

Breaking Down Silos
Integrating Water into Land Use Planning

Addressing Water Efficiency in Planned
Unit Developments (PUDs)



SPEAKERS



- **Kevin Reidy**, *State Water Conservation Technical Specialist*
- **Don Elliott, FAICP**, *Clarion Associates*
- **Mac Cummins**, *Planning Manager, City of Westminster*
- **Jason Cowles, P.E.**, *Engineering Department, Eagle River Water & Sanitation District*

WHY WE ARE HERE



Objectives:

- Problems with Planned Unit Developments (PUDs) and how to make them a better tool.
- How PUDs can be strengthened to include water efficiency standards.
- Case studies of PUDs in Colorado communities.

WHO'S ON THE CALL



- Local gov't admin
- Local gov't planners
- Elected officials
- Planning or zoning board member
- Water Providers
- Community members
- Others?



AGENDA



12:00 – 12:05	Welcome
12:05 – 12:25	The Yin & Yang of PUDs
12:25 – 12:40	Case Study - City of Westminster, Colorado
12:40 – 12:50	PUDs and the Role of the Water Provider
12:50 – 1:00	Question and Answers

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The Yin & Yang of Planned Unit Developments (PUDs)

Don Elliott, FAICP, *Clarion Associates*

The Yin and Yang of PUDs

PUDS – What Are They?

- May be called PDs (or something else)
- Customized “one-off” zoning negotiated between the property owner and the city or county
- Yes –Legislatively authorized “spot zoning”
- Can be very detailed if the proposed development for a specific site are known
 - “Snapshot” zoning
- Can be very vague if details or end user of the property is not
 - “Bubble” zoning
 - Almost always requires another round of detailed plan approvals before development



The Yin and Yang of PUDs

PUDS – What Are They?

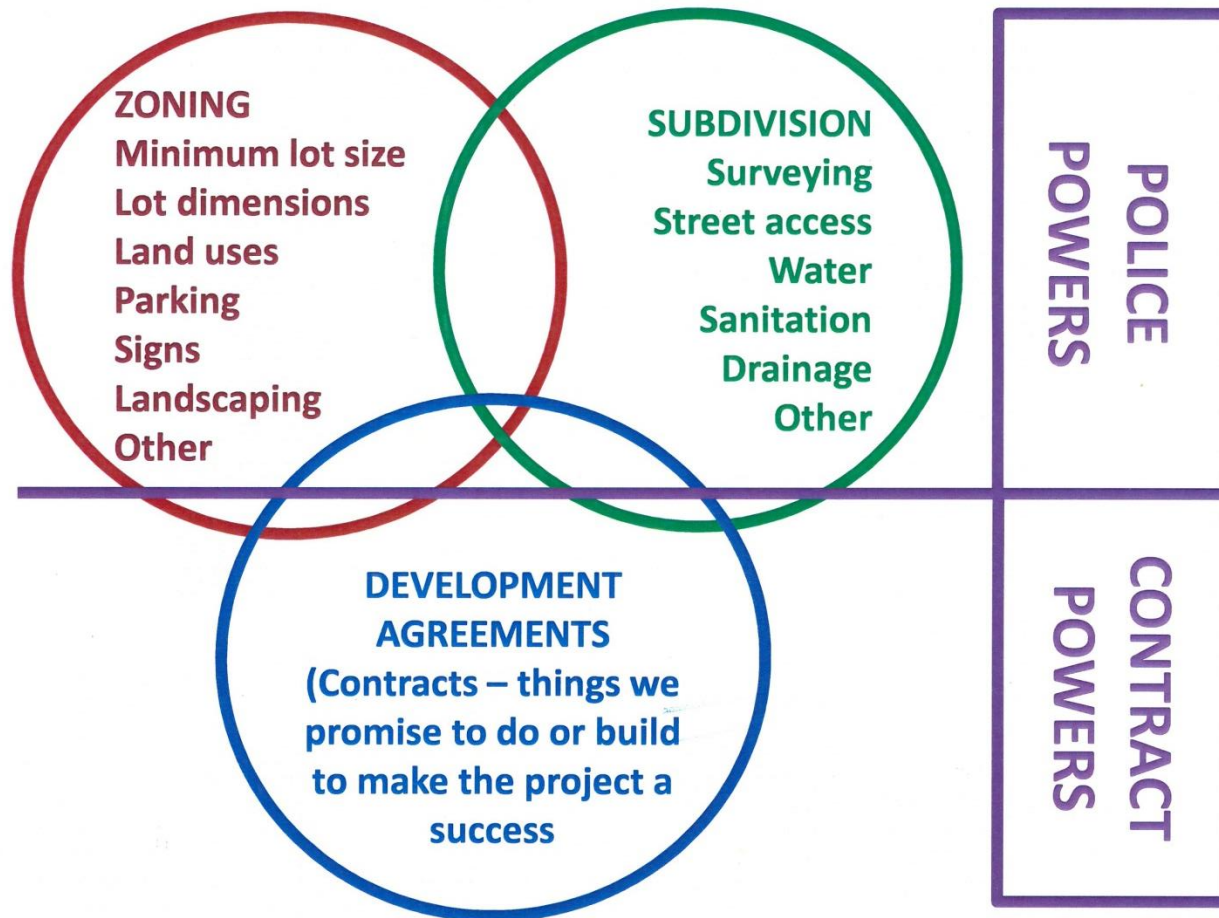
- Because they are negotiated and site-specific, they are “part zoning and part contract”
- Often, PUDs include both:
 - A land use regulatory document (covering zoning and/or subdivision) – enforceable through the city or county’s “police powers”;

AND

- A contract document (covering all the things the local government and the property owner have promised to do or to build) – enforceable through “contract law”



The Yin and Yang of PUDs



The Yin and Yang of PUDs

The Good Part

- You can negotiate anything
- You can lock in a “snapshot” of a very desirable development
- You can require things to get built (by either the applicant or the local government) by a stated time – zoning doesn’t usually do that.
- For example, the applicant might be willing to install additional trails if the City commits to building connecting trails by a certain date



The Yin and Yang of PUDs

The Good Part

- You can make a binding agreement to do things that would be hard to enforce through zoning alone
- For example – an agreement to install water conserving technology in buildings, or to operate the sites and buildings to conserve more water than the design alone would conserve
- For example – an agreement to take on the maintenance of Low Impact Development features



