

SUBJECT: DISCUSSION / DIRECTION – ACCESSORY DWELLING UNIT TAP FEES

DATE: MAY 20, 2025

PREPARED BY: KURT KOWAR, P.E., DIRECTOR OF PUBLIC WORKS AND UTILITIES

PRESENTED BY: KURT KOWAR, P.E., DIRECTOR OF PUBLIC WORKS AND UTILITIES

SUMMARY:

Accessory Dwelling Unit (ADU) Water Tap Fees

Staff is proposing consideration of 2 options and recommendation of Option #2 for water tap fees for ADU's based upon review of water usage patterns within Louisville. Options considered:

1. Accessory Dwelling Unit Water Tap Fee
 - a. 0.20 single family equivalents for ADU footprints eliminating irrigated turf.
 - b. 0.30 single family equivalents for ADU's not eliminating irrigated turf.
2. Urban Single Family Residential Tap Fee – Free. This option recognizes water taps sold to parcels that service single family residential as a lot that by zoning code will be allowed multiple units in the form of a primary residence and an ADU. This new category would also eliminate differentiating between ¾" and 1" taps and just recognize the service as an overall parcel.

It is also recommended that regardless of the option selected that these considerations be reevaluated after a period of 5 years. (1-3 years of ADU construction, 1-4 years of usage data collection)

Utility staff performed an exhaustive analysis of water usage records to identify current usage patterns indoors within single family homes and multifamily units as well as usage patterns outdoors for landscape irrigation. Within the single-family home customer class there is a broad range of usage between small homes with small yards all the way up to large homes with large yards resulting in differences on average of 90,000 gallons per year per parcel. Indoor usage indicates minimal variances between small and large homes (10,000 – 15,000 gallons per year) while outdoor irrigation indicates the largest differences (25,000 – 75,000 gallons per year).

ADU annual water usage data is not readily available. Analysis of Louisville data for various multifamily and senior living usage patterns per unit and overall usage of indoor gallons per capita per day usage (gpcpd ~ terminology for the average amount of water one person uses in a day) provided information that could be utilized to estimate ADU annual usage. On average it is expected that an ADU could utilize 15,000 – 25,000 gallons per year indoor usage. A reduction of 5,000 gallons per year to that estimate could be applied if the footprint of the ADU is replacing irrigated turf.

Based upon overall average differences in usage (up to 90,000 gallons per year) within the same residential customer class, integration of an ADU (15,000 – 25,000 gallons per year) into an existing residential parcel will have significantly less impact on the overall system than year to year (wet to dry) seasonal impacts. Furthermore, ADU's that replace irrigated turf reduce seasonal variation and introduce smaller consistent baseline demands.

Overall, long term improvements in water conservation through State regulation, fixture technology and performance improvement, and customer sustainability awareness have resulted in decreases in overall home average indoor and outdoor annual water use.

Margins between indoor water use in varying product types have very small differences compared to historical averages prior to conservation and awareness and low to moderate infill for single family residential parcels through ADU's likely represent a de minimis impact over the recommended 5-year evaluation period relative to climate change and outdoor irrigation demands.

Primary Residence and ADU Service Line Sizing and Configuration

By Ordinance, the City requires a separate service line per premise unless otherwise approved by the Director of Public Works under specific circumstances.

Historically, with very few occurrences, the Utility has approved use of the same service line to service a primary residence and guest house through specific circumstance review approvals. This has not been an issue due to only a handful of occurrences over time given zoning code constraints.

With adoption of amended zoning code ordinances allowing for ADU's, the City will update Title 13, Water and Sewer ordinance to reflect a common service line between the Primary Residence and ADU as an approved means of physical service.

This does not preclude the responsibility of owners to have proper analysis done to determine the proper water service size given distribution system pressure, existing and proposed fixture demands, and internal and external service line length configurations. All these considerations can still have an impact that may require an upsizing in the service line to provide adequate water flow. In this scenario, there would not be a tap fee for upsizing

from ¾" to 1" however there will be costs associated with new metering equipment and appurtenances that will be the responsibility of the owner.

BACKGROUND / PRIOR DISCUSSIONS:

Colorado House Bill HB24-1152 requires that on or after June 30, 2025, jurisdictions allow provision for one accessory dwelling unit as an accessory to a single unit detached dwelling. Accessory dwelling units provide solutions to mitigate housing affordability challenges and allow options to the community for aging in place and intergenerational living arrangements enabling child or elder care arrangements and may assist low to moderate income families with rental income.

The City recently adopted Ordinance No. 1893, Series 2025 modifying the definition of family and is progressing through the second reading of Ordinance No. 1892 Series 2025 regarding regulation of accessory dwelling units (ADU) to remove barriers to implementation of HB24-1152.

The City Council has requested the Utility to review water tap fees in relation to current policy changes and determine how ADU's may be integrated into Title 13, Water and Sewers, of the Louisville Municipal Code.

ANALYSIS:

Exhaustive analysis has been completed and is attached for detailed backup.

Essentially:

- 16 guiding principles incorporating the City Council Workplan priorities and lenses and the 2013 Utility Rate Study and Rate Task Force Pricing Objective Rankings were evaluated to support recommendation of Option 1 – 0.20-0.30 tap fee and Option 2 – free Urban Single Family Tap Fee dependent upon individual interpretation.
- ¾" and 1" single family equivalents do not have recognizable differences in usage to the system.
- There are significant usage variations within the single family customer class (up to 90,000 gallons per year per home) that represent internal class inequity.
- Estimated ADU impacts to the system (10,000 – 25,000 gallons per year per ADU) that are real but are anticipated to be minimal comparable to normal seasonal outdoor irrigation demand and variations.
- Review of neighboring and regional communities indicates a broad variety of methodologies and costs for an ADU. The most common community approach,

using fixture count and annual demand analysis would result in 40-65% of potential parcels requiring to pay a \$41,800 upsize fee from $\frac{3}{4}$ " to 1" depending on the size of ADU constructed. Analysis indicates low $\frac{3}{4}$ " to 1" residential indoor use variance. Consolidating to the Urban Tap fee reduces applicant fixture count or annual demand anxiety and significantly reduces administrative overhead.

- Review of alternative fixture count methodologies such as the American Water Works Association M22 Manual + International Plumbing Code (IPC) versus the City's existing 2018 IPC methodology does provide different sizing results relative to the ADU analysis. In addition, consolidation of $\frac{3}{4}$ " and 1" tap sizing into a proposed Urban Single Family Tap Fee eliminates fixture count anxiety for purposes of tap fee cost. Regardless, staff will explore the M22+IPC methodology through the City of Denver over the short to midterm to determine if there is value to change.
- Review of overall City customer water usage indicates that long term overall water conservation trends using billing data from test years 2012 and 2024 indicate potential opportunity to reduce the amount of water purchased for each single family equivalent (sfe) indirectly reducing the overall cost of a sfe tap fee. Additionally, analysis in the mid to long term will be conducted to determine if this trend provides for a confidence level to shift the base amount of water forecasting and purchasing for an sfe.

2025 COUNCIL WORK PLAN:

Approval of option 2 supports Affordable Housing, Core Services, Economic Vitality, EDI, and Environmental Sustainability.

FISCAL IMPACT:

Budgeted?: **No**

The City's Utility realizes revenue through monthly user rates for indoor and outdoor water usage and one time tap fees that buy in to existing infrastructure and purchase water rights.

ADU's represent new units or growth within the City and from a pure cost recovery standpoint could be considered required to pay a unit tap fee proportional to a single family equivalent.

Data analysis of Louisville customer billing records suggest a per unit approach would not take into consideration customer inequities within the single family equivalent customer class.

Seasonal outdoor irrigation variations combined with ongoing climate change represent significantly larger financial impacts to the system than ADU's.

The proposed Urban Tap Fee that provides for a free ADU with a 5 year evaluation period appears to present minimal overall risk versus benefits to the Utility and overall Community.

ALTERNATIVE(S):

The Utility could make no changes to its existing ordinances.

ADU's would be considered as a multifamily unit and charged 0.45 single family equivalents.

Common service lines would be approved under special consideration or new detached ADU's may be required to have a separate service line.

RECOMMENDATION:

Staff recommends approval to move forward with modifying Title 13, Water and Sewer ordinance provisions to:

1. Provide specific language approving a common properly sized water and sewer service line between a Primary Residence and Accessory Dwelling Unit.
2. Adopt an Urban Single Family Residential Tap Fee that considers a service line as a whole parcel or lot and allows for ¾" or 1" size service line servicing a primary residence and one (1) accessory dwelling unit.

ATTACHMENT(S):

1. Analysis and Background Data

Water Utility Usage Analysis

May 20, 2025



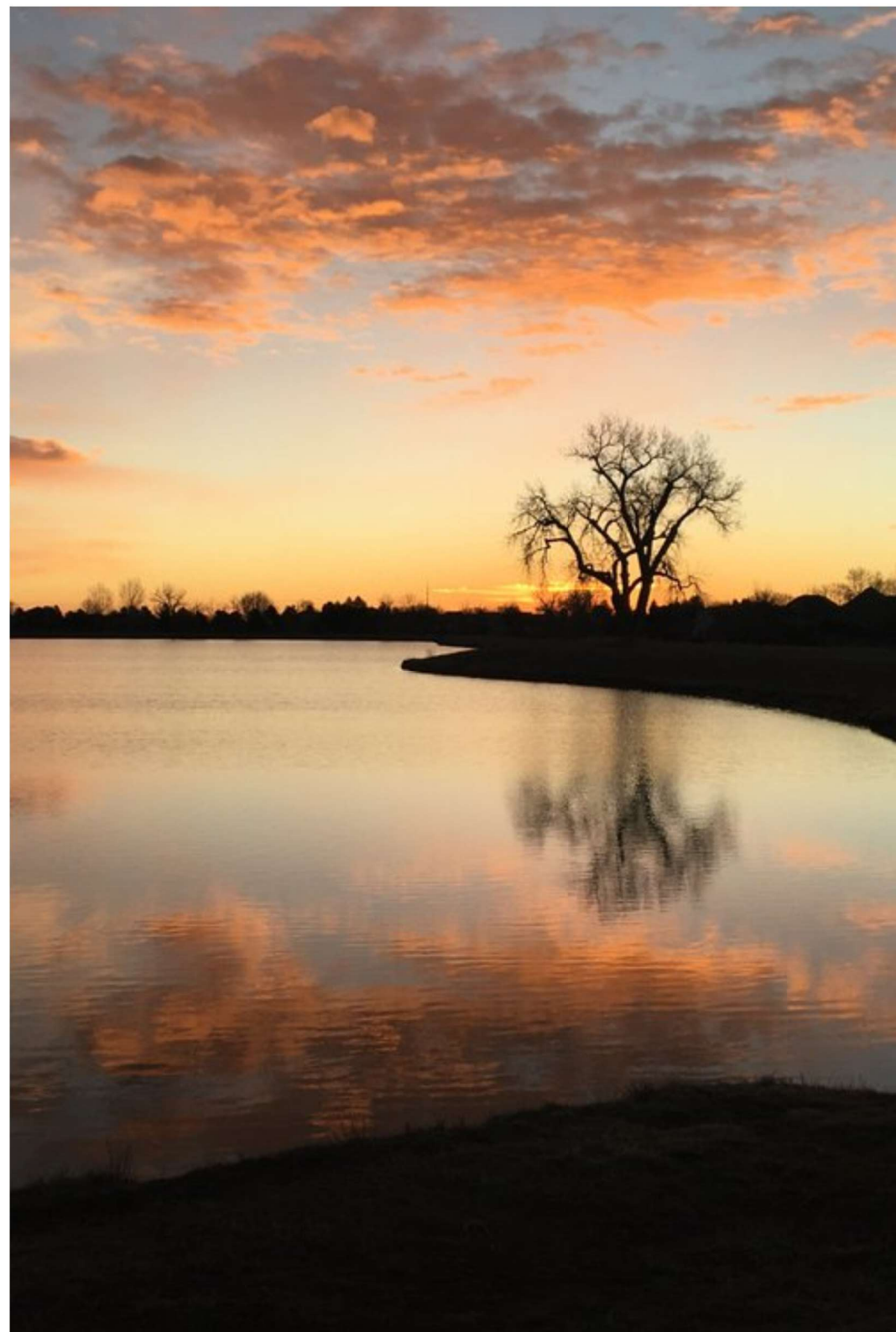
Staff Recommendations

Now - Change Single Family Tap charges to Per Lot or Urban Tap Fee without price differentiation between 3/4" and 1" taps. (Final fee structure may have an indoor base charge and then outdoor irrigation component by square foot of landscape.)

Now - Under Urban Tap Fee per Lot considerations do not charge for ADU's.

Midterm - Explore M22+IPC Service Line Sizing

Mid - Long Term - Evaluate Base Water Forecasting and Purchasing for Single Family Equivalents and Consider Reduction based upon Long Term Water Conservation Trends. (May also be contingent on review of outdoor irrigation policies)



Bringing it All Together

Guiding Principles	Flat Fee 0.45	Flat Fee 0.30 w/o Turf and 0.20 w/ Turf	Flat Fee SFE (ADU w/ Lot)	Fixture Count / Sizing 3/4" - 1"
Economic Vitality	✓	✓	✓	✗
Core Services	✓	✓	✗	✓
Safety	✓	✓	✓	✓
Affordable Housing	✗	✓	✓	✗
TABOR	✓	✓	✓	✓
Lenses: Sustainability/EDI	✗	✓	✓	✗
Ordinance 13.12	✓	✓	✗	✓
HB24-1152 ADU's	✗	✓	✓	✗
Growth Pays for Itself (4.57)	✓	✓	⚖️	✓
Cost of Service Equity (4.43)	✗	⚖️	⚖️	✗
Water Conservation (4.29)	✓	✓	✓	✓
Customer Acceptance (3.29)	✓	✓	✗	✗
Customer Impact (3.00)	✓	✓	✗	✗
Fixed Income / Affordability (2.86)	✗	✓	✓	✗
Administrative Ease (2.57)	✓	✓	✓	✗
Peak Usage Reduction (2.43)	✓	✓	✓	✓



Topics provided for **Background Data.**

1. Review **Utility Guiding Principles** ~ How are we making decisions?
2. Review **Utility Financial Principles** ~ How do we charge for services?
3. Review **Tap Fee Methodology** ~ How do we determine our fees?
4. Review **Water Planning Factors** ~ How do we know if we have enough?
5. Review **Fixture Count Methodology** ~ How are service lines and meters sized?
6. Review **Single Family Homes** ~ What does usage look like?
7. Review **Single Family Homes vs Multifamily** ~ What are the differences?
8. Review **Accessory Dwelling Units** ~ What are ways to incorporate them?

Administrative Background

Colorado Law, Louisville Ordinance, Utility Guiding Principles, History

Colorado Tabor Law Enterprise Funds

- Restricted funds that only cover the cost of providing a specific service through user fees and charges.
- They must operate as a “standalone business” and generate the revenues necessary to provide services.
- The City’s Water Fund is an Enterprise Fund
- An Enterprise Fund for water service cannot incentivize Economic Development, Historical Preservation, or Housing Plan goals.
- An Enterprise Fund can indirectly provide support of community goals through infrastructure and affordable rates and charges based upon cost recovery.
- Utility is agnostic to external goals unrelated to water service goals.
- Utility operates from a cost recovery lens.



Current City Ordinance 13.12

- Requires City Manager to establish a table of City water tap fees annually. Established in 2000 by Ordinance 2000-1339.
- Tap fees shall be based on and used for growth related capital expansion costs for water resources, water supply, water storage, transmission, treatment and distribution facilities, related costs factors.
- Tap fees shall reflect the City's overall costs incurred to provide services for which the tap is requested and for which the tap is designed.

- TITLE 12 - STREETS AND SIDEWALKS
- ▼ TITLE 13 - WATER AND SEWERS
 - Chapter 13.04 - WATER SERVICE ADMINISTRATION AND ENFORCEMENT
 - Chapter 13.08 - WATER SERVICE REGULATIONS
 - Chapter 13.12 - WATER SERVICE RATES AND FEES
 - Chapter 13.20 - SEWER SERVICE ADMINISTRATION AND ENFORCEMENT
 - Chapter 13.24 - SEWER SERVICE INSTALLATION
 - Chapter 13.28 - SEWER SERVICE—RATES AND BILLING
 - Chapter 13.32 - SEWER USE REGULATIONS
 - Chapter 13.36 - STORMWATER—ILLICIT DISCHARGES AND CONSTRUCTION/POST

2013/2014 Utility Rate Study

1. Task Force - 2 Homeowners, 2 Business/Developer, 2 HOA Representatives, 1 At Large Community Representative.

2. Reviewed Financial Planning, Cost of Service, Water Rate Structures, and Tap Fees

3. Recommended to move from CCI Index Estimated Tap Fees to Calculated Tap Fees

Water, Wastewater and Stormwater Utility Rate Study

Final Executive Summary Report

July 30, 2014

Report Prepared By:

2014 Utility Rate Task Force Pricing Objectives and Tap Fee Historical Discussions

- 2014 Rate Study Task Force ranked Growth Pays for Itself as #1.
- 2015 Utility Committee reviewed Live/Work Tap Fee and did not recommend tap fee changes. The “Live” portion was essentially an Accessory Dwelling Unit.
- 2017 City Managers Office and Utility Committee held discussions regarding Economic Development and Historical Preservation activities not able to be incentivized by Utility Fees due to Enterprise Fund status.
- 2017 Significant Discussions with Building Department regarding the definition of “Premise”.
- 2019 City Council increased Water Tap Fees from \$30,500 to \$53,500 due to rising cost of water rights.
- Utility Committee up until 2021 prioritized Growth Pays for Itself.
- 2021 Utility Committee merged with Finance Committee.
- Staff monitor Tap Fee costs and have not adjusted Water Tap Fees since 2019.

**Table 4
Task Force
Pricing Objectives Rankings**

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

2000 - 2013 Tap Fee Structure Form

City Advertised Fee by Tap Size.

Problem: Ordinance did not sell taps by only tap size.

Consequence: Lots of Developer Confusion.

Also: No Irrigation Meter Fee - City was not recovering true cost of irrigation meters.

NOTICE

TAP FEE TABLE ESTABLISHED BY THE CITY MANAGER IN ACCORDANCE WITH SECTION 13 OF THE LOUISVILLE MUNICIPAL CODE

Pursuant to Section 13.12.020 of the Louisville Municipal Code delegating to the City Manager the authority to establish City water tap fees on a quarterly basis, effective, July 1, 2010 the table of tap fees shall be as follows:

<u>Fee Calculations</u> <u>Deman (gpm)</u>	<u>Tap Size</u>	<u>Tap Fee</u>
0-22	¾"	\$24,140
23-45	1"	\$42,910
46-80	1 ½ "	\$96,540
81-140	2"	\$171,630
141-280	3"	\$386,160
281-500	4"	\$693,400

For taps larger than 4 inches, the tap fee and other terms and conditions of the issuance of the tap shall be established by written agreement approved by the City Council.

A single-family sewer tap fee for residential properties is \$3221.00.

The posted table of city water tap fees is to be paid for the 3rd calendar quarter of 2010.

By:

Malcolm Fleming

Malcolm Fleming
City Manager

cc: Building Safety Division
Planning Department
Public Relations Manager (website)
Central Files (original)
Public Works
Finance Department



TAP FEE CALCULATION FORM

WATER, IRRIGATION, AND SEWER TAP FEES ESTABLISHED PURSUANT TO THE LOUISVILLE MUNICIPAL CODE, DELEGATING AUTHORITY TO THE CITY MANAGER TO ESTABLISH TAP FEES ON A QUARTERLY BASIS
EFFECTIVE FEBRUARY 15, 2020.

