

CITY OF GOLDEN

Utility Rate Citizen Committee Meeting #2

March 19, 2019



Golden's current rate structures

Water Service Charge	
Meter Size Inches	Service Charge \$ per bill
¾"	\$4.43
1"	4.90
1 ¼" & 1 ½"	10.07
2"	12.15
3"	55.60
4"	66.81
6"	87.34
8"	114.41
10"	150.07
12"	197.18

Water Volume Rate	
Treated, \$ per 1,000 gal	\$5.26
Bulk Water, \$ per 1,000 gal	\$6.26

Wastewater Rates	
Service Charge, \$ per bill	\$12.11
Volume rate, \$ per 1,000 gal	\$2.61
Strength Charges	
BOD, \$ per lb, >300 mg/l	\$0.466049
TSS, \$ per lb, >300 mg/l	\$0.261723
[1] Residential based on February water use.	
[2] Commercial based on actual use.	

Stormwater Rates (2018)	
Single family, \$ per bill	\$4.22
Multifamily, \$ per unit (4 units or less)	\$4.22
Multifamily >4 Units and Commercial, \$ per sq ft	\$0.0022



Rate structure pricing objectives

- Defensibility
- Revenue sufficiency
- Equity between classes
- Equity within a class
- Conservation
- Demand management
- Essential use affordability
- Customer understanding
- Customer bill impact
- Ease of implementation/administration



Pricing objective ranking list

Pricing Objective	Rank
Defensibility	Required
Revenue sufficiency	Required
Equity between classes	
Equity within a class	
Conservation	
Demand management	
Essential use affordability	
Customer understanding	
Customer bill impact	
Ease of administration/implementation	



What do fixed charges and volume charges recover?

- Fixed charge, \$ per account per month (bimonthly, Qtrly)
 - › Meter maintenance and meter reading
 - › Customer service, billing, and collection (general admin)
 - › May include fire protection costs (hydrant maintenance)
 - › Service availability (a component of capital costs, depreciation)
- Volume rate, \$ per 1,000 gallons
 - › Water
 - Water resources, source of supply
 - Collect, treat, and distribute
 - Fire protection costs
 - › Sewer
 - Collection
 - Treatment
 - Disposal



Monthly fixed charges

- Billing charge/customer charge (Water/Wastewater)
 - › Recovers meter reading, billing costs, a portion of general admin costs
 - › May vary by class
- Service or meter charge (Water/wastewater)
 - › Varies by meter size
 - › Recovers same cost as a billing charge plus costs that vary with meter size
- Minimum charge
 - › Includes a volume allowance
 - › Recovers same cost as a billing charge plus costs that vary with meter size and cost of the minimum volume allowance
- Readiness to serve charge (Water/wastewater)
 - › May vary by meter size and by class
 - › Recovers same costs as a billing charge plus a portion of capital-related costs

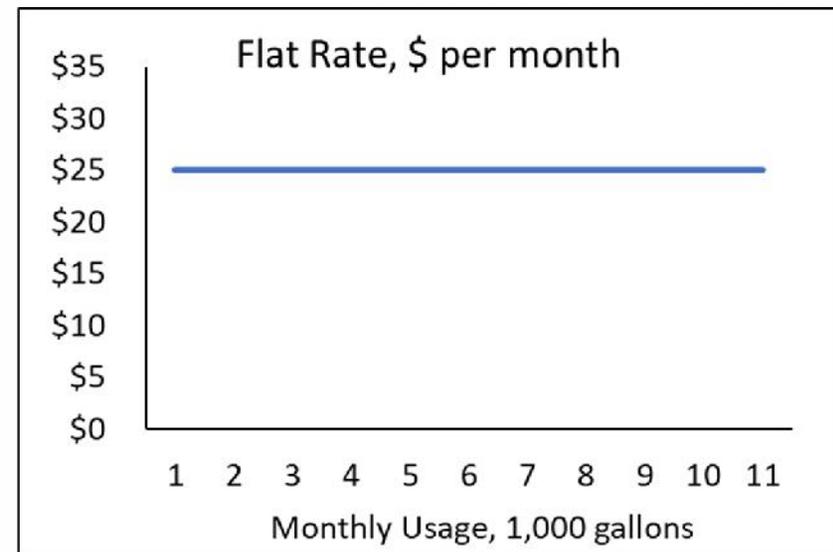


Water volume rate structure continuum

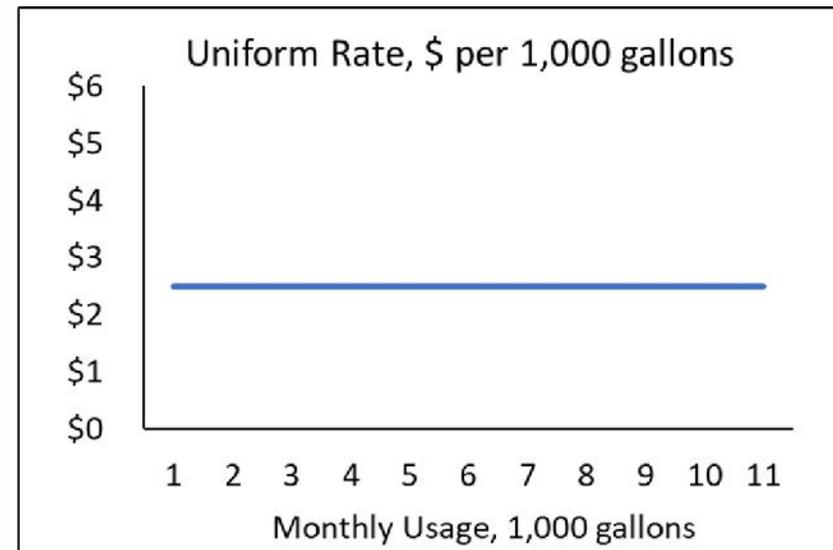


Flat rate and uniform rate Water and wastewater

Period	Monthly Use	Rate	Monthly Bill
January	4,000 gal	N/A	\$24.00
February	12,000 gal	N/A	\$24.00