The Yin and Yang of PUDs

The Good Part

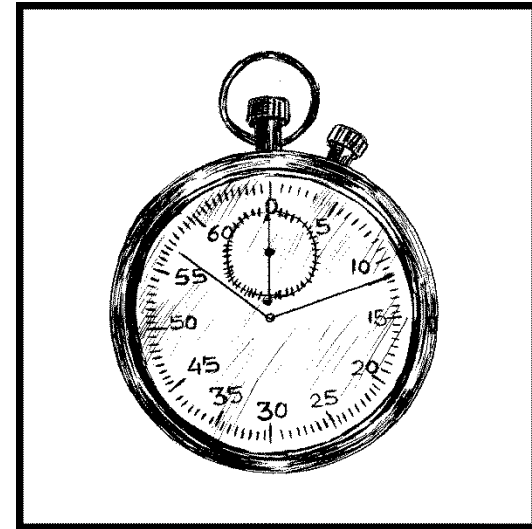
- You can enforce the agreement to do or build something by suing under the contract – rather than withholding land use permits and approvals
 - Withholding permits or approvals could hurt the building tenants or users, when it is the property owner that failed to perform
 - Contract enforcement may allow you to compel the property owner to take an action or pay money damages



The Yin and Yang of PUDs

The Bad Part

- You can negotiate anything
 - Once you start negotiating – everything starts to look like something you should negotiate
 - PUDs often take a lot of time to negotiate and get approved
- Staff cannot memorize all the negotiated details, they have to look it up each time
 - PUDs often take a lot of time to administer on a day-to-day basis



The Yin and Yang of PUDs

The Bad Part

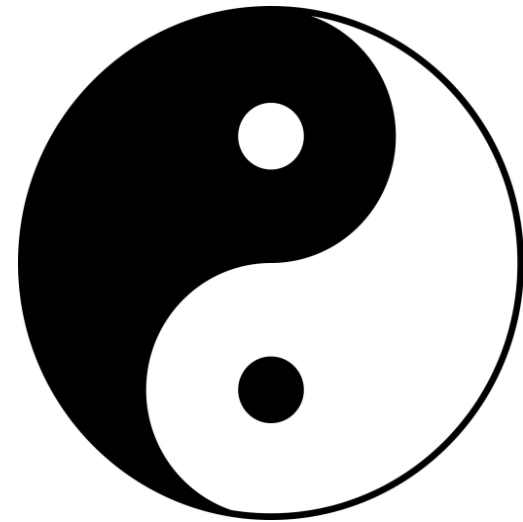
- Over time, the “snapshot” is likely to prove too rigid, and to require amendments – or multiple amendments – to keep up with changing desires of the owners and the community
 - PUDs often take lots of time to amend – repeatedly
- As ownership of the land fragments (lots are sold off) it is often unclear how many of the current owners need to agree in order to file an application to amend the original deal



The Yin and Yang of PUDs

The Balance

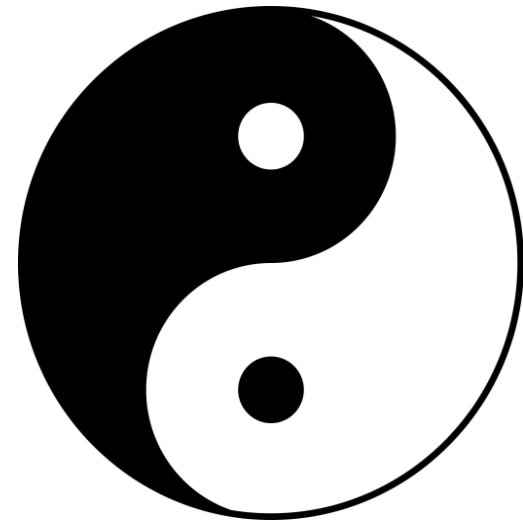
- Because of the time required to negotiate PUDs and the staff time required to amend them over time, many cities and counties are trying to limit their use of PUDs to:
 - Truly unique and complex small projects
 - Very large and complex projects with significant future impacts



The Yin and Yang of PUDs

The Balance

- In some cases, the result that you intended to achieve with a PUD can be achieved with a combination of “standard” (i.e. non-negotiated zoning using existing zone districts) – which are easier to administer – PLUS
- a Development Agreement listing additional agreements to build or operate in certain ways



The Yin and Yang of PUDs

Maintenance and Operation

- Most agreements to create a “greener” development depend on BOTH:
 - The initial design and technology incorporated into the development AND
 - The maintenance and operation of those features in certain ways over time – which often exceed the up front or short term costs of a less “green” development
- Many “green” development deals fail over disagreements as to who will be responsible for these costs – discuss it early



The Yin and Yang of PUDs

Potential PUD Measures for Water Conservation Could Include

- Commitment to a greater percentage of small lots and low-rise multifamily than otherwise required in that location
- Commitment to limit irrigated turf on both residential and non-residential sites
- Commitment to negotiate and adopt water budgets for each of the uses and sites included in the PUD
- Commitment to use recycled water for all public area landscaping



The Yin and Yang of PUDs

Potential PUD Measures for Water Conservation Could Include

- Commitment not to file preliminary plat documents until final water adjudications/allocations have been documented
- Commitment to prohibit connection of rainwater downspouts to the piped stormwater system
- Commitment to design and locate required open spaces to serve as stormwater detention facilities/amenities to reduce need for separate irrigation



The Yin and Yang of PUDs

Potential PUD Measures for Water Conservation Could Include

- Commitment to install gray water systems in major public amenities (e.g. community centers and shopping centers)
- Commitment to require lot buyers to participate in adopted xeriscape programs through purchase document clauses
- Commitment to use best available water conservation technology, as mutually agreed during 5-year updates of the PUD Plan
- Commitment to include water conservation monitoring responsibilities in all Homeowner Association and Property Owner Association bylaws

Breaking Down Silos Integrating Water into Land Use Planning



Addressing Water Efficiency in Planned Unit Developments (PUDs) Westminster Case Study

Mac Cummins, *Planning Manager, City of Westminster*

Westminster City Council Strategic Plan Objective:

“Westminster is the next Urban
Center of the Colorado Front
Range”

