

# **City Council Study Session Agenda**

**Tuesday, October 8, 2024  
Library Meeting Room  
951 Spruce Street  
6:00 PM**

*Members of the public are welcome to attend remotely; however, the in-person meeting may continue even if technology issues prevent remote participation.*

- You can call in to **+1 719 359 4580 or 877 853 5247 (toll free)**  
Webinar ID **#876 9127 0986**.
- You can log in via your computer. Please visit the City's website here to link to the meeting: [www.louisvilleco.gov/council](http://www.louisvilleco.gov/council)

Anyone may email comments to the Council prior to the meeting at [Council@LouisvilleCO.gov](mailto:Council@LouisvilleCO.gov).

1. Call to Order & Roll Call
2. Utilities - Water 101
3. Adjourn

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#### **Citizen Information**

If you wish to speak at the City Council meeting in person, please fill out a sign-up card and present it to the City Clerk at the meeting; if you are attending remotely, please use the "raise hand" icon to show you wish to speak in public comments.

Persons planning to attend the meeting who need sign language interpretation, translation services, assisted listening systems, Braille, taped material, or special transportation, should contact the City Clerk's Office (303.335.4536 or 303.335.4574) or [ClerksOffice@LouisvilleCO.gov](mailto:ClerksOffice@LouisvilleCO.gov). A forty-eight-hour notice is requested.

Si requiere una copia en español de esta publicación o necesita un intérprete durante la reunión del Consejo, por favor llame a la Ciudad al 303.335.4536 o 303.335.4574 o email [ClerksOffice@LouisvilleCO.gov](mailto:ClerksOffice@LouisvilleCO.gov).

**SUBJECT:** PRESENTATION: UTILITIES – WATER 101

**DATE:** OCTOBER 8, 2024

**PRESENTED BY:** KURT KOWAR, DIRECTOR OF PUBLIC WORKS  
CORY PETERSON, DEPUTY DIRECTOR OF UTILITIES

**SUMMARY:**

This presentation provides an educational overview of the City’s water sources and acquisition, water treatment facilities, water conservation impacts, climate impacts, water usage, water revenue, and the amazing staff that provides clean water to the residents of Louisville.

**FISCAL IMPACT:**

N/A – Informational Item Only

**PROGRAM/SUB-PROGRAM IMPACT:**

N/A – Informational Item Only







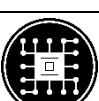

**STAFF RECOMMENDATION:**

This is an informational item for Council. Staff will be available to answer any questions.

**ATTACHMENT(S):**

- 1) Utilities – Water 101 Presentation

**STRATEGIC PLAN IMPACT:**

<input checked="" type="checkbox"/>		<b>Financial Stewardship &amp; Asset Management</b>	<input checked="" type="checkbox"/>		<b>Reliable Core Services</b>
<input type="checkbox"/>		<b>Vibrant Economic Climate</b>	<input type="checkbox"/>		<b>Quality Programs &amp; Amenities</b>
<input type="checkbox"/>		<b>Engaged Community</b>	<input type="checkbox"/>		<b>Healthy Workforce</b>
<input type="checkbox"/>		<b>Supportive Technology</b>	<input type="checkbox"/>		<b>Collaborative Regional Partner</b>

# Utilities - Water 101

October 8, 2024



People

Water Treatment  
Operations  
Engineering  
Administration



## People

## Water and Operations Staff

Level	Expected Level of Responsibility	Years of Experience	Core Certifications and Skills (All Required)	Elective Certifications and Skills (Requires Any 2 per Level)
Operations Technician I	<ul style="list-style-type: none"> <li>Learn the very basics in Operations</li> <li>Familiarize self with equipment &amp; procedures.</li> <li>Perform job duties as assigned.</li> </ul>	0-1	<ul style="list-style-type: none"> <li>CDL (B)</li> <li>Flagger Certification</li> <li>Trench &amp; Shoring Safety Certification</li> <li>First Aid, CPR, AED Certified</li> </ul>	<ul style="list-style-type: none"> <li>Beginning Excel Course</li> <li>Intermediate Excel Course</li> <li>Advanced Excel Course</li> <li>Beginning Word Class</li> <li>Intermediate Word Class</li> <li>Advanced Word Class</li> </ul>
Operations Technician II	<ul style="list-style-type: none"> <li>Basic understanding of Operations with a higher skill set and the ability to report any special considerations.</li> <li>Proficient in equipment usage of backhoe/loader/vector/jetter/sw eeper/bobcat.</li> </ul>	1-2	Prerequisite for Tech II: <ul style="list-style-type: none"> <li>Distribution I Certification</li> <li>Collections I Certification</li> <li>Traffic Control Technician</li> <li>Confined Space Entry Training</li> <li>Conflict Management Class</li> <li>Exceeds Job Requirements on Performance Review</li> </ul>	<ul style="list-style-type: none"> <li>Beginning Powerpoint Class</li> <li>Intermediate Powerpoint Class</li> <li>Advanced Powerpoint Class</li> <li>Typing Class</li> <li>Attend a KICP-Keep It Clean Seminar</li> <li>KICP Certificate</li> </ul>
Operations Technician III	<ul style="list-style-type: none"> <li>Knowledge of all facets of Operations.</li> <li>Step up technically and act as lead in absence of Tech IV.</li> <li>Make suggestions on preventative maintenance &amp; help determine repair methods.</li> <li>Above proficient in equipment usage, back hoe/loader/vector/jetter/bobcat.</li> </ul>	2-4	Prerequisite for Tech III: <ul style="list-style-type: none"> <li>Distribution II and III Certifications</li> <li>Collections II and III Certifications</li> <li>Traffic Control Supervisor</li> <li>Trench Safety Supervisor</li> <li>Stormwater Inspector Training</li> <li>Buddy to Supervisor Class</li> </ul>	<ul style="list-style-type: none"> <li>Attend a Water or Collections Seminar</li> <li>Attend a Leadership Class</li> <li>Attend a Water, Collections, Asphalt, or Snow &amp; Ice Conference.</li> <li>Stormwater Inspector</li> <li>Backflow - Cross Connection Certification</li> <li>Welding Certificate</li> <li>Customer Service Class</li> <li>Budgeting Class</li> </ul>
Operations Technician IV	<ul style="list-style-type: none"> <li>Crew lead in field.</li> <li>Stress importance of safety &amp; training.</li> <li>Give technical suggestions to Asst. Ops Manager.</li> <li>Assist in inventory &amp; ordering of supplies.</li> <li>Lucity &amp; Munis competent.</li> </ul>	4+	Prerequisite for Tech IV: <ul style="list-style-type: none"> <li>Distribution IV Certifications</li> <li>Collections IV Certifications</li> <li>Confined Space Supervisor</li> <li>Traffic Control Supervisor</li> <li>Trench Safety Supervisor</li> <li>Supervisory Class</li> </ul>	<ul style="list-style-type: none"> <li>Other Classes as Approved</li> </ul>

## People

## Staff Development

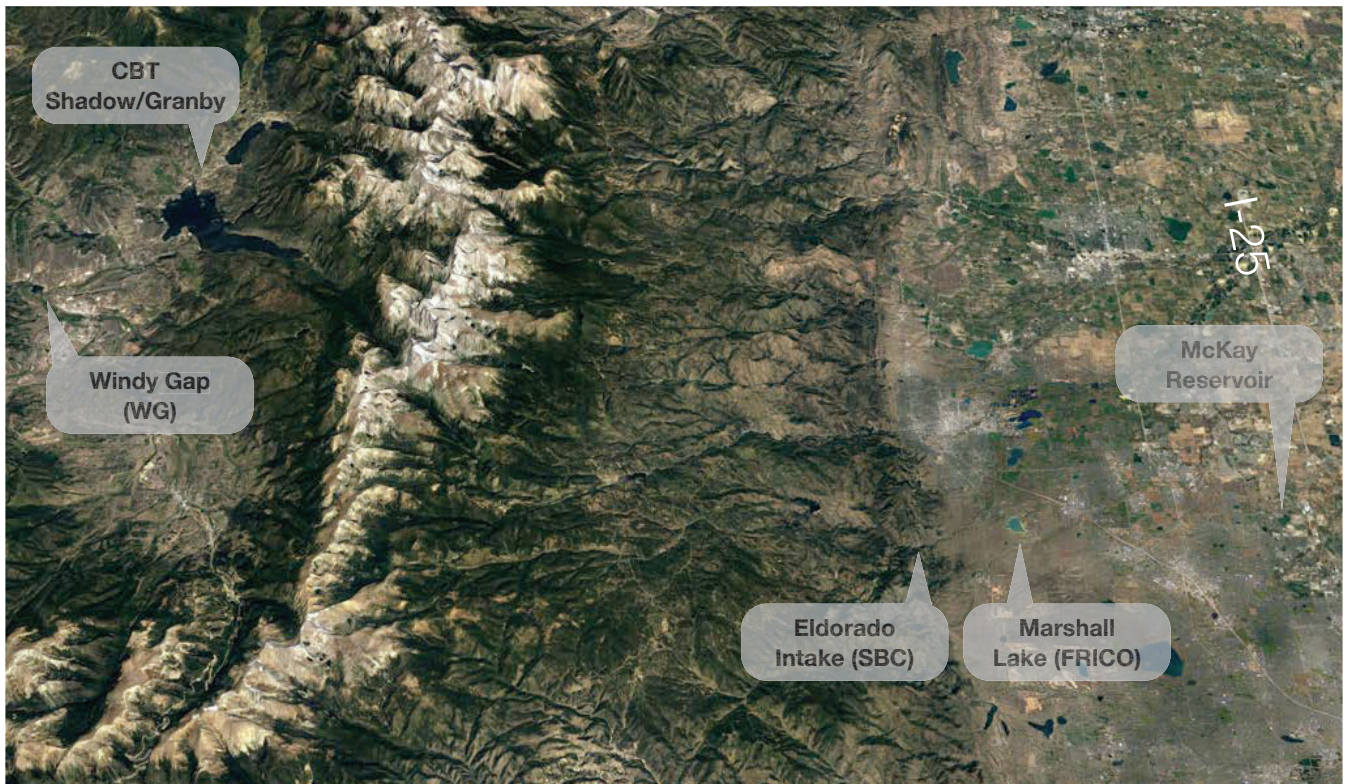
# 2024 Utility Master Plan

Evaluation of Current and Future Regulatory Impacts

Analysis of Existing and Future Conditions for Demand and Capacity.