Period	Monthly Use	Rate	Bill
January	4,000 gal	\$1.50	\$6.00
July	12,000 gal	\$1.50	\$18.00



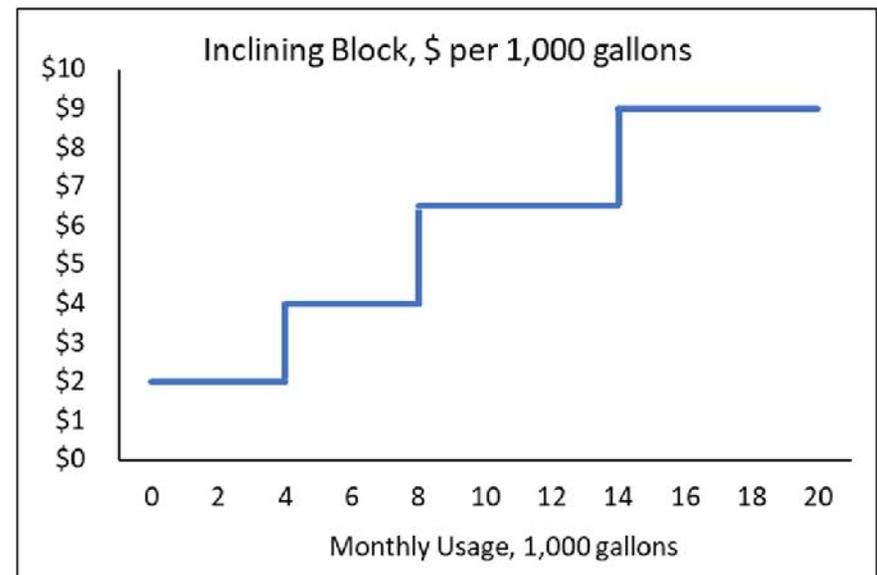
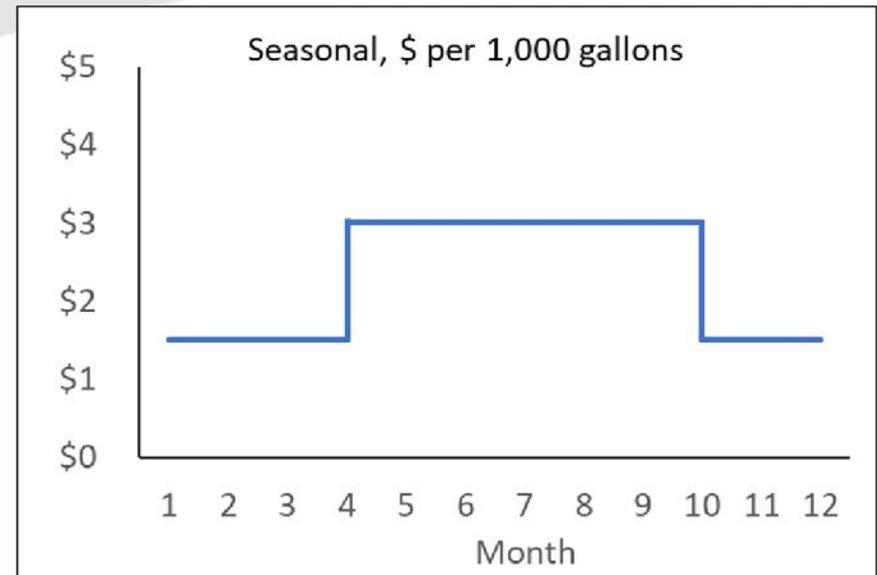
Summer rate and Inclining block rate Water only

- Seasonal example:

Period	Monthly Use	Rate	Bill
Winter	4,000 gal	\$1.50	\$6.00
Summer	12,000 gal	\$2.00	\$24.00

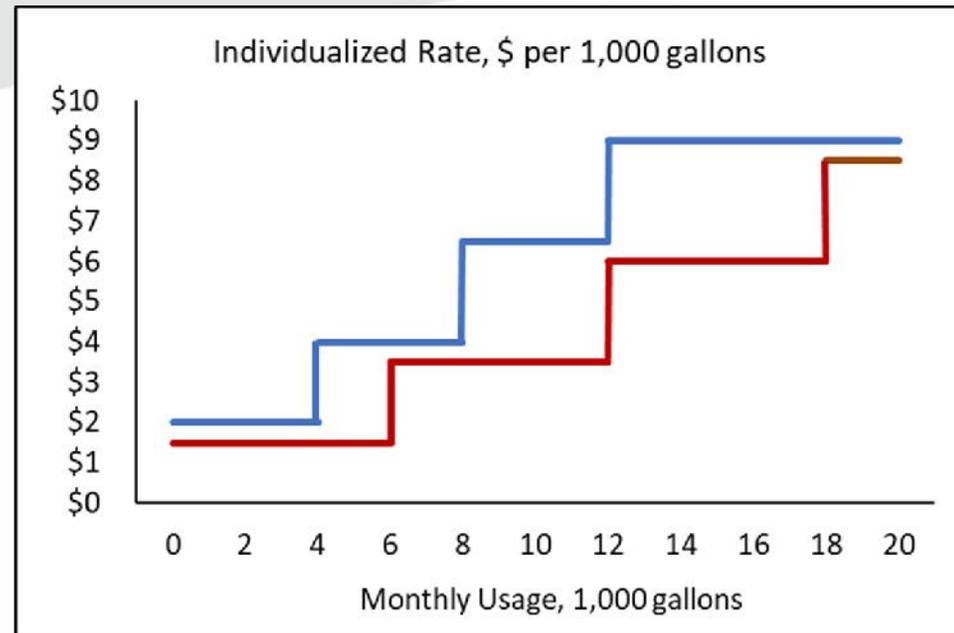
- Inclining block example:
 - > 12,000 gallons