Utilize this form to determine Water, Irrigation, and Sewer Tap Fees by completing the shaded cells. For each premises (separate building) a Tap Fee will be assessed. For Multifamily, Non-Residential, and Other Uses, please fill out a separate sheet for each premises. Additional information on Tap Fees and other utility service requirements may be found in the Louisville Municipal Code. For taps larger than 4 inches, the tap fee and other terms and conditions of the issuance of the tap shall be established by written agreement approved by the Louisville City Council.

Project Location: _____ Subdivision: _____ Filing: _____ Block: _____ 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: _____ V/N _____ Meter Size: _____

DEDICATION OF WATER RIGHTS

1) Water Rights Tap Fee Credit

INSTRUCTIONS:
In approved cases, utilize this section to determine the credit for the dedication of water rights. The water rights tap credit is calculated as the total number or fraction of water rights multiplied by the credit for a Single Family Equivalent. Water Dedication is required prior to the issuance of a building permit.

Water Rights _____ rights X \$39,400 = \$ _____ (total credit)

WATER TAP FEES

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

INSTRUCTIONS:
Utilize this section to determine the water tap fee for the proposed residential development. Insert the number of single-family duplex and/or 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.

3/4" meter X _____ units X \$53,500 = \$ _____

1" meter X _____ units X \$95,300 = \$ _____

Total Single-Family Residential Tap Fee = \$ _____ (Total Cost minus water rights tap credit)

Complete this section for each separately metered premises (separate building) and/or other uses.

3) Multifamily Residential Tap Fee (townhouse, multifamily and senior independent living, as defined in Louisville Municipal Code)

INSTRUCTIONS:
Provide fixture count and meter size.

Fixture Count _____ Meter Size _____

Townhouse _____ units X \$42,800 = \$ _____

Multifamily _____ units X \$32,100 = \$ _____

Senior _____ units X \$16,050 = \$ _____

Total Cost = \$ _____

Sum the total for each unit type, which will be the total tap fee for those units.

5 or more Townhouse or Multifamily Units: separate irrigation tap required, provide Plumbing Permit number for the separate irrigation tap: _____

No. of Units _____ (from above) X \$ 8,025 = \$ _____ (total irrigation tap credit)

Townhouse and Multifamily premises with five or more 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 as 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 = \$ _____ (Total Cost minus irrigation and/or water rights tap credit)

CONTINUE ON THE OTHER SIDE

4) Non-Residential and Other Use Tap Fee

(Non-Residential and Other Uses include: commercial, industrial, retail, institutional, pools, spas, water features)

1) Annual Indoor Demand _____ gpm

2) Meter Size _____ gpm

Instantaneous Demand _____ gpm (from Water Tap Application Form)

Other Usage _____ gpm

Meter Size (from Table) _____ (Based on Total Demand)

Total Demand _____ gpm

INSTRUCTIONS:
Applicant to provide annual Indoor and Other Usage demand, calculated by a licensed engineer or architect. Non-Residential Uses are required to obtain a separate irrigation tap. Base Tap Fee (Table) corresponds to the fee associated with the Demand Budget that satisfies the majority of Total Demand. Additional Tap Fee is calculated by dividing the difference between Total Demand and the selected Demand Budget by 117,000, then multiplying by \$53,500. Add the Base Tap Fee and Additional Tap Fee to derive the Total Tap Fee.

In approved cases where Annual Demand has been estimated, the City of Louisville may monitor and verify annual usage. If annual usage exceeds the estimated Demand, the City of Louisville may impose an expansion charge based on the documented usage as subject to City of Louisville Municipal Code.

Written justification will be required for meter sizing difference in Annual and Instantaneous Demand.

***Example: For a 250,000 gpm demand, the next lowest budget is 208,260 gallons, which corresponds to a fee of \$85,300. 250,000 - 208,260 = 41,740 gallons
41,740 / 117,000 * \$53,500 = \$19,062.24

Total Non-Residential and Other Use Tap Fee = \$ _____

IRRIGATION TAP FEES

5) Irrigation Tap Fee

Instantaneous Demand _____ gpm

Meter Size _____ (Sect. 3 Table)

Total Irrigated Area (sq ft) _____

X 15 gallons/sq ft. = _____

Irrigation Demand (gallons/year) _____

Irrigation Tap Fee _____

/117,000 * \$53,500 = \$ _____

Number of Drip Taps _____

Drip Tap Fee _____

X \$13,370 = \$ _____

Total Irrigation Tap Fee = \$ _____ (sum of Irrigation Tap Fee and Drip Tap Fee minus water rights tap credit)

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 Total Irrigation Demand and Drip Tap Fee for separate drip irrigation tap. Provide irrigation design showing total irrigated area and instantaneous demand for each zone, calculated by a licensed engineer or architect. Utilize maximum instantaneous demand for determining meter size. Irrigation Demand is calculated by multiplying the total irrigated area by 15 gallons per square foot. The minimum irrigation tap fee is set by the base tap fee for the associated size from the Table in Section 3.

In approved cases a drip irrigation tap may be allowed in conjunction with a primary irrigation tap. Drip irrigation tap(s) shall be used for small isolated locations, such as a roadway median. Each drip tap requires a separate 3/4" meter and may serve a total area up to 4,000 square feet with a total drip system demand of 5 gallons per minute or less. Any area irrigated with a drip irrigation tap shall not be included in the Total Irrigated Area used in for the irrigation tap calculation.

SEWER TAP FEES

6) Sewer Tap Fee

Residential Sewer Tap Fee

Single-Family _____ X \$4,600 = \$ _____

Townhouse _____ units X \$3,680 = \$ _____

Multifamily _____ units X \$3,680 = \$ _____

Senior _____ units X \$2,760 = \$ _____

Commercial Sewer Tap Fees

3/4" Meter _____ X \$4,600 = \$ _____

1" Meter _____ X \$8,200 = \$ _____

1 1/2" Meter _____ X \$16,400 = \$ _____

2" Meter _____ X \$32,800 = \$ _____

3" Meter _____ X \$79,600 = \$ _____

4" Meter _____ X \$130,900 = \$ _____

Total Sewer Tap Fee = \$ _____

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 water meter size.

CITY USE ONLY BELOW DASHED LINE

Form Reviewed By: _____ Date: _____

Payment Received by: _____ Date: _____

2013 - Present Tap Fee Form

- Categorized Fees by User
- Added Irrigation Tap Fee
- Review Annual and Instant Demands
- Tap Credits on Cash Paid or Volumetric
- Developer Provided Water Rights in Lieu of Fee

2024/2025 Approved Budget

“Ensure safe, **reliable**, great tasting water; properly treated wastewater; effective stormwater control; successfully managed solid waste; and **competitive prices for all services.**”

~ Utility Goals

“Consistently provide safe and great tasting water, routinely testing quality for compliance with State and Federal Standards. Operate and maintain facilities efficiently, allowing for **reasonable** and **equitable rates** while maintaining optimal quality.”

~ Water Utility Objective

Values

Innovation

Leading and embracing change and transformation through creative thinking, learning, and continuous improvement.

Collaboration

Proactively engaging colleagues and other stakeholders in developing solutions through open communication.

Accountability

Fulfilling our responsibilities, owning our actions, and learning from our mistakes.

Respect

Treating people, processes, roles, and property with care and concern.

Excellence

Doing our best work and exceeding expectations with responsive, efficient, and effective customer service.

Critical Success Factors



Financial Stewardship and Asset Management



Reliable Core Services



Vibrant Economic Climate



Quality Programs and Amenities



Engaged Community



Healthy Workforce



Supportive Technology



Collaborative Regional Partner



Financial Stewardship and Asset Management

The City of Louisville has established financial policies and internal controls to ensure financial sustainability and financial resiliency, and to safeguard the City's assets. The City's recurring revenues are sufficient to support desired service levels and proactively maintain critical infrastructure and facilities. The City practices long-term financial planning through a comprehensive budget process to proactively adjust for changes in financial forecasts. City employees are trusted stewards of the public's money and assets.



Reliable Core Services

Louisville is a safe community that takes comfort in knowing core services, such as police, roads, water and basic maintenance, are fair, effective, consistent, and reliable. Excellent customer service is provided in the delivery of all City services. The City is prepared for emergencies and offers residents peace of mind knowing basic municipal services are planned for and carried out.

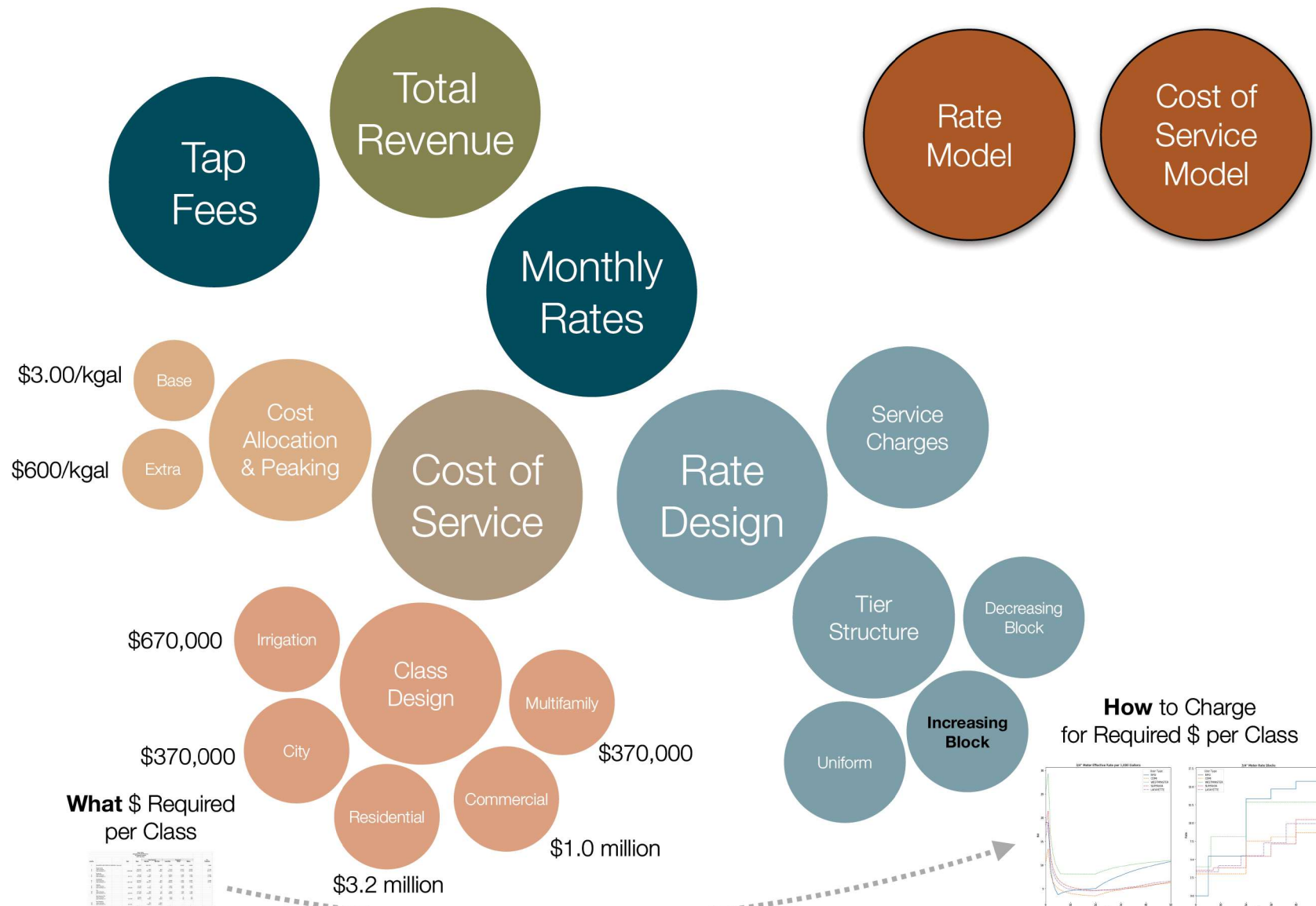
Financial Background

Financial Structure, Utility Revenues

The Pieces of the Utility Financing Picture

Base: \$3.00/kgal and Extra: \$600/kgal usage in 2021 Costs.

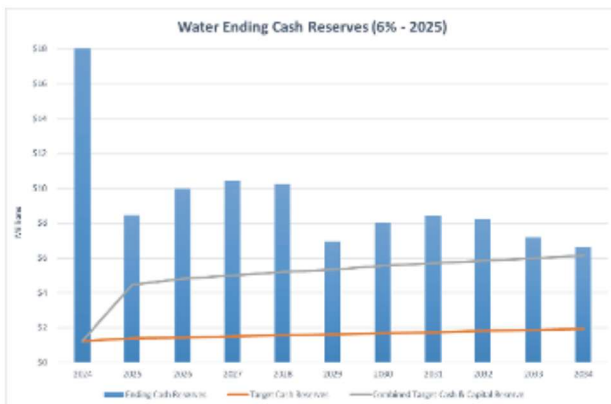
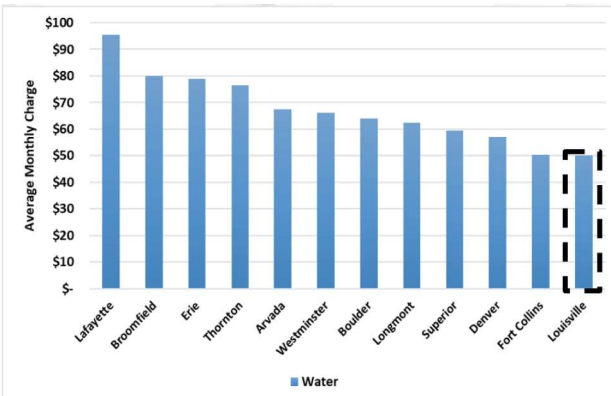
2024 Overall \$12/kgal



Utility Revenue Sources

User Rates

1. Monthly Bill



Tap Fees

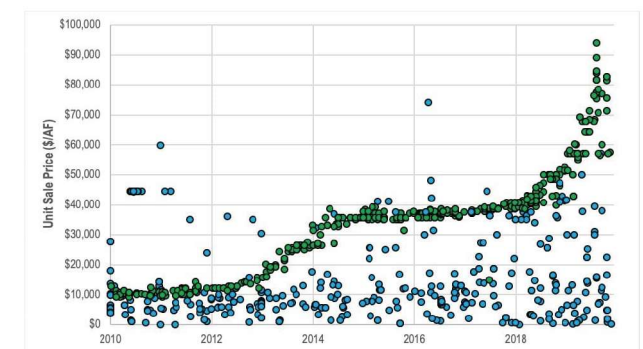
2. Infrastructure

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			
		Current Construction Cost per Staff	Current Cost
Max Day Capacity			
gallons per day		per gpd	
Total Water Treatment Plant	13,000,000	\$4.00	\$54,200,000
Treated Water Storage			
		Current Construction Cost per Staff	Current Cost
Volume			
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)		\$4,735,000	
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		\$	(5,900,000)
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.

3. Water Rights

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		
6	Estimated C-BT current cost per acre-foot	\$93,167	per acre-foot	\$93,167	\$41,000
7	Current C-BT cost per SFE	\$39,380	per SFE		\$28,833
(a) Includes 15% local distribution system water losses.					
TABLE WSDC-3					
Water Utility Schedule of Water System Development Charges					
Meter Size	Existing	Facilities	Proposed SDC Water Resource	Total	City Demand Ratios Demand Amount 3/4-inch equiv.
3/4	\$ 30,500	\$ 14,100	\$ 39,400	\$ 53,500	117,000 1.00
1	\$ 54,400	\$ 25,100	\$ 79,500	\$ 95,300	208,000 1.78
1 1/2	\$ 122,000	\$ 56,400	\$ 178,400	\$ 214,000	468,000 4.00
2	\$ 217,000	\$ 100,300	\$ 280,200	\$ 380,500	\$11,870 7.11
3	\$ 488,000	\$ 225,000	\$ 693,400	\$ 856,000	\$ 1,872,000 16.00
4	\$ 867,500	\$ 401,100	\$ 1,120,000	\$ 1,521,700	\$ 3,327,480 28.44



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	Current Construction	Current Cost
	<i>gallons per day</i>	<i>per gpd</i>		
Total Water Treatment Plant	13,000,000	\$4.00		\$54,200,000
Treated Water Storage				
	Volume	Current Construction	Current Construction	Current Cost
	<i>gallons</i>	<i>per gallon</i>		
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			\$	(5,900,000)
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.				

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			
					<i>gallons per year</i>				
3/4	\$ 30,500	\$ 14,100	\$ 39,400	\$ 53,500	117,000	1.00			
1	\$ 54,400	\$ 25,100	\$ 70,200	\$ 95,300	208,260	1.78	\$ 95,230	\$ 54,290	
1 1/2	\$ 122,000	\$ 56,400	\$ 157,600	\$ 214,000	468,000	4.00	\$ 214,000	\$ 122,000	
2	\$ 217,000	\$ 100,300	\$ 280,200	\$ 380,500	831,870	7.11	\$ 380,385	\$ 216,855	
3	\$ 488,000	\$ 225,600	\$ 630,400	\$ 856,000	1,872,000	16.00	\$ 856,000	\$ 488,000	
4	\$ 867,500	\$ 401,100	\$ 1,120,600	\$ 1,521,700	3,327,480	28.44	\$ 1,521,540	\$ 867,420	

Water Rights
Acquisition

CBT Market Rate
Incremental Cost

Current 3/4" Tap Fee

\$14,100 **Facilities** (Equity)
\$39,400 **Water** (Incremental)

\$53,500 Total Water System Fee *

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

Previous 2019 Fee was \$30,500



Luke Runyon @LukeRunyon · Aug 28

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

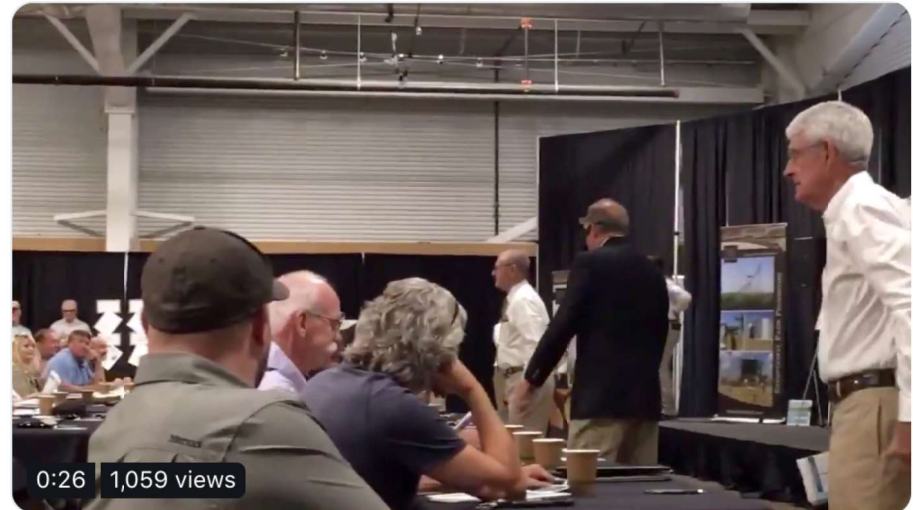


Luke Runyon ✓

@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



3



5



12



Luke Runyon ✓ @LukeRunyon · Aug 28

Most units selling for between \$55,000-\$60,000.