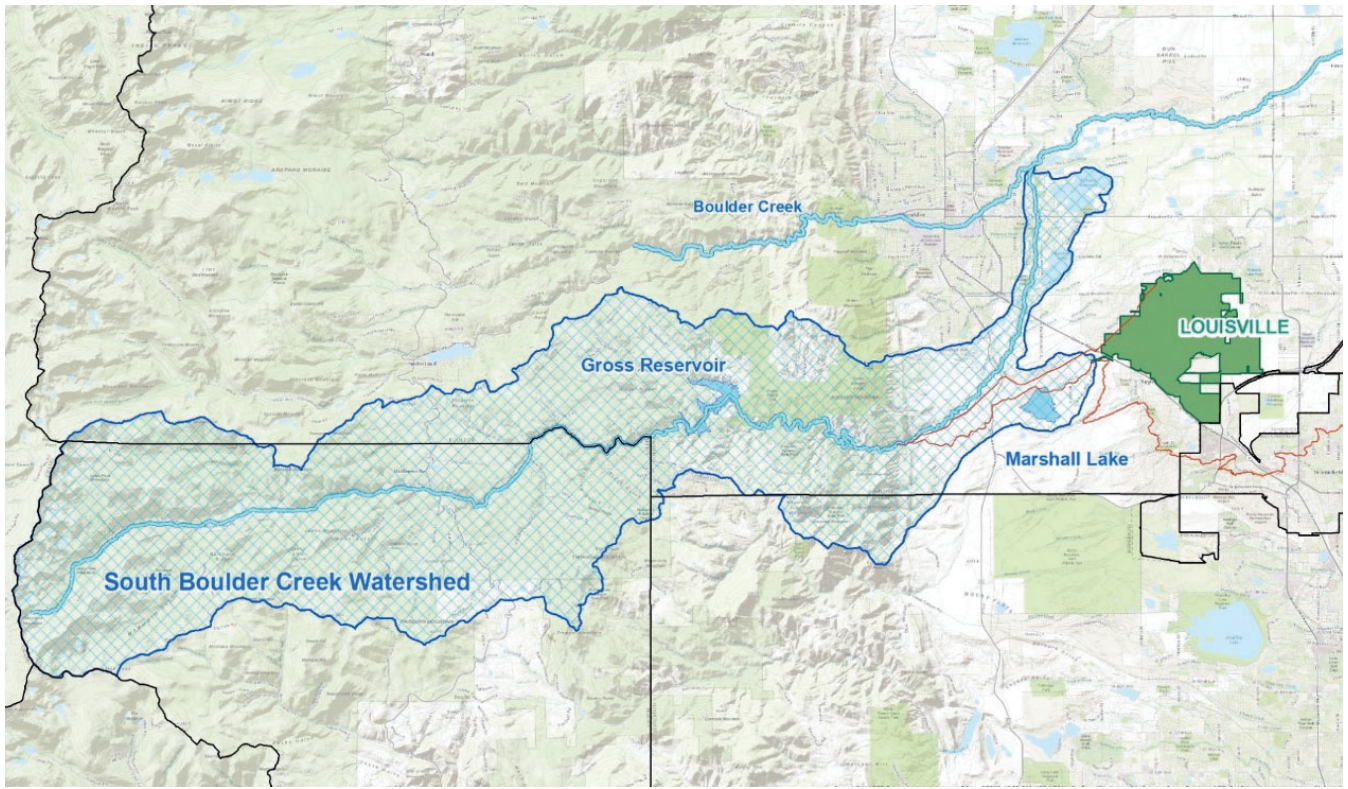
Asset Risk and Criticality Review

Long Term Capital Improvement Project Plan Review and Update



## The Global Perspective

Two River Basins  
East Slope (SBC)  
West Slope (CBT/WG)



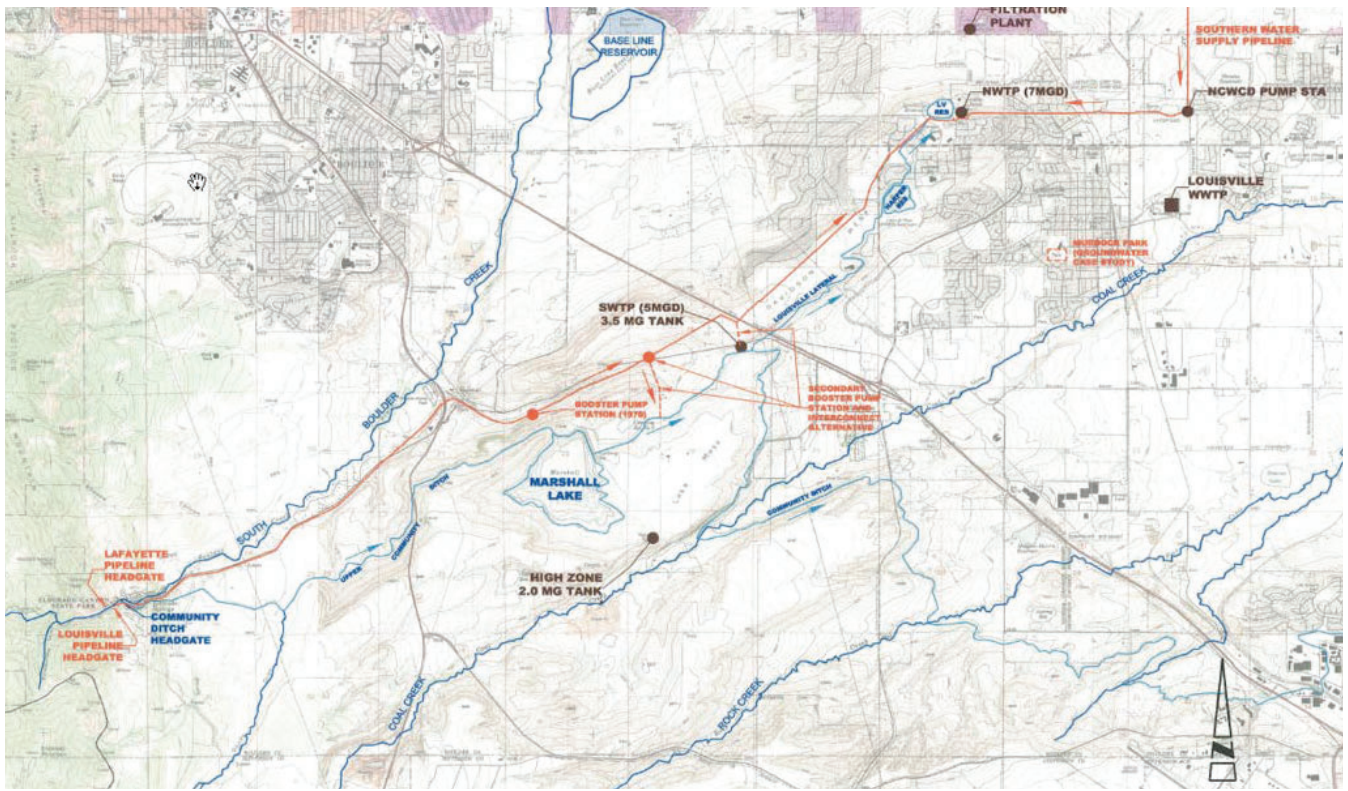
South Boulder Creek

Watershed



Eldorado Canyon Intake

South Boulder Creek



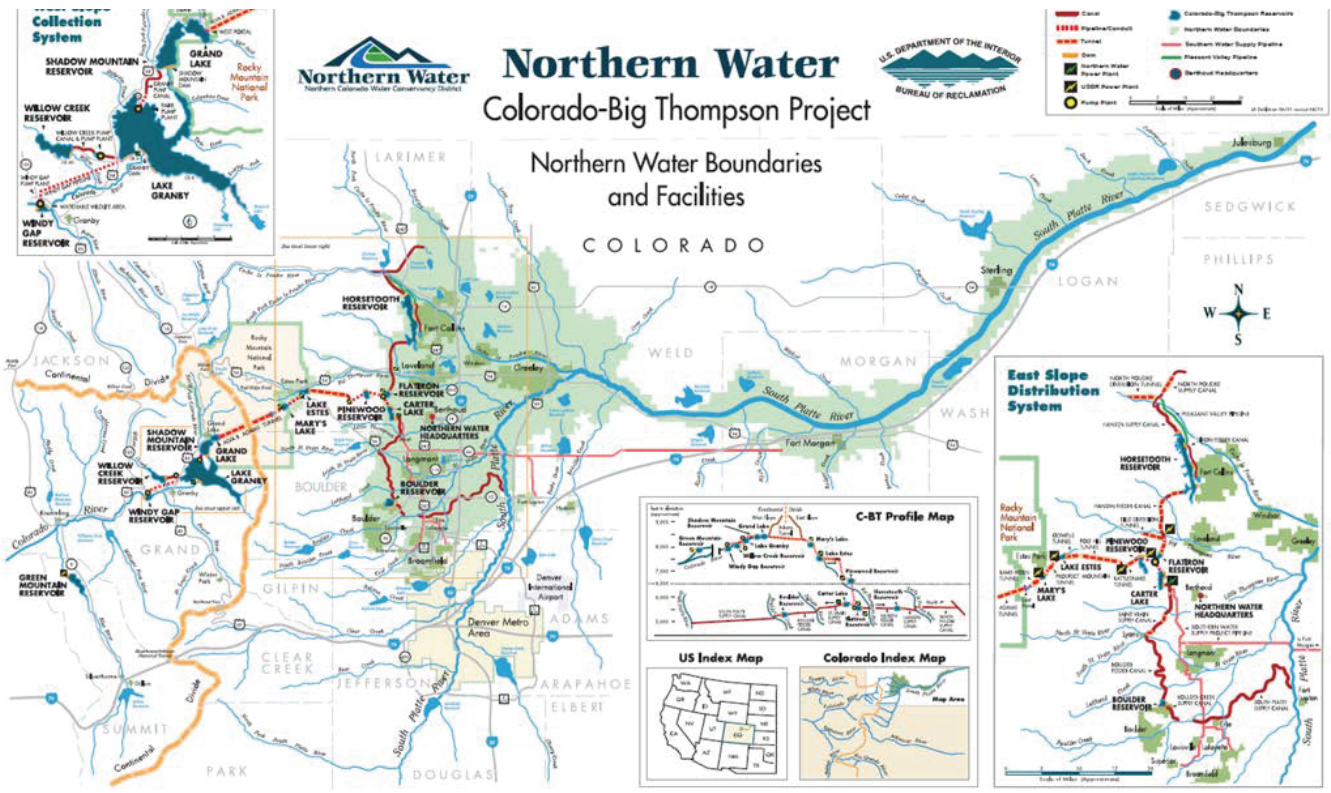
South Boulder Creek (Direct)  
Marshall Lake (FRICO)