Tier	Threshold	Usage	Rate	Bill
1	0-4 kgal	4	\$2.00	\$8.00
2	4-8 kgal	4	\$4.00	\$16.00
3	8-12 kgal	4	\$6.00	\$24.00
4	>12 kgal	0	\$9.00	\$0.00
Total		12		\$48.00



Individualized rate Water only

- Three variants
 - › AWC + fixed block
 - › AWC excess use
 - › Water budget



AWC = Average Winter Consumption

AWC Fixed Block		
Tier	Threshold	Rate
1	0 – AWC	\$2.00
2	AWC + 15,000	\$4.00
3	>AWC + 15,000	\$6.50

AWC Excess Use		
Tier	Threshold	Rate
1	0 – AWC	\$2.00
2	AWC – 4x AWC	\$4.00
3	>4x AWC	\$6.50

Water Budget		
Tier	Threshold	Rate
1	0 – 50% of monthly budget	\$2.00
2	50% - 100% of monthly budget	\$4.00
3	>100% of monthly budget	\$6.50

Individualized rate structures

- AWC-Fixed block
 - › Individualized structure charges for water based on where it is used (indoor/outdoor)
 - › Block 1 is based on each customer's average winter consumption, a proxy for indoor use or essential use
 - › Block 1 is lowest rate block which ensures each customer pays the lowest rate for their essential usage
- AWC-Excess use
 - › Individualized structure can be based on cost of average day and peak day demands
 - › Used to send price signal for peaking customers – reduces system peak demands
 - › Used for commercial or industrial customers but can be used for residential



Individualized rate structures

- Water budget
 - › Individualized structure charges for water based on where it is used (indoor/outdoor)
 - › Budget changes on a monthly basis recognizing changes in water requirements due to weather
- Individualized rate structure - fundamental question:
 - › Should different customers pay a different unit rate for the same unit of water?



AWC-fixed examples

- AWC = 3,000 gal
- Monthly use: 12,000 gal

Tier	Threshold	Threshold	Rate	Use	Bill
1	0 – AWC	0 – 3 kgal	\$2.00	3	\$6.00
2	AWC + 15	3 – 18 kgal	\$4.00	9	\$36.00
3	>AWC + 15	>18 kgal	\$6.50	0	\$0.00
			Total	12	\$42.00

- AWC = 10,000 gal
- Monthly use 12,000 gal

Tier	Threshold	Threshold	Rate	Use	Bill
1	0 – AWC	0 – 10 kgal	\$2.00	10	\$20.00
2	AWC + 15	10 – 25 kgal	\$4.00	2	\$8.00
3	>AWC + 15	>25 kgal	\$6.50	0	\$0.00
			Total	12	\$28.00



AWC-excess use examples

- AWC = 5,000 gal
- Monthly use: 20,000 gal

Tier	Threshold	Threshold	Rate	Monthly Use	Bill
1	0 – AWC	0 – 5 kgal	\$2.00	5	\$10.00
2	AWC – 4x AWC	5 – 20 kgal	\$4.00	15	\$60.00
3	>4x AWC	>20 kgal	\$6.50	0	\$0.00
			Total	20	\$70.00

- AWC = 10,000 gal
- Monthly use 20,000 gal

Tier	Threshold	Threshold	Rate	Monthly Use	Bill
1	0 – AWC	0 – 10 kgal	\$2.00	10	\$20.00
2	AWC – 4x AWC	10 – 40 kgal	\$4.00	10	\$40.00
3	>4x AWC	>40 kgal	\$6.50	0	\$0.00
			Total	20	\$60.00



Water budget

- June water budget = 10,000 gal
- June usage: 20,000 gal

Tier	Threshold	Threshold	Rate	Monthly Use	Bill
1	0 – 50%	0 – 5 kgal	\$2.00	5	\$10.00
2	50 – 100%	5 – 10 kgal	\$4.00	5	\$20.00
3	>100%	>10 kgal	\$6.50	10	\$65.00
			Total	20	\$95.00

- July water budget = 16,000 gal
- Monthly use 20,000 gal

Tier	Threshold	Threshold	Rate	Monthly Use	Bill
1	0 – 50%	0 – 8 kgal	\$2.00	8	\$16.00
2	50 – 100%	8 – 16 kgal	\$4.00	8	\$32.00
3	>100%	>16 kgal	\$6.50	4	\$26.00
			Total	20	\$74.00



How the rate structures stack up against pricing objectives

Structure	Revenue Stability	Demand Mgmt	Conservation	Interclass Equity	Intraclass Equity	Essential Use Affordability	Customer Understanding	Ease of Implement/ Admin
Flat	Meets Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Meets Objective	Meets Objective
Uniform	Meets Objective	Somewhat Meets Objective	Somewhat Meets Objective	Meets Objective	Meets Objective	Somewhat Meets Objective	Meets Objective	Meets Objective
Seasonal	Somewhat Meets Objective	Meets Objective	Somewhat Meets Objective	Meets Objective	Somewhat Meets Objective	Somewhat Meets Objective	Meets Objective	Meets Objective
Inclining block	Somewhat Meets Objective	Meets Objective	Meets Objective	Meets Objective	Somewhat Meets Objective	Somewhat Meets Objective	Somewhat Meets Objective	Somewhat Meets Objective
Individualized	Somewhat Meets Objective	Somewhat Meets Objective	Meets Objective	Meets Objective	Somewhat Meets Objective	Meets Objective	Somewhat Meets Objective	Does Not Meet Objective

