CONSERVATION LIMITS RATE INCREASES FOR COLORADO UTILITY

DEMAND REDUCTIONS OVER 30 YEARS HAVE DRAMATICALLY REDUCED CAPITAL COSTS

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Water and wastewater rates have increased faster than the Consumer Price Index (CPI) over the past 15 years.

Long term conservation coupled with short term drought response has reduced demands.

Some utilities have experienced revenue shortfalls.

Customers are confused.

WHY ARE MY RATES GOING UP AGAIN WHEN I KEEP CONSERVING WATER?
Exhibit 1. Long-term trends in the Consumer Price Index (CPI) for utilities (1913-2012). The index is set to 100 for 1982-1984 except for telephone and wireless services, where the index is set to 100 for 1997. Date ( ) indicates start of series.
To examine the impact of conservation on rates Westminster looked at marginal costs due to the buildout requirements by removing conservation from the equation.

Conclusion: Reduced water use in Westminster since 1980 has resulted in significant savings in both water resource and infrastructure costs, saving residents and businesses 80% in tap fees and 95% in rates compared to what they would have been without conservation.
As a result of conservation, Westminster’s citywide per capita water use has been reduced 21% since 1980. Since 1980 (32 years) rates have increased while water use has gone down per SFD home.

- **Annual water cost increase per home =**
  - 22% 1980 to 2012 in 2012 dollars
  - 0.7% increase per year

Staff researched the effect on rates and tap fees (since 1980) had no conservation measures been implemented.
Conservation practices have reduced water use.
- National plumbing codes
- Conservation programs 1980 to present
- Billing structure

Benefits to Westminster
- Residents
- Businesses
CONSERVATIVE SCENARIO ASSUMPTIONS
HYPOTHETICAL ROLLBACK OF CONSERVATION MEASURES

- Reclaimed system not included
  - Potable water use was increased
- Rate structure changes
  - Inclined blocks and seasonal
- Rebate programs
  - HE fixtures and appliances
- Changes to plumbing codes
- Landscape regulations and Xeriscape
- Education
- Attitude
CONSERVATIVE SCENARIO ASSUMPTIONS

Increased regional water demands would have placed stress on limited supply of South Platte basin water, which would have resulted in:

- Higher water resource costs
- Higher rates
- Limited economic growth
IMPACTS ON DEMAND & WATER RESOURCES AT BUILDOUT

Cost: 7,295 AF * $30,000/Acre-Feet = $218,850,000

Does not include debt costs
IMPACTS TO WATER TREATMENT INFRASTRUCTURE AND BUILDOUT

Total peak day = 111 MGD

Cost: 52MGD * $2,500,000/MGD = $130,000,000
Cost: 4 MGD * $5,000,000/MGD = $20,000,000
### IMPACTS TO CITY:

**INFRASTRUCTURE & WATER RESOURCES COSTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>52 MGD total</th>
<th>4 MGD total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional WTF capacity</td>
<td>$2,500,000/MG</td>
<td>$5,000,000/MG</td>
</tr>
<tr>
<td></td>
<td>$130,000,000</td>
<td>$20,000,000</td>
</tr>
<tr>
<td>Additional WWTF capacity</td>
<td>4 MGD total</td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>$20,000,000</td>
<td></td>
</tr>
<tr>
<td>Additional Water Resources</td>
<td>7,295 AF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$30,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$218,850,000</td>
<td></td>
</tr>
<tr>
<td>Interest (on debt funding)</td>
<td></td>
<td>$223,106,000</td>
</tr>
<tr>
<td>Total Costs</td>
<td>$591,956,000</td>
<td></td>
</tr>
</tbody>
</table>
## IMPACTS TO CITY: OPERATING COSTS*

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage Increase</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional annual operating cost of WTF</td>
<td>21%</td>
<td>$480,400</td>
</tr>
<tr>
<td>Additional annual operating cost of BDCWWTF &amp; Metro</td>
<td>20%</td>
<td>$757,600</td>
</tr>
<tr>
<td>Total additional operating costs</td>
<td></td>
<td>$1,238,000</td>
</tr>
</tbody>
</table>

*No Additional Personnel*
## IMPACTS TO RESIDENTS AND BUSINESSES

### 2 SOURCES OF REVENUE / 2 WAYS TO FUND ALL COSTS

<table>
<thead>
<tr>
<th>Revenue Source: Rates</th>
<th>Pays for: O&amp;M, R&amp;R, Debt Service</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Revenue Source: Tap Fees</th>
<th>Pays for: New Infrastructure, New Water Resource, R&amp;R</th>
</tr>
</thead>
</table>
### Impact to Residents: Single Family Rates – Annual Bill (Water & Sewer)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>Additional Charge</th>
<th>Total Annual SF Water/Sewer Bill</th>
<th>% Increase to 2012 Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>$410</td>
<td>$561</td>
<td>$971</td>
<td>137%</td>
</tr>
<tr>
<td>Sewer</td>
<td>$245</td>
<td>$63</td>
<td>$308</td>
<td>26%</td>
</tr>
<tr>
<td>Total</td>
<td>$655</td>
<td>$624</td>
<td>$1,279</td>
<td>95%</td>
</tr>
</tbody>
</table>
### Impact to Residents/Businesses: Single Family Tap Fees

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>Additional Charge</th>
<th>Total Annual SF Tap Fee</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>$16,325</td>
<td>$16,086</td>
<td>$32,411</td>
<td>99%</td>
</tr>
<tr>
<td>Sewer</td>
<td>$4,904</td>
<td>$866</td>
<td>$5,770</td>
<td>18%</td>
</tr>
<tr>
<td>Total</td>
<td>$21,229</td>
<td>$16,952</td>
<td>$38,181</td>
<td>80%</td>
</tr>
</tbody>
</table>
SUMMARY

1980 citywide water use = 21% higher than current use.
Increased water use would have required:
- Acquisition of additional water resources
- Expansions of the water and wastewater treatment facilities

Resulting in:
- Increased rates
- Increased tap fees
- No additional revenue to the City

Reduced water use (conservation) has resulted in savings in both resource and infrastructure costs, saving residents and businesses 80% in tap fees and 15% in rates.
Each water system is unique. Results from Westminster may not apply.
Utilities can perform a similar analysis.
The $591 million dollar cost reveals the significant hardship associated with expanding supply and infrastructure today. The cost highlights the inherent value in our current infrastructure.

The cheapest water (by far) is the water we already have and the best way to keep rates and tap fees low is to conserve the water we already have.

CONCLUSION
THANK YOU.

QUESTIONS?

Peter Mayer, P.E., Principal, WaterDM
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IMPACTS OF HIGHER WATER USE

Impacts to the City:
- Acquisition of additional water resources
- Increasing treatment facility capacities (water & wastewater)
- Increased annual operating costs

Impacts to residents & businesses:
- Increased tap fees
- Increased rates
2010 average to peak day factor is 2.1
1980 average to peak day factor was 3
Conservation has reduced the peak day factor (irrigation patterns)

2010 buildout 34,000 AF = 30.35 MGD average x 2.1 = 64 MGD peak
1980 buildout 41,295 AF = 36.87 MGD average x 3 = 111 MGD peak