Primary Supply ~ 3,800 ac-ft (Firm)  
44 Different Rights  
13 Different Ditch Companies



McKay to Big Dry Creek  
Return Flows

Collaboration (Westminster)



# Colorado Big Thompson Windy Gap

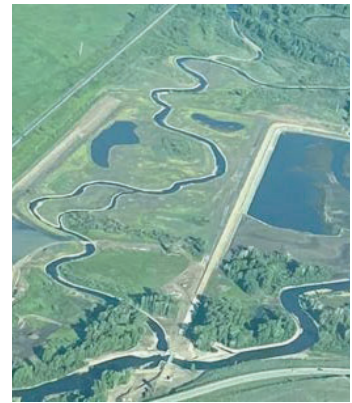
Secondary Supply  
 CBT (Dry) ~ 1,240 ac-ft (Firm)  
 WG (Wet) ~ 2,835 ac-ft (Storage)  
 WG (Wet) ~ 600 ac-ft (Firmed)

## Chimney Hollow

- \$670 Million Project
- \$18.50 Million Louisville Share
- Provides 600 AF of Firm Yield
- Forecasted to be Online 2028/2029







Chimney Hollow and Colorado River Connectivity Channel Construction Progress - Fully Operational by 2029

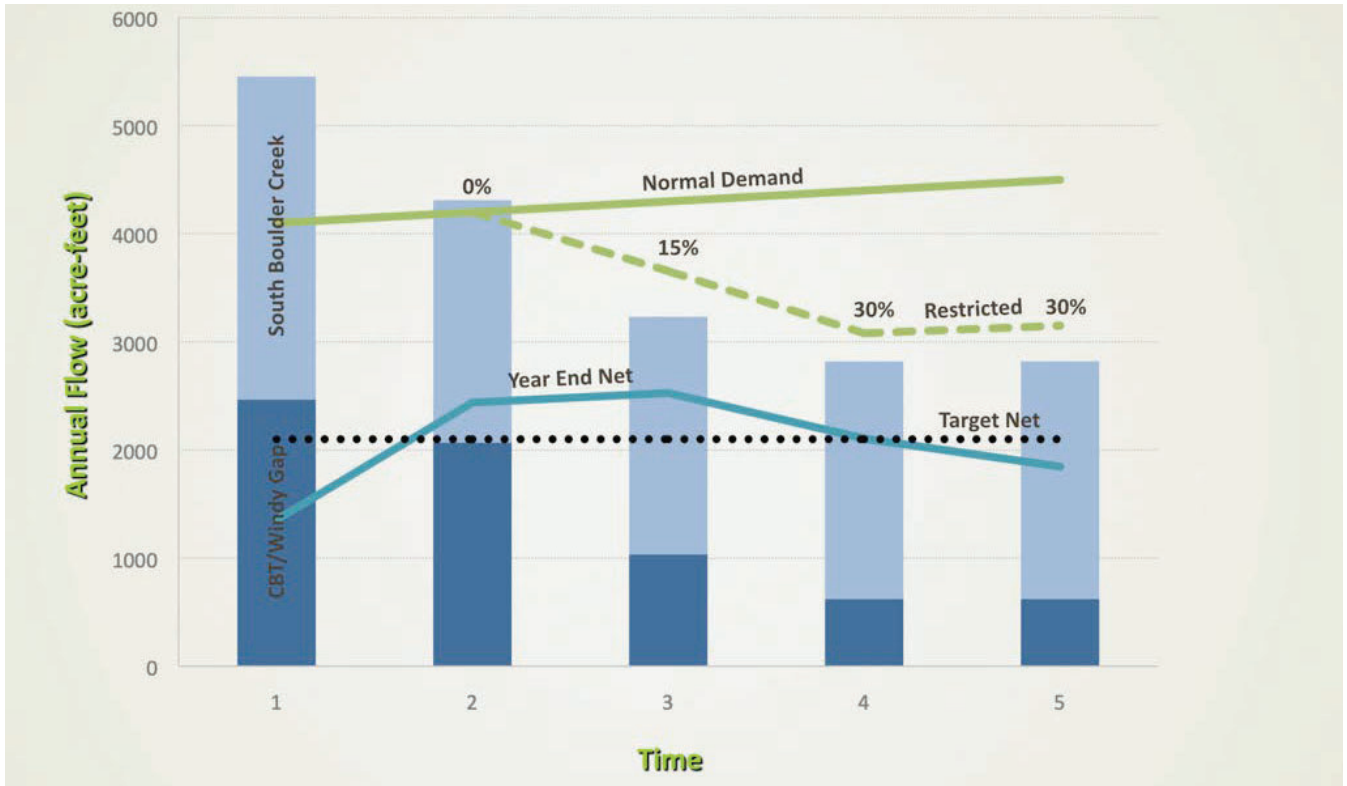


# Water Planning

- **1979** Comprehensive Water System Planning Report
- **1989** Water Distribution System Study Update
- **1992** Raw Water Master Plan
- **1998** Raw Water Master Plan Update
- **2003** Raw Water Master Plan Update
- **2012** Water Infrastructure Master Plan
- **2013** Drought Management Plan
- **2015** Water Efficiency Plan
- **2016** Raw Water Master Plan
- **2024** Utility Master Plan

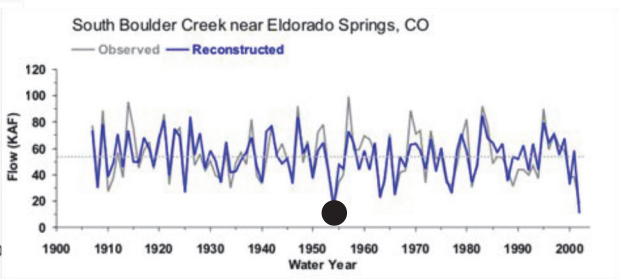
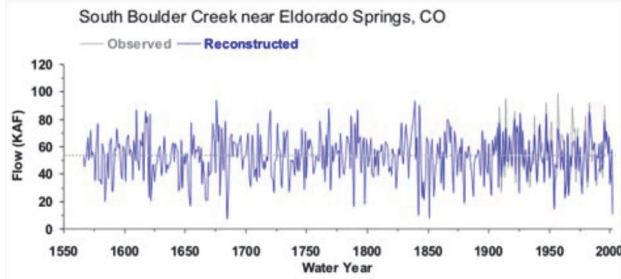


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## Drought

US Drought Monitor  
 Snow Pack ~ Water Supply  
 Demands  
 Windy Gap Firming Critical



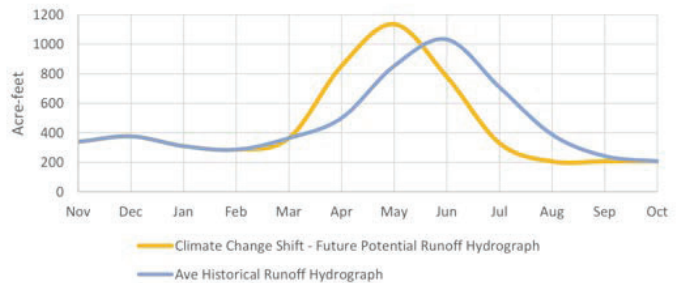
## Drought Planning

## Tree Ring Data

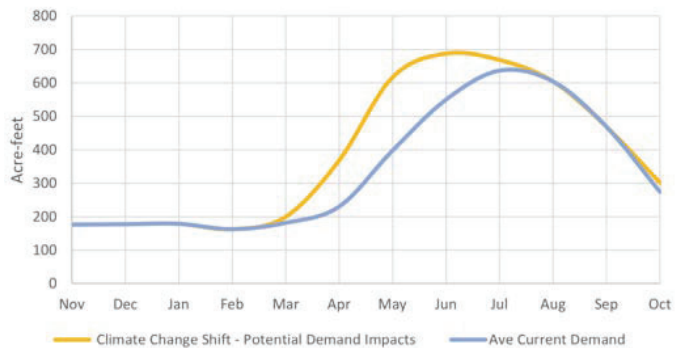
## Climate Change

- **Winter** Precip Increase 10-20%
- **Summer** Precip Decrease 5-15%
- **Late Summer** Stream Flows Decrease 8-10%
- **Irrigation** Demands Increase 5-15%
- **Reservoir** Evaporative Losses Increase
- **Weather** Extremes Increase
- **Storage** becomes more important.
- **Outdoor Watering** Efficiency becomes more important.

**Figure 3**  
Potential Runoff Timing Shift



**Figure 4**  
Potential City Demand Shift



At-A-Glance

# 2023 Cumulative Impact



## GARDEN IN A BOX

- 39 water providers
- 7,746 community members
- 11,554 waterwise gardens sold
- 10,200,000 gallons of water saved\*



## LAWN REPLACEMENT

- 23 water providers
- 604 community members
- 329,213 sq. ft. of lawn removed
- 3,900,000 gallons of water saved\*



## SLOW THE FLOW

- 33 water providers
- 2,231 residential properties
- 48 non-residential properties
- 11,200,000 gallons of water saved\*



## WATERWISE YARD SEMINARS

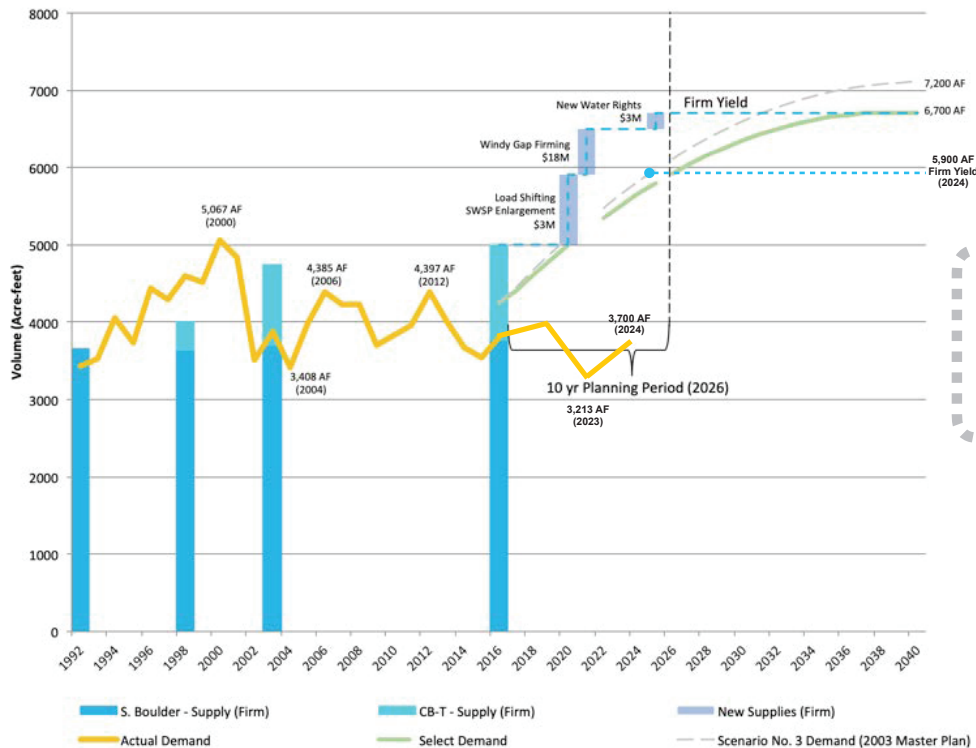
- 16 water providers
- 3,415 community members
- 25 waterwise webinars

\*Estimated water savings in 2023.

