2016 Water Cost Comparison Study

Board Meeting
May 3, 2018
Objective of the study

To develop a water cost comparison analysis with the intent of identifying a feasible methodology for measuring the operational efficiency of water districts within Orange County.
Water rates comparison 2015

**Average Monthly Water Charges Comparison by Counties - 2015**

*Data Source: 2015 California-Nevada Water and Wastewater Rate Survey, p11*
Sample water rates comparison 2016

Data Source: RFC Rate Survey
Using water rates to measure operational efficiency

Challenges:

- Size of agency, geographic location, overall demand, etc.

- Non Rate Revenues

  Many agencies receive non-rate revenues, i.e. property tax, which offset water costs and affects water rates
OC Water Districts’ Sources of Income Comparison (2016)

Data Source: California State Controller’s Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity
Share of sales in total revenues 2007-2016

Data Source: California State Controller’s Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity
Total Expenditure Per Capita: Proxy to Measure Efficiency

- Total expenditures for special districts are gathered by the CA State Controller’s *Special Districts Annual Report*

- Population service area is available from the last MWDOC and 2015 Urban Water Management Plan by water district
Expenditure comparison per capita 2016

Data Sources:
California State Controller's Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity
California State Controller's Office, Special Districts Long-term Debt Database
Population from Orange County Water Suppliers - respective agencies' 2015 UWMP
Expenditure comparison per capita 2015

**Data Sources:**
- California State Controller’s Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity
- California State Controller’s Office, Special Districts Long-term Debt Database
- Population from Orange County Water Suppliers - Water Rates & Financial Information (Updated as of Aug 2013)
Expenditure comparison 2016 vs 2015

Data Sources:
California State Controller’s Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity
California State Controller’s Office, Special Districts Long-term Debt Database
Population from Orange County Water Suppliers - Water Rates & Financial Information (Updated as of Aug 2013) and respective agencies’ 2015 UWMP
Population and total expenditure 2016

Data Sources:
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Population from Orange County Water Suppliers - respective agencies’ 2015 UWMP
Population and total expenditure 2016

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California State Controller's Office, Special Districts Long-term Debt Database
Population from Orange County Water Suppliers - respective agencies’ 2015 UWMP
Total expenditures per capita 2007-2016

<table>
<thead>
<tr>
<th></th>
<th>MNWD</th>
<th>IRWD</th>
<th>SMWD</th>
<th>ETWD</th>
<th>TCWD</th>
<th>SWD</th>
<th>YLWD</th>
<th>LBCWD</th>
<th>SCWD</th>
<th>Mesa Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>% change</td>
<td>52%</td>
<td>31%</td>
<td>21%</td>
<td>25%</td>
<td>86%</td>
<td>62%</td>
<td>37%</td>
<td>69%</td>
<td>85%</td>
<td>27%</td>
</tr>
<tr>
<td>$ change</td>
<td>$151</td>
<td>$70</td>
<td>$87</td>
<td>$58</td>
<td>$288</td>
<td>$290</td>
<td>$107</td>
<td>$257</td>
<td>$328</td>
<td>$60</td>
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</tbody>
</table>
The value of water and water conservation

Higher percentages of revenue from commodity rates are more likely to educate customers on the value of water and promote conservation.
The value of water and water conservation

Data Sources:
California State Controller's Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity Commodity/Fixed rate revenue shares – RFC Rate Survey 2015
The value of water and water conservation

