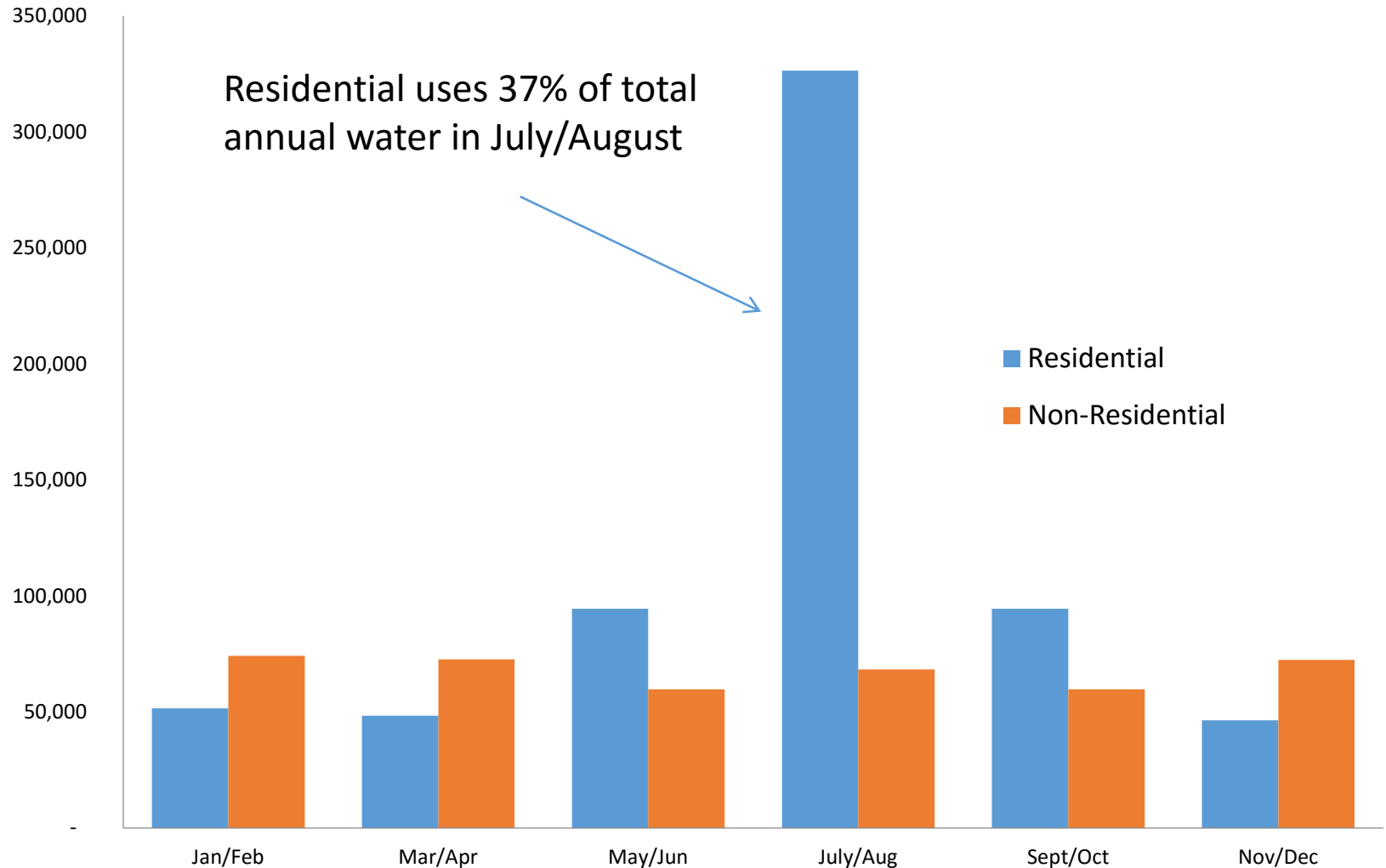
Non-Residential Water Meters

Meter Size	#	Equivalency Factor (AWWA)	Equivalent Residential Connections
1" or less	249	1.0	249
1 1/2 "	21	2.25	46
2 "	16	4.0	64
2 1/2 "	2	6.25	14
3"	2	9.0	21
Total	290		394