Meets Objective

Somewhat Meets Objective

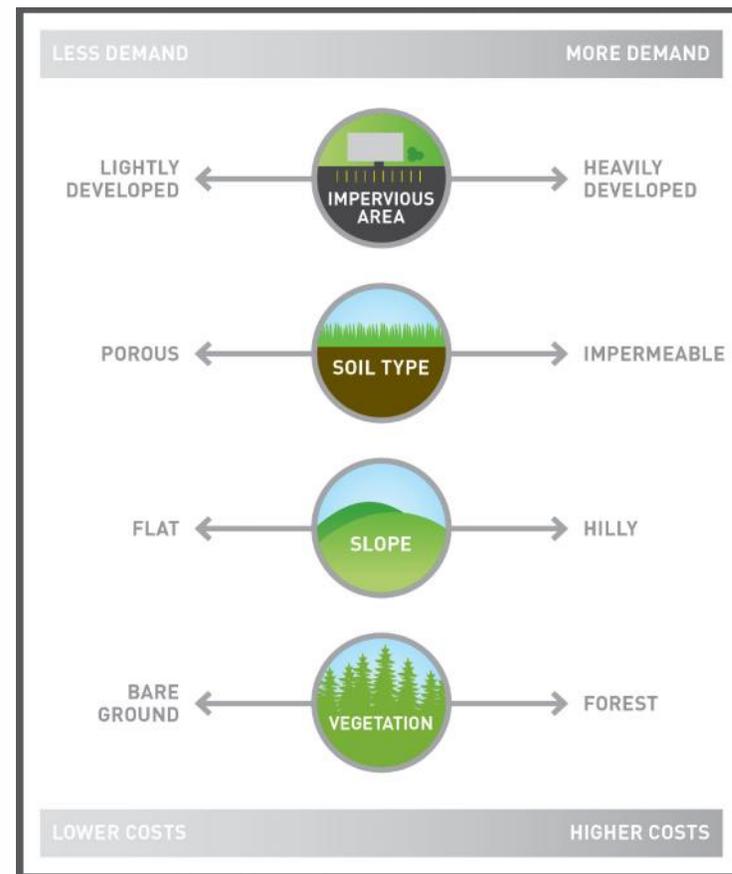
Does Not Meet Objective



Stormwater rate structures

- Typical rate structures
 - › Equivalent residential unit basis (ERU/EQR)
 - › Lot size/parcel size
 - › Impervious area
 - › Runoff coefficient

Factors Influencing Stormwater Rate Structures



Front Range utility rate structure survey

Residential water rate structure comparison

Community	Fixed Charge	Volume Rate
Arvada	Bimonthly charge by number of units	4 tier increasing
Boulder	Fixed charge by meter size	5 tier increasing (Budget based)
Broomfield	Fixed charge by meter size and customer class	Uniform rate
Denver Water	Fixed charge by meter size	3 tiered increasing (Based on AWC)
Evergreen	Fixed charge	2 tier increasing
Ft. Collins	Fixed charge by dwelling type	3 tier increasing
Green Mountain	Fixed charge by customer class	3 tier increasing
Golden	Fixed charge by meter size	Uniform rate
Longmont	Fixed charge by meter size	4 Tiered Increasing
Louisville	Monthly Minimum (includes 5,000 gal) By Meter Size	5 Tiered Increasing
Loveland	Fixed charge by meter size and customer class	Uniform rate by land use
Nederland	Fixed charge by meter size and customer class	Uniform rate
Superior	Fixed charge by meter size by EQR	5 Tiered Increasing



Residential wastewater rate structure comparison

Community	Fixed Charge	Volume Rate ¹
Arvada	Bi-monthly fixed charge	Uniform rate (based on AWC)
Boulder	Fixed charge by water meter size	Uniform rate (based on AWC)
Broomfield	Fixed charge by ERU	Uniform rate (based on AWC)
Denver Water	N/A	N/A
Evergreen	Flat rate	None
Ft. Collins	Fixed charge by water meter size	Uniform rate (based on AWC)
Green Mountain	Fixed charge by customer class	Uniform rate by customer class (based on AWC)
Golden	Fixed charge	Uniform (based on AWC)
Longmont	Fixed rate	Uniform rate
Louisville	Fixed rate for billing and readiness to serve	Uniform rate (Based on AWC)
Loveland	Fixed rate By customer class	Uniform rate by customer class (Based on WQA)
Nederland	Fixed rate By customer class	Uniform rate by customer class
Superior	Fixed charge by ERU and customer class	Only for non-residential and residential with separate irrigation meter

[1] AWC = Average winter consumption. The average of winter water use which serves as a basis for determining residential wastewater billable volume. Typically includes the months of Dec – Feb but varies by utility.
WQA = Winter quarter average. Same as AWC.



Residential stormwater rate structure comparison

Community	Fixed Charge
Arvada	Per ERU
Boulder	3-tiered structure based on sq ft of lot size
Broomfield	Fixed charge by ERU
City of Denver	Flat fee plus inclining block based on runoff coefficient
Ft. Collins	Unit rate based on runoff coefficient x sq ft of parcel
Golden	Flat fee per month, same for all residential customers
Longmont	Flat fee
Louisville	Flat fee
Loveland	Flat fee based on parcel size
Nederland	Fixed rate By customer class
Superior	\$ per ERU

