

Incentivizing Water Conservation through Connection Charges



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Background

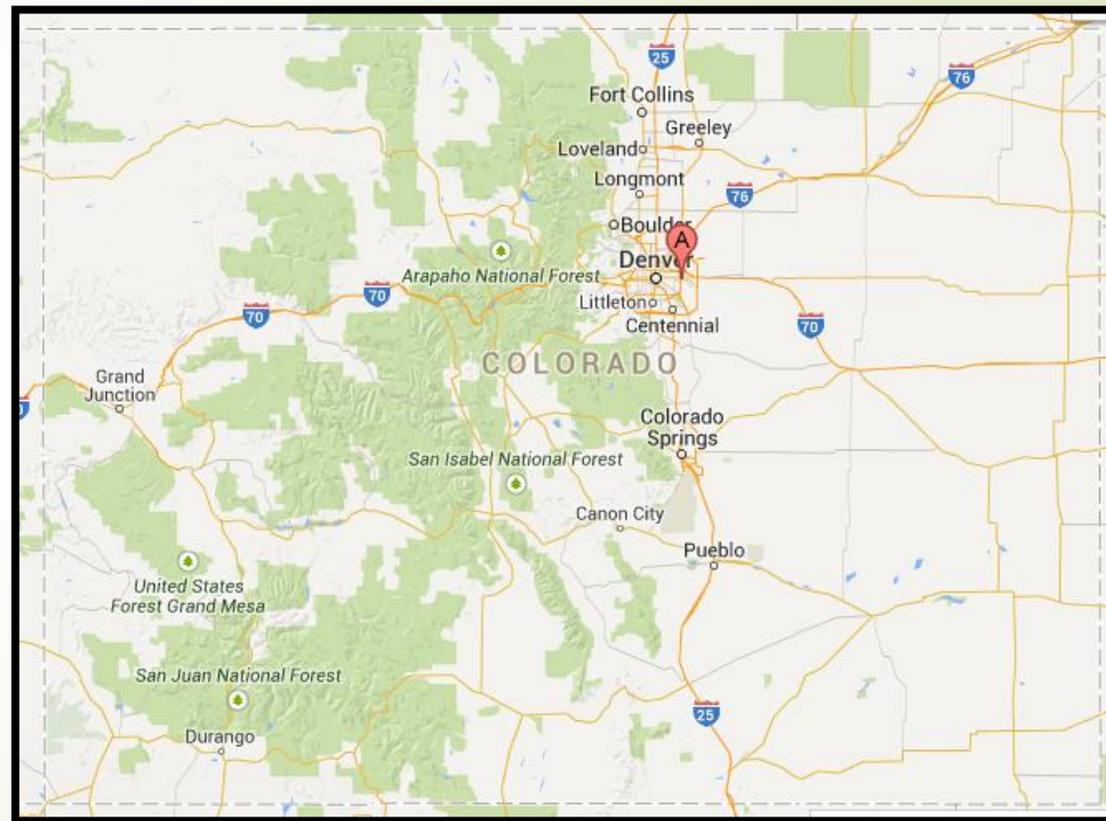
- Connection Charges - The fees charged to new developments to cover the capital costs of past and/or future investments in a water system
 - infrastructure, treatment plants, water rights acquisition etc.
- Most often charges are based on the size of a water meter, example at right
- A few communities in Colorado are leading the way in developing demand-based connection charges, and incentivizing water efficiency in developments.

Tempe, AZ Development Charges

<u>Water Meter Sizes</u>	<u>Water Dev.</u>
5/8"	\$3,045
3/4"	\$4,568
1"	\$7,613
1-1/2"	\$15,225
2"	\$24,360
2" T	\$42,630
3" C	\$60,900
3" T	\$76,125
4" C	\$121,800
4" T	\$152,250
6" C	\$243,600
6" T	\$304,500
8" T	\$578,550

Aurora, Colorado

- ▶ 3rd largest city in CO: > 345,000 residents
- ▶ Only 1/3 built out
- ▶ Adopted a new Development and Connection Charge schedule in 2014
 - ▶ Fees collected under previous schedule were not adequately covering costs because:
 - ▶ Changes in demand and growth patterns
 - ▶ Residential fees subsidizing other customer classes' fees via the meter-only based system





Step 1. Assess the cost water. (past and future investments in this case)

- 1) Water resources (the market cost of water in the region),
- 2) Source of supply (the existing and projected assets required to move and store water),
- 3) Treatment and distribution (the existing and projected assets),
- 4) Carrying costs (the financial costs incurred to obtain water), and
- 5) Water losses in the system.