METERED WATER USE 2016/2017

ANNUAL WATER CONSUMPTION (m3)		% Total
Residential	697,000	63%
Non-Residential	413,000	37%
Total Metered Water Volume	1,110,000 m3	100%
2018 Revenue Target		\$927,000
2018 Water Use Forecast (25% conservation)		832,000 m³
Full cost of water (per m³)		\$1.11

ANNUAL WATER USE (m³)



RESIDENTIAL USE 2016/2017

ANNUAL WATER USE		
	m3 per Year	m3 per month
Average Customer	390	32.5
Upper Quartile	600	50.0
Lower Quartile	200	16.6

SUMMER WATER USE (JULY/AUGUST)	
	m3 per month
Average Customer	100
Upper Quartile	140
Lower Quartile	31

FIXED VS. VARIABLE CHARGE

The Rate Structure will have both a fixed and a variable (consumption based) component:

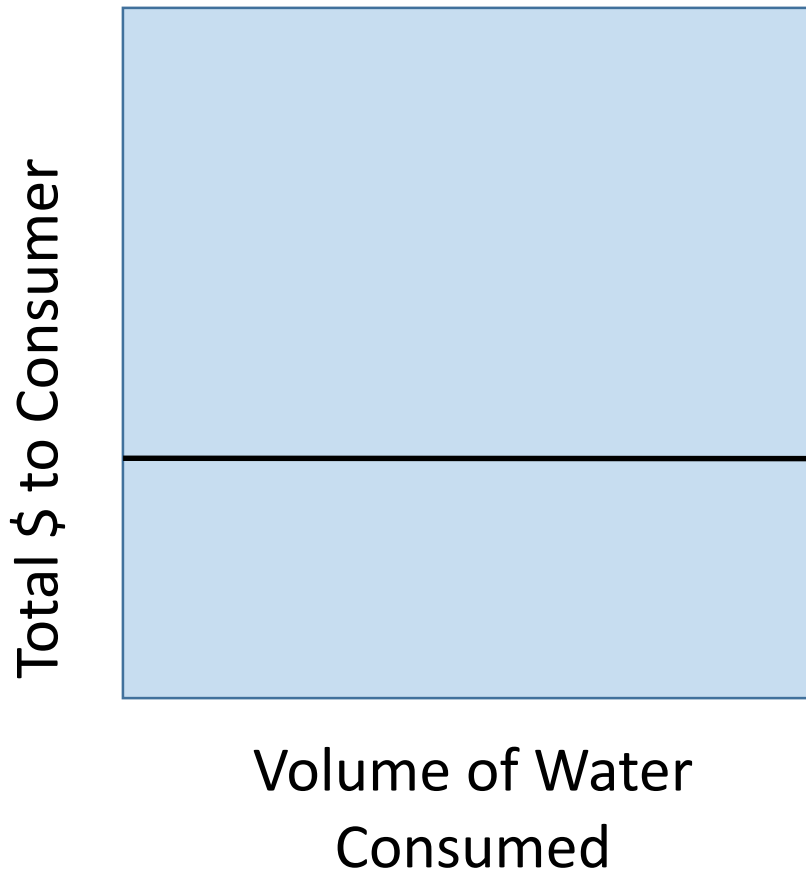
Fixed Component – This component is constant and does not vary with the volume of water consumed

Variable Component – This portion of the charge is based on the volume of water used multiplied by the unit rate

The fixed component of the charge helps to stabilize revenues since water use will fluctuate year to year based on the weather and other factors.