[1] ERU = Equivalent residential unit



Water and Wastewater Characteristics

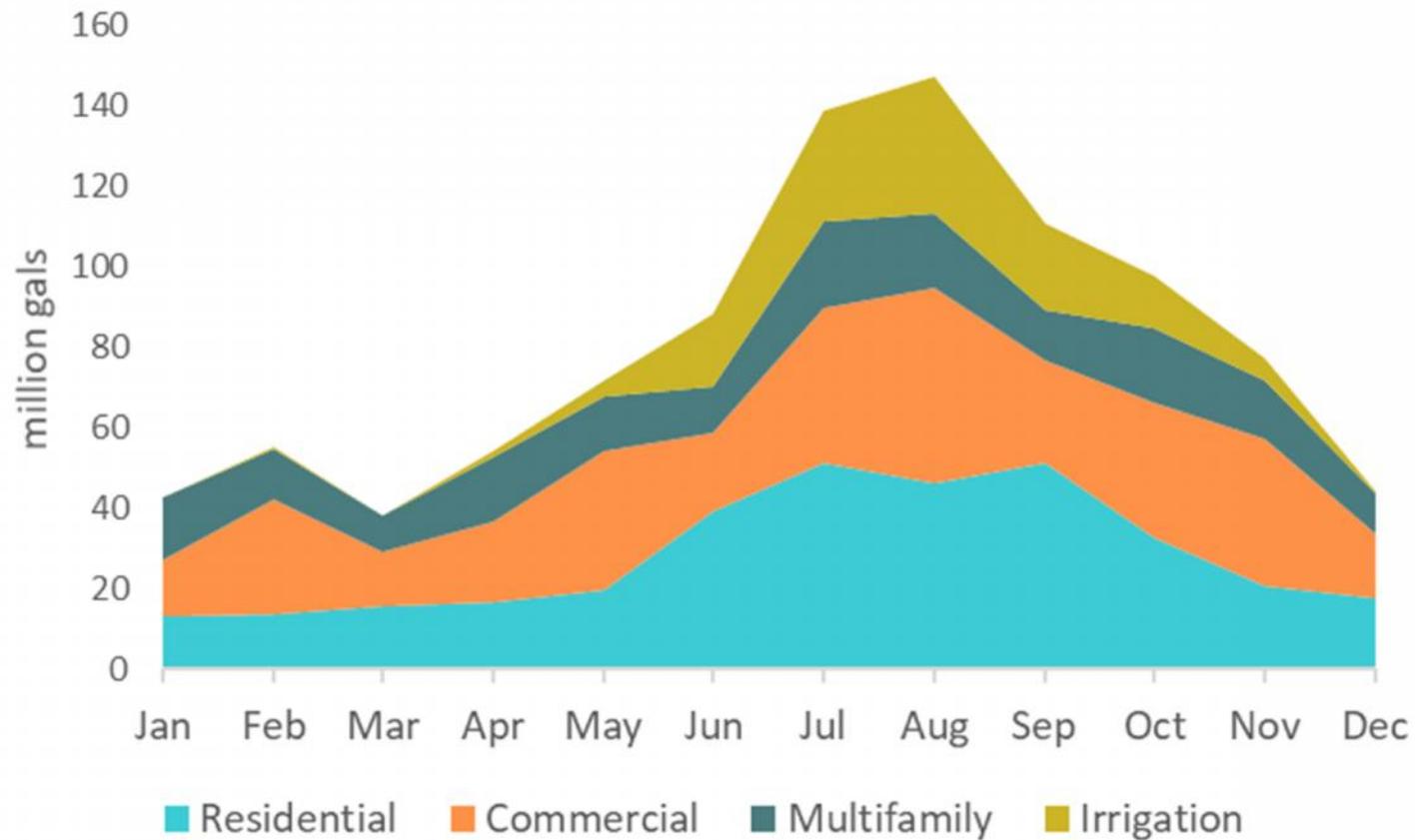
Water and wastewater customer characteristics

- Based on 2018 billing data – 2017 and 2016 showed similar patterns
- Converted quarterly usage into monthly usage
 - › Calculated monthly usage profile for each customer class using quarterly billing data (quarterly bills go out each month throughout the year)
 - › Calculated the monthly % of total annual usage
 - › For each customer and their quarterly bill, trended three months of billing based on the class-wide monthly usage profile
- These characteristics will be used in developing rate structure alternatives



