## Growing Water Smart: Land Use Solutions

Rocky Mountain Land Use Institute Conference

March 17, 2017







## Agenda

• Setting the Context

Kevin Reidy, Colorado Water Conservation Board

Implementing Solutions

Drew Beckwith, Western Resource Advocates

- Aurora Case Study Lyle Whitney, City of Aurora
- Supporting the Effort Anne Miller, Colorado Department of Local Affairs
- Panel & Open Discussion
- Next Steps





## Setting the Context

Kevin Reidy, Colorado Water Conservation Board





#### Colorado's Population is Rapidly Growing







## Municipal & Industrial Gaps







## Water Supply Decreasing

- CO to warm 4°F by 2050
  - Increases in evaporation
  - Lower elevation snowpack decline
  - Timing of runoff to shift earlier
- CO in "transition zone" on precipitation
  - More winter precipitation, less in summer?



Historical Supply and Use

20

**Projected Future Supply and Demand** 

**Projected Water Demand** 





## By 2025, 75% of Coloradans will live in communities that have incorporated water-saving actions into land-use planning.

The CWCB will work with the Department of Local Affairs, local governments, water providers, Colorado Counties Inc., Colorado Municipal League, the Special District Association, councils of governments, and homebuilders (Colorado Association of Homebuilders) to examine and strengthen the tools they collectively possess to help Colorado reach this objective.





## Land Use Affects Water Use





COLORADO'S

## Relevance of Land Use Planning to Water Conservation

• Land use and building regulations can change the type of housing, plumbing, and landscaping allowed.





220

Feet

440









#### Land Use-Water Nexus







# Working Together

- The <u>way</u> we grow matters
- Need more water-efficient land use patterns
- Decreasing demand & using 'alternative' supplies best done at planning stage
- Need solutions for CO communities to thrive in spite of water scarcity









## Breaking Down Silos

- •We're not the 1st with this problem
  - Education
  - Procedure for regular contact
  - Coordinated planning



- Institutionalization







# Implementing Solutions

Drew Beckwith, Western Resource Advocated





## Aurora Case Study

#### Building Water Efficiency into Community Development

Lyle Whitney, City of Aurora, CO







- **New Connection Fees** 
  - History
  - Reactions
  - Z-zone option
  - Process
  - Potential savings
- Residential Connection Fees & Credits

Proposed Landscape Code Changes





#### Acronyms/Terms

- HWU High water use (bluegrass)
- LWU Low water use (xeric plants)
- Z-zone No water use plants
- WC Water Conservation





## **Connection Fee History**



• \$.157/gallon/year



## **Reaction and Solutions**

Up-front cost increased (could be 4x)

Water worked with Joint Task Force (JTF)

#### Created Z-zone option:

Revised 2014 Fees	
High-Water Use (HWU)	\$2.75/sf
Low-Water Use (LWU)	\$1.47/sf
No Water Use (Z-Zone)	\$0.00/sf





## Z-Zone Requirements

Irrigation Meters only

Fees for Z-Zone: \$0.00

Variance Request submitted with plans

Plans must indicate use of Z-zone option

Hydrozone map included with plans





## Z-Zone Use - Expectations

Properties will be given a water allocation based on plant needs not tap size

3 year evaluation - Water Conservation

Allocation adjusted after 3<sup>rd</sup> year





#### **Z-Zone Process**







## Variance Request

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## Hydrozone Map







#### PERMANENT TAP 1

DESCRIPTION	QUANITY
HIGH WATER USE AREA (SOD)	1,986 SQ. FT.
LOW WATER USE AREA (BED & NATIVE)	57,160 SQ. FT
LOW WATER USE (CANOPY TREES IN TEMPORARY TAP) - 9 TREES	6,354 SQ. FT.
LOW WATER USE (EVERGREEN TREES IN TEMPORARY TAP) - 36 TREES	6,372 SQ. FT.
LOW WATER USE (ORNAMENTAL TREES IN TEMPORARY TAP) - 1 TREE	177 SQ. F <b>T</b> .



#### PERMANENT TAP 4

DESCRIPTION	QUANITY
HIGH WATER USE AREA (SOD)	331 SQ. FT.
LOW WATER USE AREA (BED & NATIVE)	2,215 SQ. FT.
LOW WATER USE (EVERGREENS IN TEMPORARY TAP) - 9 TREES	1,593 SQ. FT.