## Water Conservation

## Resource Central

### Water Supply and Demand



Scenario 1  
2015  
Water Efficiency Plan  
6,100 ac-ft

Scenario 2  
2013/2016  
Drought Management Modeling Reviews  
6,500 ac-ft

Scenario 3  
2003  
Raw Water Master Plan Update  
7,120 ac-ft

## Raw Water Master Plan

2024 Master Plan  
6,400 - 6,900 ac-ft

# Water Acquisition Considerations

1 ac-ft = 325,000 and supplies 2-3 homes (EQR)

	SBC Basin	CBT/WG Basin
Delivery (\$/ac-ft)	\$0/ac-ft	\$52 - 147 ac-ft
Storage	Marshall	CBT and WGF
Acquisition Cost (\$/ac-ft)	\$25,000 - \$117,000 *	\$108,000
Water Court Risk	High	None
Administration	Complex	Simple
Return Flow Requirements	Yes	No
Reuse	No	CBT-No, WGF-Yes
Resale	Limited	Significant
Resilience	Limited	Significant
Threats	Fire, Landslide, Flood, Colorado Compact Call, Gross Reservoir	Fire, Colorado Compact Call

\* Dependent on watershed where shares are acquired, water court costs, and new infrastructure for return flows.

## Raw Water Integration Project (RIP)

\$5.9 Million

Adds 100 AF of Supply Synergy

Budgeted 2028/2029





System Layout and Pressure Zones (Low, Mid, High)



Sid Copeland Water  
(North) Treatment Facility

8 Million Gallons per Day  
Built in 1985 (40 yrs)



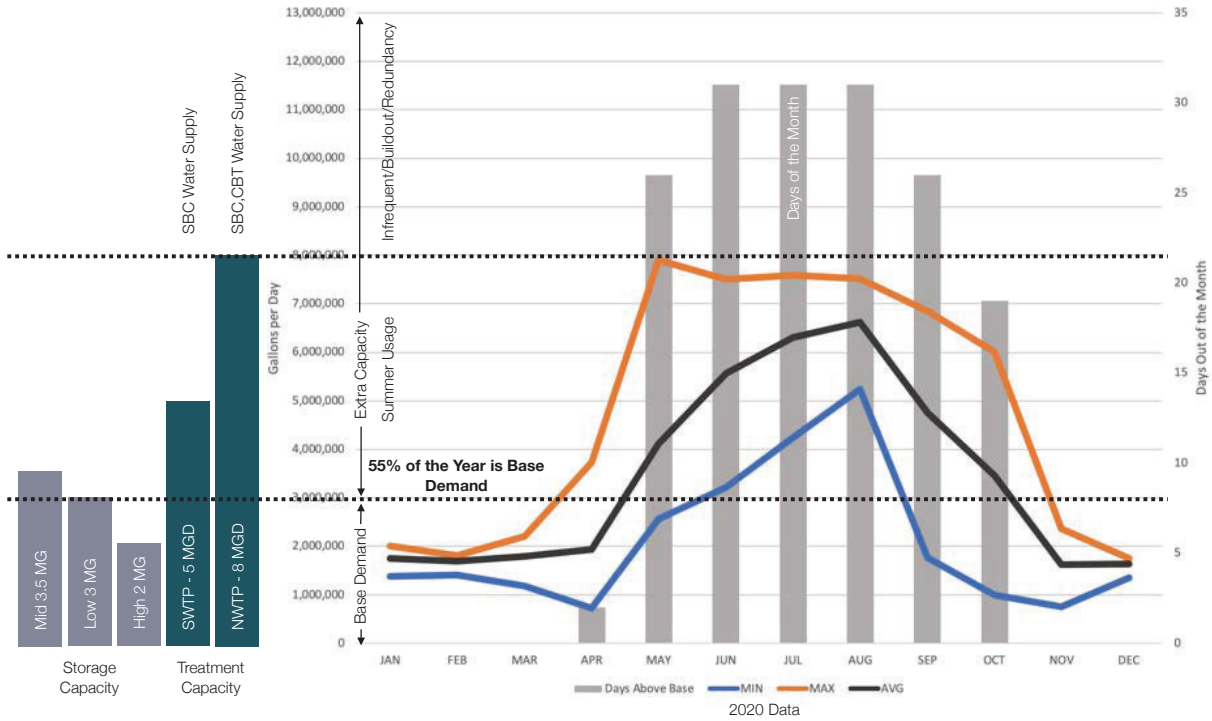
## Howard Berry Water (South) Treatment Facility

5 Million Gallons per Day  
Built in 1993 (30+ yrs)

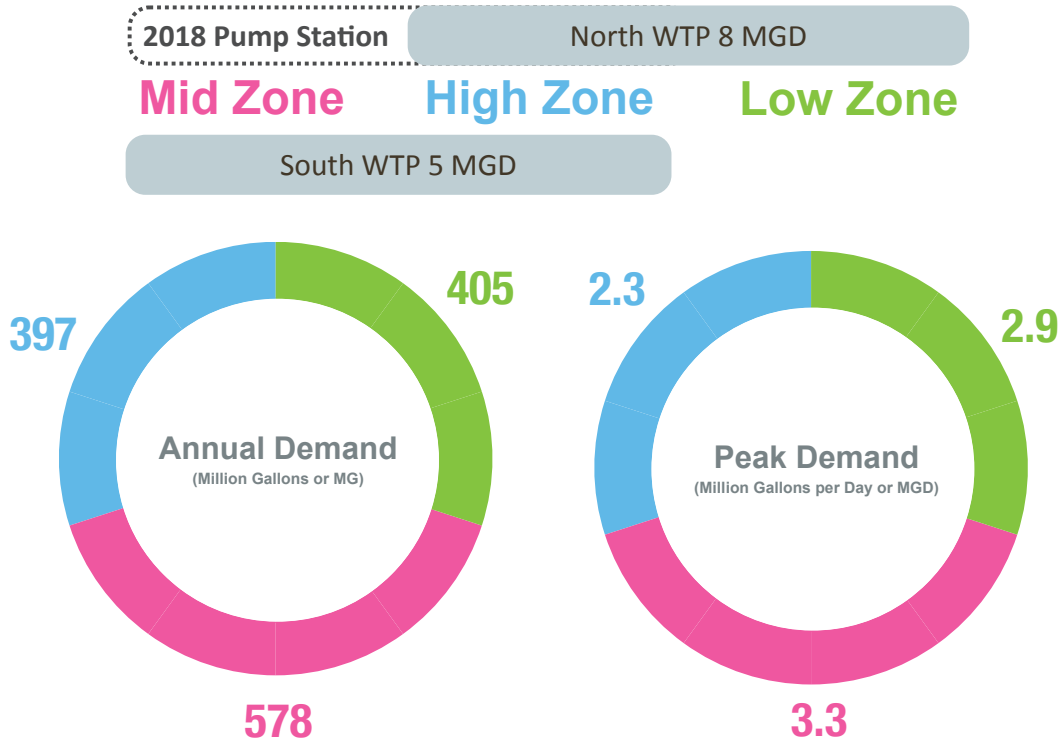


Various Facilities

# Water Treatment Production



# Zone Demand Management





# Distribution and Storage

Flush Hydrants (Water Quality)