City of Westminster 2013 Comprehensive Plan

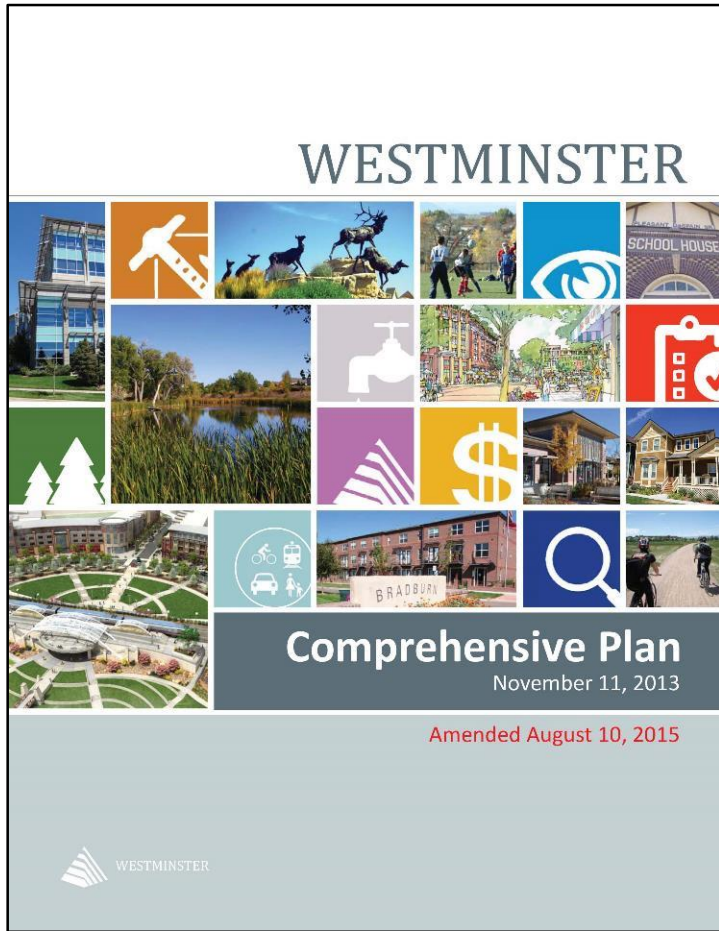
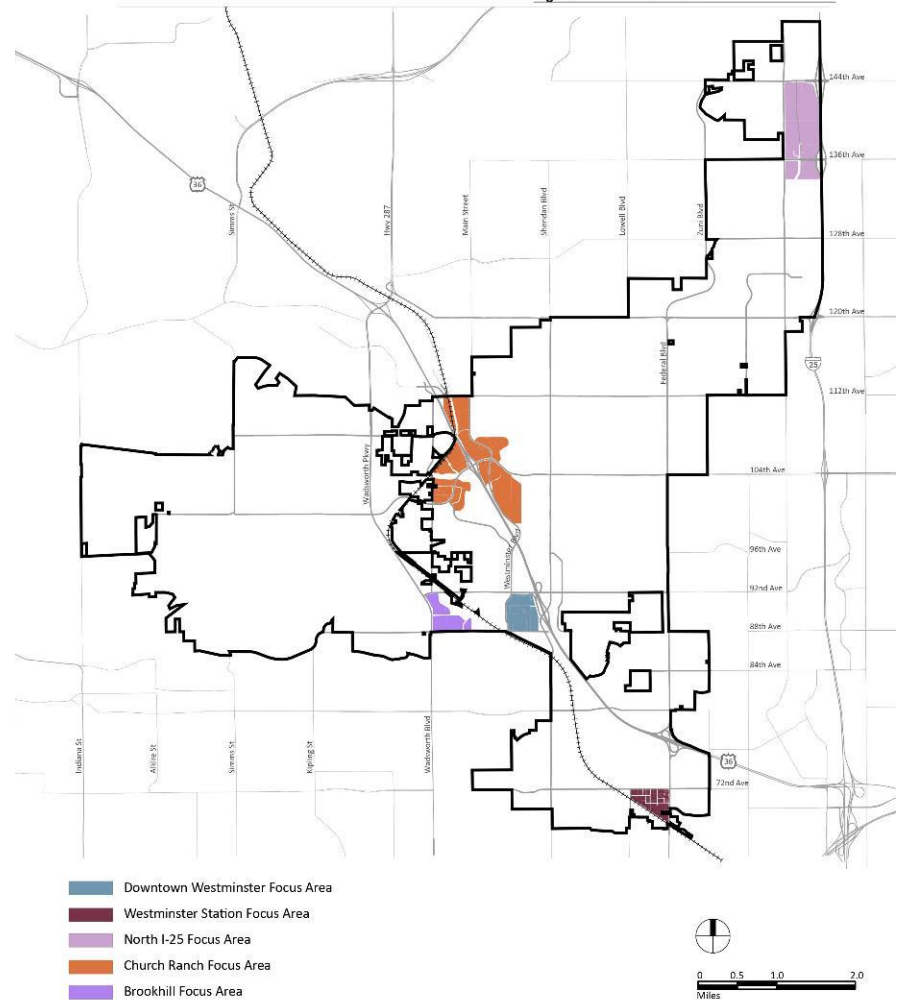
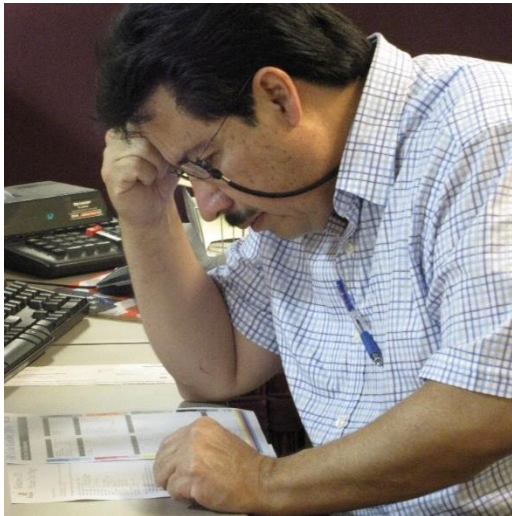