#### NOTES:

- TREE SQ. FT. DETERMINED ASSUMING 30 FT. DIAMETER CANOPY TREES (706 SQ. FT.) AND 15 FT. DIAMETER EVERGREEN AND ORNAMENTAL TREES (177 SQ. FT.)
- TREES IN TEMPORARY TAP AREAS WILL BE COUNTED AS LOW WATER USE FOR CALCULATING TAP FEES.





## Water Savings Potential

Zone	Pre- Z-Zone Option	Post- Z-Zone Option	Post- Z-Zone SF
High Water	47%	21%	638,855
Low Water	47%	38%	1,182,775
No Water	6%	41%	1,283,155

Potential Savings (establishment) = 6,644,370 gallons/year Potential Savings (post-establishment) = 16,894,601 gallons/year

11 out of 50 developments have opted for Z-zone





## Single Family Connection Fees

2013 study: bathrooms = water usage

Indoor Use Fee:

Number of Bathrooms	Fee
1-2	\$5,509
3-4	\$8,901
5+	\$15,425

Outdoor Use Fee: \$0.941/sf of lot size

Promotes smaller development

5,000 SF lot w/ 2 bathrooms = \$10,214

15,000 SF lot w/ 5 bathrooms = \$29,540

\$1,000 credit for xeric front yard

Old Fee: Flat rate of \$24,460





## Large Lot Variance

Any lot > 35,737 sf (3/4 acre) is eligible

Adjusted tap fee based on "developed" area Minimum 35,737 sf Reduced tap fee Capital recovery fee tied to water allocation

	Recovery Fee for Excessive Usage		
Time Period	Jan 1 - Jun 30 per 1,000 gallons	Jul 1 - Dec 30 per 1,000 gallons	
Fee	\$11.98	\$5.99	





## Proposed Landscape Code Changes

Reduce allowable turf areas in front yards

Tree lawns as part of front yards

Standardize requirements

Promote water-wise landscaping

Disallow bluegrass in commonly owned tree lawns





## Water Savings with Turf Adjustments

	Residential Water Savings Potential 2018 -2022			
	Turf SF	% Turf Reduction	H2O Savings (AF)	% Water Savings
Residential FY*:	2,043,208	43%	60	31%
	Non-Residential Water Savings Potential 2018 - 2022			
Arterials**:	721,057	100%	89	45%

\* Front yard turf option: Minimum = 400 square feet, Maximum = 40% of front yard area or 1,000 square feet, whichever comes first
\*\* Streetscapes that are along arterials and commonly owned and maintained by any non-single family residential customers





























# Supporting the Effort

Anne Miller, Colorado Department of Local Affairs





## Land Use & Colorado's Water Plan - Education/Training

SB 15-008: Concerning the promotion of water conservation in the land use planning process

- Develop and provide training programs for local government water demand and land use planners regarding water demand management best management practices
- Integration of water demand management and water conservation planning into land use planning efforts





## Webinars & Training

- Training Module Series / Recorded Webinars
- Integrating Water into Land Use Planning: Setting the Stage
- Integrating Water Efficiency into **Comprehensive Planning**
- Integrating Water Efficiency into the **Zoning Code**

www.colorado.gov/pacific/cowaterplan/integrating-water-land-use-planning

- Train-the-Trainer Workshop
  - October 24, 2017 at the APA Colorado Conference







## **Ongoing Training**

#### • 2 additional webinars in 2017

- Landscape Ordinances March 14
- Planned Unit Developments April 11
- Request a training







## Partner Efforts



- Western Resource Advocates
  - Water Efficiency & Land Use Manual coming soon
- Keystone Policy Center
  - Colorado Water & Growth Dialogue scenario planning
  - Attend 10:15 am session today to learn more
- Sonoran Institute & Lincoln Institute of Land Use Policy
  - Colorado Workshop Fall 2017
- American Planning Association

https://www.planning.org/policy/guides/adopted/waterresources.htm





## **Discussion Questions**

- How best can your community encourage water-efficient land use patterns in the future?
- What are strategies to **enhance communication** and coordinated planning?
- What **support** do you need to be successful?
- How do we create **buy-in and consensus** on a water smart vision for the future?
- What are **state or regional actions** that are needed to advance water conservation and land use planning?





## Thank You!

- Anne Miller, Colorado Dept. of Local Affairs <u>anne.miller@state.co.us</u>
- Kevin Reidy, Colorado Water Conservation Board kevin.reidy@state.co.us
- Drew Beckwith, Western Resource Advocates <u>drew.beckwith@westernresources.org</u>
- Lyle Whitney, City of Aurora gwhitney@auroragov.org