A water utility will typically collect between 25% and 50% of revenues from the fixed charge component of the rate

Option 1 - Flat Rate



- Fixed charge regardless of volume used
- Easy to understand and to administer
- Very predictable revenue
- Does not promote conservation

Option 1 – Flat Rate

Residential			
Annual Fixed Charge	\$434		
Consumption Charge (\$ per m3)	\$0.00		
Annual Cost to Various Users	Fixed Charge	Cons. Charge	Total Charge
Average Water User	\$434	0	\$434
Higher Water User (Upper Quartile)	\$434	0	\$434
Water Conserver (Lower Quartile)	\$434	0	\$434

2017 Annual Charge = \$436

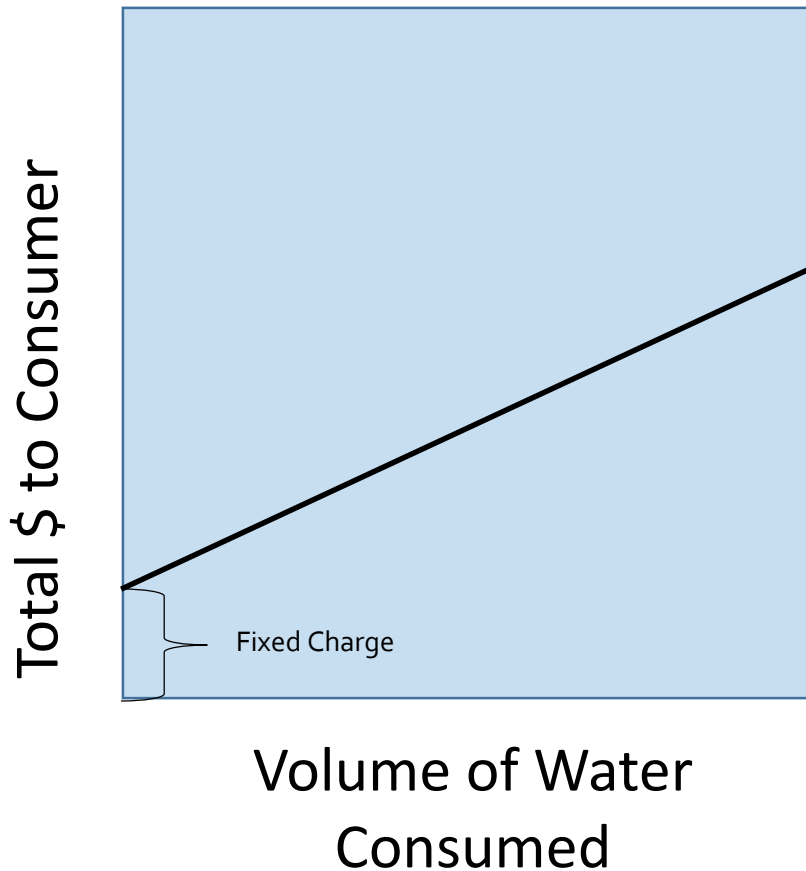
Option 1 – Flat Rate

Non-Residential			
Annual Fixed Charge per ERC	\$434		
Consumption Charge (\$ per m3)	\$0.00		
% of Revenue from Fixed Charge	100%		
Annual Cost to Various Users	Fixed Charge	Cons. Charge	Total Charge
1" Meter or less	\$434	0	\$434
1 ½"	\$975	0	\$975
2 "	\$1735	0	\$1735
2 ½"	\$2715	0	\$2715
3"	\$3900	0	\$3900

Option 1- Revenue Breakdown

Revenue Source	Residential	Non-Residential	Total
Fixed Charges Charges	\$756,000	\$171,000	\$927,000
Consumption Charges	\$0	\$0	\$0
Total	\$756,000	\$171,000	\$927,000
	82%	18%	100%
% from fixed charges			100%
% from consumption			0%

