Pump Zone Charges
March 15, 2017
What is a Pump Zone?

A pump zone is a water distribution system that receives and stores water through the use of pumps, motors, pipelines and storage tanks to provide water service to customers within a specific geographical area at a certain elevation.
District Pump Zone Map

1 - North Twin Oaks
2 - Deer Springs
3 - Coggan
4 - Coronado Hills
5 - Wulff
6 - Palos Vista
7 - School House
8 - Double Peak
9 - Meadowlark
COSTS ASSOCIATED WITH PUMP ZONES

- Motors and Pumps
- Piping
- Storage reservoirs/tanks
- Operations & Maintenance Personnel
- Equipment replacement
- Electricity
Direction Requested

- What percentage of pump zone costs are we trying to capture through pump zone charges?
- How will those costs be spread across District customers?
- When should the new charges be effective?
HOW DO WE ALLOCATE THE COSTS?

• Overarching philosophy – Those customers that receive benefits of a service should pay for that service
• Customers at lower elevations may not need the pump operations that service the higher elevations
• Customers at lower elevations may receive some benefits from water stored at higher elevations
• Pumping water to customers at higher elevations requires more electricity than to those at lower elevations
• Pump zones serving a smaller number of customers have higher unit pumping costs due to fixed electricity charges
ASSUMPTIONS

• Capturing only electrical costs
  – Currently not capturing full amount (40%)
• Estimated electrical costs of pumping water is $413,500
• Pumping operations primarily at off-peak power rates
• Total water pumped to pump zones is 911,148 units/2,092 Acre-Feet/682 million gallons per year
  – One unit of water is 748 gallons
ALTERNATIVES CONSIDERED

- Current charge is the baseline – does not capture electricity costs
- Alternative A – Spread the pump zone electrical costs over all District customers, even those at lowest elevations
- Alternative B – Spread the pump zone electrical costs over all pump zone customers, regardless of elevation, amount of water pumped or number of customers
- Alternative C – Calculate pump zone costs by dividing pump zone power costs in a zone by the number of units of water pumped to that zone (January 18 method)
- Alternative D – Spread total pump zone electrical costs over pump zone customers, factoring in the elevation to which the water is pumped and the amount of water being pumped to that zone
- Alternative E – Similar to Alternative D, adding assumption that lower elevation customers receive a small amount of benefit (10% of electrical costs) by having water stored at higher elevations
### PUMP ZONE CHARGE ALTERNATIVES

<table>
<thead>
<tr>
<th>PUMP ZONE NAME</th>
<th># OF CUSTOMERS</th>
<th>Current Charge per Unit</th>
<th>Flat Cost per Unit Across District</th>
<th>Cost per Pump Zone Customer</th>
<th>Costs Within Pump Zone</th>
<th>Weighted Lift Volume Approach (WLVA)</th>
<th>WLVA with 10% General Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - North Twin Oaks - 1,330 HGL</td>
<td>127</td>
<td>$0.50</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.94</td>
<td>$0.31</td>
<td>$0.28</td>
</tr>
<tr>
<td>2 - Deer Springs - 1,234 HGL</td>
<td>58</td>
<td>$0.20</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.47</td>
<td>$0.22</td>
<td>$0.20</td>
</tr>
<tr>
<td>3 - Coggan - 1,608 HGL</td>
<td>25</td>
<td>$0.15</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.92</td>
<td>$0.56</td>
<td>$0.50</td>
</tr>
<tr>
<td>4 - Coronado Hills - 1,530 HGL</td>
<td>159</td>
<td>$0.06</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$1.24</td>
<td>$0.58</td>
<td>$0.53</td>
</tr>
<tr>
<td>5 - Wulff - 1,588 HGL</td>
<td>12</td>
<td>$0.58</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$1.02</td>
<td>$0.52</td>
<td>$0.47</td>
</tr>
<tr>
<td>6 - Palos Vista - 1,500 HGL</td>
<td>710</td>
<td>$0.25</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.42</td>
<td>$0.56</td>
<td>$0.50</td>
</tr>
<tr>
<td>7 - School House - 1,115 HGL</td>
<td>869</td>
<td>$0.01</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.12</td>
<td>$0.25</td>
<td>$0.22</td>
</tr>
<tr>
<td>8 - Double Peak - 1,530 HGL</td>
<td>797</td>
<td>$0.18</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.24</td>
<td>$0.62</td>
<td>$0.56</td>
</tr>
<tr>
<td>9 - Meadowlark - 815 HGL</td>
<td>125</td>
<td>$0.15</td>
<td>$0.07</td>
<td>$0.45</td>
<td>$0.38</td>
<td>$0.11</td>
<td>$0.10</td>
</tr>
</tbody>
</table>
Timing of Charges

• When should new charges be effective?
• Should the charges be phased over time?
  – If so, in how many phases?
  – How much time between phases?
Direction Requested

- What percentage of pump zone costs are we trying to capture through pump zone charges?
- How will those costs be spread across District customers?
- When should the new charges be effective?
Staff Recommendations

- Collect 100% of the pump zone electrical costs through pump zone charges
- Allocate the costs to the pump zone customers based on the Weighted Lift Volume Approach (Alternative D)
- Implement one-half of the change per zone effective April 1, 2017 and the remaining half effective at same time as new sewer rates and water Ready to Serve rates, expected to take effect on September 1, 2017
Direction Requested

• What percentage of pump zone costs are we trying to capture through pump zone charges?
• How will those costs be spread across District customers?
• When should the new charges be effective?
QUESTIONS?