1

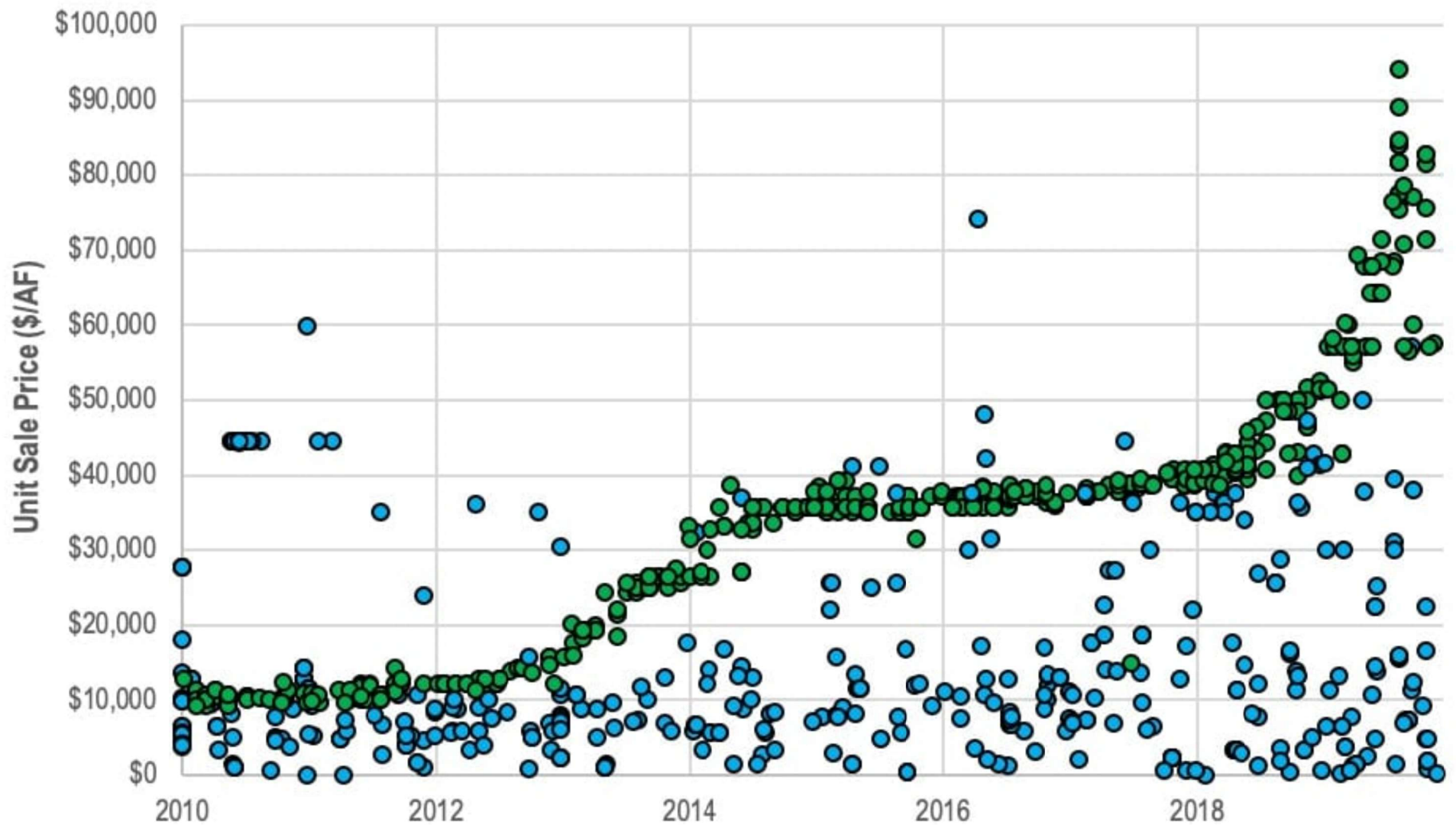


1



4





Water Rights Acquisition

CBT Market Rate Over Time
\$93,000 per Acre Foot

Tap Fee Expenditures

2016 - 2025 Review - Someday is Now. Buildout is here.

- \$26 million has been **collected** in **tap fees**.
- \$26 million has been **spent** on **infrastructure** improvements and **water rights**.
- \$8.3 million on water supply infrastructure **bond** payments.
- \$4.7 million on **pumping** capacity improvements. (Marshall Fire Critical)
- \$4.4 million on payments to Chimney Hollow **reservoir**.
- \$4 million on new **water rights**.



Water Use and Forecasting

External Impacts, Housing, Forecasting, High Level Overview

Major Influences

A Lot of Big Educated Guesses

Utility Master Planning/Forecasting

Table 1-13: Water demand influent factors

Factor	Low Variability Range	High Variability Range
Drought	20%	25%
Climate	10%	15%
Conservation	-15%	-10%
Cumulative	15%	30%

Water Conservation

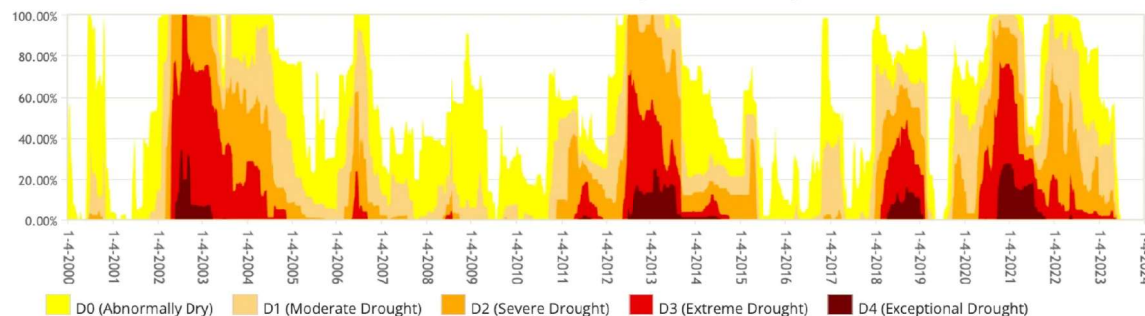
WaterSense/ENERGY STAR/WaterWise



colorado
waterwise

Drought/Climate Change Impacts

Colorado Percent Area in U.S. Drought Monitor Categories



Community Planning/Needs



City of Louisville
Housing Plan

COL Housing Plan ~ Potential Impacts

Adopted May 7, 2024.

Exhibit 5: Population Forecast, Louisville and Boulder County, 2023-2047

Source: Colorado Department of Local Affairs, ECONorthwest

	2023	2047	# Change	% Change
Louisville	20,499	24,614	4,115	20%
Boulder County	331,429	389,233	57,804	17%

Exhibit 23. Illustration of Housing Needs Calculation

Sources: ECONorthwest.



The future needs analysis focuses on estimating housing needs based on future housing needed by 2047 and current needs based on housing underproduction.⁸ The inclusion of current housing underproduction helps to ensure housing needs targets address current unmet housing needs not provided for in the existing housing inventory. More detail on assumptions and methodology for the future housing needs analysis can be found in the full HNA included in Appendix A.

Exhibit 24: Total Housing Need in Louisville by 2047

Source: ECONorthwest and DOLA

Future Need Based on Assumed Population Growth	2,075 housing units
Housing Underproduction (or Housing Shortage)	409 housing units
Total Housing Need	2,483 housing units

Combining the current housing underproduction (409 housing units) with the future housing units needed brings the total to 2,483 new housing units needed by 2047 based on the population forecasts in this section. On an annual basis this means an average of 96 new housing units per year.

Exhibit 1: Louisville Population Growth, 2011-2022

Source: DOLA

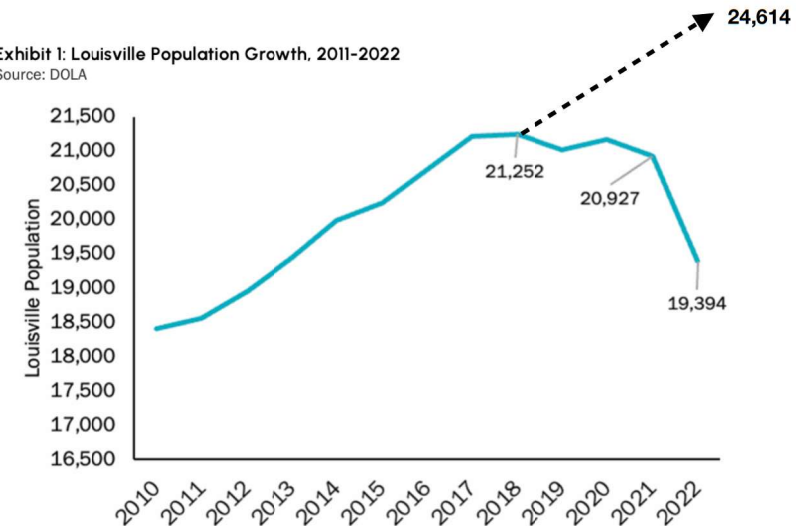


Exhibit 14: Change in Average Household Size, Louisville and Comparison Geographies, 2011-2021

Source: ACS 5-Year Data Tables, 2007-2011, 2017-2021

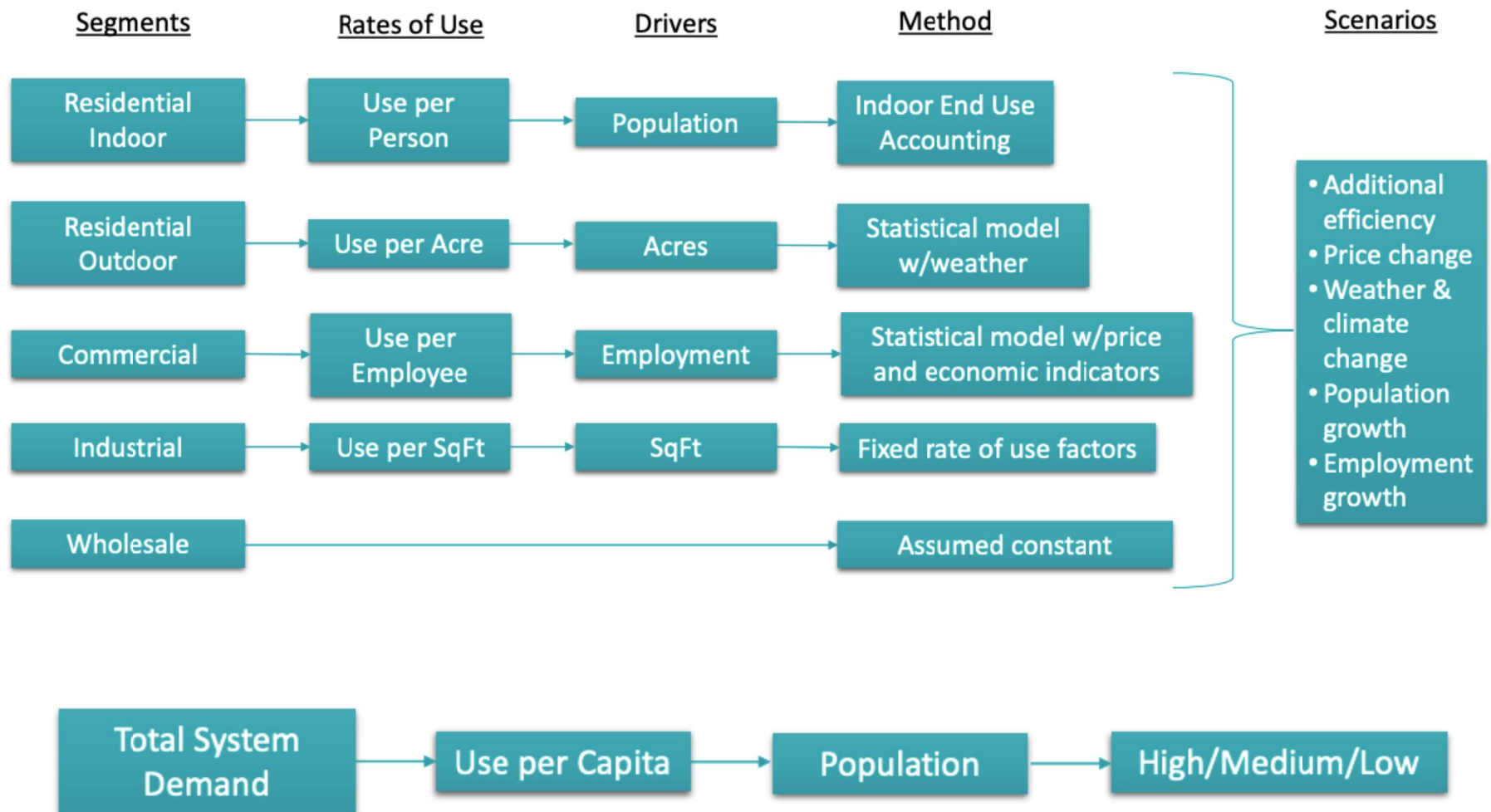
	2011	2021	% Change
Superior	2.71	2.85	5.2%
Louisville	2.43	2.50	2.9%

ECONorthwest
City of Louisville Housing Needs Assessment

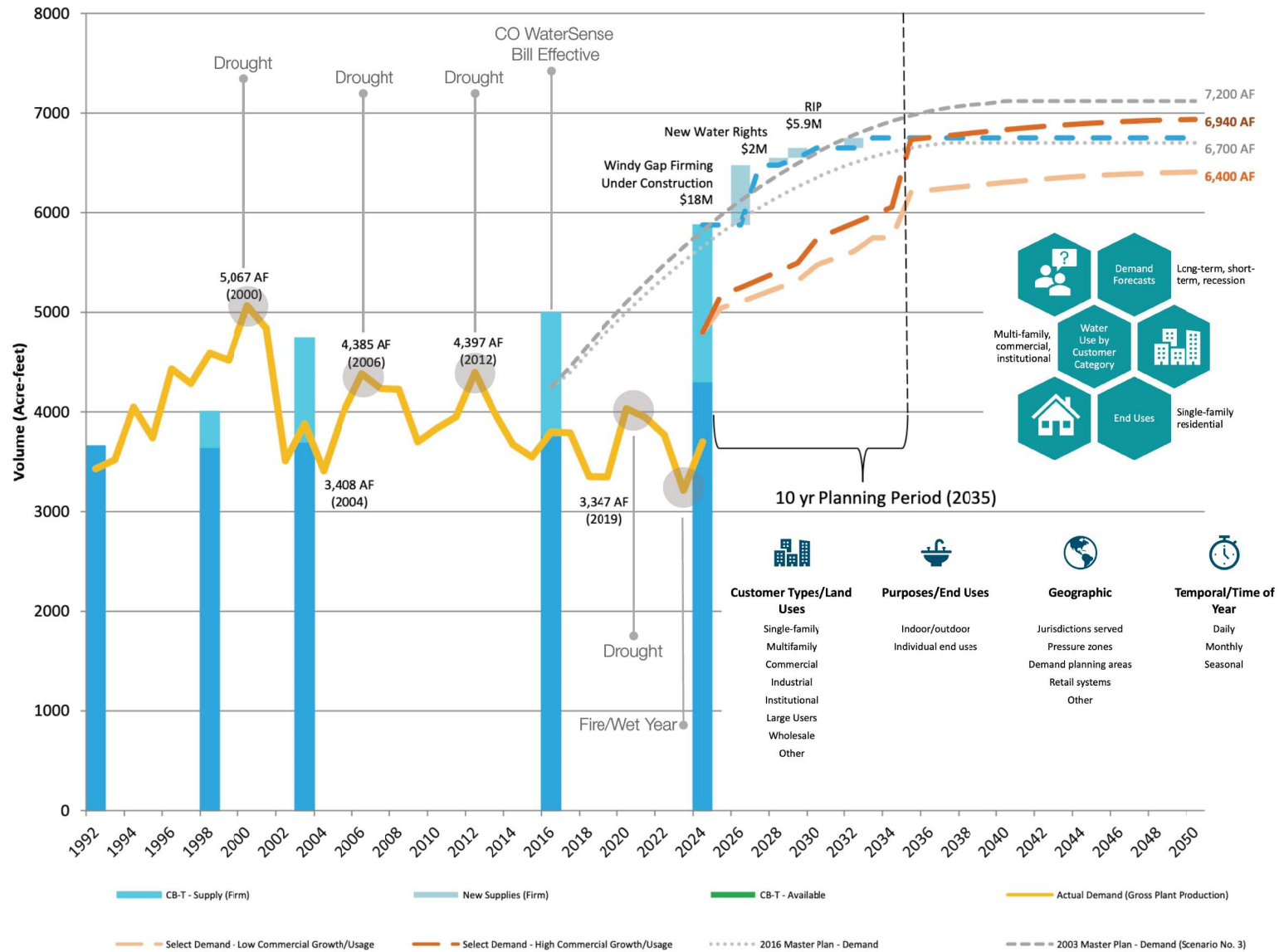
16

Boulder	2.17	2.21	1.8%
Boulder County	2.39	2.41	0.8%
Erie	2.95	2.97	0.7%
Longmont	2.59	2.50	-3.5%
Lafayette	2.50	2.41	-3.6%

Perspectives on Customer Class Forecasting



Water Supply and Demand



Growth/Buildout Forecasting

- New Build/Growth
- Infill/Densification
- Drought
- Climate Change Impacts

Population and Water Demand Forecasting

50,000 Foot Overview - 1979 to 2047 - Policy, Climate, and Demographics Always Change

It Will Never Be Perfect or Predictable in the Forever Scope - Housing Plan close to Utility Master Plan

Year	Population	Avg. SF HH Size (1)	Avg. MF HH Size (2)	Population % Change	People Per Household % Change	Housing Source	Actual Water Demands (AF)	Projected Water Demands (AF)	Buildout Population	Water Source
1979	-	-	2.8	-	-	-	1,100	5,428 (to 1990)	-	1979 Comprehensive Water System Planning
1989	-	-	2.4	-	-	-	-	9,189 / 6,213 (Ultimate / Midpoint)	-	1989 Water Distribution System Study Update
1992	-	-	-	-	-	-	3,557	-	-	1992 Raw Water Master Plan
1998	-	-	2.4	-	-	-	4,650	-	-	1998 Raw Water Master Plan
2000	18,868	2.62	-	-	-	2013 Comp Plan	4,860	-	-	-
2003	-	-	-	-	-	-	3,793 -Drought (Restrictions)	7,120	-	2003 Raw Water Master Plan
2010	18,376	2.41	1.90	(2.60%)	SF: (7.31%)	2013 Comp Plan (1) NMHC - National (2)	3,704	-	-	-
2011	18,406	2.43	-	~ 0.00%	SF: ~ 0.00%	2024 Housing Plan	3,693	-	-	-
2012	-	-	-	-	-	-	4,239 - Drought (No	-	23,000	2012 Water System Facilities Plan
2013	-	2.67	1.68	-	SF: 9.87% MF: (15.15%)	2013 Comp Plan	3,507	6,500	-	2013 Drought Modeling
2015	-	-	-	-	-	-	3,671	6,100	22,145	2015 Water Efficiency Plan
2018	21,252	-	-	15.46%	-	2024 Housing Plan	3,357	6,700	-	2016 Raw Water Management Plan + Contingency
2021	20,855	2.50	-	(1.86%)	SF: (6.36%)	2024 Housing Plan	3,799	-	-	-
2022	-	-	1.69	-	MF: ~ 0.00%	RentCafe Analysis National	-	-	-	-
2023	-	-	2.12	-	MF: 25.44%	Self.Inc Colorado	-	-	-	-
2024	-	2.58	1.93	-	SF: 3.20% MF: (8.96%)	US Census (1) Point2Homes - Denver (2)	-	-	-	-
2025	-	-	-	-	-	-	-	6,940	24,227	2024/2025 Draft Utility Master Plan (UMP)
2047	24,614	-	-	-	-	2024 Housing Plan	-	-	-	-

Simplified Unit Level CBT Water Cost (Optimistic)

Based upon Average People per Household, Gallons per Capita Use, Gallons per SF Irrigation
500 - 800 square foot ADU with turf removal has significant net operational cost savings to system

	Daily (gallons)	Annually (gallons)	Annual Acre Feet (af)	Per 1,000 Units (af)	Buy In per Unit at @ \$62,000 per CBT Share (One Time)	Irrigation Deduct/Add (7.70 gal/sf)	Water Rights Per 1,000 Units (One Time)
Person	40 per Person	14,600	0.04	40	\$4,000 per person		\$4,000,000
Irrigation - Turf per Square Foot		7,700 per 1,000 sf yard	0.02	20	\$2,000 per 1,000 sf		\$2,000,000
House Indoors 2.58 People	100 per House	36,500	0.11	110	\$10,000 per House		\$10,000,000
House Outdoors Irrigation - Turf Average Yard Use	140	51,340 per yard	0.16	160	\$14,000 per Yard		\$14,000,000
House All Avg House	240	87,840 per House	0.27	270	\$24,000 per House		\$24,000,000
Apartment 1.90 People (Separate Irrigation)	75 per Apartment	28,000	0.09	90	\$8,000 per Apartment	Add Separate Irrigation Varies	\$8,000,000
Accessory Dwelling Unit	40 - 80 1-2 People	14,600 - 29,200	0.04 - 0.08	40 - 80	\$4,000 - \$8,000 per ADU	Subtract 3,850 - 6,160 gal \$1,000 - \$1,700 500 sf - 800 sf	\$4,000,000 - \$8,000,000 \$3,000,000 - \$6,300,000 (I)

Meter and Service Line Sizing ~ ie. Tap Size

Fixture Count Methodology, Multifamily and ADU Product Review

IPC Table E201.1

METER AND SERVICE PIPE (inches)	DISTRIBUTION PIPE (inches)	MAXIMUM DEVELOPMENT LENGTH (feet)									
Pressure Range 30 to 39 psi		40	60	80	100	150	200	250	300	400	500
3/4	1/2 ^a	2.5	2	1.5	1.5	1	0.5	0.5	0	0	
3/4	3/4	9.5	7.5	6	5.5	4	3.5	3	2.5	2	1.5
3/4	1	32	25	20	16.5	11	9	7.8	6.5	5.5	4.5
	1	32	32	27	21	15	10	8	7	5.5	5
3/4	1 1/4	32	32	32	30	24	20	17	13	10.5	
	1 1/4	80	80	70	61	54	47	40	34	28	22
1 1/2	1 1/4	80	80	80	75	54	40	31	25	17.5	13
1	1 1/2	87	87	87	87	84	73	64	56	45	36
1 1/2	1 1/2	151	151	151	151	117	92	79	69	54	43
2	1 1/2	151	151	151	151	128	99	83	72	56	45
1	2	87	87	87	87	87	87	87	87	87	86
1 1/2	2	275	275	275	275	258	223	196	174	144	122
2	2	365	365	365	365	318	266	229	201	160	134
2	2 1/2	533	533	533	533	533	495	448	409	353	311

Fixture Counts

Currently the City's Fixture Count Form is based upon the 2018 International Plumbing Code (IPC).