= \$57.45 per gallon per day

Step 2. Allocate Fees in Proportion to Water Demand

RESIDENTIAL: Utility analyzed 6 years of data to profile the water demands of customers.

Connection Fees

Single Family Residential Detached

Water Service Connection Fee		
Indoor Use Fee		Outdoor Use Fee
Number of Bathrooms ¹	Fee	
1-2	\$5,509	\$0.941 per sq ft of lot size ²
3-4	\$8,901	
5+	\$15,425	

SFR Water Connection Fees

Previous Fee: \$24,460

Lot Size (Sq. Ft.)	Proposed Fees		
	1-2 Bath Use	3-4 Bath Use	5+ Bath Use
-	\$5,509	\$8,901	\$15,426
5,000	\$10,213	\$13,605	\$20,130
6,000	\$11,154	\$14,546	\$21,071
7,000	\$12,095	\$15,487	\$22,011
8,000	\$13,036	\$16,428	\$22,952
9,000	\$13,977	\$17,369	\$23,893
10,000	\$14,917	\$18,309	\$24,834
15,000	\$19,621	\$23,014	\$29,538
20,000	\$24,326	\$27,718	\$34,242
50,000	\$52,550	\$55,942	\$62,467
100,000	\$99,591	\$102,983	\$109,507

Step 3. Incentivize Water Efficiency

Connection Fees

Single Family Residential Detached

Water Service Connection Fee			Sanitary Sewer Connection Fee		
Indoor Use Fee		Outdoor Use Fee	City of Aurora	Metro Wastewater District	
Number of Bathrooms ¹	Fee			Meter Size (inches)	Fee
1-2	\$5,509	\$0.941 per sq ft of lot size ²	\$2,400 per unit	5/8	\$3,960
3-4	\$8,901			3/4	\$7,920
5+	\$15,425			1	\$19,008

¹ A single half bath (i.e. sink and toilet only) will be automatically deducted from the number of bathrooms in single family detached if applicable.

A credit of \$1,000.00 may be applied to the portion of the fee attributable to outdoor use for any single-family detached user that installs xeric front yard landscaping according to the requirements set forth in Section 146: Table 14.3b of the City Zoning Code.

Irrigation Connection Charges

Irrigation meters are used for large, landscaped areas such as commercial or residential common areas.

Previous Schedule was \$0.71/sq ft for non-conserving and \$0.36/sq ft for conserving

Table 3: 2015 Fee Structure for Irrigation Meters		
Landscape Type	Cost Per Sq. Ft. of Landscaped Area	Cost for 10,000 sq-ft of Landscaped Area
Non-Water Conserving Landscape	\$2.75	\$27,500
Water Conserving Landscape	\$1.47	\$14,700
z-zone	\$0 [\$20,000 deposit, 100% refundable after establishment period]	\$0 after refund

The cost of conserving landscape is almost half the price per square foot as non-conserving landscape. Fees for z-zones cost the least.



Changes to the Land Use Planning Process

- Water Utility is now involved in the landscape plan review process, if a z-zone is chosen
- Pre-development meetings with the utility are offered to developers
- Aurora will develop a process to site check these landscapes after the 3 year establishment period

