INTEGRATING WATER INTO LAND USE PLANNING

INTEGRATING WATER CONSERVATION INTO ZONING

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Don Elliot, Clarion Associates
Mac Cummins, Planning Manager, City of Westminster
WHY WE ARE HERE

Workshop Objectives

1. How to use zoning to reduce water consumption:
2. Clear understanding of best practices, including:
   - Promoting water conserving land uses
   - Creating water conserving landscapes
   - Incorporating water conserving fixtures
3. How to incorporate density in areas for water-efficient growth while:
   - Maintaining neighborhood character and open space
   - Improving the economics of the municipality
   - Protecting property rights
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?
WATER CONSERVATION AND THE LAND USE SYSTEM
THE LAND USE SYSTEM

- State Delegation of Powers
- Comprehensive Plan establishes community’s vision
- Zoning must conform to comprehensive plan
- Comprehensive plan can focus on water conservation
OVERVIEW OF ZONING

• Zoning:
  – Permits certain land uses in designated districts; and
  – Prescribes dimensions for the construction and location of buildings

• Certain land uses conserve more water than others and can be allowed by amending zoning

• Water conservation standards can be added too
# Matrix of Water Conservation Methods

## WATER CONSERVATION IN THE LAND USE SYSTEM

<table>
<thead>
<tr>
<th>Water Conservation Measures</th>
<th>Comp Plan</th>
<th>Zoning Regulations</th>
<th>Subdivision Regulations</th>
<th>Site Plan</th>
<th>Building Code</th>
<th>Plumbing Code</th>
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<tr>
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<td>Plant list/Allowable plants</td>
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</table>
The City of Westminster

- Growth management explicitly tied to water
- Point system limits annual developments
- Points awarded based on water efficiency
- Competitive development proposal system
- Points awarded for going beyond the code
- Proposal with the most points gets permit
BEST PRACTICES

Incorporate water-conserving land uses into as-of-right permitted uses by:

• Zoning to Limit Lot Size
• Clustering of Permitted Homes
• Emphasize use of in-fill development
• Compact Mixed Use Zoning Districts
CLUSTERING OF PERMITTED LOTS

Conserves Water Because:
• Tends to result in smaller home sizes
• Results in smaller yards and less landscaping
• Results in preserved open space, enhances ecosystem services, and groundwater recharge
Foster water-efficient densities by permitting accessory dwelling units.

- Permit construction of an Accessory Unit
- Limit Accessory Units by:
  - Amount of space
  - Occupancy
  - Parking
- Accommodate growing population without extending infrastructure
- Accessory units often do not require additional water for landscaping
BEST PRACTICES

Incorporate water-conserving measures into conditionally permitted uses

- Land uses may be permitted as conditional uses rather than by-right
- All conditions placed on the use must be met in order to be permitted
- Water conserving measures can be added to the zoning code’s provisions for conditional uses
EXAMPLE: CONDITIONAL USES IN SINGLE FAMILY ZONES

- Diversifies types of housing:
  - Small lot homes
  - Attached homes
  - 2-3 family homes, designed to look like existing single family homes
  - Small multi-family
- Standards can include: landscaping plans, compatible design, conserving landscaping fixtures
BEST PRACTICES

Conditionally permit water-intensive uses upon water-conservation measures

- Zoning can designate land use as conditional, rather than by-right
  - Examples - car washes, nurseries, small-scale farming, etc.
- Zoning can impose conditions on uses that limit water consumption
- Zoning can also require recycling of water by these businesses
Condition rezoning on water-conserving practices

- Legislature can impose any reasonable condition on rezoning approval
- Locality may impose any condition that reduces water consumption
- Such measures may include:
  1. landscaping practices and fixtures
  2. water recycling
  3. grey water systems
  4. limit the amount of natural vegetation
To support it, add to the comprehensive plan:
• Goals and objectives
• Appropriate locations
• Examples of standards to be applied

Why is this not illegal “spot zoning?”
Because it conforms with the Comprehensive Plan
**BEST PRACTICES**

**Bonus density zoning as water conservation incentive**

- Home rule localities may permit developers added density
- Incentivize public benefits by awarding bonus density zoning permits
- Techniques for awarding higher density include:
  1. Rezoning
  2. Planned Unit Developments (PUD)
  3. Simply providing more density by right
- Localities must carefully balance
  - Value of added density v. Cost of water conservation measures
ASHEVILLE, NORTH CAROLINA
BONUS DENSITY ZONING

Incentives include:

- Increased density, waivers of minimum lot size, setback, parking, and height
- In exchange for on site water efficiency, building fixtures, and other green building amenities
- Staff created point system to calculate incentives based on amenities offered
Use Planned Unit Development (PUD) regulations to foster water conservation

- PUDs permit developers flexibility in land uses in exchange for:
  - Extra quality,
  - Amenities; including water conservation measures, or
  - Other benefits the community would not get from uses permitted by-right

- PUDs must be comply with the locality’s comprehensive plan
PUD ZONING OF LARGE PARCELS

• Can allow mixed-uses, while requiring amenities, including water conservation techniques
• Highly negotiated arrangements
• Can include rain water harvesting, including xeriscaping and gray water systems

Broomfield, CO uses a pre-application plan review meeting to negotiate amenities and includes local water planners in the meeting
**BEST PRACTICES**

Create a water conservation floating zone

- Floating zones may be created for certain types of development
- Floating zones are created in two steps:
  1. The local legislature creates a zone that “floats; then
  2. Developer may petition to affix zone to qualified parcel
- Floating zones permit uses that use less water per capita than others:
  - Compact, mixed use development; or
  - Small lot single family residences
- Developer may be required to incorporate water conserving land use techniques
FLOATING ZONE STANDARDS