Standardized plumbing value of various water fixtures in a house such as a sink, toilet, or shower to determine worst case water demands in gallons per minute (gpm)

IPC takes into account WaterSense fixtures to a certain degree.

The 30 fixture unit threshold for 3/4" to 1" water service line aligns with IPC Table E201.1 for the lowest system pressure servicing up to 150 feet in length of service line. Essentially, simplifying service line sizing for the average lot. Ultimately, service line and residential line sizing is required to be stamped by an engineer.

IPC Table P2903.6

IPC Table P2903.6(1)

RESIDENTIAL WATER FIXTURE COUNT FORM

Name of Applicant _____		Name of Owner _____	
Address of Applicant _____		Address of Owner _____	
Phone Number of Applicant (____) ____ - ____		Phone Number of Owner (____) ____ - ____	
Address Location of Tap _____ Lot _____ Block _____ Subdivision _____			
TYPE OF FIXTURES Figure # of units times unit value = Total fixture units. Convert fixture units into gallons per minute (see table A) then figure tap size based on Demand (gpm) Go back to tap fee table to see cost.		# of units	Water supply fixture unit value (w.s.f.u.)
Bar Sink			0.7
Bathtub (with or without overhead shower head)			1.4
Bidet			0.7
Clothes Washer			1.4
Dishwasher			1.4
Full-Bath group with bathtub (with/without shower head) or shower stall			3.6
Half-Bath group (water closet and lavatory)			2.6
Hose Bbb (sillcock)			2.5
Kitchen group (dishwasher and sink with/without garbage disposal)			2.5
Kitchen sink			1.4
Laundry group (clothes washer standpipe and laundry tub)			2.5
Laundry tub			1.4
Lavatory (bathroom sink)			0.7
Shower stall			1.4
Water Closet (tank type) (toilet)			2.2

Supply Systems Predominantly for Flush Tanks			Total Fixture Units _____
Load	Demand	Water Tap Size	
Water Supply Fixture Units	Gallons per Minute	(Meter Size Required)	
1	3.0	Requires 3/4 inch	
2	5.0	Requires 3/4 inch	
3	6.5	Requires 3/4 inch	
4	8.0	Requires 3/4 inch	
5	9.4	Requires 3/4 inch	
6	10.7	Requires 3/4 inch	
7	11.8	Requires 3/4 inch	
8	12.8	Requires 3/4 inch	
9	13.7	Requires 3/4 inch	
10	14.6	Requires 3/4 inch	
11	15.4	Requires 3/4 inch	
12	16.0	Requires 3/4 inch	
13	16.5	Requires 3/4 inch	
14	17.0	Requires 3/4 inch	
15	17.5	Requires 3/4 inch	
16	18.0	Requires 3/4 inch	
17	18.4	Requires 3/4 inch	
18	18.8	Requires 3/4 inch	
19	19.2	Requires 3/4 inch	
20	19.6	Requires 3/4 inch	
25	21.5	Requires 3/4 inch	
30	23.3	Needs 1" Water Tap Size	
35	24.9	Needs 1" Water Tap Size	
40	26.3	Needs 1" Water Tap Size	
45	27.7	Needs 1" Water Tap Size	
50	29.1	Needs 1" Water Tap Size	

Studio Apartment - 7.5 Fixture Units

354 sf - 507 sf

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

S1.A

🛏 Studio 🚿 1 Bath

📏 354 Sq. Ft.



Call for details

Deposit: Varies

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

S2.A

🛏 Studio 🚿 1 Bath

📏 477 Sq. Ft.



Starting at \$1,639

Specials Available

Deposit: Varies

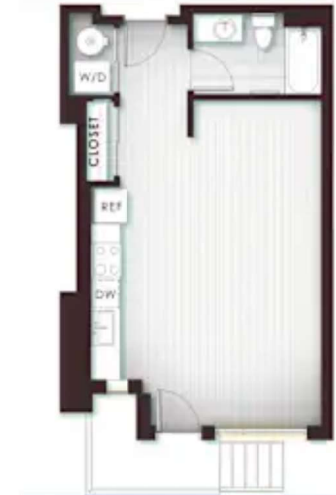
Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

S3.A

🛏 Studio 🚿 1 Bath

📏 504-507 Sq. Ft.



Starting at \$1,659

Specials Available

Deposit: Varies

1 Bedroom Apartment - 7.5 Fixture Units

583 sf - 725 sf

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5

1.1A

🛏 1 Bed 🚿 1 Bath

📏 583-689 Sq. Ft.



Call for details

Deposit: Varies

1.2BA

🛏 1 Bed 🚿 1 Bath

📏 703 Sq. Ft.



Starting at \$2,100

Deposit: Varies

1.2C

🛏 1 Bed 🚿 1 Bath

📏 706-725 Sq. Ft.



Starting at \$2,090

Deposit: Varies

2/3 Bedroom Apartment - 11.1 Fixture Units

1,137 sf - 1,339 sf

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 2 x 3.6
Washer/Dryer ~ 1.4
Total ~ 11.1

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 2 x 3.6
Washer/Dryer ~ 1.4
Total ~ 11.1

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 2 x 3.6
Washer/Dryer ~ 1.4
Total ~ 11.1

2.1B

2 Bed 2 Bath

1,137 Sq. Ft.



Starting at \$2,615

Deposit: Varies

3.1A

3 Bed 2 Bath

1,250-1,330 Sq. Ft.



Call for details

Deposit: Varies

3.1B

3 Bed 2 Bath

1,339 Sq. Ft.



Call for details

Deposit: Varies

1 Bedroom ADU - 7.5 Fixture Units

550 sf

Fixture Units

Kitchen Group ~ 2.5
Bathroom Group ~ 3.6
Washer/Dryer ~ 1.4
Total ~ 7.5



In 15 carts

\$15.00

1 Bedroom 1 Bath (550SF) ADU(Accessory Dwelling Unit) Floor Plan House Plan (24'-5"Width X 22'-7"Length)

BasicFloorPlans ★★★★★

Add to cart

Star Seller. This seller consistently earned 5-star reviews, shipped on time, and replied quickly to any messages they received.



Item details ^

Highlights

Designed by **BasicFloorPlans**

Digital download

Digital file type(s): 3 PNG, 2 PDF

Plan Name: Main_St_ADU_550SF

ADU Dimensions: (24'-5"Width X 22'-7"Length)

[Report this item to Etsy.](#)

2 Bedroom ADU - 11.1 Fixture Units

800 sf



In 20+ carts

\$15.00

2 Bedroom 2 Bath (800SF) ADU(Accessory Dwelling Unit) Floor Plan House Plan (20'-0"Width X 40'-0"Length)

BasicFloorPlans ★★★★★

Add to cart



Star Seller. This seller consistently earned 5-star reviews, shipped on time, and replied quickly to any messages they received.

Item details



Highlights



Designed by **BasicFloorPlans**



Digital download



Digital file type(s): 3 JPG, 2 PDF

Plan Name: ADU_Plan_101_800SF

ADU: (20'-0"Width X 40'-0"Length)

[Report this item to Etsy](#)

Comparison of Meter/Line Sizing Methodologies

2018 International Plumbing Code vs M22 (Water Demand Calculator)

3/4" to 1" Upsize Thresholds: 30 fixture units or 23.30 gallons per minute (gpm)

Description Base Home: Kitchen w/ Dishwasher, Laundry, Front and Back Spigot	COL (2018 IPC) Fixture Counts (gallons per minute)	Denver (2018 IPC,M22,WDC) gallons per minute	Difference (COL-Denver) COL Size Denver Size
Small ADU Kitchen w/ DW, Laundry, 1 Bathroom	7.50 (12.3 gpm)	9 gpm	+3.30 gpm 3/4" 3/4"
Large ADU Kitchen w/ DW, Laundry, 2 Bathroom	11.10 (15.46 gpm)	11 gpm	+4.46 gpm 3/4" 3/4"
Home ~ 2.5 Bath	18.70 (19.08 gpm)	20.40 gpm	-1.32 gpm 3/4" 3/4"
Home ~ 3.5 Bath	22.30 (20.47 gpm)	20.40 gpm	+0.07 gpm 3/4" 3/4"
Home ~ 4.5 Bath	25.90 (21.82 gpm)	21.90 gpm	-0.08 gpm 3/4" 3/4"
Home ~ 2.5 Bath + Small ADU	26.20 (21.93 gpm)	20.60 gpm	+1.33 gpm 3/4" 3/4"
Home ~ 2.5 Bath + Large ADU	29.80 (23.23 gpm)	21.90 gpm	+1.33 gpm 3/4" 3/4"
Home ~ 3.5 Bath + Small ADU	29.80 (23.23 gpm)	21.90 gpm	+1.33 gpm 3/4" 3/4"
Home ~ 3.5 Bath + Large ADU	33.40 (24.39 gpm)	23.90 gpm	+0.49 gpm 1" 1"

Denver Water ADU



- Accessory Dwelling Units are charged **\$1,940** or **0.64** of the Base Charge Tap Fee of \$3,030.
- The \$1,940 tap fee is equivalent to the lowest cost multifamily tap fee that Denver Water recognizes. (Over 8 Dwelling Units)
- Denver sells a base residential tap that doesn't differentiate between 3/4" and 1". This likely eliminates fixture count anxiety and simplifies administrative overhead.

Accessory Dwelling Units

If you have or intend to add a carriage house, mother-in-law suite, guest house or any other [detached accessory dwelling units \(ADUs\)](#) to your property, you may need a new water supply license, and you may owe additional fees.

A detached accessory dwelling unit is a secondary living space that occupies the same lot as the main house, many times for use as a rental or to allow a family member to live nearby. To run water service to the ADU, customers need a [water supply license](#), (under [Tap Application Packet](#)) and will owe [an additional system development charge](#) to finance system improvements, capital projects, efficiency projects and water right acquisitions.

Also, if the service line on the property is made of noncopper material, the customer must replace the service line from the water main to the first copper or brass fitting within the structure, and the tap cut must be witnessed by Denver Water, in accordance with our [scrape-off policy](#).

Denver Water may suspend water service to premises that do not comply with this regulation, and customers will not benefit from the [nonresidential billing rate](#) they may be eligible for.

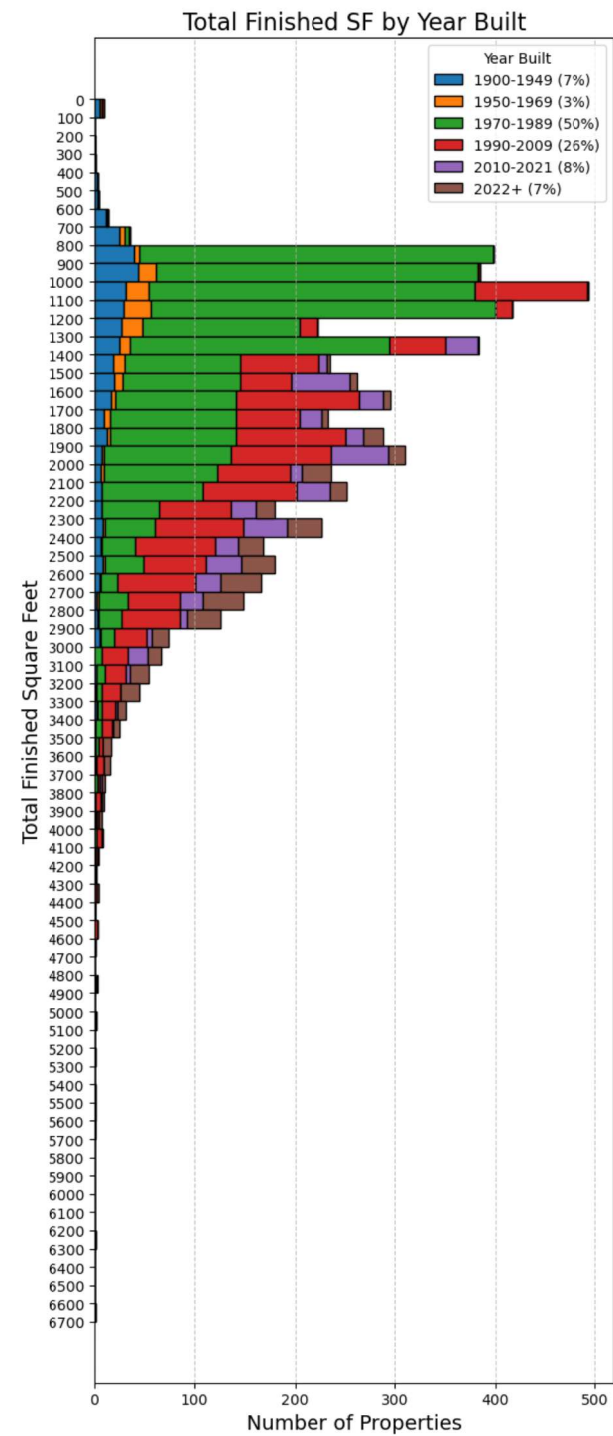
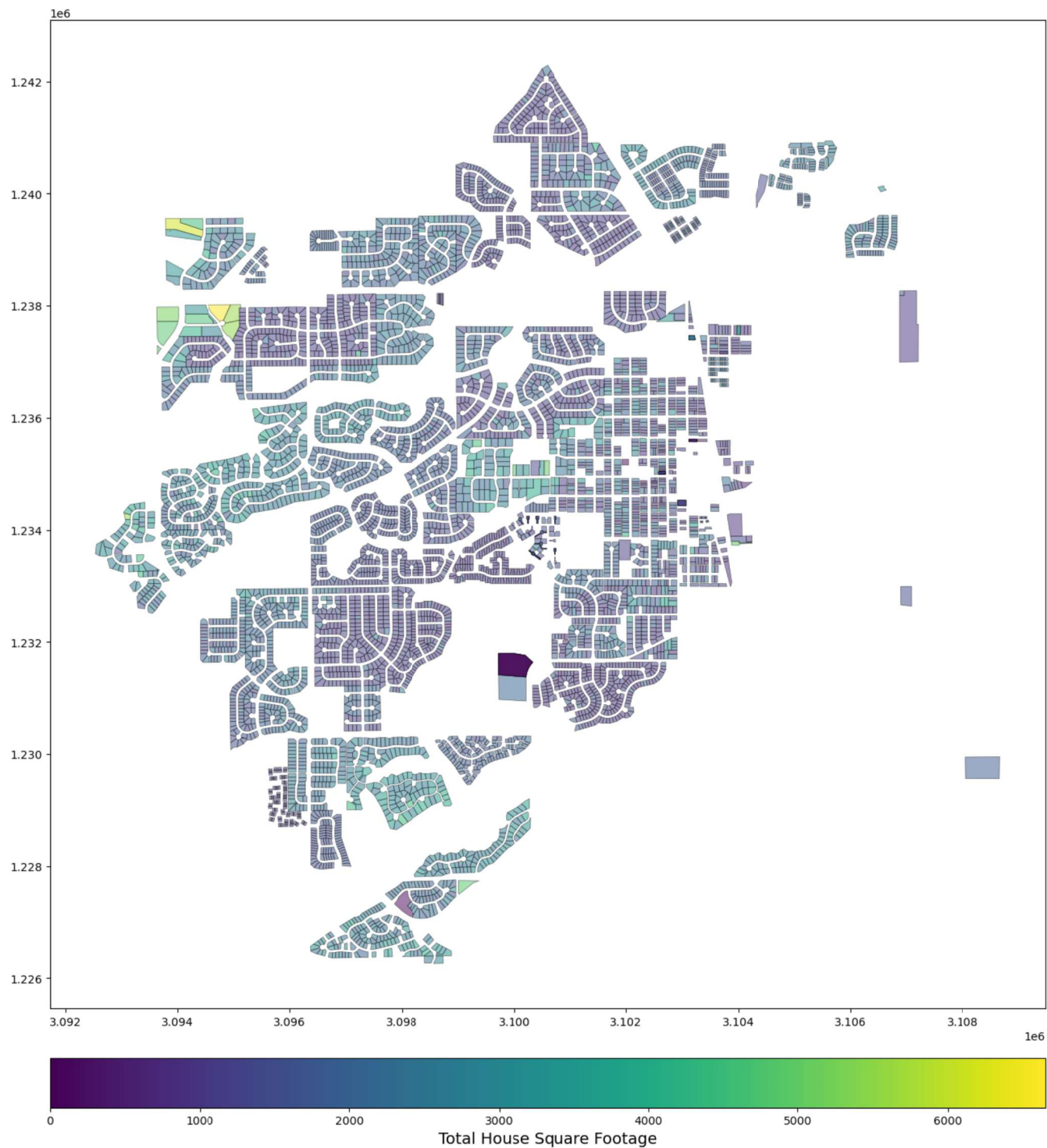
Questions? Contact Sales Administration at [303-628-6100](tel:303-628-6100) or watersales@denverwater.org.