Figure 3-1: Focus Areas

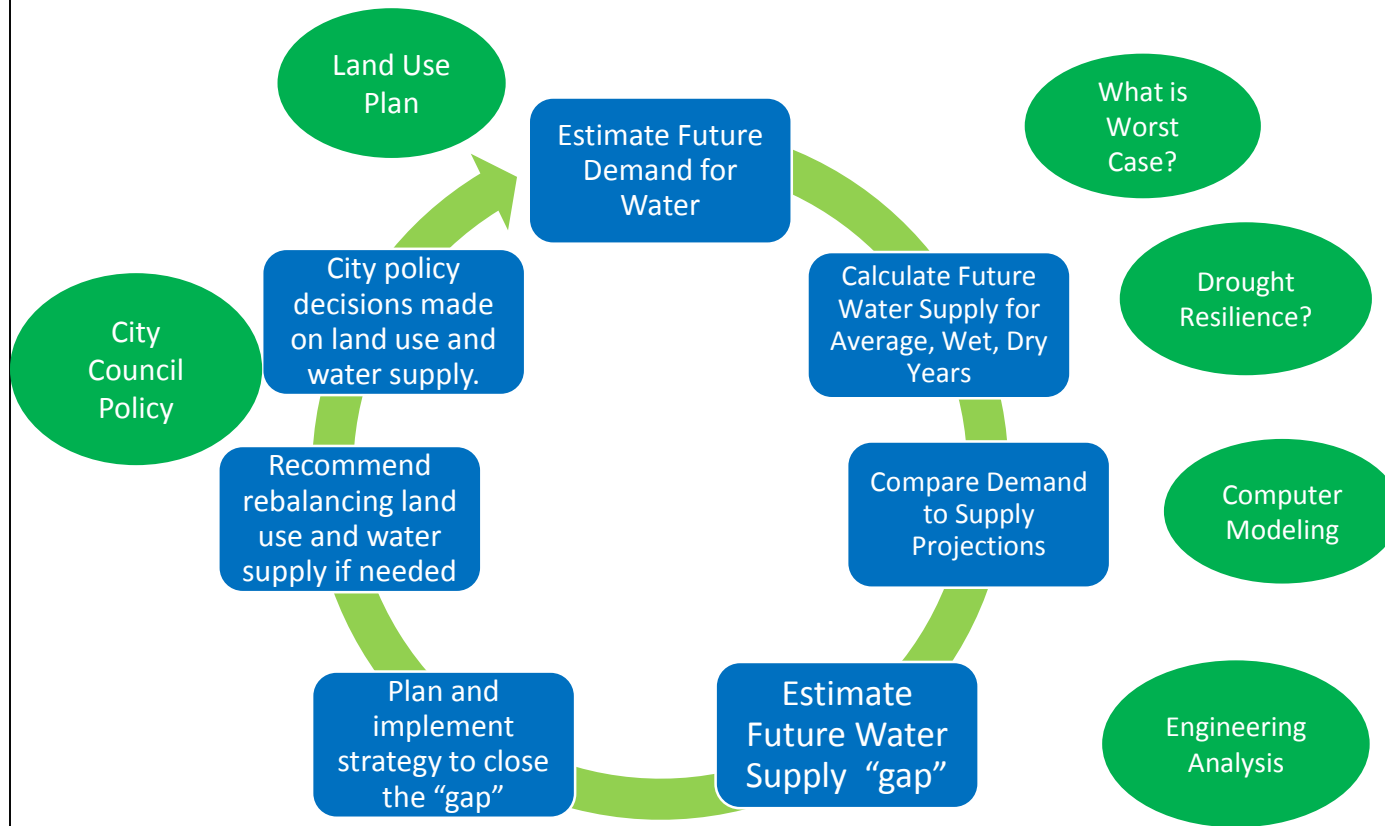


Relationship between Land Use Planning and Water Planning



1. Consistent Coordination & Communication
2. Landscape Code
3. Inspections Process
4. Post Occupancy Permit Inspections
5. Audits
6. Right Pricing of Utilities
7. Comprehensive Plan & Comprehensive Water Supply Plan updates

Municipal Water Supply Planning



Growth Management

- Water Rights
- Relationship with the Comprehensive Plan
- Service Commitment
- Competition



New Residential Competition Process

- Based on Service Commitments (SCs)
- One SC is the unit of measure-equivalent for one single-family detached (SFD) unit
- Other unit types calculated as follows:
 - 0.7 per single-family attached (SFA) unit
 - 0.5 per multi-family (MF) unit
 - 0.35 per senior housing unit
- 600 SCs available for 2017 competition process

New Residential Competition Process

- Quality-based competitive system
 - Based on design guidelines
 - Score Sheets (n/a for TMUND)
 - Minimum requirements versus incentive items
 - Minimums must be met – no points
 - Points scored by choosing incentives
- Level of Detail
 - To reduce developer's time and expense, engineering plans and studies not required
 - Preliminary site plan necessary

General Submittal Requirements

1. Application Form
2. Cover Letter
3. Sketch Plan & Conceptual Elevations
4. Location Map
5. Legal Description
6. Competition Score Sheets
7. Three copies of each (12 for TMUND)
8. 8 ½" x 11" unbound format
9. Electronic Submittal – PDF on Disk

2017 SERVICE COMMITMENT ALLOCATIONS

CATEGORY	DESCRIPTION	PROPOSED ALLOCATIONS
<u>Potable</u>		
A and L	All Active Residential and Legacy Ridge	1969
B	New Residential (for competition process)	500
C	Non-Residential	500
D	Outside City Contracts	25
E	Senior Housing (for competition process)	100
F	Public and Contingency	100
F	Downtown Westminster	<u>650</u>
W	Total – Potable	3844

New Residential Competition Process

- Evaluation of Submittals
 - Focus on quality design
 - Total points scored
 - Jury for TMUND
- City Council awards (by resolution) to specific projects through build-out
 - Conditions, terms
 - Letter of Intent

TENTATIVE SCHEDULE FOR 2017
SERVICE COMMITMENT COMPETITION

DATE	DAY	ITEM
10/10/2016	Monday	City Council authorizes competition and allocates Service Commitments
10/11/2016	Tuesday	Notice to Developers
10/11/2016	Tuesday	Application packets available
10/19/2016	Wednesday	General information meeting (5:00 – 6:00pm)
11/30/2016	Wednesday	5:00 p.m. deadline for applications
12/5/2016	Monday	City staff review of applications begins
12/15/2016	Thursday	Judging for TMUND competition
1/23/2017	Monday	City Council awards service commitments to winning projects (date subject to change)

CATEGORY B-1 COMPETITION SCORE SHEET

SINGLE-FAMILY DETACHED RESIDENTIAL

Project Name: _____

Project Location: _____

Project Applicant: _____

Instructions: Under the "Project" column below, complete the checklist by placing check marks in all of the boxes adjacent to items labeled "Minimum" to acknowledge that the proposed project would comply with the minimum standards. In addition, record the number of points applicable for each "Incentive" item that would be incorporated within the proposed project should it receive a Service Commitment Award through this Category B Competition (maximum points possible are listed under the "Max. Pts." column). Subtotal and total the points in the spaces provided under the "Project" column for each sub-category. City Staff will complete the "City" scoring column. Please note that this checklist summarizes the City's Design Standards, and the applicant is responsible for all information in the Design Guidelines. Consult that document for clarification of terms referred to in this checklist.