Water utility

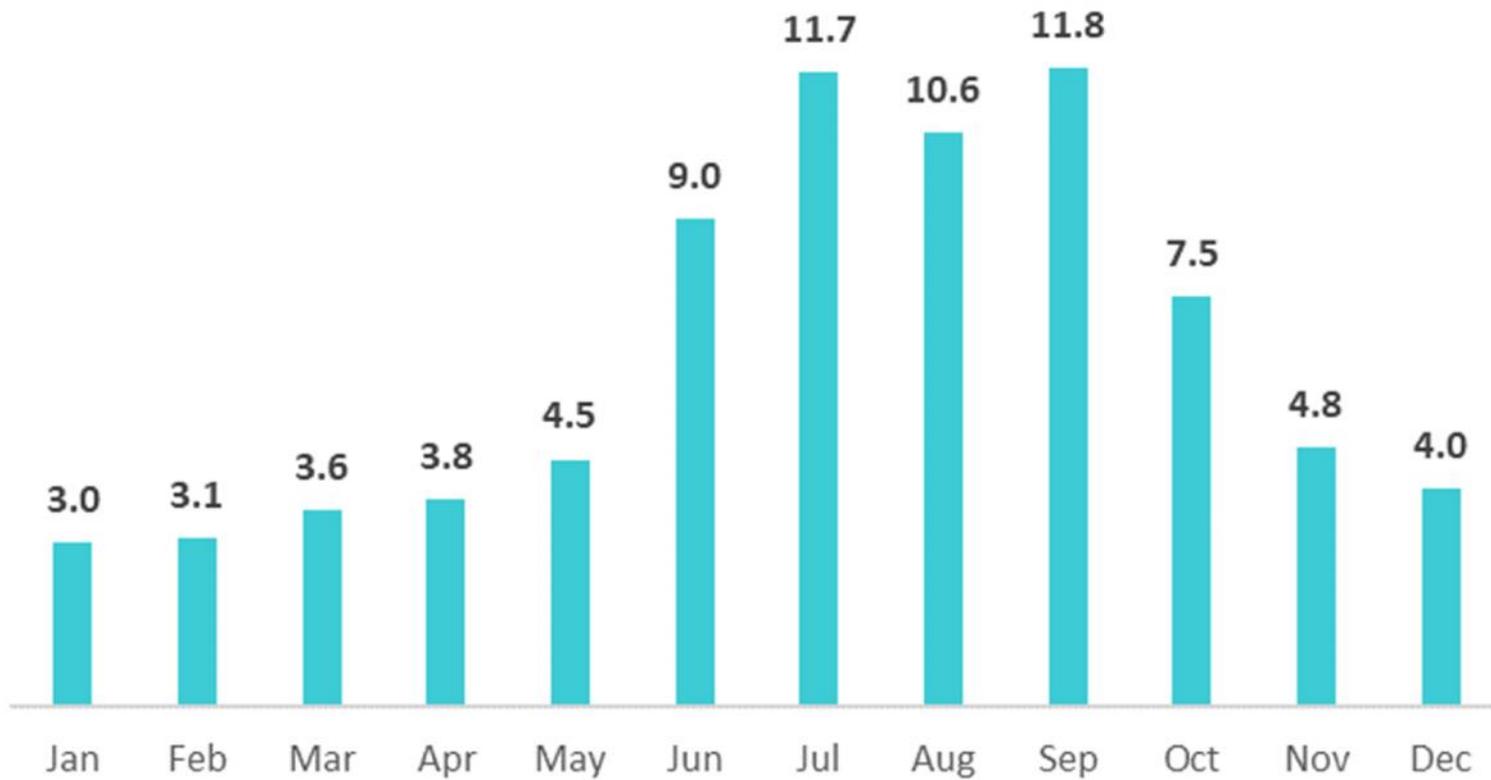
Monthly usage profile by month



*Based on 2018 billing data.