Install and Repair Hydrants

Exercise Water Valves

Repair Water Breaks

Install, Repair, Read Water Meters

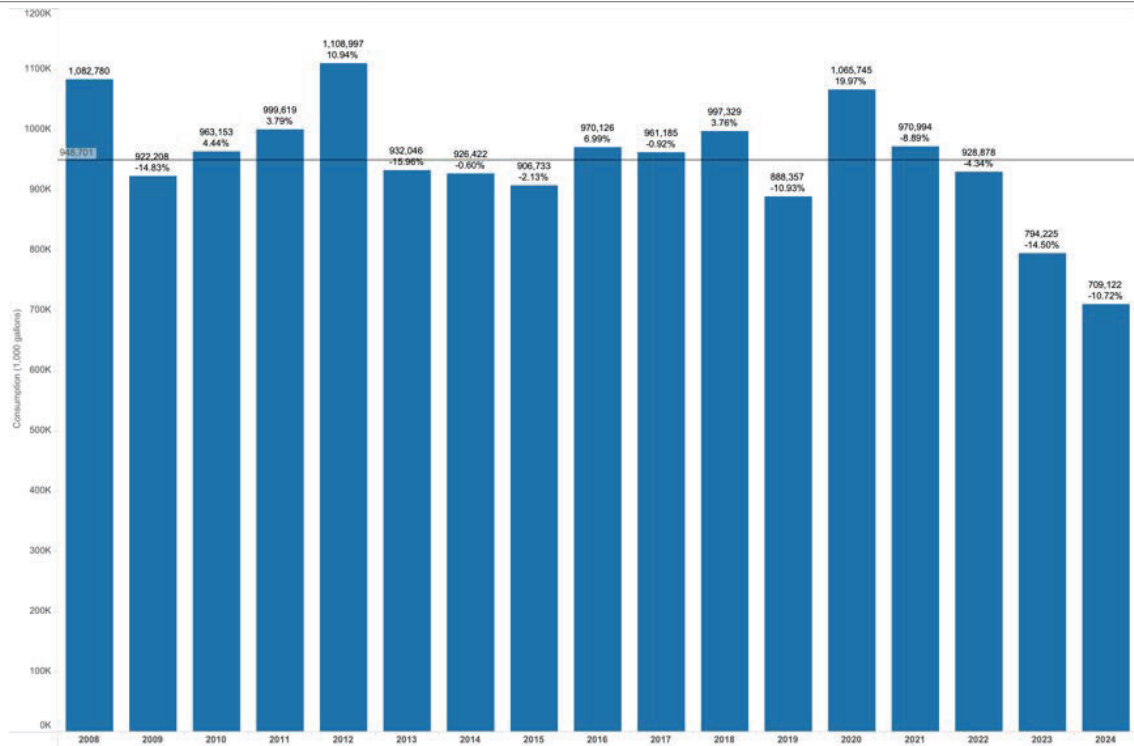
Inspect, Repair, Maintain Storage Tanks

Backflow Prevention and Cross Connection Compliance



## Annual Total Water Usage Gallons

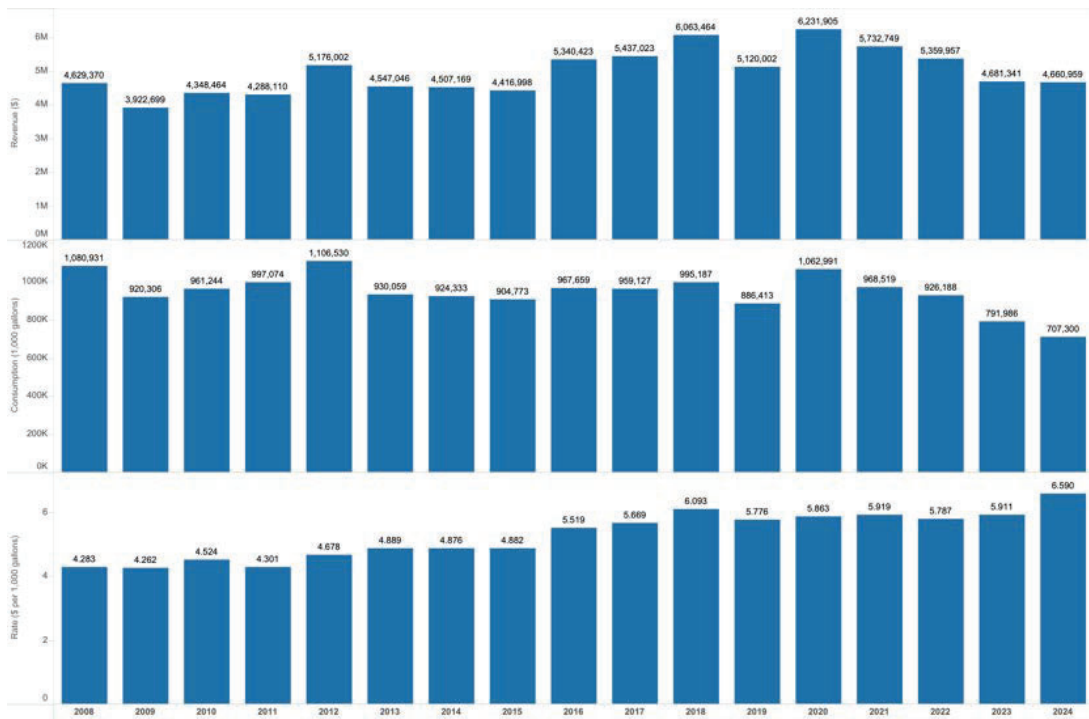
Year over Year % Change, 2024 Data Through August



Sum of Consumption (1,000 gallons) for each Year. The marks are labeled by sum of Consumption (1,000 gallons) and % Difference in Consumption (1,000 gallons). The data is filtered on User Class and location\_code. The User Class filter excludes CITY. The location\_code filter excludes 254062495. The view is filtered on Year, which keeps 17 of 17 members.

# Annual Total Revenue, Usage, \$/Gallon

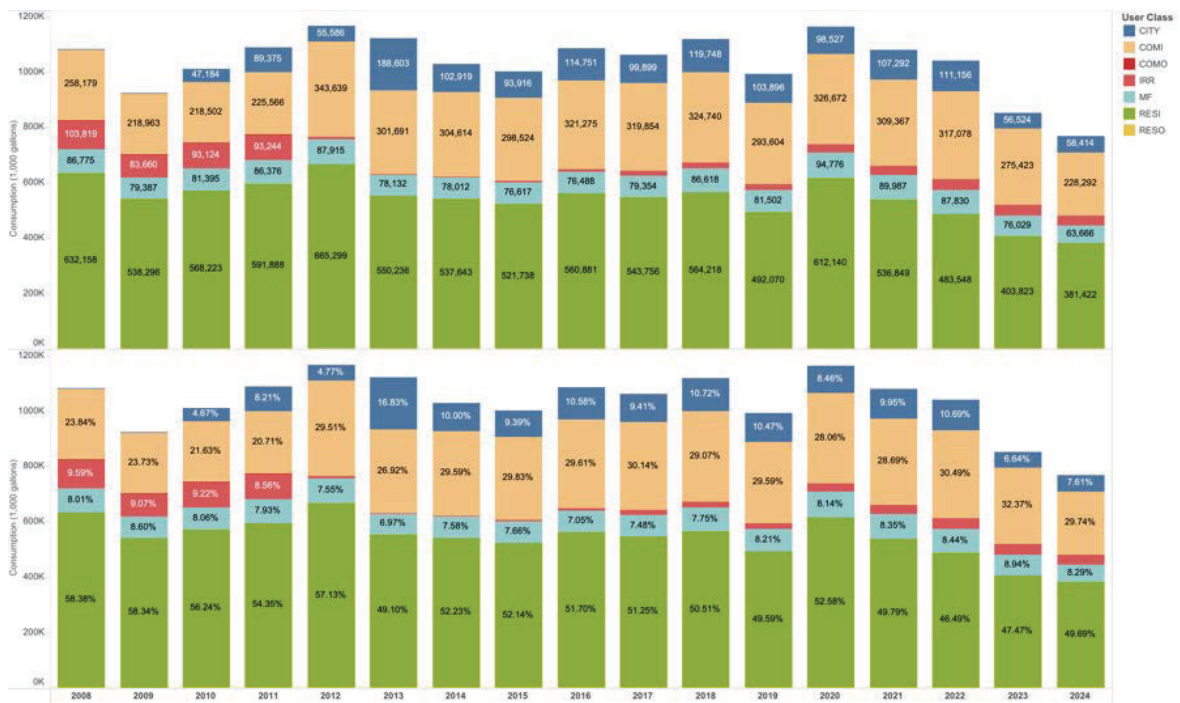
City Usage Revenue Not in Graphs (~\$475,000), 2024 Data Through August



Sum of Revenue (\$), sum of Consumption (1,000 gallons) and Rate (\$ per 1,000 gallons) for each Year. For pane Sum of Consumption (1,000 gallons): The marks are labeled by sum of Consumption (1,000 gallons). For pane Sum of Revenue (\$): The marks are labeled by sum of Revenue (\$). For pane Rate (\$ per 1,000 gallons): The marks are labeled by Rate (\$ per 1,000 gallons). The data is filtered on User Class and location\_code. The User Class filter keeps COMR, IRR, MF and RESI. The location\_code filter excludes 254062495. The view is filtered on Year, which keeps 17 of 17 members.

# Annual Total Usage, % Usage by User Class

2024 Data Through August



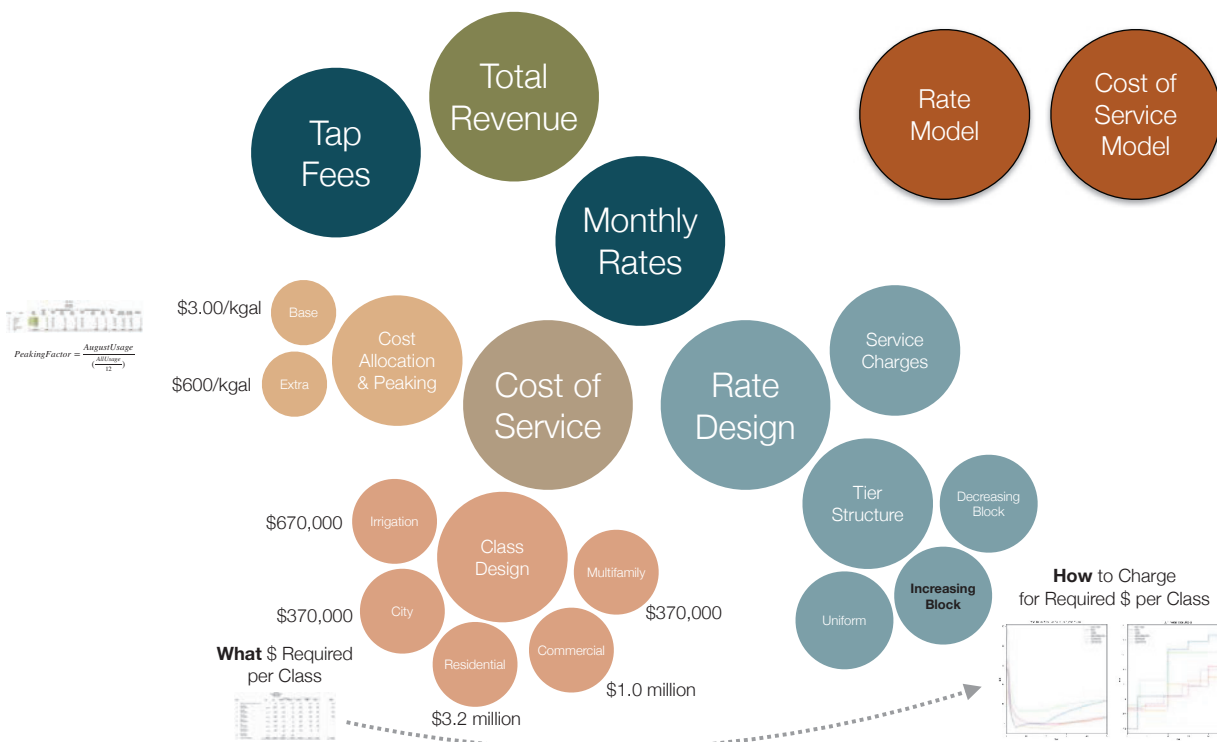
Sum of Consumption (1,000 gallons) and sum of Consumption (1,000 gallons) for each Year. Color shows details about User Class. For pane Sum of Consumption (1,000 gallons): The marks are labeled by sum of Consumption (1,000 gallons). For pane Sum of Consumption (1,000 gallons) (2): The marks are labeled by % of Total Consumption (1,000 gallons). The data is filtered on location\_code, which excludes 254062495. The view is filtered on User Class and Year. The User Class filter excludes -. The Year filter keeps 17 of 17 members.