SCORING	
Project	City

Max.
Pts.

SUBDIVISION PLANNING AND SITE DESIGN

1. LAND USE COMPATIBILITY

Minimum: * Residences shall be setback a minimum of 50' from the common property line when adjacent to a non-residential use, and 30' from the common property line when adjacent to a residential use.

2. CONFORMANCE WITH THE WESTMINSTER COMPREHENSIVE LAND USE PLAN

Minimum: * Project shall conform with the Westminster Comprehensive Land Use Plan including maximum net residential densities.

3. VIEW PRESERVATION

Minimum: * View corridors as identified in the Westminster Comprehensive Land Use Plan shall be preserved.

4. DRAINAGEWAYS

Minimum: * Significant drainageways shall be incorporated in site development as aesthetic amenities, open space/trail corridors, and wildlife areas. (Channelization and engineered structures are discouraged in these areas, and the City requires landscaping and irrigation).

5. CIRCULATION, ACCESS, AND PARKING

Minimums: * Every single-family detached residence shall contain a min. of four off-street parking spaces - two enclosed (in garage) and two in each driveway
* If installed, landscaped medians in collector streets shall be a min. of 10-feet wide and shall be maintained by the developer or homeowners assoc.

Incentives: * Landscaped street medians (other than entrance medians) will be installed in collector streets (10-foot min. width): 100 points

75 * Landscaped islands will be installed in cul-de-sacs within the project: 75 points

6. STREET LIGHTING

Minimum: * Lighting along all public streets shall be in conformance to Xcel Energy standards and installed at developer expense.

75 Incentive: * "Specialty" lighting with ornamental bases, armatures, fixtures, etc. relating to the architectural theme of the development will be installed along collector and/or local streets: 75 points

7. RIGHT-OF-WAY DEDICATION

500 Incentives: * Additional arterial or collector right-of-way (beyond amount required) will be provided for berming and additional landscape area: 100 points per additional three-foot strip added to right-of-way section along the entire street frontage (500 max. points)

200 * Greater overall right-of-way area and landscaping are achieved through the use of a frontage road parallel to the major road (houses face single-loaded frontage road): 200 points

8. ENTRANCE FEATURES

Minimums: * One monument sign shall be required per subdivision or one at each arterial or collector street entrance. Signs are typically located in a landscaped median or on either side of the entrance road. The size of the sign is not to exceed the Westminster Municipal Code.

* The right-of-way landscaping shall extend to include the entry area.

* A landscaped street median/island (10-foot min. width, 50-foot min. length) shall be required at the major entrance to the subdivision and shall be the responsibility of the developer/homeowners group.

75 Incentives: * Entry signage will be mounted on a masonry wall (4' min. height, 6' max. height, 20' min. length): 75 points

50 * Entry landscaping exceeds the minimum required (1 tree and 3 shrubs per 550 S.F.) in the right-of-way area: 50 points

75 * Evergreen trees (a min. of 3 Austrian Pine, Blue Spruce, or similar) will be planted behind the entry monument signage: 75 points

9. LOT SIZES

Minimums: * Lot sizes shall be consistent with the Comprehensive Land Use Plan (CLUP). Minimum lot sizes vary as illustrated in the CLUP.

10. SETBACKS

Minimums: * Front setback (and side yard abutting public local street): 25'
* Front setback for non-garage architecture when front-loaded garage is set back a min. of 30 feet: 20'
* Front setback for side-loaded garage: 15'
* Rear setback for garages: 20'
* Front setback for front porches (no living space permitted above porch w/ this setback): 14'
* Side setback for one-story residence: 7.5'

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Project	City

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100

15. FENCING AND WALLS

Minimums:

- * When used, perimeter fencing or walls are to be constructed in accordance with City standards and are to include brick or stone columns (2-foot min. width and depth) spaced a max. of 65 feet apart.
- * All horizontal supporting structures of all solid wood and vinyl fencing shall be constructed toward the interior of the project or lot to reduce visibility of the support structures from streets and other public areas.
- * Off-sets (min. 5' depth, 10' length) for landscaping (trees and shrubs req.) in perimeter fencing and/or walls shall be provided every 200' or less.

Incentive:

- * *Masonry columns will be spaced 55 feet (or less) apart: 100 points*

16. MITIGATION OF ENVIRONMENTAL EFFECTS

Minimum:

- * Developer/owner-installed screening and/or buffering will be required for all proposed residential developments along U.S. 36, I-25, and all arterial streets. Developer-installed fencing, earth berming, and landscaping will be required, and further mitigation measures may be required.

17. NEIGHBORHOOD NOTIFICATION

Minimum:

- * Project developers/owners are required to contact the surrounding neighborhoods regarding their proposed developments and are responsible for all public notifications, researching and providing property ownership information, and organizing and conducting neighborhood meeting(s). (See Neighborhood Contact Requirements handout for more information).

5450

SUBTOTAL (SUBDIVISION PLANNING AND SITE DESIGN)

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SCORING	
Project	City

Max.

Pts.

ARCHITECTURAL DESIGN

1. ANTI-MONOTONY CRITERIA

Minimums:

- * A minimum of four distinctly different home models shall be built within each "streetscape." (Length of a streetscape is no more than 20 homes per side of street). Changing roof or siding materials and colors, adding garages, providing "mirror images" of models, or different elevations of the same model do not constitute distinctly different models.
- * No single family dwelling unit of the same model shall be built on adjacent lots. (Adjacent lots are any lots that adjoin or share any side lot line or lots whose front elevations face each other, although separated by a street, have their property lines overlap by more than 30%).
- * No more than 30% of the same model shall be built in any streetscape.

50

Incentive:

- * *Choose one from below (if applicable):*
- * *25% or more ranch homes or two-story homes with a first-floor master bedroom and bath with a shower or tub will be built: 25 points*
- * *50% or more ranch homes or two-story homes with a first-floor master bedroom and bath with a shower or tub will be built: 50 points*

2. EXTERIOR DESIGN ELEMENTS

a. Recessed and Projecting Elements

Minimums:

- * All three-story planes (e.g. three-story walk-out units) shall be designed with projections and/or recesses.
- * A "horizontal offset" or "projection/recess" of 4' or greater shall be provided on a minimum of 50% of all approved models and residences built.