- Can replace underlying zoning where applicable
- Can allow a new land use type or layout
- Can contain water conservation standards: climate tolerant plants, plant density, irrigation efficiency, storm water collection, water reuse
- Often require site plan layout and amenities to be included for floating zone to alight
Best Practices

Overlay Zoning

• Rather than rezone, a locality can create two overlay zones:
  ▪ Zone 1: Priority Growth Areas, and
  ▪ Zone 2: Priority Conservation Areas

• Overlay zones add provisions to existing zoning

• They impose new conditions on development in zone

• Overlay provisions supersede if stricter than underlying zoning
OVERLAY ZONING

- May tailor water conserving measures to high density and mixed-use
- Provisions in lower density zones may be appropriate for those uses
DOUGLAS COUNTY, COLORADO

OVERLAY ZONES

• Divides the county into water supply zones
• Restricts use of nonrenewable water sources
• Identifies minimum water demand standards
• Identifies minimum water supply standards
• Sets up a procedure to determine matters
• Has an appeal process
Establish a Transfer of Development Right (TDR) program with sending districts to preserve green infrastructure and receiving districts to channel economic development

• Localities can designate:
  ▪ Priority growth districts as receiving districts; and
  ▪ Environmentally valuable districts as sending zones

• TDR allows the transfer of rights from sending to receiving zones

• Intended net result is to:
  ▪ Limit development in sending districts; and
  ▪ Boost development in receiving districts
Example TDR

- **Adams County**: Voluntary TDR Program
  - Encourages development in areas with adequate infrastructure and
  - Preserves diminishing farmland and open space
  - Uses a variety of overlay zones to designate several environmentally sensitive areas
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

- Downtown Westminster Focus Area
- Westminster Station Focus Area
- North I-25 Focus Area
- Church Ranch Focus Area
- Brookhill Focus Area
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

- **Land Use Plan**
  - City policy decisions made on land use and water supply.

- **Estimate Future Demand for Water**
  - Recommend rebalancing land use and water supply if needed

- **Calculate Future Water Supply for Average, Wet, Dry Years**
  - Plan and implement strategy to close the “gap”

- **Compare Demand to Supply Projections**
  - Estimate Future Water Supply “gap”

- **What is Worst Case?**
  - Drought Resilience?

- **Computer Modeling**
  - Engineering Analysis

- **City Council Policy**

- **Recommend rebalancing land use and water supply if needed”**

City policy decisions made on land use and water supply.
Development Category Water Use Acre Feet/Acre (Water Sense)

- 50 residential units per acre
- 40 residential units per acre
- 36 residential units per acre
- 32 residential units per acre
- Mixed Use Center
- Mixed Use
- 18 residential units per acre
- TMUND
- Office/R&D High Intensity
- Golf Courses
- Service Commercial
- Office/R&D Low Intensity
- Public Parks
- 8 residential units per acre
- Retail Commercial
- Flex Industrial
- Office
- 5 residential units per acre
- Public/Quasi Public
- 3.5 residential units per acre
- 2.5 residential units per acre
- 1 residential unit per acre
- City Owned Open Space

Acre Feet/Acre
Outdoor Water Use Percentage

- Golf Courses
- Public Parks
- 1 residential unit per acre
- Public/Quasi Public
- 2.5 residential units per acre
- Office
- Office/R&D Low Intensity
- Flex Industrial
- 3.5 residential units per acre
- TMUND
- Service Commercial
- Retail Commercial
- 5 residential units per acre
- Mixed Use
- 18 residential units per acre
- Mixed Use Center
- 8 residential units per acre
- Office/R&D High Intensity
- 32 residential units per acre
- 36 residential units per acre
- 40 residential units per acre
- 50 residential units per acre
- City Owned Open Space

Percentage: 0% 10% 20% 30% 40% 50% 60% 70% 80%
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
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

<table>
<thead>
<tr>
<th>Water Zone</th>
<th>SF</th>
<th>Gallons/SF/Season</th>
<th>Total Gallons/Season</th>
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<tbody>
<tr>
<td>High Water Zone</td>
<td>4,000</td>
<td>x 18</td>
<td>= 72,000</td>
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<tr>
<td>Moderate Water Zone</td>
<td>1,000</td>
<td>x 10</td>
<td>= 10,000</td>
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<tr>
<td>Low Water Zone</td>
<td>5,000</td>
<td>x 3</td>
<td>= 15,000</td>
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<tr>
<td>TOTAL Gallons Needed by all Zones</td>
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<td>= 97,000</td>
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<tr>
<td>TOTAL Square Feet of all Zones (SF)</td>
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<td>= 10,000 SF</td>
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<tr>
<td>Average Gallons per SF per Season for all Zones</td>
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<td></td>
<td>= 9.7 Gals./SF/Season</td>
</tr>
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*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
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
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

<table>
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<tr>
<th>Category</th>
<th>Description</th>
<th>Proposed Allocations</th>
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<td><strong>Potable</strong></td>
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<tr>
<td>A and L</td>
<td>All Active Residential and Legacy Ridge</td>
<td>1969</td>
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<tr>
<td>B</td>
<td>New Residential (for competition process)</td>
<td>500</td>
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<td>C</td>
<td>Non-Residential</td>
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<td>D</td>
<td>Outside City Contracts</td>
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<td>E</td>
<td>Senior Housing (for competition process)</td>
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<td>F</td>
<td>Public and Contingency</td>
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<td>F</td>
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<td>W</td>
<td>Total – Potable</td>
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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
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

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

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

Contact: kevin.reidy@state.co.us