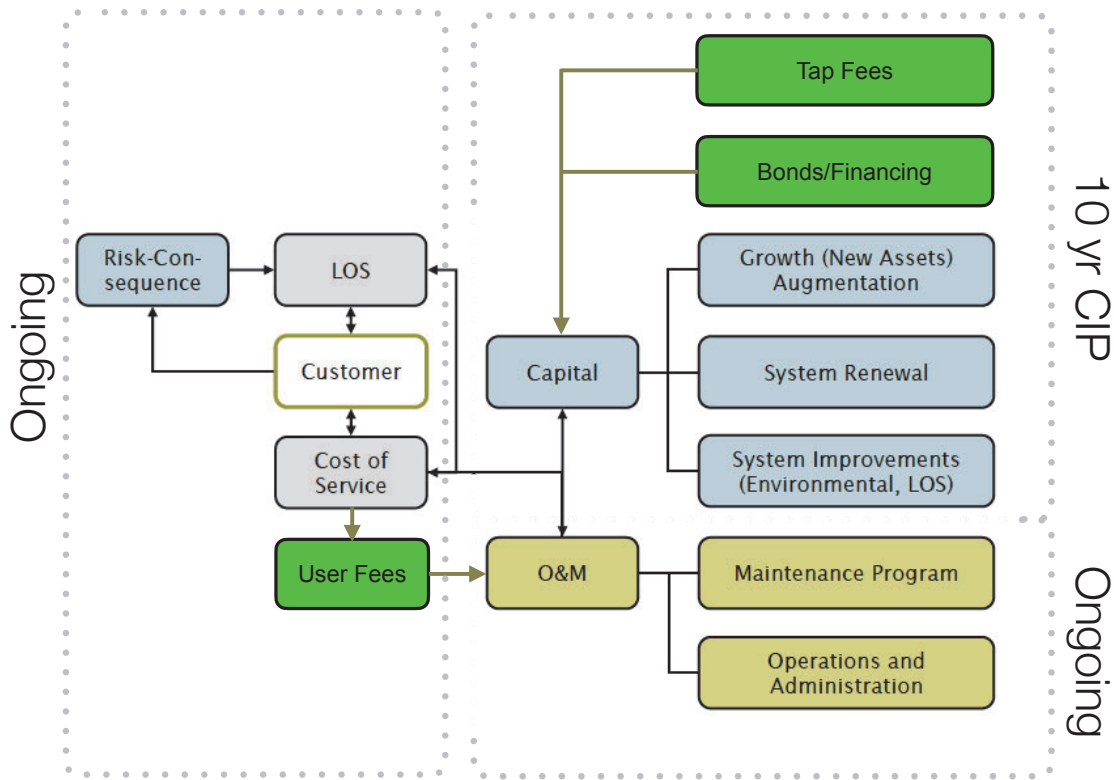
# 2013 Utility Rate Task Force Priorities

## Pricing Objective Rankings *Louisville Rate Study Task Force*

Pricing Objective	Total	Average	Rank
Growth pays for itself	32	4.57	1
Cost of service equity	31	4.43	2
Water conservation	30	4.29	3
Environmental enhancements	26	3.71	4
Customer acceptance	23	3.29	5
Customer impact	21	3.00	6
Fixed income / affordability	20	2.86	7
Revenue stability	19	2.71	8
Administrative ease	18	2.57	9
Peak usage reduction	17	2.43	10
Large volume customers	12	1.71	11

## The Pieces of the Utility Financing Picture





## The Rate Model

Water  
Sewer  
Storm

35

## 3/4" Tap Fee Base Fee

\$14,100 **Facilities**  
\$39,400 **Water**

\$53,500 **Total Water System Fee \***

\* Provision for Developers to provide acceptable water in lieu Water Acquisition portion of fee.

**Luke Runyon** @LukeRunyon · Aug 20  
In the 2016 auction CBT units went for \$26,000-\$27,000 a piece, mostly bought by fast-growing north Denver suburbs. Today, they could go for upwards of \$60,000.  
4 5 10

**Luke Runyon** @LukeRunyon [Follow](#)  
One unit of CBT water just went for \$60,000. That's a new record in the history of the project, built in the 1930s.

0:26 1,059 views

9:34 AM - 28 Aug 2019  
5 Retweets 12 Likes

**Luke Runyon** @LukeRunyon · Aug 28  
Most units selling for between \$55,000-\$60,000.  
1 1 4

36

# Growth Infrastructure Facilities Buy In \$14,100

1. Raw Water Infrastructure
2. Pipes
3. Water Treatment
4. Water Storage
5. Water Pumping

Represents **Equity** via SFE's

Backbone			
12	150,197	\$185.00	\$27,786,000
14	1,830	\$189.00	346,000
16	17,212	\$193.00	3,322,000
18	9,114	\$197.00	1,795,000
24	21,733	\$201.00	4,368,000
30	935	\$206.00	193,000
36	5,770	\$211.00	1,217,000
Total	206,791		\$39,027,000
Water Treatment Plant			
	Max Day Capacity	Current Construction Cost per Staff	Current Cost
	gallons per day	per gpd	
Total Water Treatment Plant	13,000,000	\$4.00	\$54,200,000
Treated Water Storage			
	Volume	Current Construction Cost per Staff	Current Cost
	gallons	per gallon	
Total Treated Water Storage	8,500,000	\$1.25	\$10,625,000
Treated Water Pumping			
		Current Construction Cost per Staff	
Pump Station		\$2,800,000	
Pump Station		800,000	
Total Treated Water Pumping		\$3,600,000	
Raw Water Infrastructure			
		Current Construction Cost per Staff	
NCWCD Pipeline (Carter Lake to Broomfield)		\$4,739,000	
NCWCD Superior Louisville Pump Station		4,000,000	
Louisville NWTP & NCWCD Connecting Line		5,900,000	
Eldorado Intake Buildings & Dam		1,560,000	
Harper Lake Pump Station		900,000	
Louisville Pipeline Interconnect		581,000	
Louisville Pipeline (16-in)		8,588,500	
Louisville Lateral (open ditch)		250,000	
Cherry Street Pipeline		2,393,000	
Louisville Reservoir		1,450,000	
Harper Lake		3,575,000	
Total Raw Water Infrastructure		\$33,936,500	
Fee Calculation			
Total Facilities Current Cost		\$	141,388,500
Less Principal on Outstanding Debt		\$	(6,900,000)
Water System Equity		\$	135,488,500
No. of Equivalents (a)			9,626
Water SDC, per equivalent		\$	14,076
(a) One equivalent represents the water service characteristics of a typical single family residential customer. One multifamily unit equals 0.8 equivalents. Nonresidential customer equivalents are based on 3/4-inch meter capacity ratios. 37			

Water Utility						
Development of Proposed Water Resource System Development Charge						
Line No.						
1	Average annual SFE usage, gallons	117,000	gallons			
2	Estimated water losses in City system (a)	15%		Includes 15% local distribution system water losses.		
3	Average annual production needed to serve an SFE, gallons	137,650	gallons			
4	Gallons per acre-foot	325,850	gallons			
5	SFE per acre-foot	2.367	SFE	2020	2016	2014
6	Estimated C-BT current cost per acre-foot	\$93,167	per acre-foot	\$93,167	\$41,000	\$28,833
7	Current C-BT cost per SFE	\$39,360	per SFE		17,319.78	
(a) Includes 15% local distribution system water losses.						

TABLE WSDC-3

Water Utility  
Schedule of Water System Development Charges

Meter Size	Existing	Proposed SDC			City Demand Ratios				
		Facilities	Water Resource	Total	Demand Amount	3/4-inch equiv			
3/4	\$ 30,500	\$ 14,100	\$ 39,400	\$ 53,500	gallons per year	1.00			
1	\$ 54,400	\$ 25,100	\$ 70,200	\$ 95,300	117,000	1.78	\$ 95,230	\$ 54,290	
1 1/2	\$ 122,000	\$ 56,400	\$ 157,600	\$ 214,000	208,260	4.00	\$ 214,000	\$ 122,000	
2	\$ 217,000	\$ 100,300	\$ 280,200	\$ 380,500	468,000	7.11	\$ 380,385	\$ 216,855	
3	\$ 488,000	\$ 225,600	\$ 630,400	\$ 856,000	831,870	16.00	\$ 856,000	\$ 488,000	
4	\$ 867,500	\$ 401,100	\$ 1,120,600	\$ 1,521,700	1,872,000	28.44	\$ 1,521,540	\$ 867,420	
					3,327,480				

## Water Rights Acquisition

CBT Market Rate  
Incremental Cost

**City of Louisville**  
WATER, SEWER, AND IRRIGATION TAP FEES ESTABLISHED PURSUANT TO THE LOUISVILLE MUNICIPAL CODE, DELEGATING AUTHORITY TO THE CITY MANAGER TO ESTABLISH TAP FEES ON A QUARTERLY BASIS. EFFECTIVE OCTOBER 1, 2016.

**TAP FEE CALCULATION FORM**

Utilize this form to determine Water, Sewer, and Irrigation Tap Fees by completing the shaded cells. For each premise (separate building) a Tap Fee will be assessed. For Multifamily, Non-Residential, and Other Users, please fill out a separate sheet for each premise. Additional information on Tap Fees and other utility service requirements may be found in the Louisville Municipal Code.