Data Sources:
California State Controller’s Office, Special Districts Water Enterprise - Revenues, Expenses and Changes in Fund Equity Commodity/Fixed rate revenue shares – RFC Rate Survey 2015
<table>
<thead>
<tr>
<th>Source</th>
<th>Code</th>
<th>Website</th>
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</thead>
<tbody>
<tr>
<td>El Toro Water District</td>
<td>ETWD</td>
<td><a href="http://etwd.com/">http://etwd.com/</a></td>
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<tr>
<td>Irvine Ranch Water District</td>
<td>IRWD</td>
<td><a href="http://www.irwd.com/">http://www.irwd.com/</a></td>
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<td>Laguna Beach County Water District</td>
<td>LBCWD</td>
<td><a href="http://www.lbcwd.org/">http://www.lbcwd.org/</a></td>
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<tr>
<td>Mesa Consolidated Water District</td>
<td>Mesa Water</td>
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<tr>
<td>Moulton-Niguel Water District</td>
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<tr>
<td>Santa Margarita Water District</td>
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<tr>
<td>Serrano Irrigation District</td>
<td>SWD</td>
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<tr>
<td>South Coast Water District</td>
<td>SCWD</td>
<td><a href="https://www.scwd.org/">https://www.scwd.org/</a></td>
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<tr>
<td>Trabuco Canyon Water District</td>
<td>TCWD</td>
<td><a href="http://www.tcwd.ca.gov/home">http://www.tcwd.ca.gov/home</a></td>
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<td>Yorba Linda Water District</td>
<td>YLWD</td>
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</tr>
<tr>
<td>CIMIS Stations</td>
<td></td>
<td><a href="http://www.cimis.water.ca.gov/Stations.aspx">http://www.cimis.water.ca.gov/Stations.aspx</a></td>
</tr>
</tbody>
</table>
ETWD - Rates effective Jul/2015; Water Budget PPH=4, GPD=55, DOS=30, WF =4.3, DF =0.5, ETAF =0.8, LA=4000
IRWD - Rates effective Jul/2015; Water Budget PPH=4, GPD=50, DOS=30, WF =4.3, DF =0, ETAF =0.75, LA=1300
LBCWD - Rates effective Nov/2015; Water Budget PPH=3, GPD=60, DOS=60, WF =4.3, DF =0.7, ETAF =0.8, LA=4000
Mesa Water - Rates effective Jan/2016; Uniform Rate
MNWD - Rates effective Jan/2016; Water Budget PPH=4, GPD=60, DOS=30, WF =4.3, DF =0, ETAF =0.7, LA=4000
SMWD - Rates effective Jan/2016; Water Budget PPH=4, GPD=55, DOS=30, WF =4.3, DF =0, ETAF =0.8, LA=4000
SWD - Rates effective Aug/2015; Uniform Rate
SCWD - Rates effective Jul/2016; Inclining Block, Peak demand charge included
TCWD - Rates effective Jan/2016; Inclining Block, Temp. revenue adjustment charge and Reliability charge included
YLWD - Rates effective Oct/2015; Uniform Rate

Abbreviations

PPH: Persons Per Household
GPD: Gallons Per Day
DOS: Days of Service
ETo: Evapotranspiration (inches of water)
DF: Drought Factor
ETAF: Evapotranspiration Adjustment Factor
LA: Landscape Area (sqf)
# Raftelis’ Population Survey

<table>
<thead>
<tr>
<th>Water District</th>
<th>Population</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>Mesa Water</td>
<td>107,588</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>IRWD</td>
<td>381,463</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>ETWD</td>
<td>48,797</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>MNWD</td>
<td>170,326</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>YLWD</td>
<td>75,773</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>SWD</td>
<td>6,464</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>LBCWD</td>
<td>19,225</td>
<td>UWMP - 2015</td>
</tr>
<tr>
<td>SCWD</td>
<td>35,004</td>
<td>UWMP – 2015</td>
</tr>
<tr>
<td>SMWD</td>
<td>156,176</td>
<td>CAFR - 2017</td>
</tr>
<tr>
<td>TCWD</td>
<td>12,712</td>
<td>UWMP - 2015</td>
</tr>
</tbody>
</table>
MWDOC decided to discontinue the “Orange County Water Suppliers - Water Rates & Financial Information” (aka. MWDOC Rate Survey) which was used to provide data on rates structure (incl. fixed vs commodity rates) and on population served by the water districts.

This hinders our ability to precisely report Expenditure Per Capita figures.

Slides 10, 11, 13 & 14: population by district in 2012-2015 is the same (last MWDOC survey as of Aug 2013). Population in 2016 is based on respective agencies’ 2015 UWMP