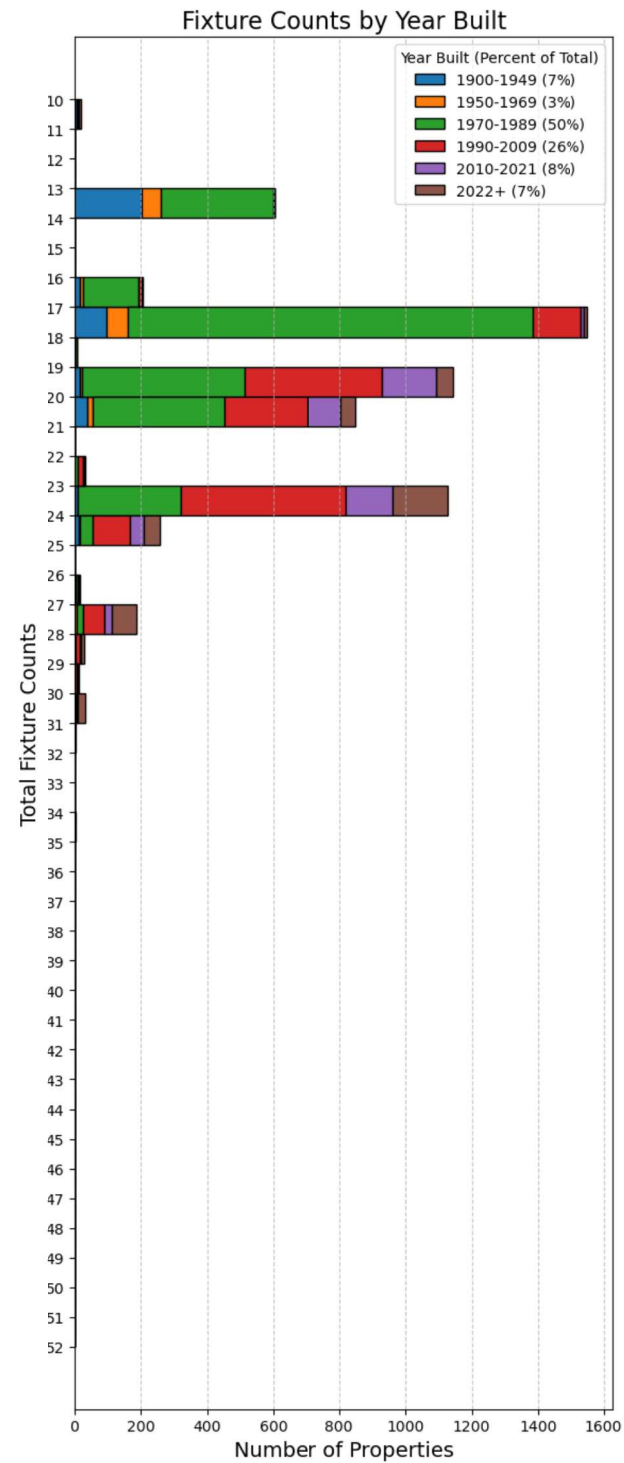
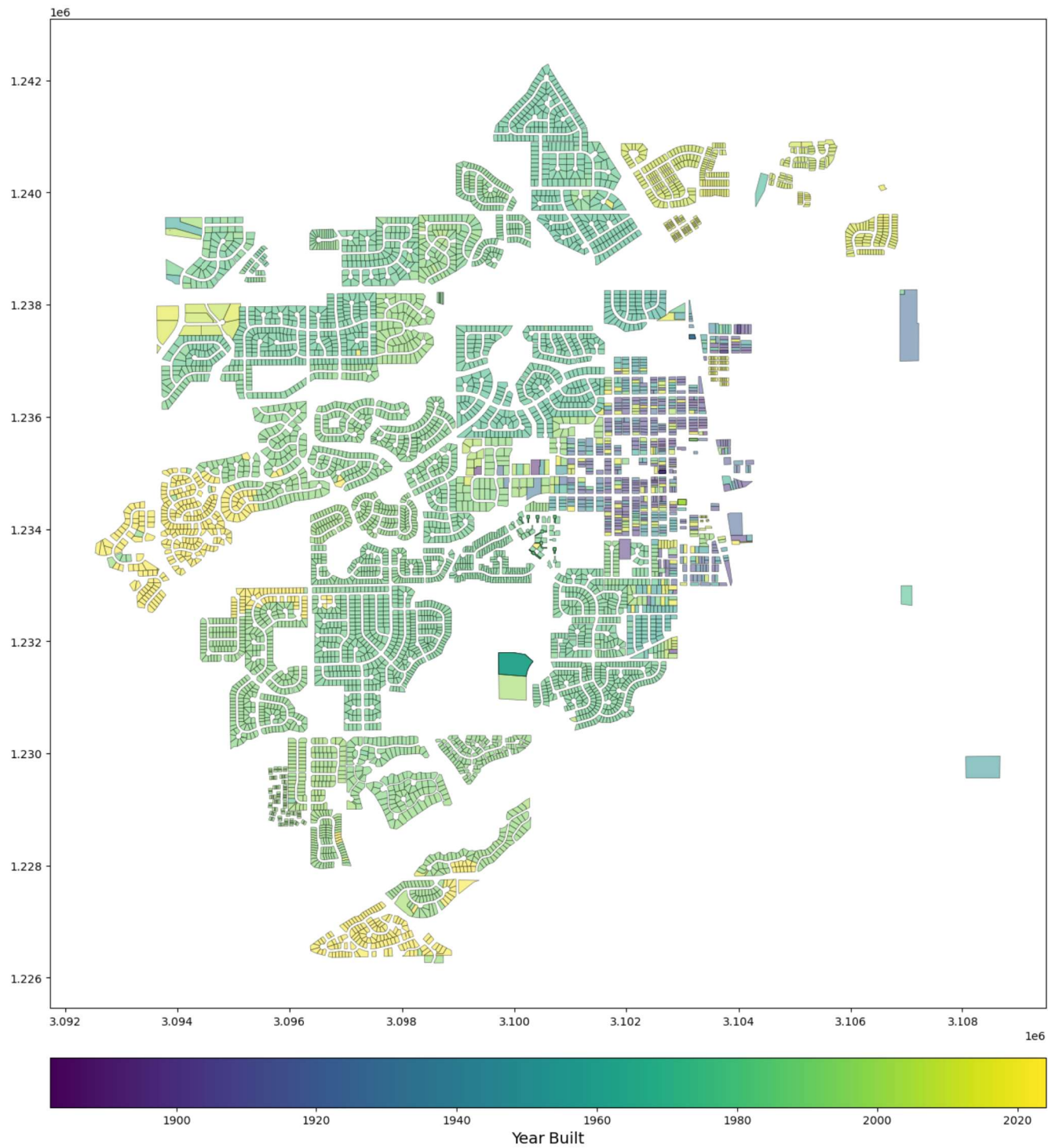
Denver Water System Development Charges fee schedule through Dec. 31, 2025

I. Single-family residential ⁷		
	Treated Water	
	Inside Denver	Outside Denver
Base Charge	\$3,030	\$4,240
First 22,000 sq ft, \$ per sq ft (lot size)	\$0.70	\$0.98
Over 22,000 sq ft, \$ per sq ft (lot size)	\$0.35	\$0.49
Accessory Dwelling Units ¹	\$1,940	\$2,710
II. Multifamily ⁷		
	Treated Water	
	Inside Denver	Outside Denver
First two dwelling units	\$10,040	\$14,060
Next 6 dwelling units, \$ per unit	\$2,420	\$3,390
Over 8 dwelling units, \$ per unit	\$1,940	\$2,710

Single Family Residential (SFE)

Lot Square Footage, Home Square Footage, Fixture Units





Home Indoor Use Statistics

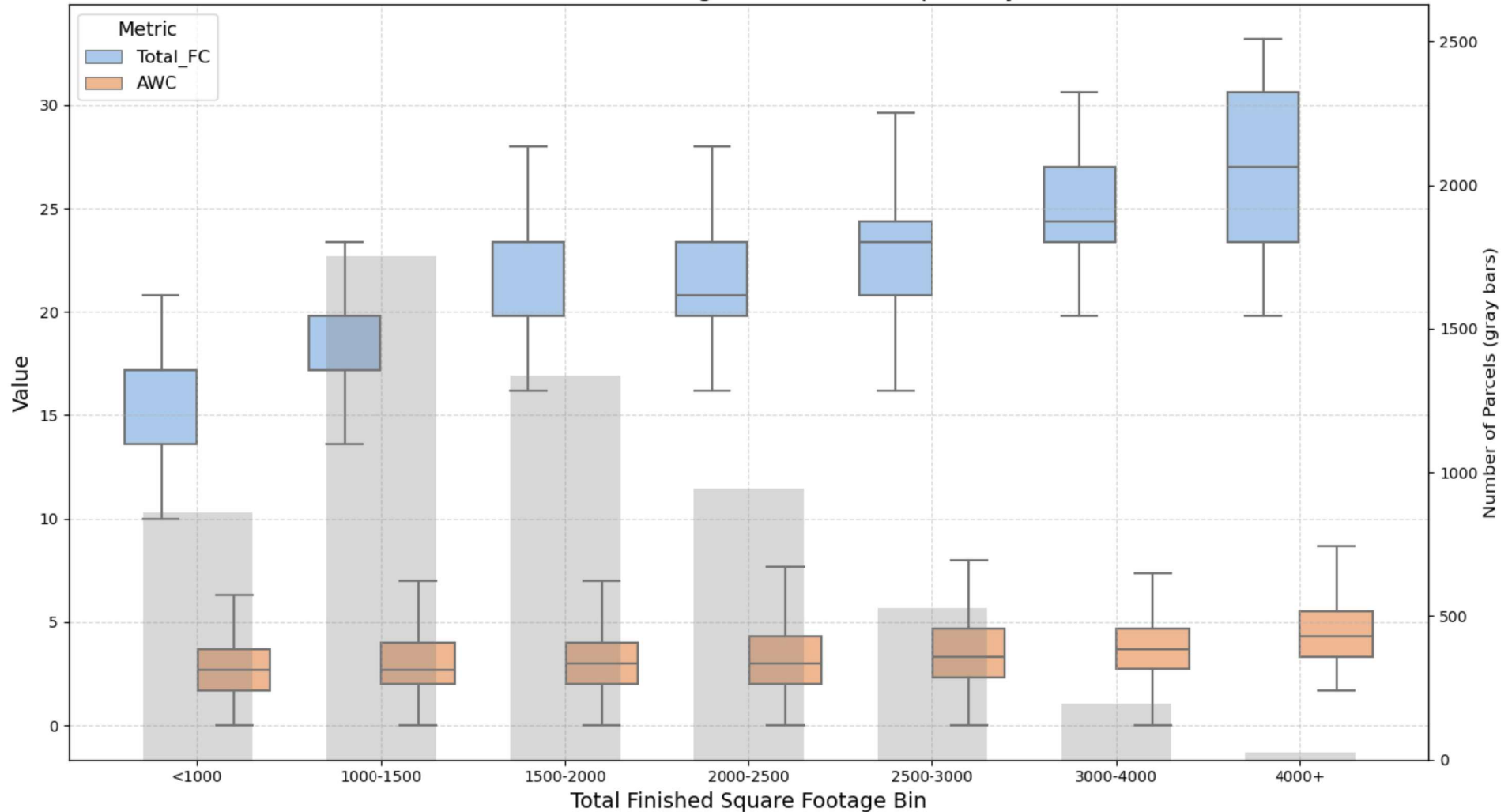
Square Footage vs Fixture Count vs Monthly Indoor Use

Figure 1. Indoor household use by fixture

							
Toilet	Shower	Faucet	Clothes washer	Leak	Other*	Bath	Dishwasher
24%	20%	19%	17%	12%	4%	3%	1%
33.1 gphd	28.1 gphd	26.3 gphd	22.7 gphd	17.0 gphd	5.3 gphd	3.6 gphd	1.6 gphd

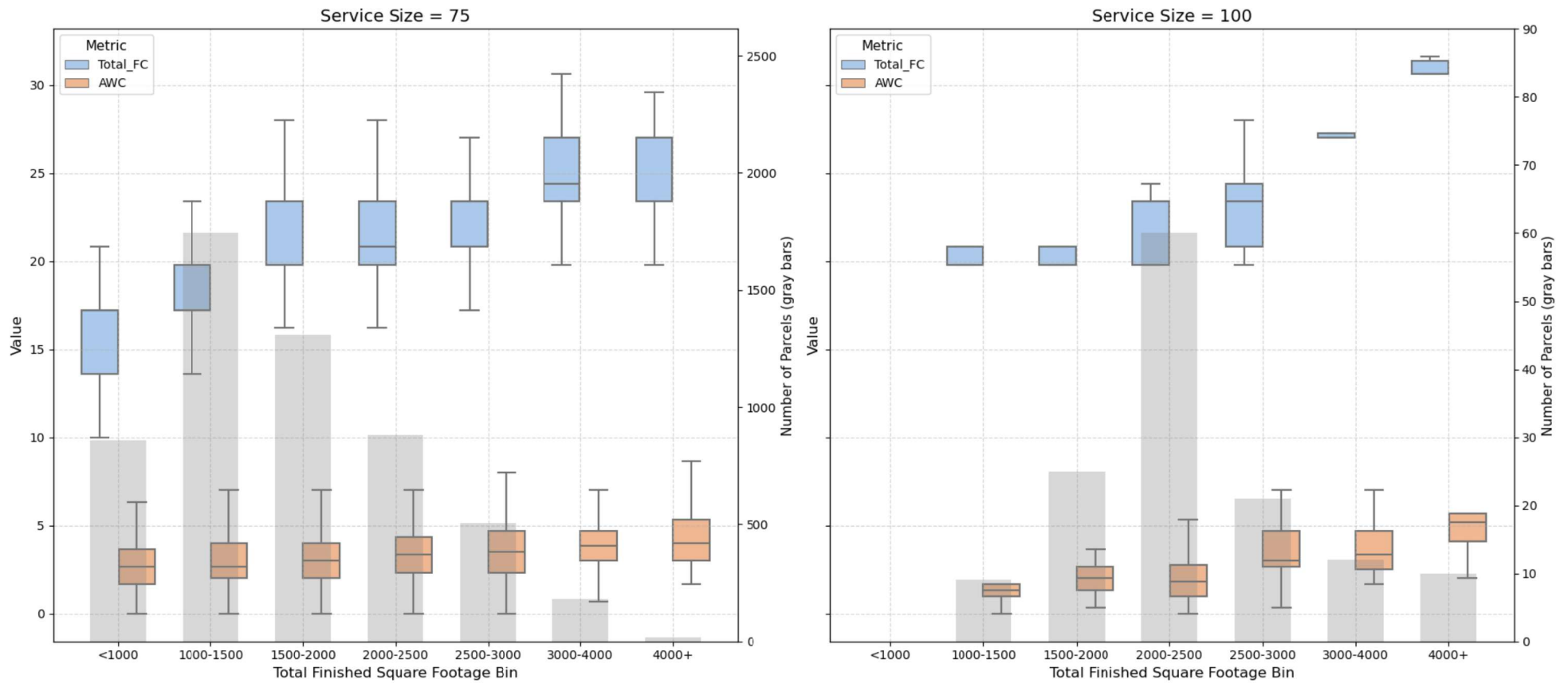
* The "Other" category includes evaporative cooling, humidification, water softening, and other uncategorized indoor uses.

Total Fixture Count and Average Winter Consumption by Home Size



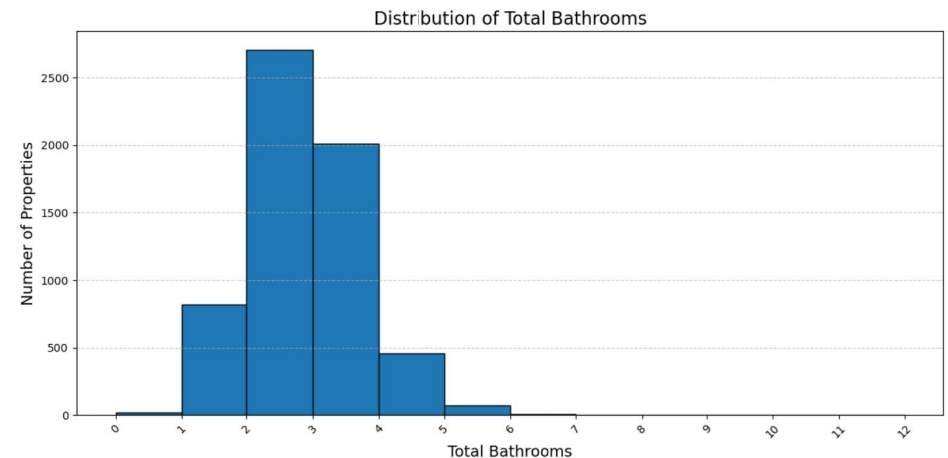
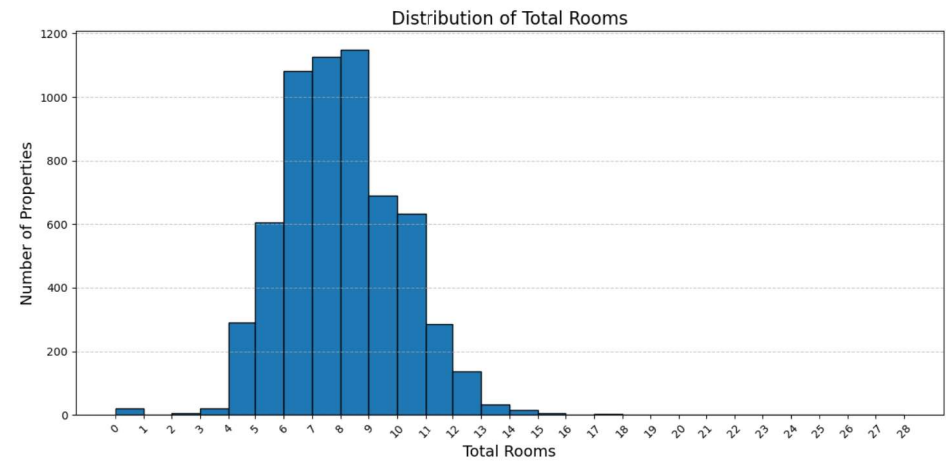
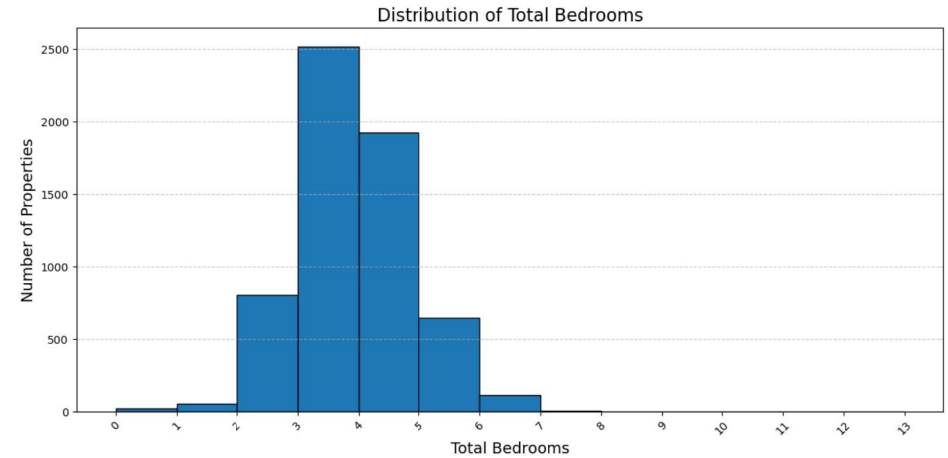
Home Indoor Use Statistics

Do 3/4" meters vs 1" meters look different for Indoor Usage? **No**



Average Home Room Profile

- Most homes have **3-4 bedrooms**.
- Most homes have **2-3 bathrooms**.
- Most homes have **6-8 total rooms** not bathrooms indicating kitchen, living room, family room, dining.
- The **difference** between a **small home** and a **large home** can be **1-2 bedrooms** and **1-2 bathrooms**.



