WATER CONNECTION CHARGES: A TOOL FOR ENCOURAGING WATER-EFFICIENT GROWTH

Case Study on Fountain, Colorado

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Fountain is a small community in the middle of Colorado’s Front Range, with a population of about 27,000 people. It is a suburban community near Colorado Springs and adjacent to a military base. In June 2014, the City of Fountain adopted an ordinance to encourage water conservation in new residential developments. Water acquisition fees are reduced by 50% for lots with 50% or less turf area, and by about 70% for lots with 30% or less turf area. In addition, smaller residential lots are assessed smaller charges.

New Connection Charge Structure Designed to Reduce Water Demands

The majority of Fountain's existing water supplies come from a transbasin water diversion (the Fryingpan-Arkansas Project), and the rest is from groundwater.¹ New water supplies are increasingly difficult and expensive to obtain, so a new connection charge structure was developed to rein in new water demands. Residential landscapes became the focus; because of Fountain’s proximity to a military base, new residents are often from more water-rich regions and are not aware of the high water needs and costs associated with watering the lawn of their new home.

Residential Connection Charges Linked to Turf Percentage

The City’s connection charge has two parts: an infrastructure fee and a water acquisition fee.² The infrastructure fee takes into account the costs of the existing and planned water delivery infrastructure (fire flow requirements, storage, treatment, and distribution). The water acquisition fee is based on the current market price for water (usually priced as $/AF)³ and is applied to the assumed volume of water used (e.g., ½ AF for one household). Both fees for new commercial and multi-family buildings are based on meter size, but the residential water acquisition fee features a conservation incentive.

The residential water acquisition fee varies by lot size and landscaping type. Lot sizes are divided into three classes, and the water acquisition fees get progressively higher with larger lot sizes (see Table 1). Smaller fees are charged for smaller lots because their irrigation needs are commensurately smaller.

Within each lot size class, a water conservation incentive is given for reduced turf areas. Residential lots with turf on 50% or less of the total “landscapable” area are charged half of the full fee. The landscapable area is not the same as the lot size; it excludes the footprint of the house and driveway. A lot with turf on 30% or less of the total landscapable area pays about 30% of the full fee.⁴ Non-turf areas do not have to meet specific requirements, but generally must have low-water-using plants or hardscape. These fee incentives were designed to be financially appealing to builders so that they would go through the extra work to design water-efficient landscaping.

³ An acre-foot (AF) of water is equal to approximately 325,851 gallons.
⁴ With one exception: The smallest lot size with 30% or less irrigated area pays about 20% of the normal fee. This is an additional incentive.
Simple Connection Charge Structure Gained Support of City and Builders

The director of the water utility initiated discussions about a revised fee structure in 2009, several years prior to its adoption. However, because the new housing market significantly declined in 2009, the effort was stalled.

A few years later, the effort was revived, and individual meetings with city council members and home builders were held to talk through the rationale, the economics, and the logistics. An initial concern in City Council was the financial implications of this change, and concerns which reduced fees while water rates were increasing. Ultimately, the high cost of new water supplies was significant enough to justify an effort to reduce new water demands through a voluntary fee incentive.
The Home Builders Association (HBA) initially had concerns about the complexity, public (homebuyer) acceptance, program enforcement, and the application process. Once those concerns were addressed, the HBA ultimately supported this new connection charge structure because it created substantial savings for their home builder members. The City adopted the simple connection charge structure, believing that a simple concept for saving water, paired with a simple fee structure, had a better chance of being understood and accepted by the community.

**Landscape Templates Help Increase Adoption of Conservation Incentive**

After the new connection charge schedule was adopted by City Council, the water utility developed template landscape plans to help the builders and landscape contractors meet the requirements of the conservation incentive. The landscape templates demonstrate where areas of turf can be placed, which types of low-water-using plants can be used, and how they might be arranged, all while meeting the varying turf percentage requirements. The utility reviews the builder’s final landscape plan before it is installed; once installed, the landscapes are inspected before a Certificate of Occupancy is issued to ensure that the landscape is consistent with the plan and requirements. In addition, the water utility is developing brochures and informational material to promote this incentive and explain the new process to home owners and home builders.

**Multi-Factor Connection Charges Benefit Utility, Builders, and Home Owners**

According to the utilities director, this new connection charge structure is a win for the water utility because it can prolong its existing water supply, a win for home builders because they have an option to pay lower fees, and a win for home buyers because their water bills will be lower.\(^5\)

In addition, the voluntary approach makes this an appealing water conservation program to all parties. The City of Fountain — residents and government alike — would not likely be supportive of a water conservation mandate, and the water utility has limited capacity to enforce those kinds of restrictions anyway.

Lastly, whereas several other Western communities have implemented turf buy-back programs to replace existing lawns with low-water-using landscapes, this program reduces turf area at the outset.

One potential challenge the utility faces is that there is no mechanism to prevent homeowners from changing their low-water landscaping to one with more turf. The utility does, however, have an inclining block rate structure with steep rate increases, which is a deterrent against installing water-thirsty landscapes.

**Majority of New Residential Developments Are Using Conservation Incentive**

This connection charge schedule has been in place since June 2014; as of November 2014, approximately 75% of the proposed new residential developments were making use of the incentive.\(^6\) The water utility plans to develop a database of new homes that were designed to meet the conservation requirements, as well as to perform spot checking periodically in the future to monitor any changes and determine how successful the program is over the longer term.\(^7\)
The City of Fountain recently has seen a significant adoption rate of its water-conserving landscape incentives for new construction through its connection charge structure. Since its adoption in November 2013, the fees and incentive structure have not changed, but over time more and more developments have used the incentive. The fees in Fountain are a direct reflection of the cost of the city’s water rights and infrastructure, and those costs have been stable in recent years.

Landscape plans still are required for all new developments. Those that use the incentive must show the square footage of pervious area (which may include turf, shrubs, trees, and rock), and the percentage of that pervious area which is turf (either 30% or 50% to meet the requirements of the incentive). In the future, the city also would like to improve the non-turf landscapes that are installed to include a greater variety of plant species and less rock, to improve the aesthetics.

Over the last several years, utilization of this incentive has increased significantly. The table below shows the number of new construction projects that have used the incentive each year and the estimated water savings. The water savings estimates are based on average lot size and typical watering habits. The estimates also conservatively assume that each lot used the 50% turf incentive (rather than the 30% turf incentive), therefore actual water savings could be even greater. As shown, the estimated cumulative five-year water savings is 80 acre-feet—a very significant result that demonstrates the great potential for reducing water demands in new construction through the city’s program.

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**TERMINOLOGY**

The terms “system development charge,” “connection charge” and “tap fee,” among others, all describe the one-time charge that covers the cost of connecting to the water system, as well as the cost of the infrastructure and water resources that were developed to support the new connection.

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1 Katie Helm, Conservation & Sustainability Program Manager, City of Fountain, personal communication with author, January 2018.
Table 1. Participation in Fee Incentive

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of New Builds (i.e. 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>
</tr>
<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>
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<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>
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<tr>
<td>Five-Year Total</td>
<td>716</td>
<td>256</td>
<td>80 acre-feet (26,068,114 gallons)</td>
</tr>
</tbody>
</table>

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