Integrating Water Efficiency into Land Use Planning

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January 15, 2019
Northern Water Winter Stakeholders Meeting
Overview

1. Intro
2. Guidebook to Integrating Water & Land Use Planning
3. Conservation-Oriented System Development Charges (SDCs)
4. Q&A
Western Resource Advocates protects the West’s land, air and water to ensure that vibrant communities exist in balance with nature.

- 6 years in integrated land use - water planning: research, education & community assistance
Guidebook Chapters:

- Comprehensive Master Plans
- Sustainability Plan
- Zoning Code
- Subdivision Regulations
- Site-Plan Regulations
- Building and Plumbing Codes
- Supplemental Regulations
- Development Moratoria
- Development Agreements
- Non-Zoning Incentives
- Post-Occupancy Enforcement
Integration Process

- Municipal water utility vs. non-municipal Process:
  1. Establishment of a Water Land Use Planning Integration Team
  2. Review Water Master and Conservation Plans, evaluate the degree of integration with Comprehensive Plan (and other land use & development codes)
  3. Discuss Self-Assessment Questions (p 37)
  4. Consult “Matrix of Implementation Techniques” (pg 41)
Comprehensive Plans

Comprehensive Master Plan – The community’s vision for the future, and a roadmap for getting there.

http://www.algomacity.org/comprehensive-plan-update/
Comprehensive Plans

• Sample Water **Goals:**
  • To absorb the market demand for new housing and economic development while lowering the per capita consumption of water by new residents and workers
  • To ensure land use planning is closely coordinated with local water planning

• Sample Water **Objectives:**
  • To reduce per capita water consumption by x% from baseline
  • To meter x% of all accounts by 20XX
Comprehensive Plans

• Sample Water Strategies:
  • To calculate the water demands of land uses and development intensities recommended by the comprehensive plan
  • To identify funding sources for infrastructure improvements
  • To amend local zoning to provide for more small lot SFR, multifamily housing, and mixed use, compact developments that result in water conservation and meet market needs.
<table>
<thead>
<tr>
<th>Water Conservation Measures</th>
<th>Comp Plan</th>
<th>Zoning Regs</th>
<th>Subdivision Regs</th>
<th>Site Plan</th>
<th>Building Code</th>
<th>Plumbing Code</th>
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<tbody>
<tr>
<td><strong>LAND USE</strong></td>
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<td>Open space dedication</td>
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<td>Demand-based tap fees</td>
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Zoning

Local governments can divide their land into zones which prescribe the land use type, e.g. residential, industrial, commercial, mixed use. This provides the blue print for future development.

- Zoning ordinances can set the minimum lot size, density, landscape requirements
- Can permit Accessory Dwelling Units

http://cityoflonetree.com/planning/what_is_my_zoning
Cochise County, AZ adopted zoning regulations for new construction within a Water Conservation Overlay Zone. Within the zone, new residential, commercial, industrial, multi-family, and public development is required to include specified water conserving features, such as greywater stub outs for new homes and water recycling systems for car washes.
Zoning

- Conditionally permitted water-intensive uses
  - Kiowa, Kansas: greenhouses, nurseries and hydroponic farms must be reviewed for the impact they will have, and City may place restrictions on the operation of the facilities
  - Dutchess County, New York – special permits required when water consumption exceeds natural recharge. Water budget & water quality impacts must be mitigated (e.g. via aquifer recharge, water conservation, water recycling).
- Bonus Density Zoning
Subdivision regulations

• Can dictate individual parcel size, which impacts density and therefore per capita water usage
• Can include water supply adequacy requirements
• Can require pre-application conference to discuss water
Landscaping Ordinances

• Can be adopted through zoning ordinance, subdivision regulation, site plan regulations or a stand alone landscaping ordinance

• Can require or incentivize plant types, turf limits, soil amendments, certification of landscapers, and more.

• Recommendation: Landscaping plans should be submitted during site-plan review, for compliance review, and for future post-occupancy enforcement
Plumbing Codes

• May include requirements for fixture efficiency, water reuse, smart meters, submetering, and irrigation technology such as: rain sensors, programmable irrigation timers, drip irrigation, etc.