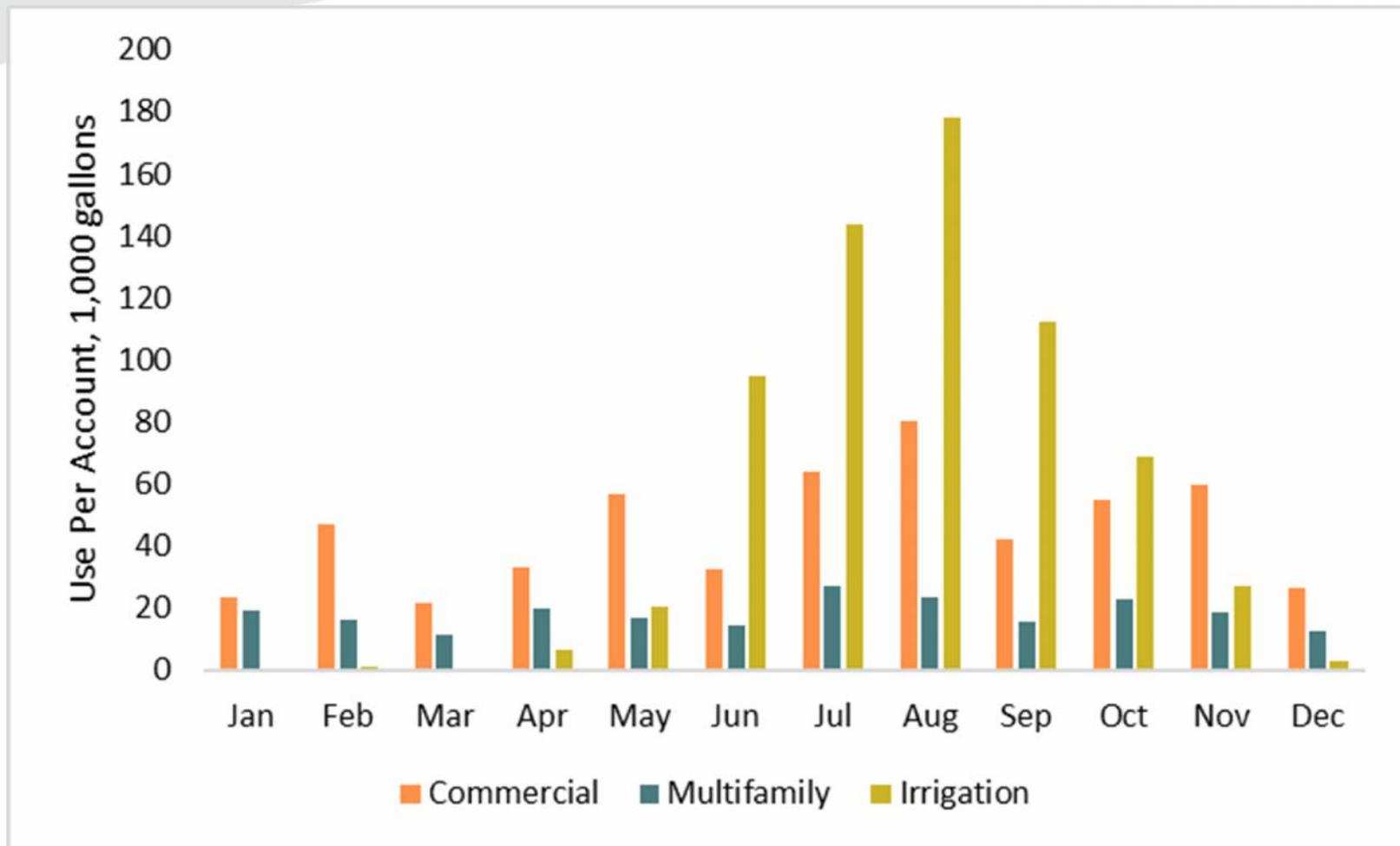


Water utility Residential monthly use per account



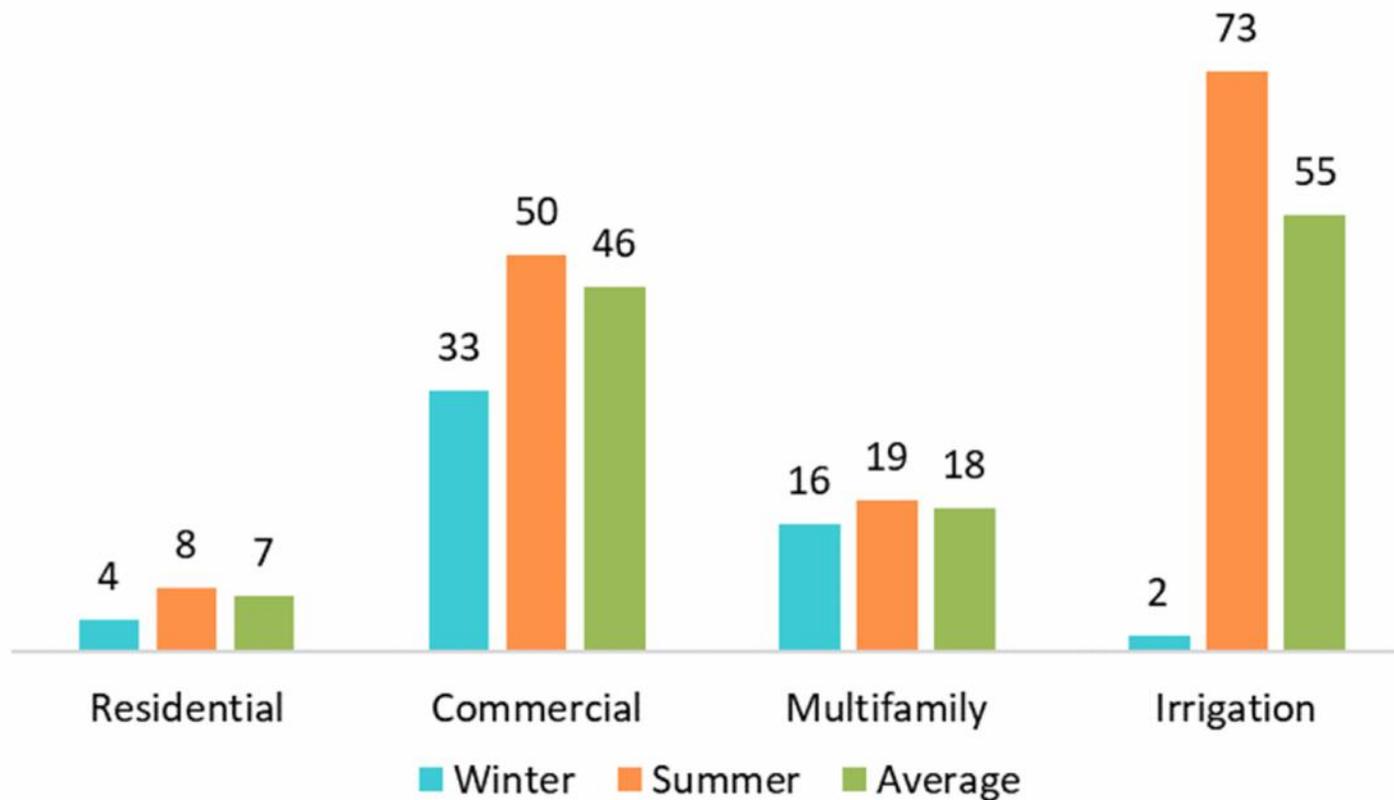
Water utility

All other customer classes monthly use per account



Water utility

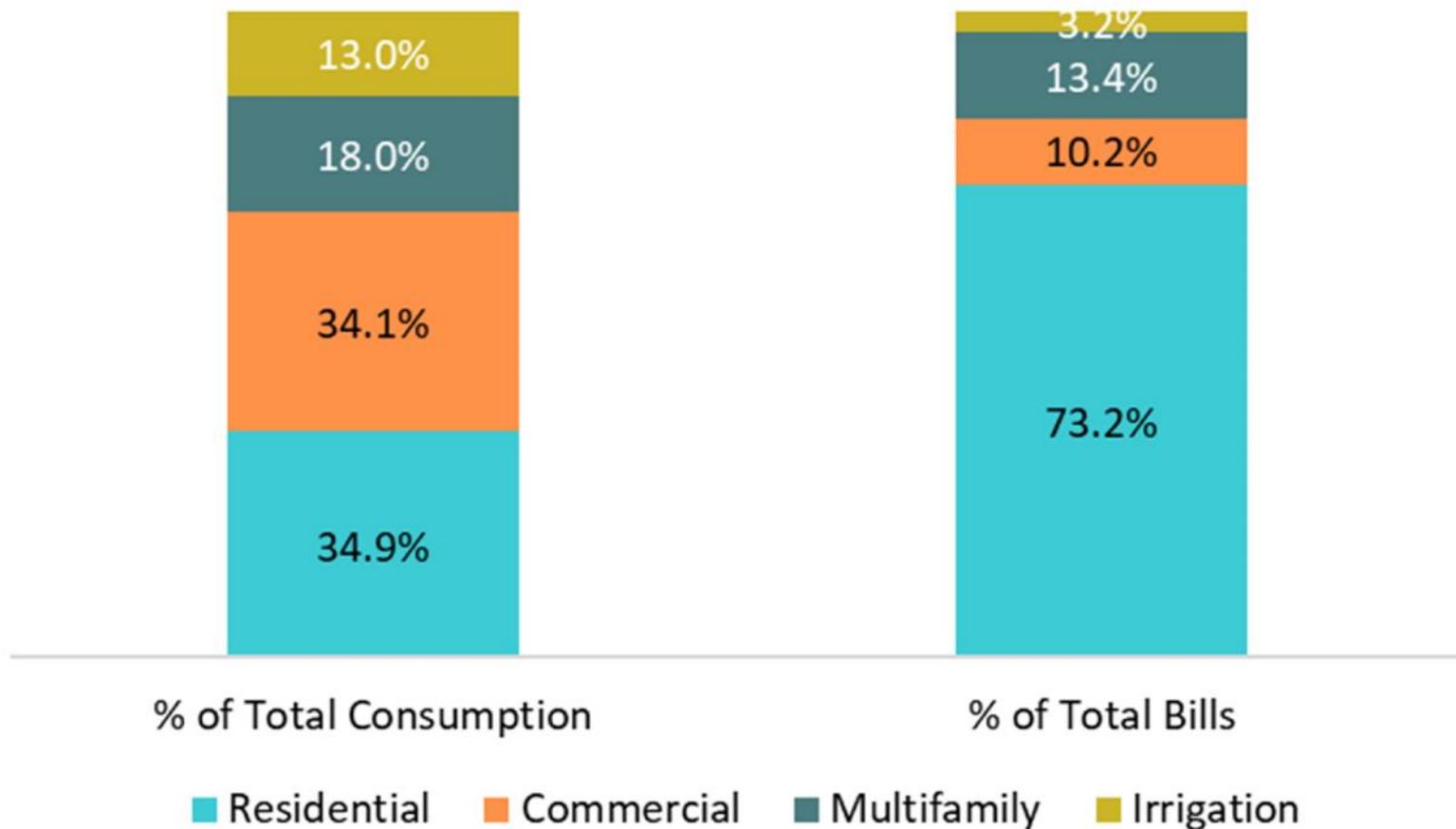
Monthly use per account, 1,000 gallons