Project Location: \_\_\_\_\_ Subdivision: \_\_\_\_\_ File #: \_\_\_\_\_ Sheet: \_\_\_\_\_ Lot: \_\_\_\_\_

Property Owner: \_\_\_\_\_ Owner's Address (if different): \_\_\_\_\_  
 Owner's Email Address: \_\_\_\_\_ Owner's Phone #: \_\_\_\_\_  
 Job Contact Name (if different): \_\_\_\_\_ Contact Phone #: \_\_\_\_\_  
 Existing System Connection:  Yes  No Meter Size: \_\_\_\_\_

**WATER TAP FEES**

**1) Single-Family Residential Tap Fee** (single family, duplexes and mobile homes)

3/4" Meter: \_\_\_\_\_ x \$53,000 = \$ \_\_\_\_\_  
 1" Meter: \_\_\_\_\_ x \$95,000 = \$ \_\_\_\_\_

**INSTRUCTIONS:** Utilize this section to determine the water tap fee for the proposed residential development. Insert the number of single-family, duplex and mobile home units in the appropriate meter size category to determine the tap fee. Each unit of a duplex and each mobile home is considered to be equivalent to a single family unit.

Total Single-Family Residential Tap Fee = \$ \_\_\_\_\_

**2) Multifamily Residential Tap Fee** (apartments, multifamily and senior independent living, as defined in Louisville Municipal Code)

Fluores Count: \_\_\_\_\_ Meter Size: \_\_\_\_\_  
 Townhouse: \_\_\_\_\_ x \$42,000 = \$ \_\_\_\_\_  
 Multifamily: \_\_\_\_\_ x \$32,100 = \$ \_\_\_\_\_  
 Senior: \_\_\_\_\_ x \$16,050 = \$ \_\_\_\_\_

**INSTRUCTIONS:** Provide future count and meter size. Utilize this section to determine the water tap fee for the proposed residential development. Insert the number of Townhouses, Multifamily or Senior Independent units and multiply the number of units by the associated tap fee to determine the total tap fee. Sum the total for each unit type, which will be the total tap fee for those units.

Total Cost = \$ \_\_\_\_\_

**3) or more Townhouse or Multifamily Units:** separate irrigation tap required, provide Plumbing Permit number for the separate irrigation tap.

No. of Units: \_\_\_\_\_ x \$ 8,625 = \$ \_\_\_\_\_

**INSTRUCTIONS:** Townhouse and Multifamily premises with fire or alarm units are required to obtain a separate irrigation tap. The separate irrigation tap allows for a credit to be applied to the per unit tap fee. The irrigation tap credit is calculated on the total number of units multiplied by the credit. Senior Independent Living Units are not eligible for the irrigation tap credit. (Irrigation Tap information should be included in Section 4 on the next page)

Total Multifamily Residential Tap Fee = \$ \_\_\_\_\_

CONTINUE ON THE OTHER SIDE

**3) Non-Residential and Other User Tap Fee** (Non-Residential and Other Users include: commercial, industrial, water, institutions, public, sports, water features)

Annual Volume Demand: \_\_\_\_\_  
 Meter Size: \_\_\_\_\_  
 Meter Size (from Table): \_\_\_\_\_  
 Annual Volume Demand (from Meter Size Table): \_\_\_\_\_

**INSTRUCTIONS:** Applicant to provide annual Volume and Other User Demand, calculated by a licensed engineer or architect. Non-Residential Users are required to obtain a separate irrigation tap. The Tap Fee is calculated based on the volume of Total Demand. Volume Demand is calculated by multiplying the Annual Volume Demand and the Annual Demand Budget by 117,000, then multiplying by \$0.001. Add the Water Tap Fee and Additional Tap Fee to derive the Total Tap Fee.

Annual Demand Budget	Water Tap Fee	Meter Size	Annual Demand Budget	Water Tap Fee
100,000	\$1,170.00	1/2"	1,000,000	\$11,700.00
200,000	\$2,340.00	3/4"	2,000,000	\$23,400.00
300,000	\$3,510.00	1"	3,000,000	\$35,100.00
400,000	\$4,680.00	1 1/4"	4,000,000	\$46,800.00
500,000	\$5,850.00	1 1/2"	5,000,000	\$58,500.00
600,000	\$7,020.00	2"	6,000,000	\$70,200.00
700,000	\$8,190.00	2 1/2"	7,000,000	\$81,900.00
800,000	\$9,360.00	3"	8,000,000	\$93,600.00
900,000	\$10,530.00	3 1/2"	9,000,000	\$105,300.00
1,000,000	\$11,700.00	4"	10,000,000	\$117,000.00

Total Non-Residential and Other User Tap Fee = \$ \_\_\_\_\_

**4) Irrigation Tap Fee**

Irrigation Demand: \_\_\_\_\_ gpm  
 Meter Size: \_\_\_\_\_ (Select 3 Tables)  
 Total Irrigated Area (sq ft): \_\_\_\_\_  
 Irrigation Demand (gallons/day): \_\_\_\_\_  
 x 10 gallons/day = \_\_\_\_\_

Irrigation Demand (gallons/day): \_\_\_\_\_  
 Irrigation Tap Fee: \_\_\_\_\_

Number of Drop Taps: \_\_\_\_\_  
 Drop Tap Fee: \_\_\_\_\_

Total Irrigation Tap Fee = \$ \_\_\_\_\_ (sum of Irrigation Tap Fee and Drop Tap Fee)

**INSTRUCTIONS:** This section is to be used for Duplex, Multifamily, Townhouse, and Non-Residential developments. Total Irrigation Tap Fee is equal to the tap fee associated with the Irrigation Demand and Drop Tap Fee for separate drop irrigation. Provide irrigation design showing total irrigated area and maintenance demand for each acre, calculated by multiplying the area by the applicable maintenance demand for the appropriate meter size. Irrigation Demand is calculated by multiplying the total irrigated area by 10 gallons per square foot. The minimum irrigation tap fee is set by the base tap fee for the associated meter size from the Table in Section 3.

**5) Sewer Tap Fee**

Single Family: \_\_\_\_\_ x \$4,400 = \$ \_\_\_\_\_  
 Townhouse: \_\_\_\_\_ x \$4,400 = \$ \_\_\_\_\_  
 Multifamily: \_\_\_\_\_ x \$4,400 = \$ \_\_\_\_\_  
 Senior: \_\_\_\_\_ x \$ 3,300 = \$ \_\_\_\_\_

Commercial Sewer Tap Fees  
 3/4" Meter: \_\_\_\_\_ x \$5,500 = \$ \_\_\_\_\_  
 1" Meter: \_\_\_\_\_ x \$6,600 = \$ \_\_\_\_\_  
 1 1/2" Meter: \_\_\_\_\_ x \$12,000 = \$ \_\_\_\_\_  
 2" Meter: \_\_\_\_\_ x \$20,000 = \$ \_\_\_\_\_  
 3" Meter: \_\_\_\_\_ x \$30,000 = \$ \_\_\_\_\_  
 4" Meter: \_\_\_\_\_ x \$50,000 = \$ \_\_\_\_\_

**INSTRUCTIONS:** Utilize this section to determine the sewer tap fee for the proposed development. Insert the number of Single Family, Townhouse, Multifamily, or Senior Independent units and multiply the number of units by the associated tap fee to determine the total tap fee. Single Family category includes each mobile home and each unit in a duplex. Commercial tap fees are charged based on sewer meter size.

Total Sewer Tap Fee = \$ \_\_\_\_\_

Form Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Payment Received By: \_\_\_\_\_ Date: \_\_\_\_\_

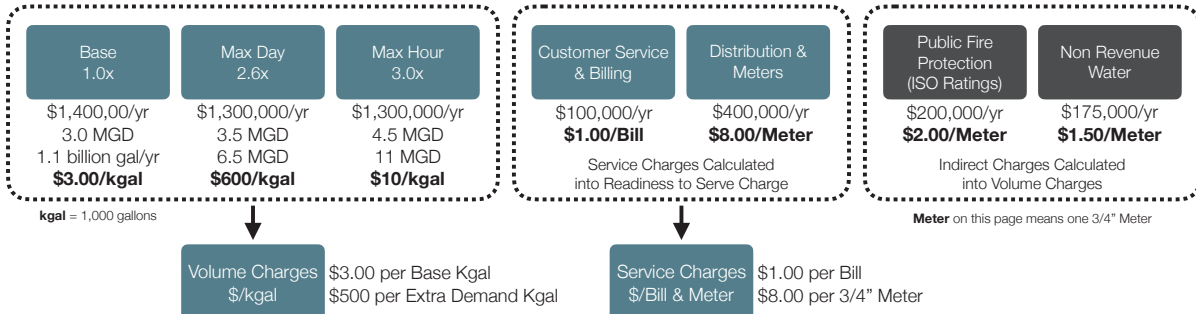
# Tap Fee Form

Categorized Fees by User  
 Irrigation Tap Fee  
 Review Annual and Instant Demands  
 Tap Credits on Cash Paid or Volumetric

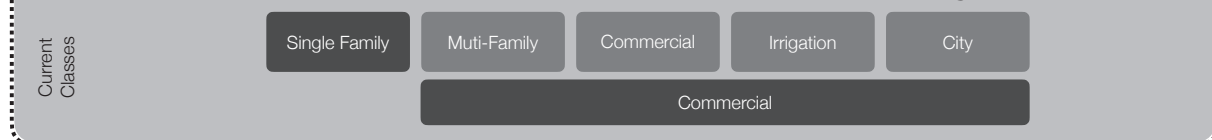
## Categorize \$3,200,000 in Operational Costs by Function (No Capital)

Base / MD / MH	Supply 100% / 0% / 0%	Treatment 62% / 38% / 0%	Storage 33% / 54% / 13%	Transmission 38% / 62% / 0%	Distribution Meter Equivalents	Billing # Bills	Meters Meter Equivalents
Ops Budget	\$600,000	\$1,800,000		\$300,000	\$300,000	\$100,000	\$100,000

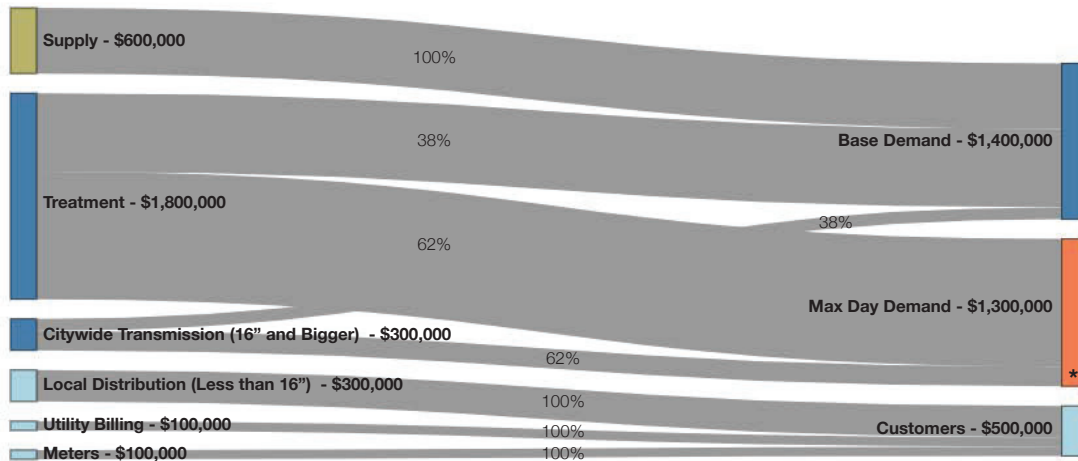
## Allocate to Cost Components of Service



## Allocate to Customer Classes by Patterns and Peaking Factor



# How Operational Costs are Allocated



\* Max Hour Demand is served by Max Day Demand. Operationally it doesn't cost extra.