Option 2 - Fixed Charge



- Fixed price for each unit of water
- Consumer pays starting from first unit
- Price to consumer increases uniformly with volume used
- Easy to understand
- Promotes conservation
- Good revenue stability

Option 2 – Fixed Charge

Residential			
Annual Fixed Charge	\$217		
Consumption Charge (\$ per m3)	\$0.56		
Annual Cost to Various Users	Fixed Charge	Cons. Charge	Total Charge
Average Water User	\$217	\$167	\$384
Higher Water User (Upper Quartile)	\$217	\$251	\$467
Water Conserver (Lower Quartile)	\$217	\$100	\$317

Assumes 25% water conservation

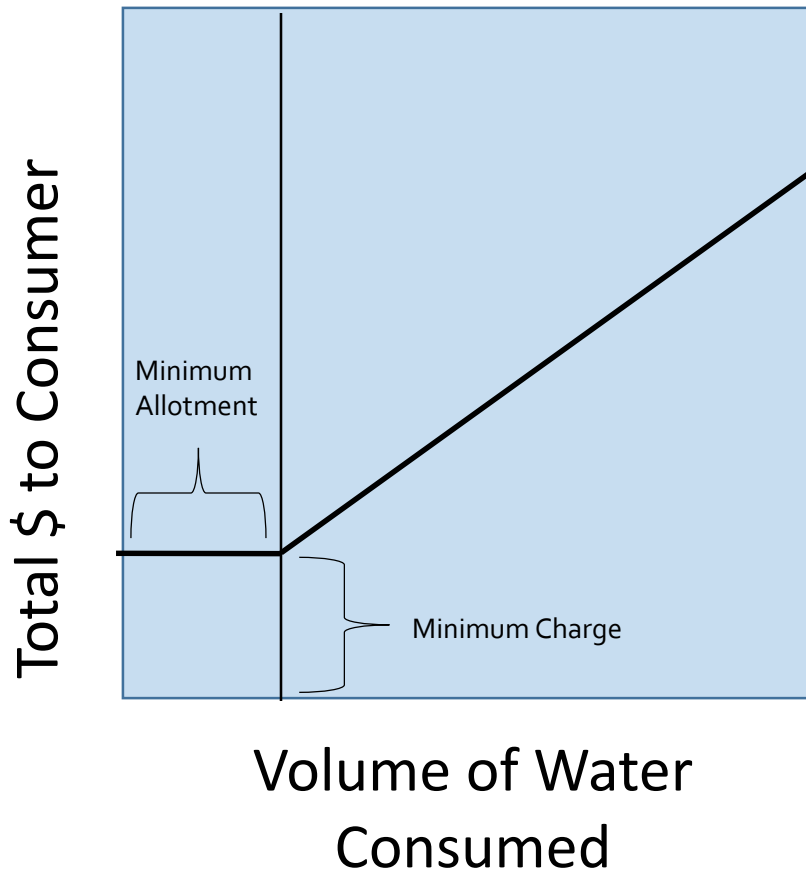
Option 2 – Fixed Charge

Non-Residential			
Annual Fixed Charge per ERC	\$217		
Consumption Charge (\$ per m3)	\$0.56		
Annual Cost to Various Users	Fixed Charge	Target Consumption Charge	Total
1" Meter or less	\$217	\$437	\$654
1 ½"	\$488	\$984	\$1,472
2 "	\$868	\$1,750	\$2,617
2 ½"	\$1356	\$2,734	\$4,089
3"	\$1953	\$3,937	\$5,888

Option 2- Revenue Breakdown

Revenue Source	Residential	Non-Residential	Total
Fixed Charges	\$378,000	\$85,500	\$463,500
Consumption Charges	\$291,000	\$172,500	\$463,500
Total	\$670,000	\$257,000	\$927,000
	72%	28%	100%
% from fixed charges			50%
% from consumption charges			50%

Option 3 - Minimum Charge



- Similar to a fixed charge, but includes an allotment of water
- Variable rate “kicks in” after allotment is exceeded