• Can also include “reach codes” which encourage local governments to “reach” for better plumbing performance, even if there is not set standard.
  
  • E.g., gray water systems required in new single-family or duplex residential construction
Non-Zoning Incentives

1. Financial Incentives
   • Fee rebates/reductions/waivers, grants, loans, tax credits etc.

2. Process incentives
   • Expedited review/streamlined permitting process, guaranteed timelines and priority inspections

3. Assistance, education and marketing incentives
   • Workshops, education programs, direct assistance, marketing assistance
Non-Zoning Incentives: System Development Charges (SDCs), aka “Tap Fees”

• SDCs are one-time charges assessed to new developments to help pay for the infrastructure and water resources capacity needed to support new development.

• Conservation-Oriented SDCs are scaled in proportion to projected water demands.

This is a thing. Why is this a thing?
Why do it?
The impact of new developments on a water system is not always uniform.

Variable factors include: lot size, square footage of home, irrigation area, plant type, and fixture types.
The benefits are compelling.

- Improved fairness across and within customer classes
- Better captures the true cost of development
- Demand reductions are achieved
- Developer-friendly
- Voluntary

Table 2. Median Connection Charges for New Single-Family Homes in Western States Researched Are Significantly Higher than in the Southeastern States.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Maximum</td>
<td>$9,600</td>
<td>$25,400</td>
<td>$8,200</td>
</tr>
<tr>
<td>Minimum</td>
<td>$1,700</td>
<td>$1,000</td>
<td>$900</td>
</tr>
<tr>
<td>Median</td>
<td>$4,800</td>
<td>$11,900</td>
<td>$2,400</td>
</tr>
<tr>
<td>Average</td>
<td>$5,200</td>
<td>$12,400</td>
<td>$2,900</td>
</tr>
</tbody>
</table>
Who’s doing it?

More and more communities....
5 case studies in report:
- Aurora Water
- Castle Rock Water
- City of Fountain
- Little Thompson Water District
- City of Westminster

Some other communities using water variables to determine fee:
Denver Water, Boulder, Thornton, Colorado Springs, Ft. Collins, Aspen, Steamboat Springs, and more...
How is it done?

Look at a single metric:

- Look at projected GPM requirements

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**Castle Rock Water’s Fee Schedule**

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>GPM</th>
<th>Single-Family Equivalent</th>
<th>Water System Fee</th>
<th>Water Resources Fee</th>
<th>Wastewater Fee</th>
<th>Water Fee Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8&quot; x 3/4&quot;</td>
<td>20</td>
<td>0.67</td>
<td>$2,220</td>
<td>$10,216</td>
<td>$2,303</td>
<td>$14,739</td>
</tr>
<tr>
<td>3/4&quot; x 3/4&quot;</td>
<td>24*</td>
<td>1.00</td>
<td>$2,658</td>
<td>$12,229</td>
<td>$2,757</td>
<td>$17,643</td>
</tr>
<tr>
<td>3/4&quot; x 3/4&quot;</td>
<td>30</td>
<td>1.00</td>
<td>$3,314</td>
<td>$15,248</td>
<td>$3,437</td>
<td>$21,999</td>
</tr>
</tbody>
</table>

*24 GPM reflects the 2 GPM credit applied to the calculated 26 GPM flow rate.*
How is it done?

Use a single water metric:

- Developer keeps within a budget to receive a lower fee
Use Indoor & Outdoor water metrics:

- Indoor: Fixture units, #bedrooms/bathrooms, Sq ft, AWC
- Outdoor: Lot size (minus building footprint), plant type and area,

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**Fountain’s Residential Landscape Fee Incentives**

<table>
<thead>
<tr>
<th>Lot Size</th>
<th>Water Acquisition Fee</th>
<th>Water Acquisition Fee with Conservation Incentive: 50% or Less Irrigated Area</th>
<th>Water Acquisition Fee with Conservation Incentive: 30% or Less Irrigated Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 9,000 sq ft</td>
<td>$4,875</td>
<td>$2,438</td>
<td>$1,024</td>
</tr>
<tr>
<td>9,001 to 13,000 sq ft</td>
<td>$5,688</td>
<td>$2,844</td>
<td>$1,706</td>
</tr>
<tr>
<td>Greater than 13,000 sq ft</td>
<td>$6,500</td>
<td>$3,250</td>
<td>$1,950</td>
</tr>
</tbody>
</table>

Fees are smaller for smaller turf areas and for smaller lots.
How is it done?