50

Incentive:

- * *Offsets (4-foot min.) will be provided on all dwelling units on all front elevations: 50 points*

b. Roof Breaks

Minimums:

- * Roof slopes shall be at a minimum pitch of 5:12 and all roofs shall have one-foot minimum overhanging eaves.
- * Roof breaks shall occur on a minimum of 50% of all approved models and residences built.

50

Incentive:

- * *Roof breaks will occur on all approved models: 50 points*

c. Outdoor Living Areas

Minimum:

- * Usable front porches (unobstructed 80 S.F. min. with 6-foot min. depth) and side or rear yard patios (unobstructed 120 S.F. min.) shall be required on a minimum of 25% of the approved models and residences built.

75

Incentive:

- * *Usable front porches (unobstructed 80 S.F. min. with 6-foot min. depth) will be provided on at least 50% of the approved models and residences built, and side or rear yard patios (unobstructed 120 S.F. min.) will be provided with all residences: 75 points*

d. Bay or Box Windows

Minimum:

- * Windows of a min. width of 5' that project a min. of 16 inches from the front facade shall be required on 50% or more of all units in a streetscape.

50

Incentive:

- * *Windows (min. 5-foot width) will project a minimum of 2 feet from the front facade on 75% or more of units within a streetscape: 50 points*

e. Garages

Minimums:

- * All dwelling units shall provide a two-car (min.) garage.
- * If three-car garages are provided, the third space shall have a separate door and a 2-foot min. horizontal setback from the main garage door. A roof design change over the third space may be substituted for the horizontal setback.
- * Garage interior minimum dimensions:
 - * Depth - single- and double-car garages: 22 feet
 - * Width - single-car garages: 12 feet
 - * Width - double-car garages: 20 feet

100

Incentives:

* Garage doors will be separated with masonry elements: 100 points

75

* Garage door windows will be incorporated in the design of 50% of the models and residences built, and the window design will complement the style of the house windows: 75 points

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500

* Choose one from below (if applicable):

* Side, rear, or front-loaded (setback of 30' or more) garages will occur on at least 20% of the models and residences built: 125 points

* Side, rear, or front-loaded (setback of 30' or more) garages will occur on at least 50% of the models and residences built: 250 points

* Side, rear, or front-loaded (setback of 30' or more) garages will occur on at least 75% of the models and residences built: 500 points

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300

* Interior garage area of each model will include a storage area of at least 50 S.F. (with a min. of 3-foot depth) that will not encroach in the 22-foot minimum garage depth: 300 points

3. EXTERIOR MATERIALS AND COLORS

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Minimums:

* 30% or more masonry (brick or stone) shall be installed on front elevations (exclude window and door area from percentage calculation) abutting streets, open space, trails, or parks.

* 30% or more masonry (brick or stone) shall be installed on side or rear elevations abutting streets, open space, trails, or parks.

* Masonry (brick or stone) shall be installed on the entire lower level of walkout units that are visible from the street.

* All second-story (or first-story walkout) decks shall include brick or stone wrapped columns when abutting streets, open space, trails, and parks.

500

Incentive:

* Choose one from below (if applicable):

* 30% or more masonry (brick or stone) will be provided on all four sides of all residences: 200 points

* 50% or more masonry (brick or stone) will be provided on all four sides of all residences: 500 points

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Minimum:

* Accessory buildings shall be architecturally integrated with the main residence and shall consist of similar materials, form, and color. Accessory buildings shall not be located in any required front or side yard and shall follow requirements of the Westminster Municipal Code.

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1750

SUBTOTAL (ARCHITECTURAL DESIGN)

SCORING	
Project	City

Max.

LANDSCAPING DESIGN

Pts.

1. RIGHT-OF-WAY LANDSCAPING

Minimum:

* A minimum of one (1) shade tree and three (3) shrubs per 550 S.F. of landscaped area is required for landscaping within the right-of-way.

100

Incentives:

* A min. of one shade tree and three shrubs per 500 S.F. of landscaped area is provided for landscaping within the right-of-way: 100 points

350

* Street trees (deciduous, shade trees with 40-foot max. spacing) will be planted in the landscape area between the curb and sidewalk along a min. of 75% of the local street lengths on both sides of the streets: 350 points

2. DETENTION POND AREA LANDSCAPING

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Minimum:

* The developer is responsible for landscaping the detention pond and other common areas at a rate of one tree and three shrubs per 550 S.F. of landscaped area. The homeowners association shall be responsible for the maintenance of these areas.

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100

Incentive:

* Landscaping will be provided in the detention pond and other common areas at a rate of at least 1 tree and 3 shrubs per 500 S.F. of landscaped area: 100 points

3. SIZE OF PLANT MATERIAL FOR RIGHTS-OF-WAY AND COMMON AREAS

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Minimums:

* Minimum sizes required in the right-of-way and common areas are: deciduous trees: 2 1/2" caliper; ornamental trees: 2 1/2" caliper; evergreens: 6-foot height.

* 20% of the trees are to be 3" min. caliper for deciduous or ornamental and 8-foot min. height for evergreens.

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100

Incentive:

* Choose only one from below (if applicable):

* 30% or more of the trees in the right-of-way and common areas are 3" min. caliper for deciduous and ornamental and 8' min. height for evergreens: 50 points

* 30% or more of the trees in the right-of-way and common areas are 3 1/2" min. caliper for deciduous and ornamental and 10' min. height for evergreens: 100 points

4. SINGLE-FAMILY HOME LANDSCAPING

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Minimums:

* For residential lots up to 10,000 S.F. in size, a min. of one shade tree shall be installed in the front yard of every residence.

* For residential lots 10,000 S.F. or larger, a min. of 2 trees shall be installed in the front yard of every residence. (At least 1 shall be a shade tree).

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75

Incentives:

* For residential lots up to 10,000 S.F. in size, a min. of 2 trees and 5 shrubs shall be installed in the front yard of each lot: 75 points

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75

* For residential lots 10,000 S.F. or larger, a min. of 3 trees and 10 shrubs shall be installed in the front yard of each lot: 75 points

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200

* Developer/builder will install entire front and one-half of the side yard landscaping including sod, 3 trees, 10 shrubs, and automatic sprinkler system: 200 points

5. SIZE OF PLANT MATERIAL FOR SINGLE-FAMILY HOMES

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Minimum:

* Minimum sizes required for front yard landscaping are as follows: deciduous and ornamental trees: 2 1/2" caliper; evergreens: 6-foot height.