Home Size Trends

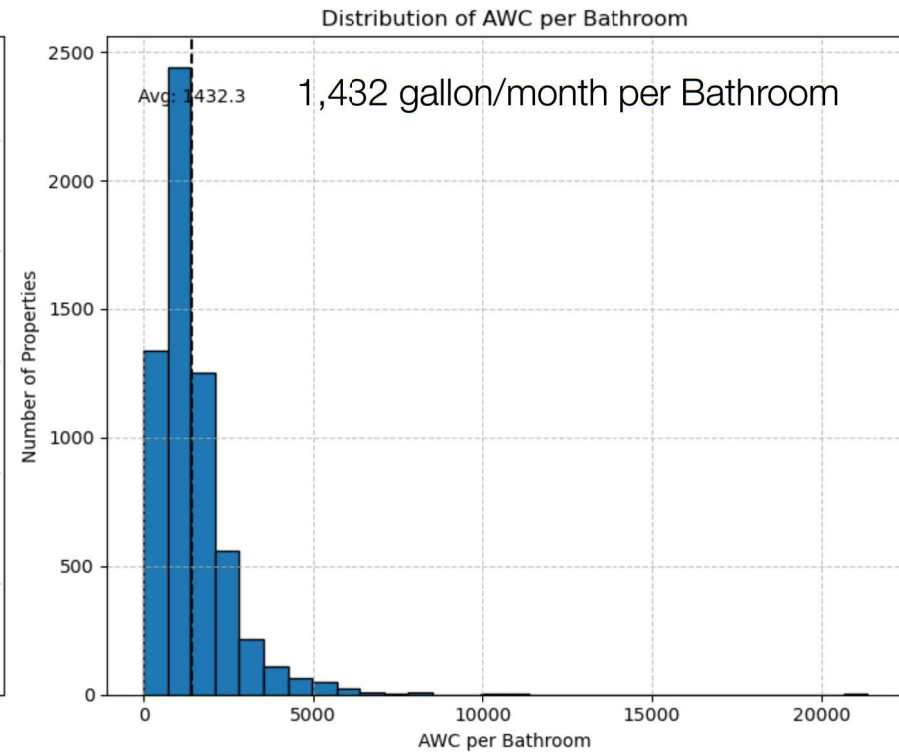
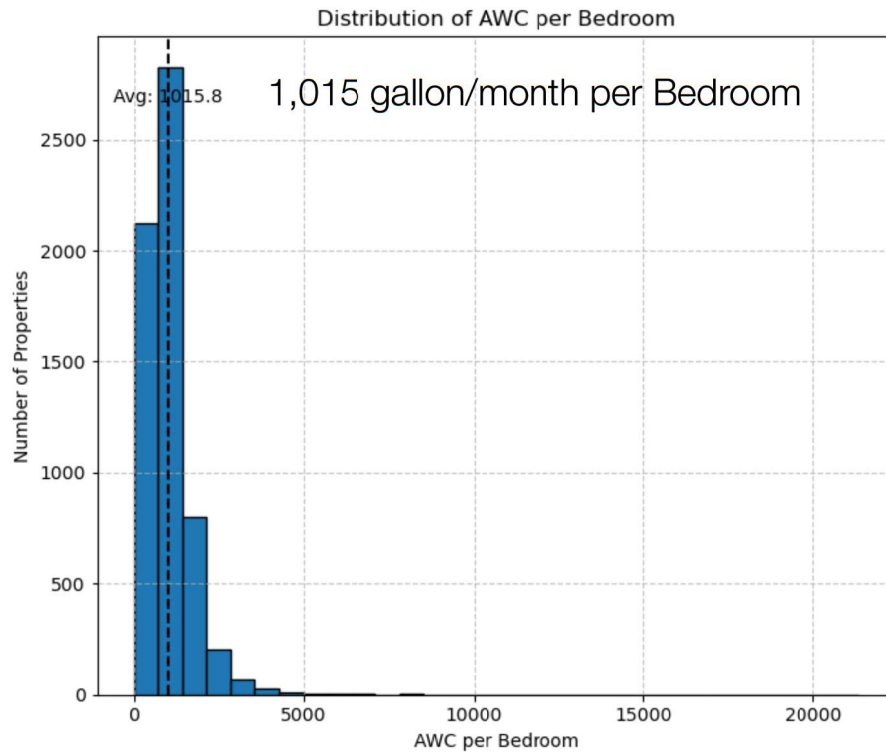
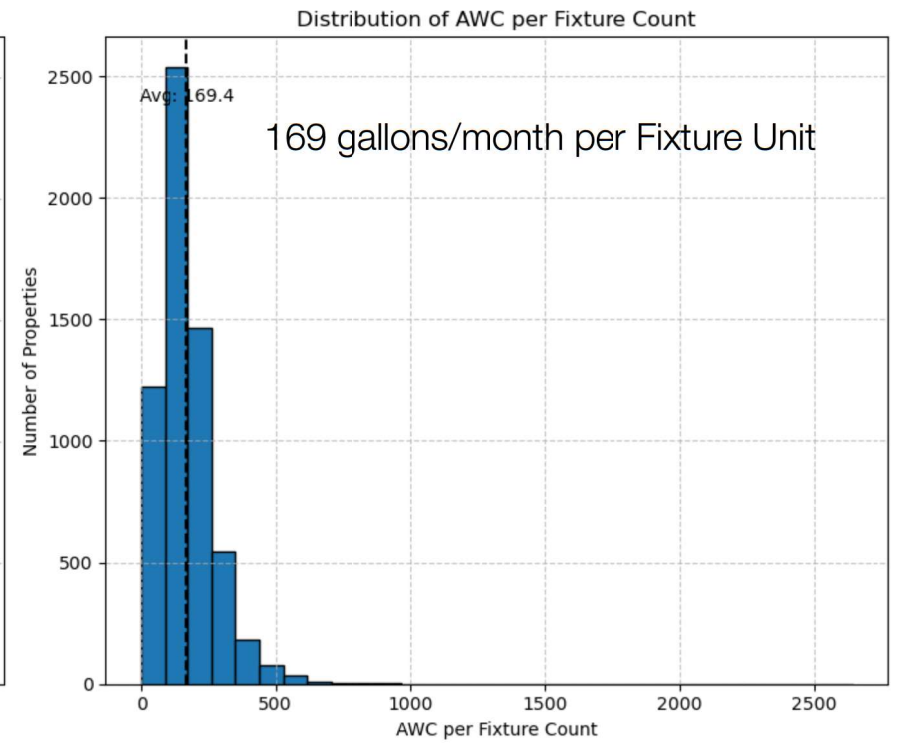
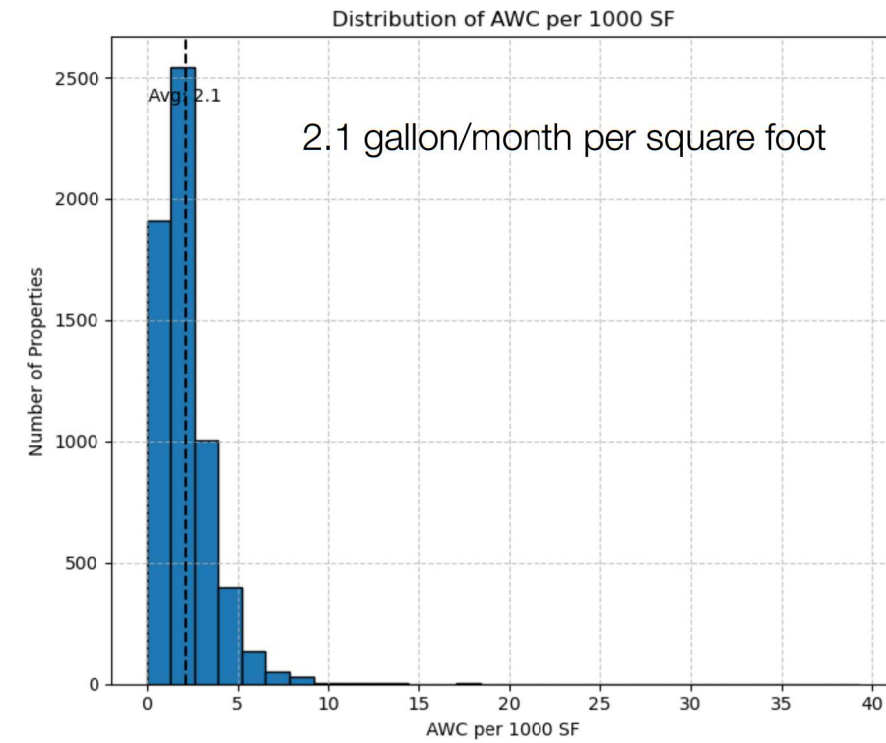
Averaged by Year Built

- Home total finished square footage increased by roughly 2x.
- Home fixture counts increased by roughly 1.5x.
- Average lot square footage was consistent and significantly decreased starting in the 2000's.
- Bigger homes less same or less lot size.

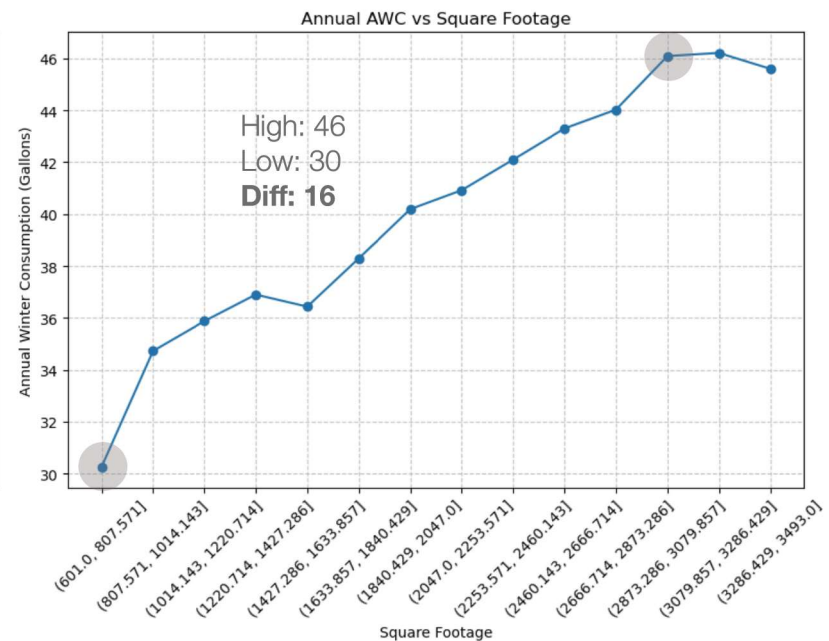
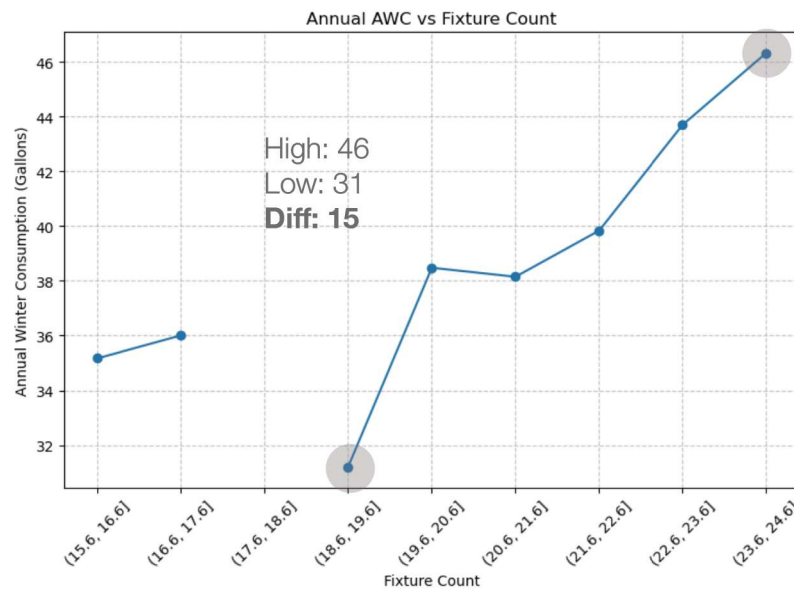
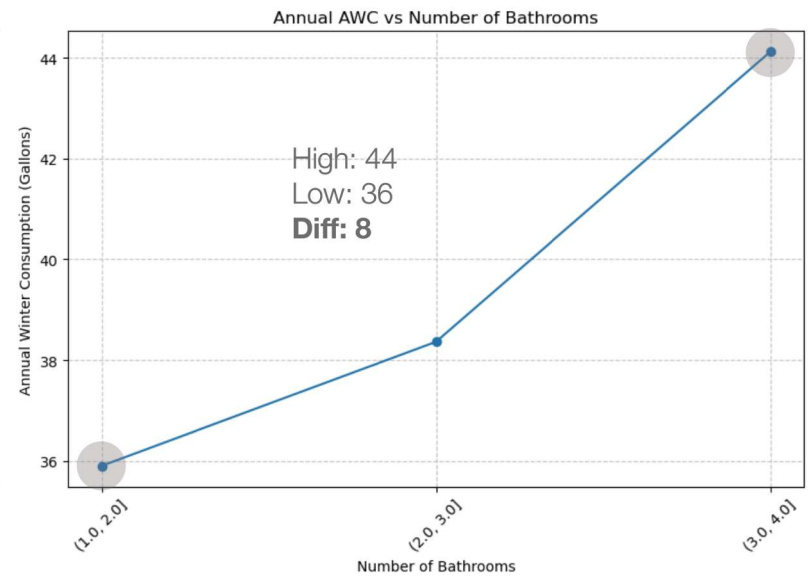
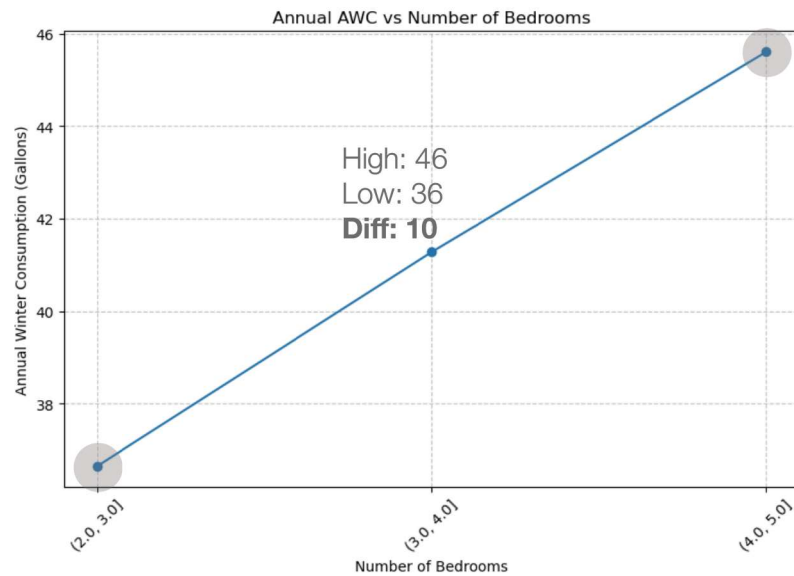


Residential Average Winter Consumption (AWC) Analysis

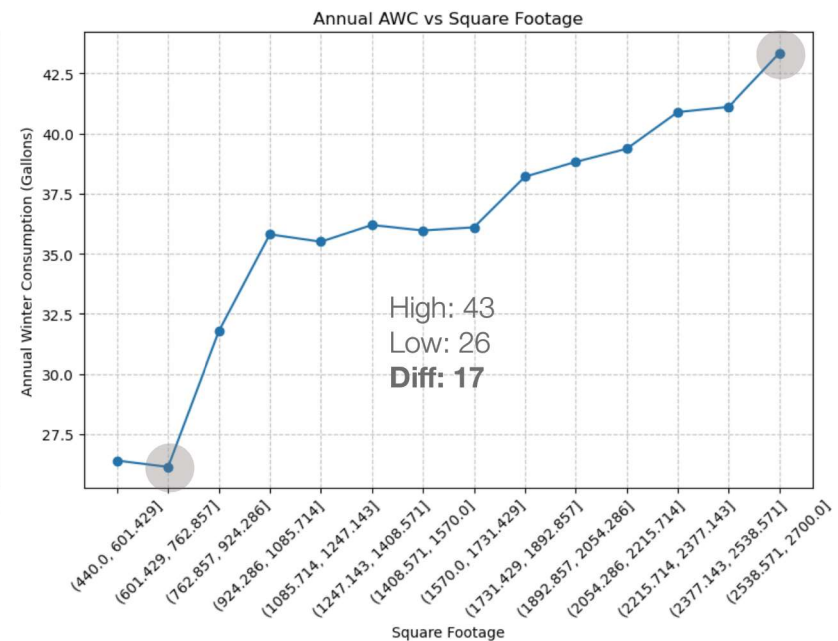
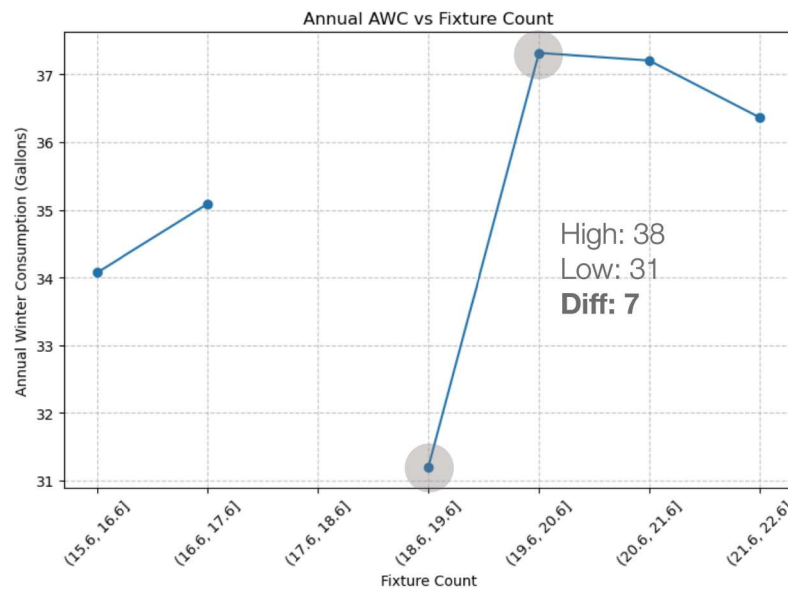
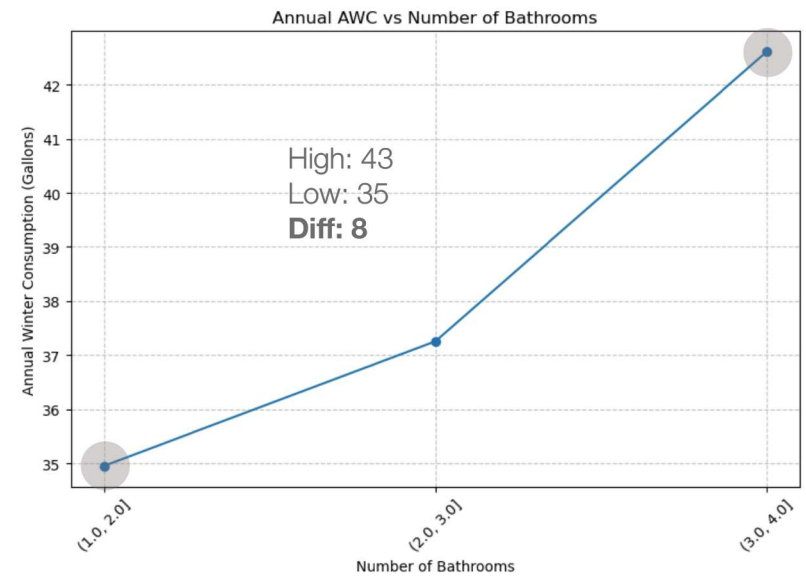
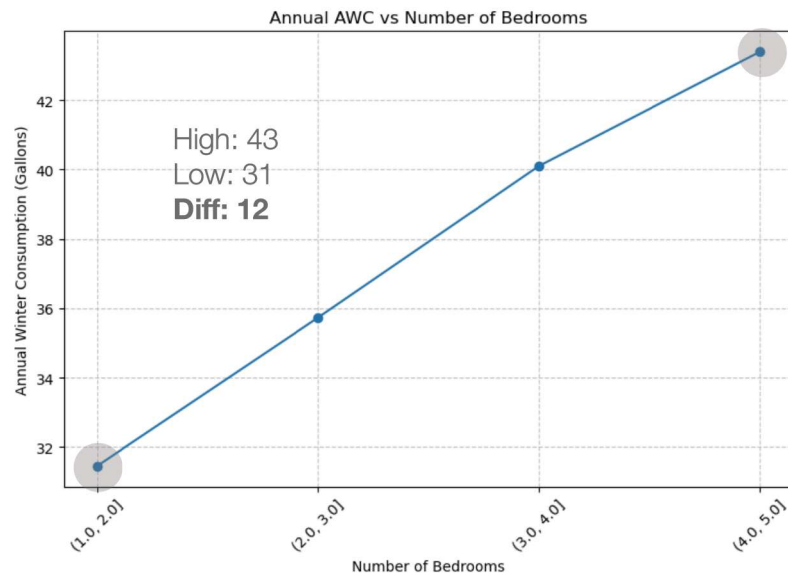
AWC is the Average of Dec, Jan, Feb or Indoor Usage



Residential - Homes Before 2022 (No Outliers)



Residential - Homes Before 2022 (95th Percentile)



Small vs Large Home Indoor Use Statistics

Small vs Large home indoor annual usage is 8,000 - 17,000 gallons depending on perspective.