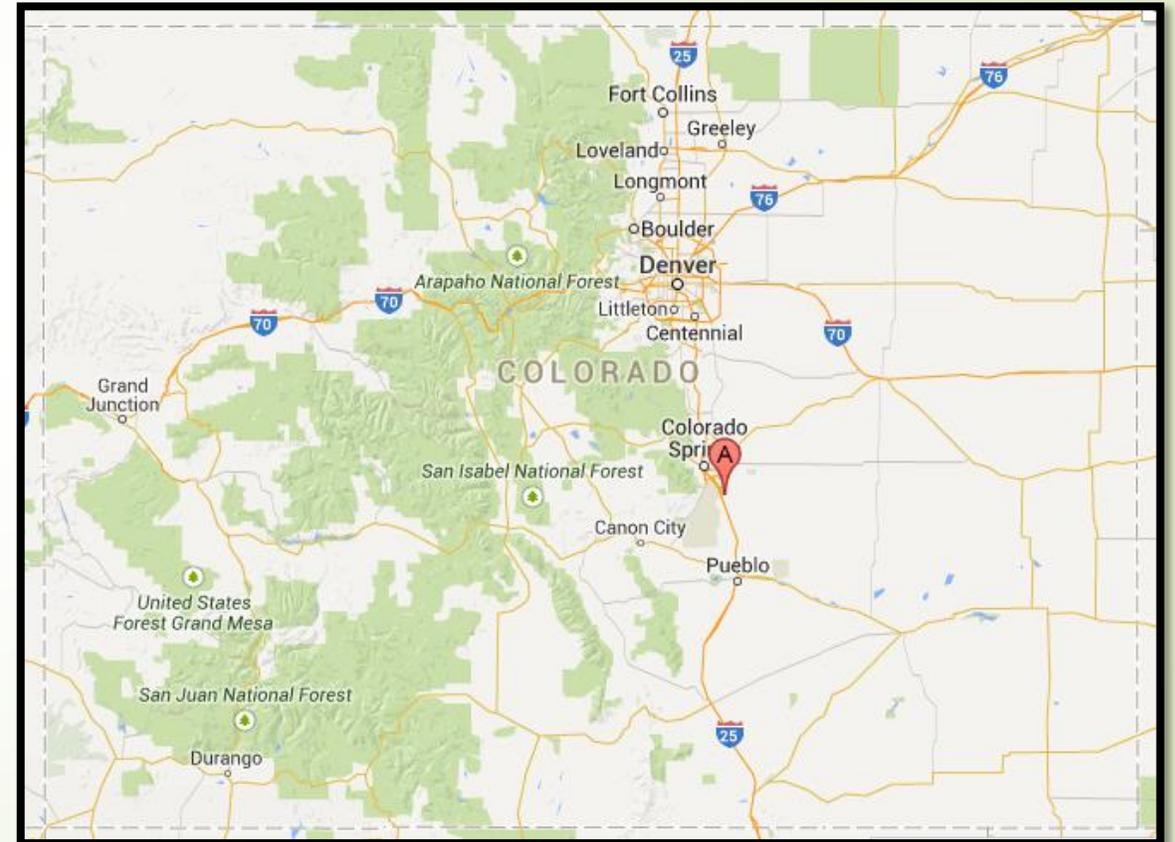


Results to Date

- ▶ To date 5 out of 6 submitted landscape plans are utilizing the Z-Zone.
 - ▶ Together this represents >730,000 sq. ft.
 - ▶ Potential water savings of 21 acre-feet per year (enough for 42 families of 4 for about a year)
- ▶ Residential xeriscape program has hardly been used
 - ▶ 2014 fee schedule did not list it
 - ▶ Not much outreach was done
- ▶ Established less than a year ago, so efforts are underway to increase the visibility of this program to the developer community

Fountain, Colorado

- ▶ Suburb of Colorado Springs with ~27,000 residents
- ▶ Most new residents have a relationship with the near by military base, and come from other parts of the country



**Table 2: 2015 Infrastructure & Water Acquisition Fee Structure
for All New Commercial & Multi-family Taps (Fountain, CO)**

Tap Size (Inches)	Infrastructure Fee	Water Acquisition	Total Connection Fee
¾"	\$10,824	\$6,500	\$17,324
1"	\$19,279	\$11,577	\$30,856
1 ½"	\$42,530	\$25,539	\$68,070
2"	\$47,433	\$28,483	\$75,916
3"	\$110,819	\$66,545	\$177,364
4"	\$193,740	\$116,341	\$310,081
¾" Each Unit Multifamily	\$6,173	\$3,640	\$9,813

Above 4" ~ For larger than 4" water rates are to be via contract between user and City of Fountain.

The fees increase with tap size.

SFR Landscaping Incentive

Table 1: 2015 Water Acquisition Fees for New, Single Family Residential Lots (Fountain, CO)

Lot Size Square Feet (sq. ft.)	Water Acquisition Fee	Water Acquisition Fee With Conservation Incentive: 50% Or Less Irrigated Area	Water Acquisition Fee With Conservation Incentive: 30% Or Less Irrigated Area
Less than 9,000 sq. ft.	\$4,875	\$2,438	\$1,024
9,001 to 13,000 sq. ft.	\$5,688	\$2,844	\$1,706
Greater than 13,001 sq. ft. or larger	\$6,500	\$3,250	\$1,950

Fees are smaller for smaller turf areas, and for smaller lots.