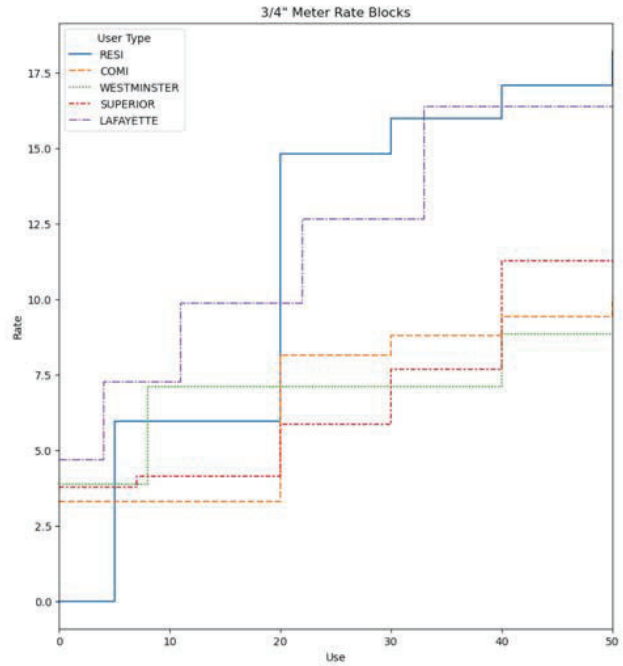
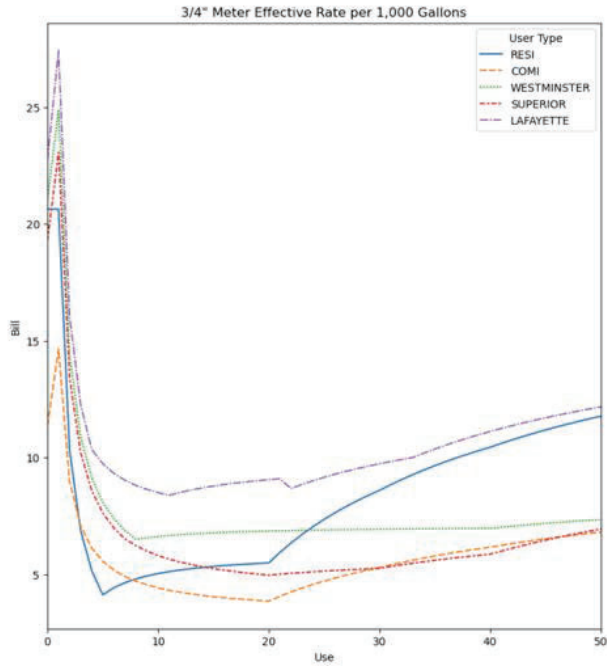
## City Capital Financing Options

- **Pay-As-You-Go** through user rates. (Monthly Bill)
- **Debt Financing** through Revenue Bonds. (Monthly Bill)
- **System Development Charges** (Tap Fees)
- **Up-Front Direct Project** Reimbursement from developers.



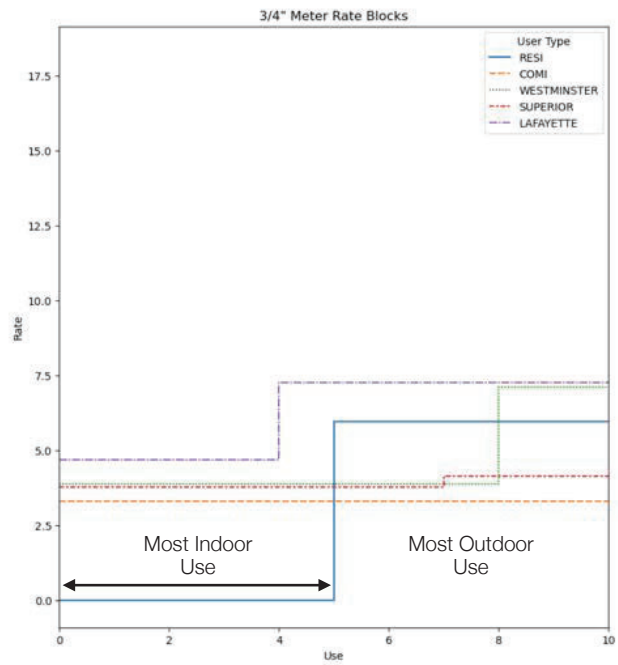
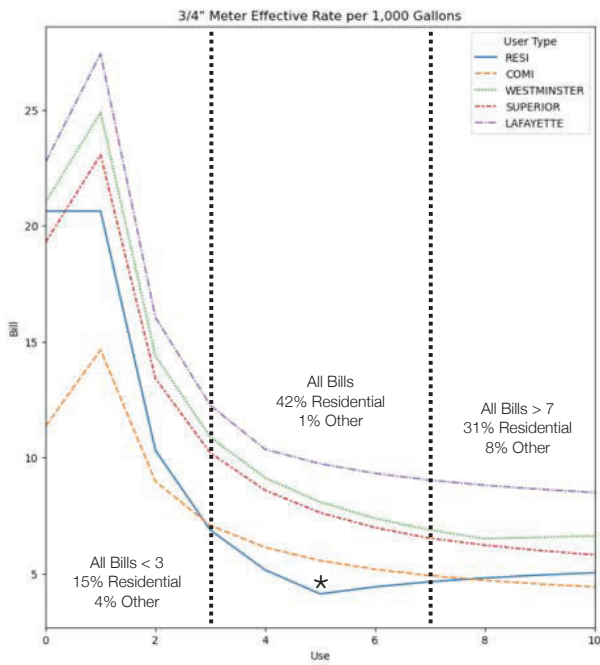
# 3/4" Rate Comparison

0 to 50,000 gallons



# 3/4" Rate Comparison

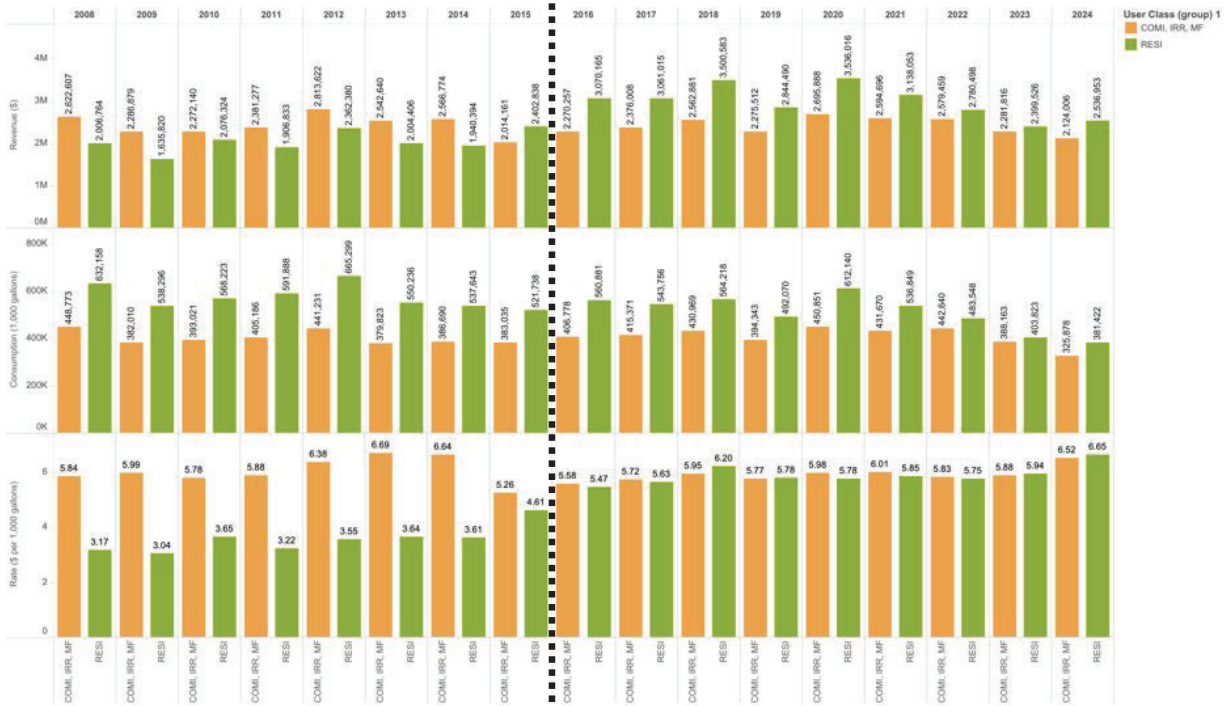
0 to 10,000 gallons





# Annual Total Revenue, Usage, \$/Gallon by Rates

City Usage Revenue Not in Graphs (~\$475,000). Add \$1.00/gal to combined Commercial Rate for City Revenue.



Sum of Revenue (\$), sum of Consumption (1,000 gallons) and Rate (\$ per 1,000 gallons) for each User Class (group) 1 broken down by Year. Color shows details about User Class (group) 1. For pane Sum of Consumption (1,000 gallons): The marks are labeled by sum of Consumption (1,000 gallons). For pane Sum of Revenue (\$): The marks are labeled by sum of Revenue (\$). For pane Rate (\$ per 1,000 gallons): The marks are labeled by Rate (\$ per 1,000 gallons). The data is filtered on User Class and location\_code. The User Class filter keeps COM, IRR, MF and RES. The location\_code filter excludes 254062495. The view is filtered on Year, which keeps 17 of 17 members.