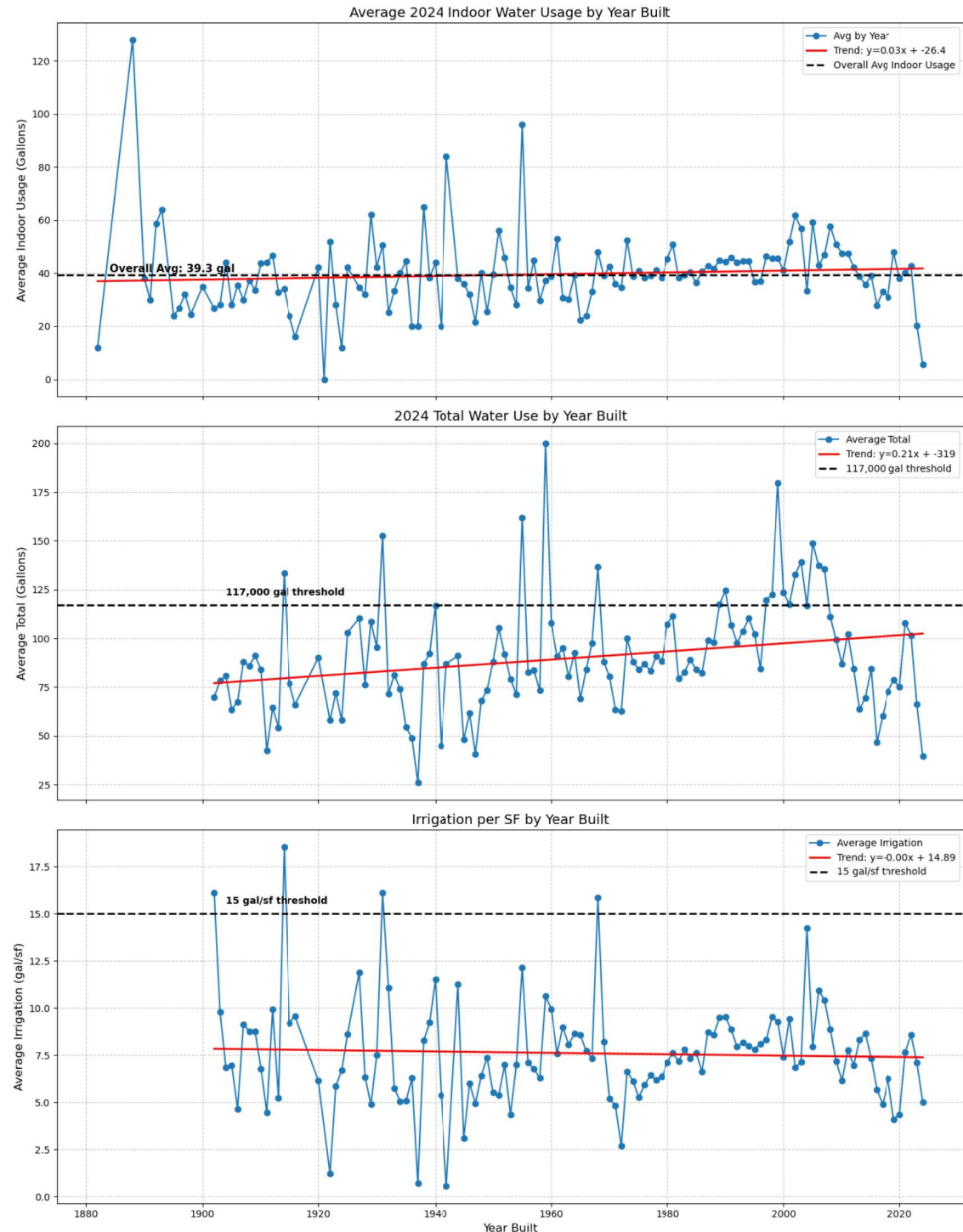
Average AWC Versus (Annual Difference)	All Homes Partial Year Data (Fire Skewed)	All Homes Built Prior to 2022 (No Fire Skew)	All Homes Built Prior to 2022 No Outliers (25-75th Percentile)	All Homes Built Prior to 2022 High Confidence (95th Percentile)
# Bedrooms Most to Least 11,000 gallons (1,015 gal/bedroom)	High: 46 Low: 34 Difference: 12	High: 50 Low: 34 Difference: 16	High: 46 Low: 36 Difference: 10 Avg: 11	High: 43 Low: 31 Difference: 12
# Bathrooms Most to Least 8,000 gallons (1,432 gal/bathroom)	High: 45 Low: 38 Difference: 7	High: 52 Low: 37 Difference: 15	High: 44 Low: 36 Difference: 8 Avg: 8	High: 43 Low: 35 Difference: 8
Fixture Count Most to Least 11,000 gallons (169 gal/fu)	High: 51 Low: 30 Difference: 21	High: 60 Low: 35 Difference: 25	High: 46 Low: 31 Difference: 15 Avg: 11	High: 38 Low: 31 Difference: 7
Square Footage Most to Least 16,500 gallons (2.1 gal/sf)	High: 50 Low: 30 Difference: 20	High: 50 Low: 30 Difference: 20	High: 46 Low: 30 Difference: 16 Avg: 16.5	High: 43 Low: 26 Difference: 17

Home Usage Trends

Averaged by Year Built.

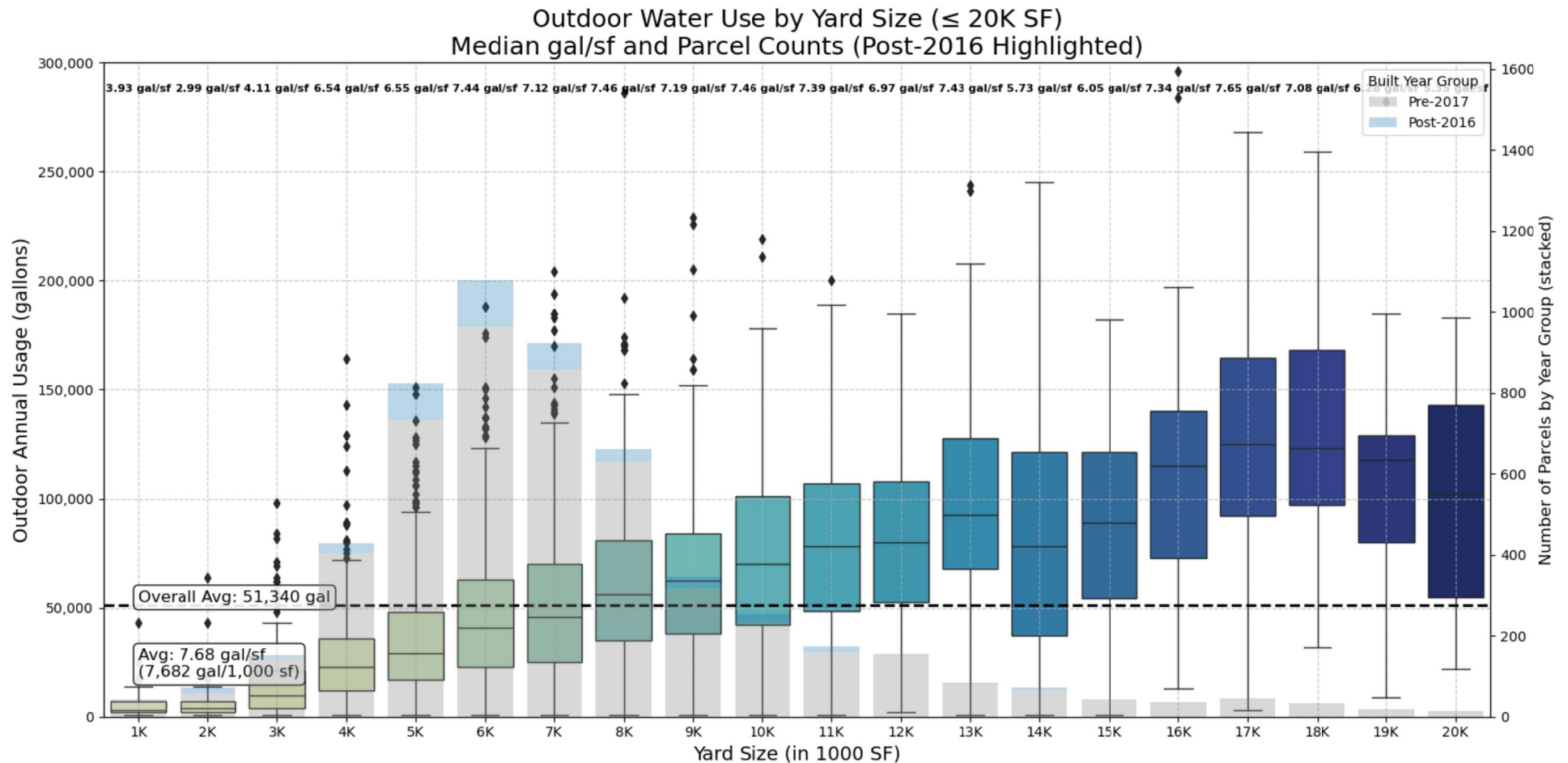
2023+ Skewed By Incomplete Fire Rebuild Usage.

- **Indoor Usage** overall **average** is consistently **40,000** gallons per year with **smaller homes** averaging closer to **30,000** gallons and larger homes averaging **50,000** gallons.
- **Total Usage** varies greatly by year built and is **influenced** by **lot size** and **outdoor irrigation**.
- Statistically the **indoor usage difference** between a typical **large home** and typical **small home** is **10,000 - 15,000** gallons.



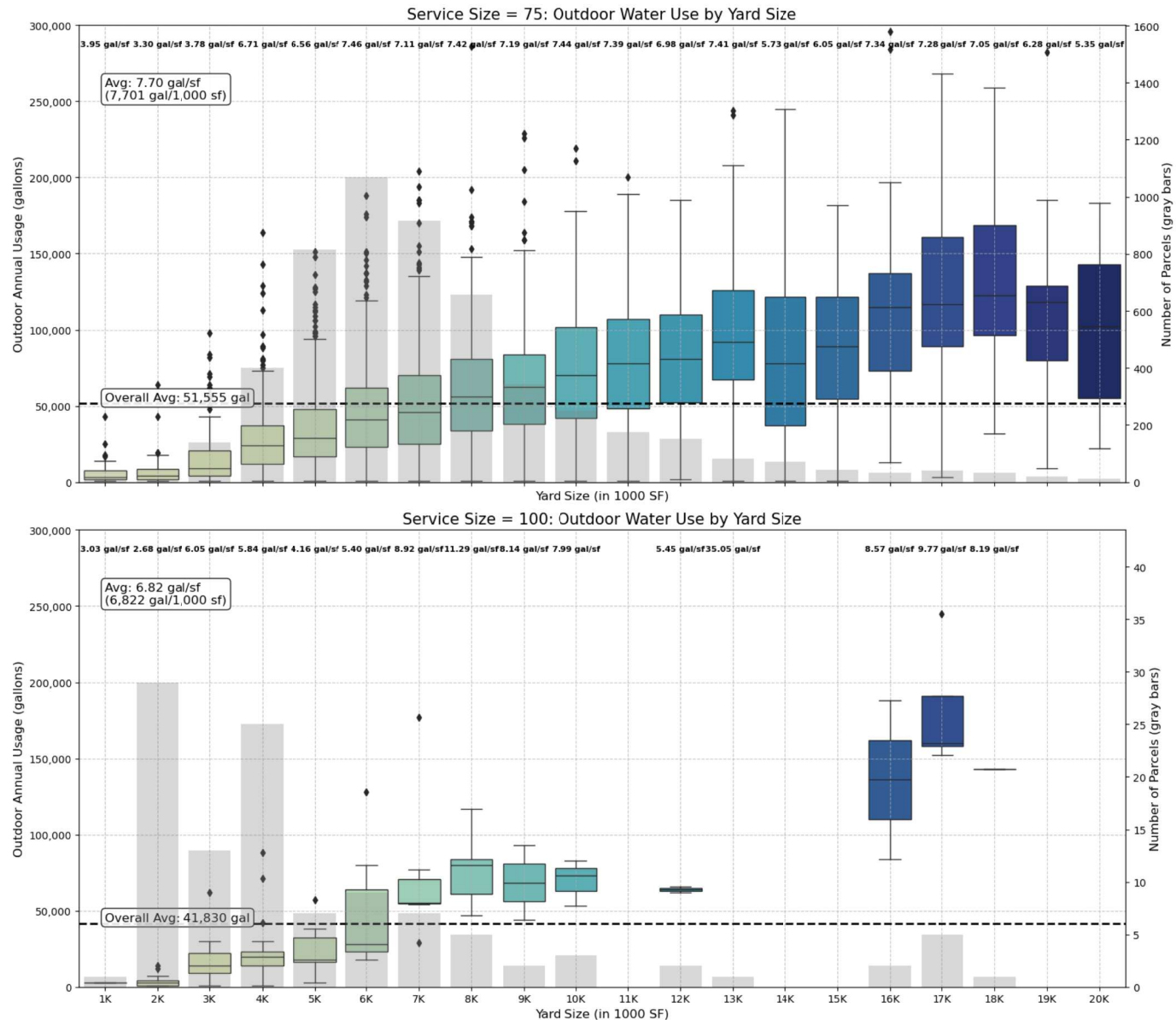
Home Irrigation Statistics

Yard Size calculated from Parcel Size - Main Floor SF (ie. driveway/walks not accounted for)



Home Irrigation Statistics

Do 3/4" meters vs 1" meters look different for Outdoor Irrigation? **No**



Single Family Residential (SFE) versus Multifamily vs ADU

Existing Perspective, Review of Usage Ranges, Proposed Perspective

Existing ADU Tap Fee Practice

- ADU's are considered as a Multifamily Unit if they are putting in fixtures beyond bathroom and small bar sink.
- Multifamily Units are **\$32,100** per Unit or **0.60** of a Single Family Equivalent Unit (SFE).
- Primary Residences can be considered as the Irrigation Component. This provides a **\$8,025** per Unit or **0.15** discount or allows for **0.45** ADU charge.
- ADU Water Tap Fee **\$24,075**
- 1 Tap Fee Paid in History**



TAP FEE CALCULATION FORM

WATER, IRRIGATION, AND SEWER TAP FEES ESTABLISHED PURSUANT TO THE LOUISVILLE MUNICIPAL CODE, DELEGATING AUTHORITY TO THE CITY MANAGER TO ESTABLISH TAP FEES ON A QUARTERLY BASIS
EFFECTIVE FEBRUARY 15, 2020.

Utilize this form to determine Water, Irrigation, and Sewer Tap Fees by completing the shaded cells. For each premises (separate building) a Tap Fee will be assessed. For Multifamily, Non-Residential, and Other Uses, please fill out a separate sheet for each premises. Additional information on Tap Fees and other utility service requirements may be found in the Louisville Municipal Code. For taps larger than 4 inches, the tap fee and other terms and conditions of the issuance of the tap shall be established by written agreement approved by the Louisville City Council.

Project Location: _____ Subdivision: _____ Filing: _____ Block: _____ 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: _____ Y/N Meter Size: _____

DEDICATION OF WATER RIGHTS

1) Water Rights Tap Fee Credit

Water Rights _____ rights X \$39,400 = \$ _____
(credit) (total credit)

INSTRUCTIONS:

In approved cases, utilize this section to determine the credit for the dedication of water rights. The water rights tap credit is calculated as the total number or fraction of water rights multiplied by the credit for a Single Family Equivalent. Water Dedication is required prior to the issuance of a building permit.

WATER TAP FEES

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

3/4" meter X _____ units X \$53,500 = \$ _____

1" meter X _____ units X \$95,300 = \$ _____

INSTRUCTIONS:

Utilize this section to determine the water tap fee for the proposed residential development. Insert the number of single-family, duplex and/or 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 = \$ _____ (Total Cost minus water rights tap credit)

Complete this section for each separately metered premises (separate building) and/or other use.

3) Multifamily Residential Tap Fee (townhouse, multifamily and senior independent living, as defined in Louisville Municipal Code)

Fixture Count _____ Meter Size _____

Townhouse _____ units X \$42,800 = \$ _____

Multifamily _____ units X \$32,100 = \$ _____

Senior _____ units X \$16,050 = \$ _____

Total Cost = \$ _____

INSTRUCTIONS:

Provide fixture 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.

5 or more Townhouse or Multifamily Units: separate irrigation tap required, provide Plumbing Permit number for the separate irrigation tap: _____

No. of Units _____ X \$ 8,025 = \$ _____
(from above) (credit) (total irrigation tap credit)

Townhouse and Multifamily premises with five or more 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 as 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 = \$ _____ (Total Cost minus irrigation and/or water rights tap credit)

CONTINUE ON THE OTHER SIDE

2022 City of Boulder ADU Update/Evaluation

Assume **50%** of ADU's are Rentals. **20%** Family. **20%** Convenience/Luxury. **10%** Other.

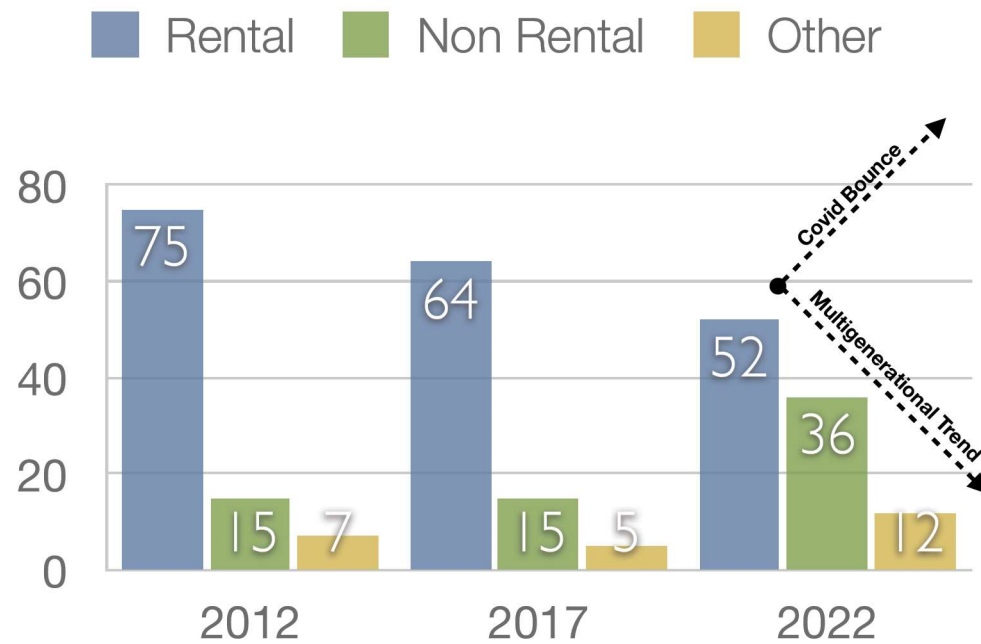


Figure 6. What do you consider to be the primary benefits of maintaining an ADU?