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50

Incentive:

* Trees installed in the front yards will be 3" min. caliper for deciduous and ornamental and 8-foot min. height for evergreens: 50 points

SUBTOTAL (LANDSCAPING DESIGN)

SCORING	
Project	City

Max.
Pts.

SUSTAINABLE DESIGN

1. LANDSCAPING AND WATER CONSERVATION

a. Tree Lawns

Minimums: * Tree Lawns will be a minimum width of 6 feet.

Incentive: * Tree lawns will be increased above the minimum 6 feet: 50 points for each additional foot of tree lawn up to 300 pts.

b. Landscaped Islands/Medians

Minimums: * In areas with parking areas for community facilities landscaped islands or medians shall be a minimum of 12 feet wide.

c. Water Conservation

Minimums: * The maximum turf area cannot exceed 40% of the common landscaped area not in right-of-way. Highly efficient irrigation systems and methods must be incorporated, including ET or soil moisture based controllers and rain sensors to reduce consumption.

Incentives: * Turf area will be reduced to 30-35% of landscaped area: 75 points.

* Turf area will be reduced to 25-29% of landscaped area: 100 points.

d. Site Design/Stormwater

Incentives: * Vegetative swale or bio-retention area of 5% of total detention square feet: 100 points.

* Vegetative swale or bio-retention area of 10% of total detention square feet: 200 points.

e. Paving Materials

Incentives: * 20% of non right-of-way hardscape area is permeable: 25 points.

* 30% of non right-of-way hardscape area is permeable: 50 points.

* 40% of non right-of-way hardscape area is permeable: 75 points.

f. Pedestrian Circulation

Minimums: * Site amenities such as bus shelters, benches, trash receptacles, and pervious decorative paving shall be incorporated at all bus stops adjacent to the development.

* Incorporation of an internal pedestrian and bicycle corridor network including punch-throughs, minimum 12' wide with a 6' walkway.

2. Building Construction

a. Pro-active Solar Construction

Incentives: * 100% of housing units pre-wired for solar photovoltaic systems

* 60 points for each 10% of housing units with installed solar photovoltaic systems (minimum 3 kw system) Max. 600 points.

b. Dwelling Unit Energy Efficiency

Incentives: * Choose one from below (if applicable):

* 10% better than the building energy code requirements, for the code adopted by City, at the time of permit issuance

* 20% better than the building energy code requirements, for the code adopted by City, at the time of permit issuance

c. Water Conserving Plumbing Fixtures

Minimum: * All new residential units shall incorporate indoor water fixtures which meet the current plumbing code.

Incentive: * All new residential units shall incorporate indoor water fixtures which meet the U.S. EPA WaterSense criteria.

c. Community Facilities

Incentives: * 1) Install solar photovoltaic systems (minimum 3 kw system) on the clubhouse/meeting/recreational facility buildings: 300 points

* Community buildings will be rated LEED Silver or higher: 300 points.

* Mail kiosk will be covered and incorporate solar-powered lighting, providing 100% of lighting demand required: 50 points.

SUBTOTAL (SUSTAINABLE DESIGN)

TOTAL

300

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75

100

100

200

Project	City
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25

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50

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75

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100

600

200

500

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100

300

300

50

3075

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11325

Landscape Code

Adopted 2004

- Westminster was the first metro-area city to require Irrigation Audits and Weather-Based Controllers (others have followed)
- Irrigation Audits assure efficiency
- Smart Controllers decrease chances of over-watering



Excessive
Runoff +
Overspray



Requirements for certain types of irrigation methods and equipment eliminate unnecessary and/or over-watering:

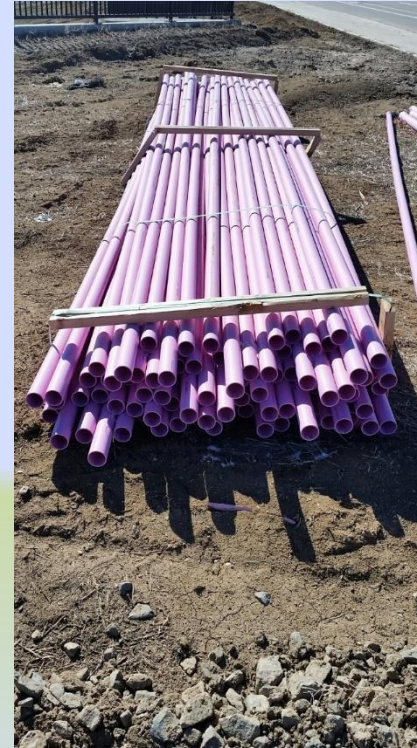
- rain sensors
- irrigation scheduling and water budgeting
- prohibiting watering between 10 am and 6 pm
- requiring subsurface drip irrigation in areas less than 8' wide



High Water Zone	4,000 SF	x 18 Gallons/SF/Season	= 72,000 Gallons/Season
Moderate Water Zone	1,000 SF	x 10 Gallons/SF/Season	= 10,000 Gallons/Season
Low Water Zone	5,000 SF	x 3 Gallons/SF/Season	= 15,000 Gallons/Season
TOTAL Gallons Needed by all Zones			= 97,000 Gallons/Season
TOTAL Square Feet of all Zones (SF)			= 10,000 SF
Average Gallons per SF per Season for all Zones			= 9.7 Gals./SF/Season
*26 week season			

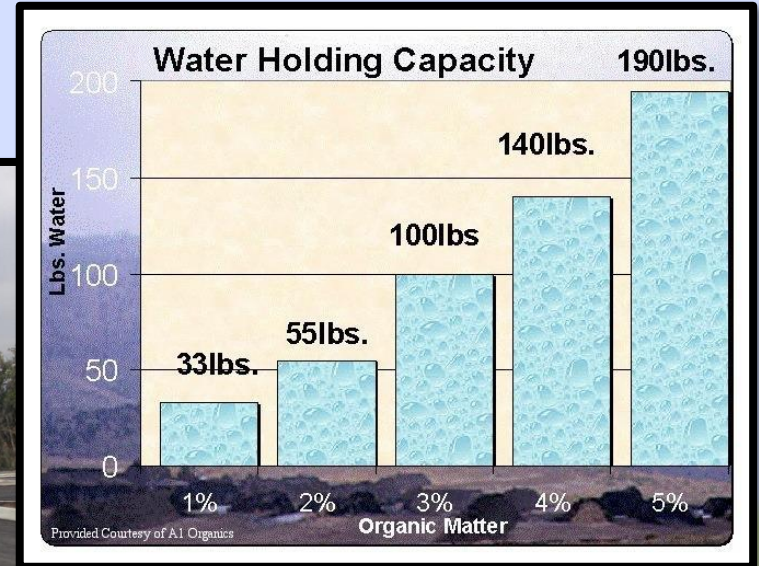


- 20% reduction on tap fee for sites using reclaimed water.
- System takes pressure off of the potable system by re-using wastewater.
- Providing reclaimed water reduces the demand on potable water system.