Incentivize Xeriscape in Large, Irrigated Areas

- Large landscapes, e.g. in HOAs, multi-family complexes, office parks

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A-Table 3. 2015 Connection Charges for Irrigation Meters

<table>
<thead>
<tr>
<th>Landscape Type</th>
<th>Cost Per Sq. Ft. of Landscaped Area</th>
<th>Cost for 10,000 Sq. Ft. of Landscaped Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Water-Conserving</td>
<td>$2.75</td>
<td>$27,500</td>
</tr>
<tr>
<td>Water-Conserving</td>
<td>$1.47</td>
<td>$14,700</td>
</tr>
<tr>
<td>z-zone</td>
<td>$0 [$20,000 deposit, 100% refundable after establishment period]</td>
<td>$0 after refund</td>
</tr>
</tbody>
</table>

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

Since 2014: 25 new developments, 4,400,000 square feet of z-zone landscapes, 170 acre-feet of water savings per year—enough to supply nearly 350 families per year!

“The administration time has increased a bit with the new z-zone methodology. This is a result of the required Service Connection Fee agreements and recording of the documents. At most, this program takes about 5% of my time. The projected benefit from water savings shows great promise, so it is worth it.”

– Tim York, Water Conservation Supervisor, Aurora Water
## Results - Fountain

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of New Builds (i.o. Lots)</th>
<th>Number of Participants</th>
<th>Savings Assuming 50% Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>176</td>
<td>5 (3%)</td>
<td>282,100 gallons</td>
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<tr>
<td>2014</td>
<td>134</td>
<td>9 (7%)</td>
<td>789,880 gallons</td>
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<tr>
<td>2015</td>
<td>115</td>
<td>43 (38%)</td>
<td>3,215,940 gallons</td>
</tr>
<tr>
<td>2016</td>
<td>128</td>
<td>72 (57%)</td>
<td>7,278,180 gallons</td>
</tr>
<tr>
<td>2017</td>
<td>163</td>
<td>127 (78%)</td>
<td>14,443,520 gallons</td>
</tr>
<tr>
<td><strong>Five-Year Total</strong></td>
<td><strong>716</strong></td>
<td><strong>256</strong></td>
<td><strong>80 acre-feet</strong> <em>(26,068,114 gallons)</em></td>
</tr>
</tbody>
</table>
Next Steps

Get some Education & Inspiration

• Download the Guidebooks!
  Land Use: https://westernresourceadvocates.org/land-use-planning-for-water-efficiency/
  SDCs: https://westernresourceadvocates.org/projects/water-system-development-charges/

• Attend webinars
  CWCB: https://www.colorado.gov/pacific/cowaterplan/integrating-water-land-use-planning
  Sonoran Institute: https://resilientwest.org/webinars/

Take Action

• Start some conversations with land use & utility staff/directors, boards, and/or council members
Next Steps

Seek Assistance

- WRA assistance:
  - Conduct research tailored to a community’s needs
  - Convene informational meetings with policymakers and staff
  - Conduct short workshops to advance polices or integration processes
  - Conduct additional services as determined on an individual basis

- Growing Water Smart Workshops & webinars by Sonoran Institute
Questions?

Amelia.Nuding@westernresources.org
Comprehensive Plans

Foster a Water Conserving Land Use Pattern

• Designate priority areas for growth and areas for natural resource conservation (i.e. little/no development)
• Designate an urban growth boundary
• Promote cluster development (site scale)
• Prioritize infill development
• Allow for multifamily and attached housing
• Plan for Green infrastructure