*Based on 2018 billing data.

Water utility

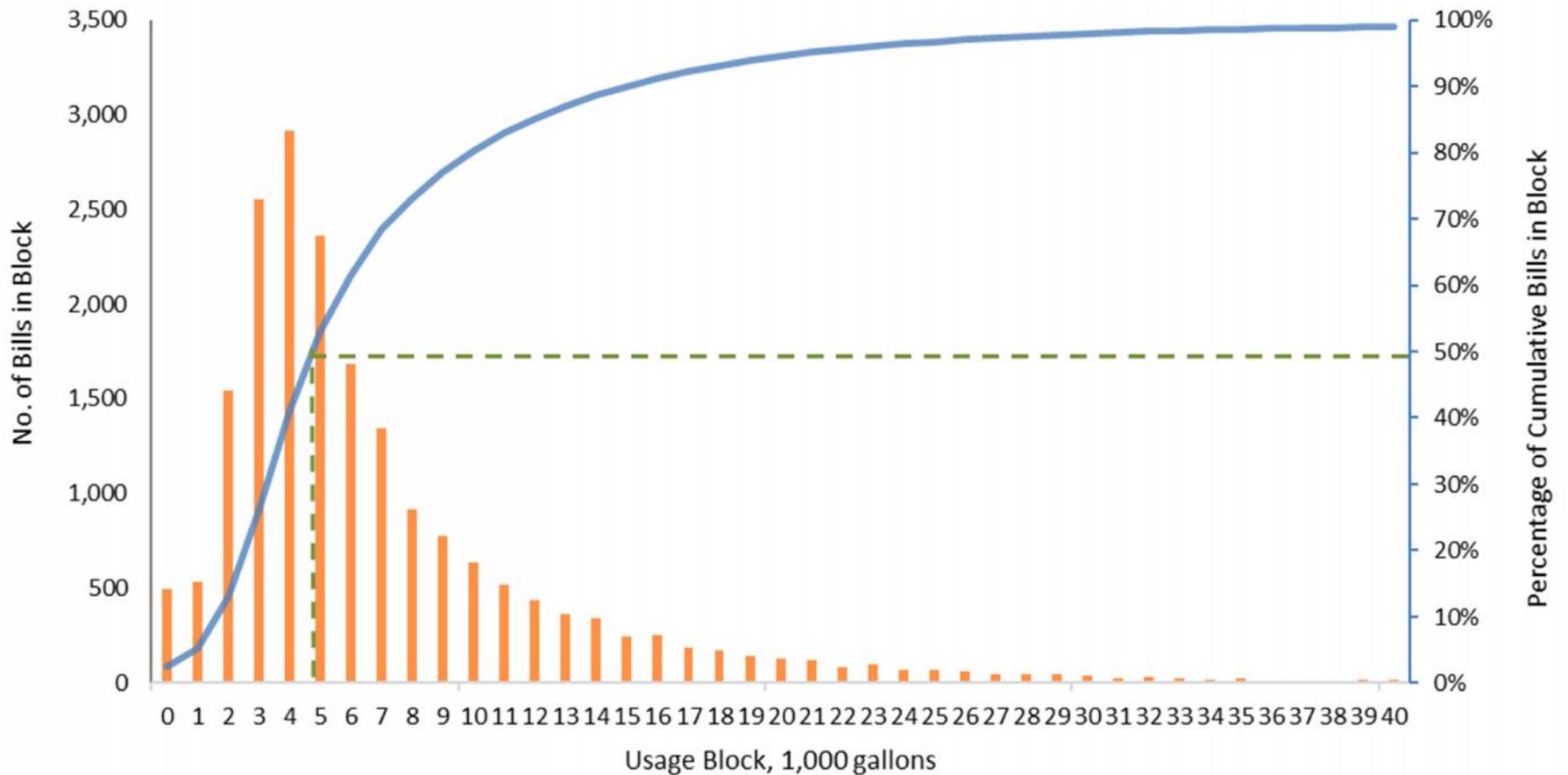
Comparison of usage and accounts by customer class



*Based on 2018 billing data.



Water utility Residential bill distribution



Wastewater utility Comparison of usage and accounts by customer class