Soil Amendment Inspections

Inspections required for soil amendments
(pre- and post-tilling)



Soil amendment requirement
(5 yards/1,000 sf) increases
plant survivability while using
less water

Breaking Down Silos Integrating Water into Land Use Planning



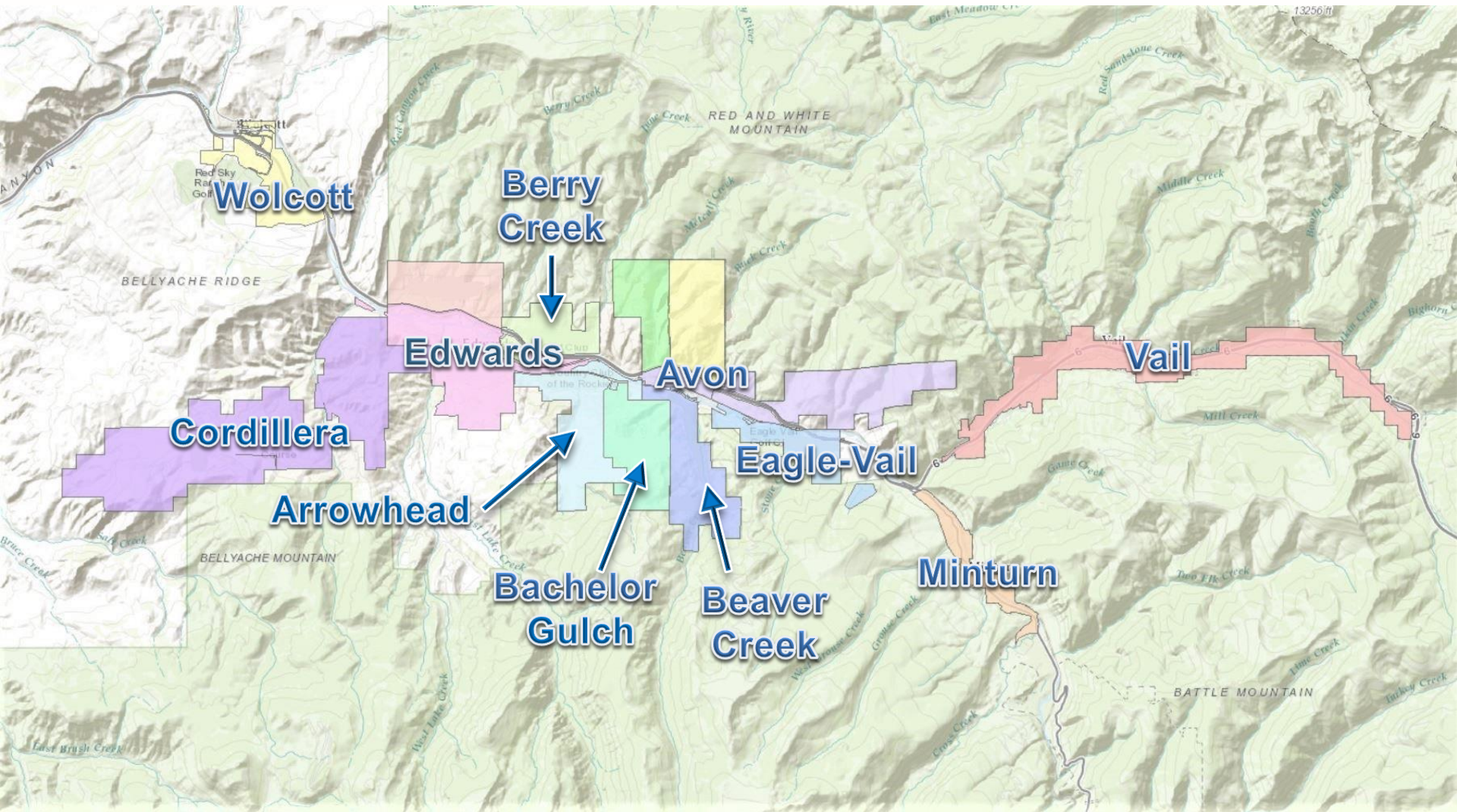
Addressing Water Efficiency in Planned Unit Developments (PUDs): The Role of the Water Authority

Jason Cowles, P.E., *Engineering Department, Eagle River Water &
Sanitation District*

Service Area



EAGLE RIVER
WATER & SANITATION
DISTRICT



Water Dedication Policy

- Entities pooled their water rights together and agreed to serve build out of all existing or permitted land uses.
- Projected water rights remaining at build out make up the Authority's unallocated pool of water.
- Service to any new land use or redevelopment that increases water consumption requires the dedication of water rights, or a cash payment in lieu of water rights for use of water rights from the Authority's unallocated pool.
- Dedication requirement is 120% of projected consumptive use based on Authority's water demand worksheet.

- Developers needing to pay cash in lieu of dedicating water rights weren't willing or able to do so until after their entitlements were in place.
- Water service agreement between the Authority and the Developer, which set water use limits, wasn't enforceable by the Land Use Authority.
- Rather than managing water use to a number, 120% Dedication Policy required dedication above and beyond projected use to cover overuse by the development.

- Water efficiency goals and requirements will be communicated up front to Land Use Authorities in permitting processes so that they are incorporated in the PUD guide and can be enforced by LUA at building permit and inspection.
- 120% dedication requirement may be reduced by demonstrating that development will be water efficient through use of enforceable water efficient landscaping and irrigation standards.

QUESTIONS?

NEXT STEPS & UPCOMING TRAININGS

Visit

<https://www.colorado.gov/pacific/cowaterplan/integrating-water-land-use-planning>

Contact: kevin.reidy@state.co.us

Upcoming Webinars

April 18th: Integrating Outdoor Water Use and Landscape Requirements into Codes & Plans