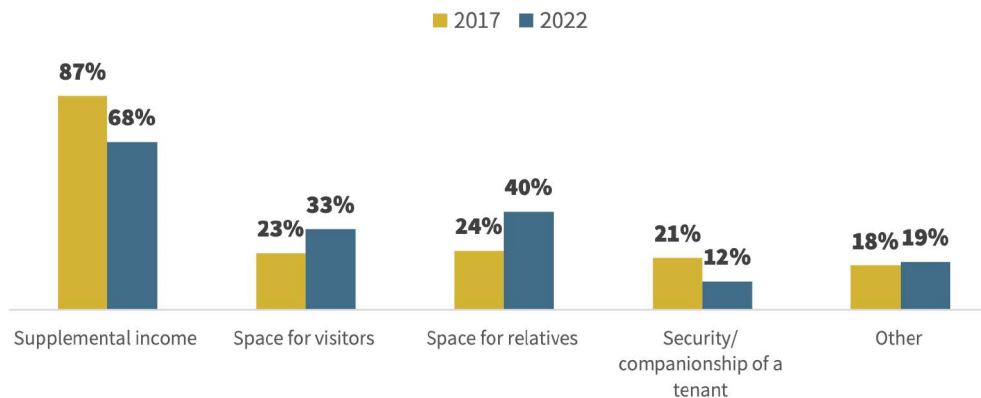
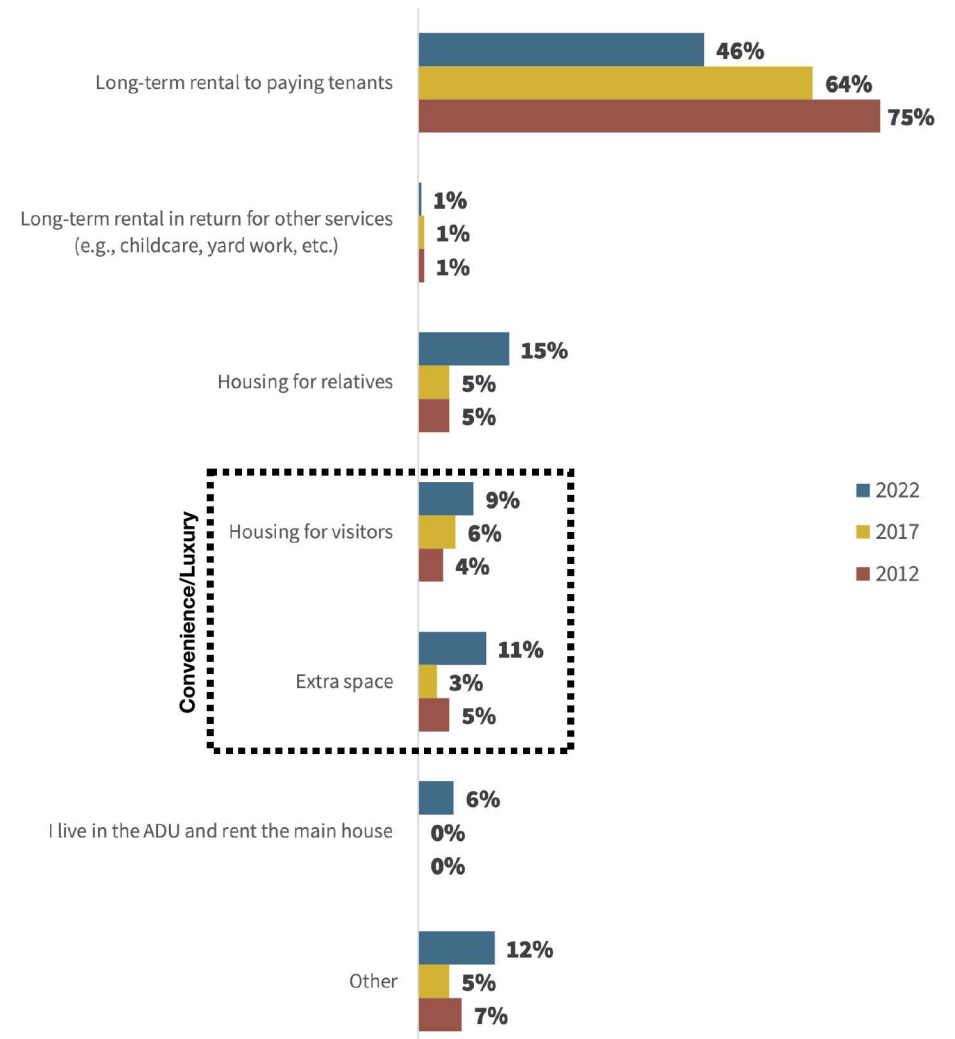
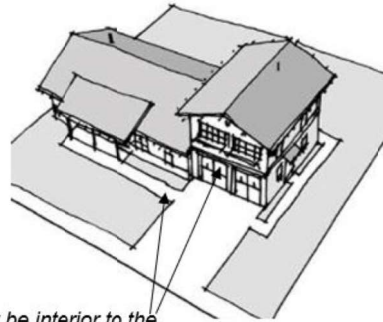
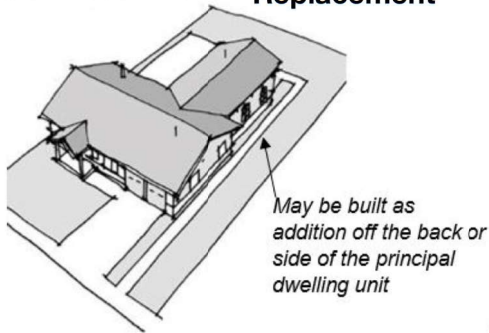


Figure 7. Current Use of the ADU (How do you currently use your ADU?)



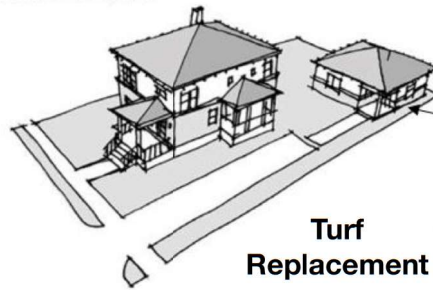
ADU Layout Examples of Turf Replacement

Attached ADUs
Turf Replacement



May be interior to the home (e.g. in the basement or separate story)

Detached ADUs



Turf Replacement

Typically located at rear or side of property, sometimes over a detached garage



Attached Above Garage ADU



Interior Converted Garage ADU



Interior Converted Basement or Attic ADU



Attached ADU

Turf Replacement



Detached ADU

Turf Replacement

ADU Community Fee Comparison

ADU Methodologies and Costs Vary Widely and are Difficult to Interpret at Times

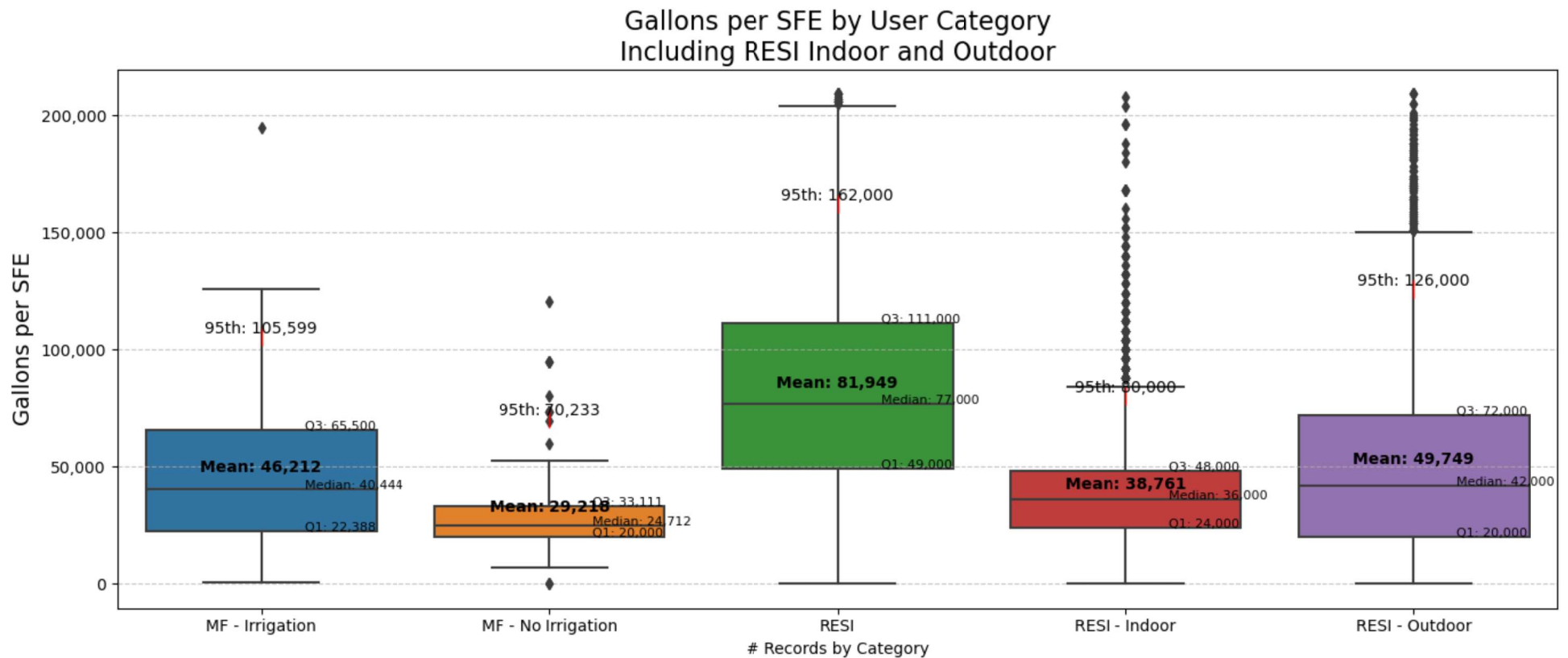
	Water Fee	Wastewater Fee	SFE Fee SFE Gallons	SFE Equivalents
Arvada	Fee if ADU triggers tap size increase. (\$16,745 - \$33,490)	Metro Water Recovery Fee (\$5,910)	Water: \$34,490 Sewer: \$6,240 N/A	Duplex: 0.75 Multi-Family: 0.50
Boulder	Fee if ADU triggers tap size increase. (Unclear)	Fee if ADU triggers tap size increase. (Unclear)	Water: \$12,167 + Irrig SF Sewer: \$4,746 N/A	Multi-Family: 0.67 of Indoor Base
Broomfield	Fee if ADU triggers tap size increase. (Unclear)	Fee if ADU triggers tap size increase. (Unclear)	Water: \$36,400 Sewer: \$14,370 163,000	Townhouse: 0.60 Multi-Family: 0.40
Denver	Fee (\$1,940)	Metro Water Recovery Unclear, Assumed (\$5,930)	Water: \$3,030 + Irrig SF Sewer: \$5,930 N/A	Multi-Family: 0.64 of Indoor Base
Erie	Fee if ADU triggers tap size increase. (\$8,030 + Raw Water)	Fee if ADU triggers tap size increase. (\$5,907)	Water: \$48,690 Sewer: \$8,860 N/A	Unclear
Golden	Fee if ADU triggers tap size increase. (\$26,182 w/ no Irrig)	Fee if ADU triggers tap size increase. (\$2,325)	Water: \$8,474 + Irrig SF Sewer: \$3,486 N/A	Unclear
Lafayette	Fee - Same as MF Unit (\$4,290)	Fee (\$2,870)	Water: \$62,584 Sewer: \$6,360 N/A	Multi-Family: 0.45 + Water
Longmont	Unclear	Unclear	Water: \$9,210 + Irrig SF Sewer: \$8,617 N/A	Multi-Family: 0.61 of Base
Louisville - Current	Fee - Same as MF Unit (\$24,075)	Fee - Same as MF Unit (\$5,400)	Water: \$53,500 Sewer: \$6,800 117,000	Multi-Family: 0.60 w/ Irrig Multi-Family: 0.45 w/o Irrig
Superior	Fee if ADU triggers tap size increase. (\$14,151)	Fee if ADU triggers tap size increase. (Unclear)	Water: \$36,393 Sewer: \$7,488 N/A	Unclear

ADU Fee if 3/4" to 1" Upsize is Triggered

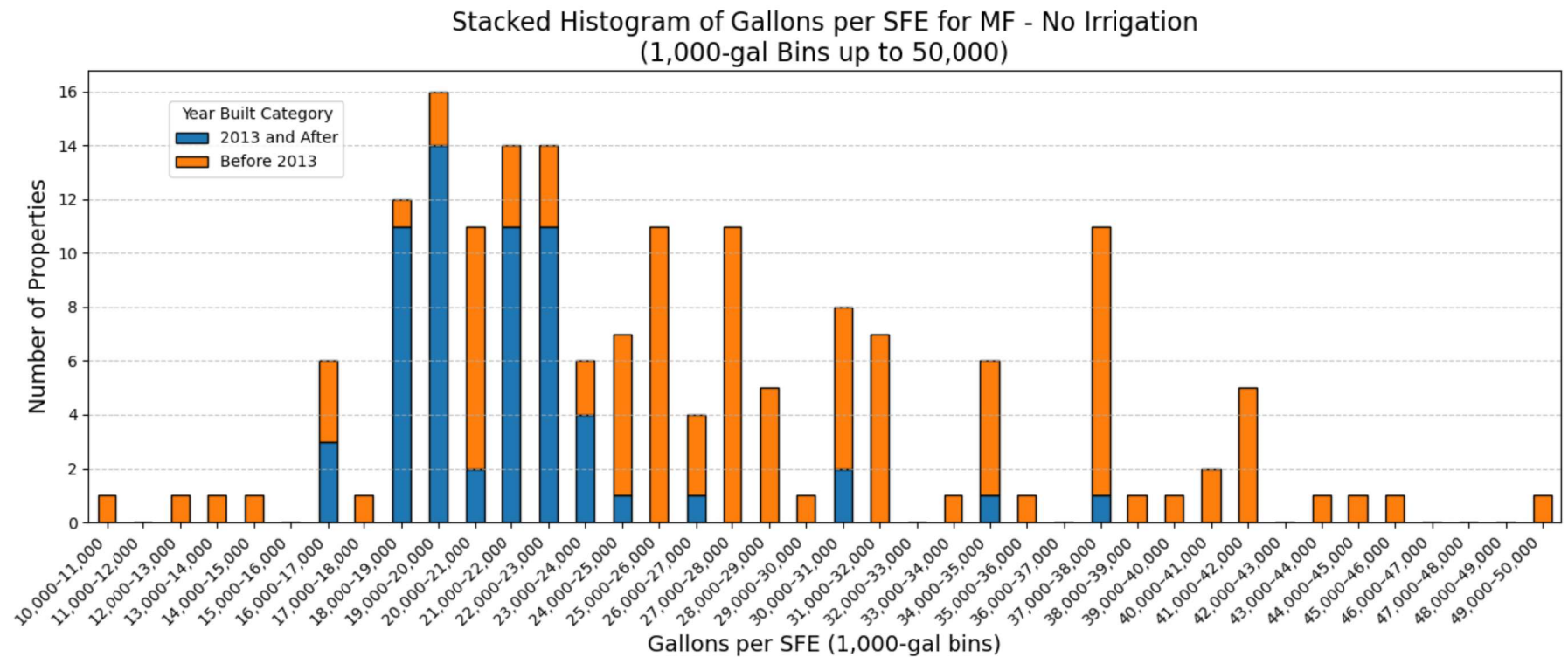
The Upsize Approach would create Inequity, Fixture Anxiety, and Administrative Overhead

Residential Meter Size	Percent of Meters	Fixture Units	Over Annual Usage Allocation	Estimated Over w/ Small ADU 1 Bathroom	Estimated Over w/ Large ADU 2 Bathroom
3/4" Meter	98%	< 1% (Over 30)	22% (Over 117,000 gal)	39%	65%
1" Meter	2%	N/A	9% (Over 208,000 gal)	9%	9%

Compare Indoor Gallons per SFE



Multifamily Indoor Gallos per SFE by Year Built



Multifamily vs Single Family Equivalents Review

2012

Ratio of MF to RESI - Gallons per SFE (Outliers Removed)

Statistic	MF - Irrigation to RESI	MF - No Irrigation to RESI
95th	0.67	0.34
Q3	0.62	0.34
Mean	0.66	0.4
Median	0.6	0.38
Q1	0.68	0.54

2024

Ratio of MF to RESI - Gallons per SFE (Outliers Removed)

Statistic	MF - Irrigation to RESI	MF - No Irrigation to RESI
95th	0.63	0.42
Q3	0.58	0.3
Mean	0.55	0.35
Median	0.53	0.32
Q1	0.46	0.41

COL Usage Ranges and Tap Fee Equivalents

Small ADU 25 x 23 = 575 sf. 575 x 7.5 gal/sf = 4,312 gallon irrigation deduction. ~ 4,000 (**)

Dwelling Type	Fixture Count Analysis	Fixture Count Equivalents	Water Usage 25th - 75th % Range (gallons/year)	Equivalent Residential Units (EQR)	COL Tap Existing Fee (EQR)	Other Considerations
Single Family Home (SFE)	15 - 35	1.0	49,000 - 112,000	1.0	117,000 gal/yr (Base SFE)	
Townhome	-	-	-	-	0.80 0.65 w/ Irrig	
1-Bedroom Apartment	7.5	0.21 - 0.30	20,000 - 33,000 20,000 - 69,000	.29 - .41 .29 - .62	0.60 0.45 w/ Irrig	Renting 93% Occupancy 1-2% Swings
2-Bedroom Apartment	7.5	0.21 - 0.30	20,000 - 33,000 20,000 - 69,000	.29 - .41 .29 - .62	0.60 0.45 w/ Irrig	Renting 93% Occupancy 1-2% Swings
3-Bedroom Apartment	7.5 - 11.2	0.32 - 0.50	20,000 - 33,000 20,000 - 69,000	.29 - .41 .29 - .62	0.60 0.45 w/ Irrig	Renting 93% Occupancy 1-2% Swings
Accessory Dwelling Unit (ADU) Existing	7.5 - 11.2	0.32 - 0.50	15,000 - 25,000 10,000 - 20,000	.22 - .30 .17 - .20	0.60 0.45 w/ Irrig	Family, Renting 50% Occupancy 25% Swings
Accessory Dwelling Unit (ADU) Option #1 Fee	7.5 - 11.2	0.32 - 0.50	15,000 - 25,000 10,000 - 20,000	.22 - .30 .17 - .20	0.30 0.20 w/Turf	Family, Renting 50% Occupancy 25% Swings
Senior Living Unit	-	-	-	-	0.30	
Commercial	Significant Variation	Significant Variation	Significant Variation	Significant Variation	Demand/ 117,000	