Option 3 – Minimum Charge

Residential			
Annual Minimum Charge	\$317	Includes first 15m3 per month*	
Consumption Charge (\$ per m3)	\$0.56		
Annual Cost to Various Users	Minimum Charge	Cons. Charge	Total Charge
Average Water User	\$317	\$67	\$384
Higher Water User (Upper Quartile)	\$317	\$150	\$467
Water Conserver (Lower Quartile)	\$317	\$11	\$328

Assumes 25% water conservation

*15 m3 allows for reasonable indoor use

Option 3 – Minimum Charge

Non-Residential			
Annual Minimum Charge per ERC	\$317	Includes first 15m3 per month per ERC	
Consumption Charge (\$ per m3)	\$0.56		
Annual Cost to Various Users	Minimum Charge	Target Cons. Charge	Total Charge
1" Meter or less	\$317	\$337	\$654
1 ½"	\$713	\$884	\$1,472
2 "	\$1,268	\$1,650	\$2,617
2 ½"	\$1,981	\$2,634	\$4,089
3"	\$2,853	\$3,837	\$5,888

Option 3- Revenue Breakdown

Revenue Source	Residential	Non-Residential	Total
Minimum Charges	\$553,000	\$125,000	\$678,000
Consumption Charges	\$130,000	\$119,000	\$249,000
Total	\$683,000	\$244,000	\$927,000
	74%	26%	100%
% from Minimum			73%
% from Consumption			27%

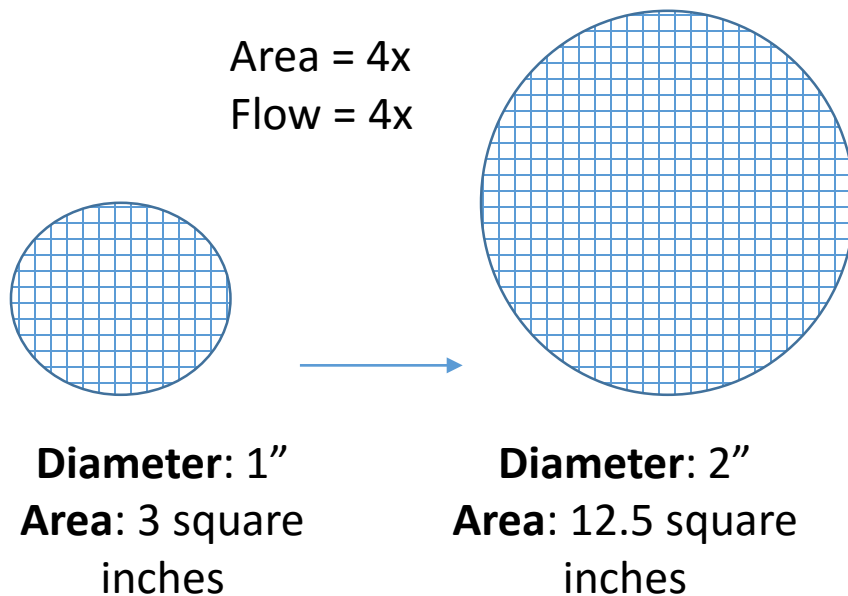
Comparison

Revenue Source	Option 1 – Flat Charge	Option 2 Fixed Charge	Option 3 – Min. Charge
Promotes Conservation	Never	All Year	Mostly In Summer
Equitable to all users	No	Yes	Mostly
Revenue Stability	100%	50%	73%
Simple to understand and administer	Yes	Yes	Yes
Affordable	Yes	Yes	Yes

Questions

Facts on Connection Size and Water Demand

Example - a 1" diameter connection has 4x the x-sectional area as a 2" and therefore 4x the volume of water can flow through it



Connection Size	Equivalent Residential Connections
=<1"	1.0
1.5"	2.3
2"	4.0
3"	9.0