WATER CONNECTION CHARGES: A TOOL FOR ENCOURAGING WATER EFFICIENT GROWTH

Case Study on Castle Rock, Colorado

January 2018

Authored by
Amelia Nuding, WRA
Castle Rock, Colorado

Castle Rock is located south of the Denver Metro Area and is a fast-growing region with limited water supplies. The population in 2018 is about 65,000 people, but is anticipated to grow to 105,200 people by 2055. Currently, a large portion of Castle Rock’s water supply comes from groundwater, but the utility is actively pursuing ways to diversify the supply and increase water conservation. The structure of their system development fees (also called “connection charges”) was designed to encourage innovative water conservation measures in new developments—measures that go beyond the town’s already substantial water-efficiency requirements for new development. The innovations are left to developers, and the fee discount is proportional to the amount of water the developer saves.

Projected Water Demand Affects System Development Fee

Castle Rock has relied on groundwater for decades, but due to declining aquifer levels a long term, sustainable water plan has been developed to support long term population growth. Conservation is a key component of this plan, and accordingly Castle Rock Water has developed an incentive based fee program to encourage new developments to be exceptionally water efficient.

Castle Rock Water’s system development fees include a water system fee that pays for infrastructure investments, and a water resources fee that pays for the actual water obtained and developed by the utility. In 2015, the fees were based only on meter size, and meter size was determined through engineering calculations. In 2016, to encourage water conservation, the utility developed a water conservation option that rewarded lower water-usage requirements with a reduced fee.

To illustrate, a typical meter size for a residential property is ¾” by ¾”, which has the capacity to provide a maximum flow of up to 30 gallons per minute (GPM). Under the original fee structure, if the engineering calculations resulted in a predicted maximum flow rate of 26 GPM, then the developer had to pay the fee associated with 30 GPM. Under the new fee structure, however, the developer pays a prorated water, water resources, and wastewater fee, and then receives an additional financial incentive equal to a 2-GPM reduction (which is adjustable by the Town of Castle Rock) in the estimated maximum flow rate. Table 1 shows the fees charged for three GPM flow rates.

Fee Reduction Applies Only If Minimum Standards Are Met

The prorated water resources fee is applicable only if a water-efficiency plan is created for the new development. The water efficiency plan must meet a set of minimum standards, which are described in detail in the document “Minimum Standards for Water Efficiency Plans.” The minimum standards have several parts: (1) Indoor Water Efficiency, (2) Outdoor Water Efficiency, (3) Resident Education, (4) Third-Party Verification, and (5) Monitoring and Enforcement. The requirements under each standard cannot be articulated in full here, but some of the highlights are summarized below.

Table 1. Castle Rock Water Fees Schedule (2017)

<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>

Table 2. A Summary of the Minimum Water Efficiency Standards That Must Be Met By Developers Seeking a Prorated Water, Water Resources, and Wastewater Fee

<table>
<thead>
<tr>
<th>Area</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Water Efficiency</td>
<td>Minimum efficiency standards for indoor fixtures are based on the most current version of EPA’s “WaterSense New Home Specifications”, including: toilet (1.28 gallons per flush), showerhead (2 GPM), clothes washer (water factor of 6 or less), and others. Any installed hot water recirculation systems must be demand based.</td>
</tr>
<tr>
<td>Outdoor Water Efficiency</td>
<td>All front and rear yards must be designed and installed by the builder. The developer is responsible for seeing the landscape plan through to completion. Turf areas cannot exceed 19% to 32% of the lot size, depending on actual square footage of the lot. Kentucky bluegrass is not allowed. Allowable turf species must be approved by the town and must be able to survive on 19&quot; of supplemental irrigation per year. 100% xeric landscapes are allowed, but must provide a minimum coverage of 75% by plant materials at 5-year maturity in front yards and side yards when adjacent to streets. Rear yards must have a minimum of 40% plant coverage at 5-year maturity. The remainder of yard coverage can be composed of mulches, aggregate surfacing, artificial turfs, and hardscape. Residential irrigation design must follow the Town of Castle Rock’s Landscape and Irrigation Performance Standards and Criteria Manual. Automatic irrigation controllers that are weather based or soil-moisture based are required.</td>
</tr>
</tbody>
</table>

Table continued on next page
Results

As of 2018 there is one new development that has fully utilized this fee structure. A few other proposed developments are planning or considering using it, however those projects are in the early stages of development. Subsequent updates will provide information about these developments, how the fee structure applied, and the water savings that were achieved.

For more information, contact
Amelia Nuding: amelia.nuding@westernresources.org
www.westernresourceadvocates.org