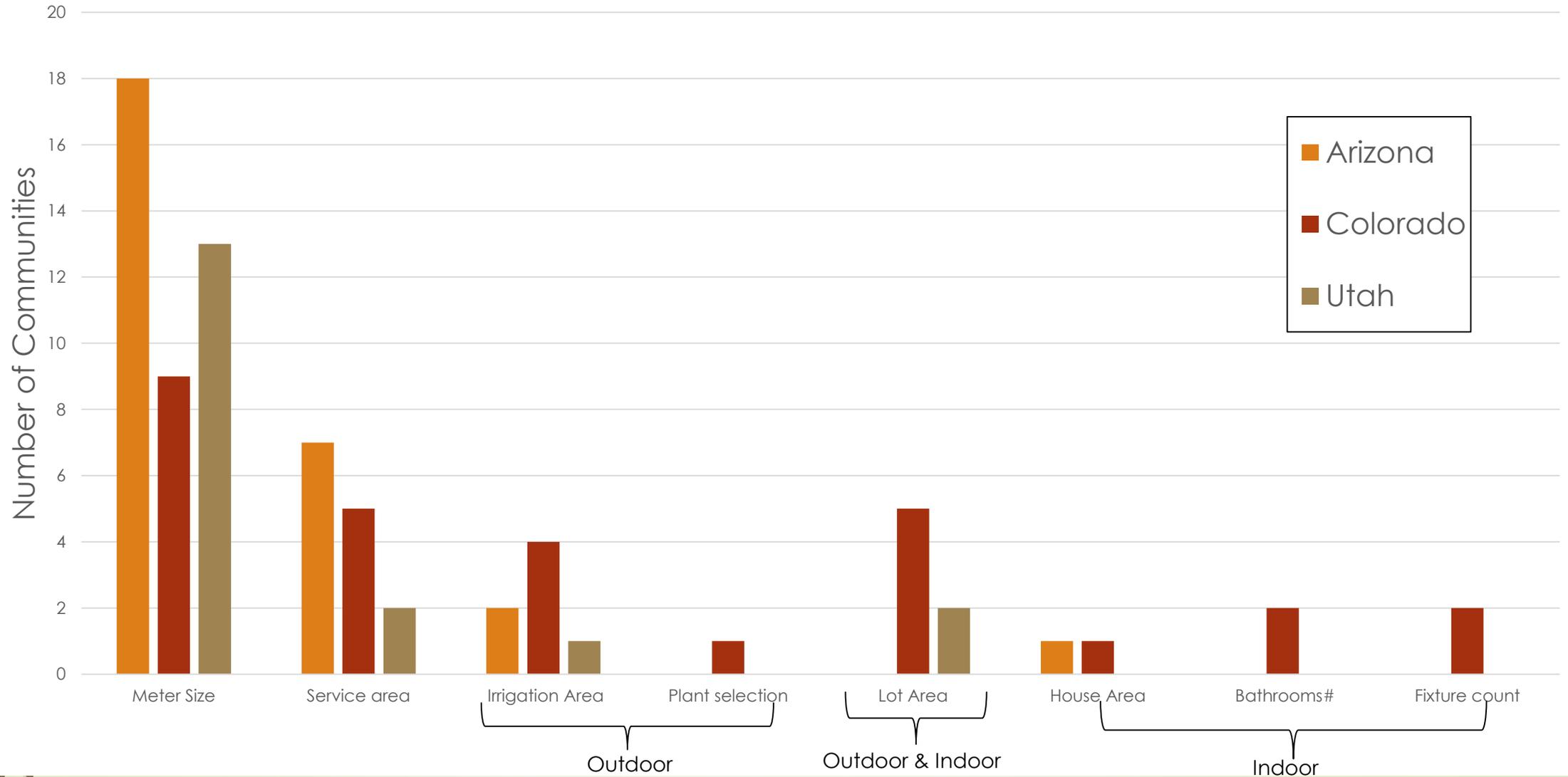
Irrigated area = turf. Other areas must be low-water using plants.



Land Use Planning Process & Results

- ▶ Landscape templates developed for the 30% and 50% turf scenarios to help builders, developers, and landscape contractors to meet the requirements
 - ▶ Utility reviews the landscape plan before and after installation
 - ▶ Currently no mechanism to prevent, or recoup costs from, a landscape converted back to turf. Tiered rate structure is the only mechanism in place currently.
 - ▶ The HBA was an important stakeholder – and supporter- in these discussions, and because their members will save money.
 - ▶ In first 5 months: 75% of new residential developments were using the incentive
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Water Demand Factors used in Single Family Residential Water Connection Charges



Full Report due out this summer, in partnership between Western Resource Advocates, University of North Carolina and Ceres:

- ▶ More case studies
- ▶ Multi-state Data and Analysis

<http://www.WesternResourceAdvocates.org/water/WaterConnectionFees>

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Thank you!

