Background and Context

- Feb. 2017 Ecology letter encouraging action on rural supply mitigation in Comp. Plan update
- Rural supply element added to updated Plan
- FutureWise challenged plan on rural water and a few other topics
- County working on FutureWise Settlement Agreement and Rural Water program
- Technical Team guiding County
Technical Study – Characterize Groundwater Conditions

- Yakima basin portion of Benton County (lower WRIA 37)
- Primarily water level focus
- Based on available info: USGS, Ecology, EIM, Benton County
- Does not include incorporated areas
- Work done by EA team now at GeoEngineers

Using Long Term Water Level Data

- Have a few dozen wells in the project area

Wells in Project Area

- Hundreds of permit exempt wells
- Predominantly rural residential

Declining Water Levels Normal

<table>
<thead>
<tr>
<th>Location ID</th>
<th>Well Tag</th>
<th>Year Interval of Data (Yr)</th>
<th>Date or Interval of Measurements</th>
<th>Percent Decline in Water Level</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

2/25/2019
Conclusions

- Alluvial is laterally restricted and low yield
- Most basalt wells with long-term data show declines
  - Less in shallow
    - Less high capacity pumping?
    - Higher potential recharge and surface connection?
  - More in deep
    - More high capacity pumping?
    - Lower potential recharge and surface connection?
Demand Forecast and Mitigation Estimates (2018 – 2038)
Approx. 18,800 population increase
6,961 Households (2.7 per household)

Growing for Entire Benton County

Table 1 - Potential Future Rural Population Growth by Land Use Category
(Table 3-7 in Comprehensive Plan)

<table>
<thead>
<tr>
<th>Land Use Category*</th>
<th>New Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>134</td>
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<tr>
<td>Rural Transition</td>
<td>1,142</td>
</tr>
<tr>
<td>Rural Remote</td>
<td>5,852</td>
</tr>
<tr>
<td>Rural Community Centers</td>
<td>34</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,961</strong></td>
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</tbody>
</table>

*Data represents all of rural Benton County.

Different requirements for western vs eastern part of County
Divided mitigation area into two parts and also within or outside irrigation district service area

Growth for Mitigation Area

Table 2 - Range of Projected Rural Residential Growth Rates

<table>
<thead>
<tr>
<th>County</th>
<th>Modified Project Area</th>
<th>Modified Project Area 29-yr Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Estimate*</td>
<td>205/VT</td>
<td>64/VT</td>
</tr>
<tr>
<td>High Estimate**</td>
<td>348/VT</td>
<td>109/VT**</td>
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<td></td>
<td></td>
<td>2176</td>
</tr>
</tbody>
</table>

* Rate based on 2013-2018 building permit data
** Rate based on County Comprehensive Plan
Assumes pattern of observed growth will not change (36.5% of total growth will occur in modified project area)

Projecting 64 to 109 new households per year

Washington Irrigation Guide

Table 3 - Prevue Turf Irrigation Requirements in inches (Appendix A, Washington Irrigation Guide, USDA, 1997)

<table>
<thead>
<tr>
<th>Station</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
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<td>0.75</td>
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<td>0</td>
<td>25.29</td>
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</tbody>
</table>
### Projected Water Use Values

**Table 5 - Total Household Water Use in Gallons per Day**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total Gallons</th>
<th>Total Acre Feet</th>
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</thead>
<tbody>
<tr>
<td>Indoor Only</td>
<td>365</td>
<td>365</td>
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<td>365</td>
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<td>4380</td>
<td>0.18</td>
</tr>
</tbody>
</table>

- **Indoor Only – Estimated 162 GPD/.18 AF**
- **Outdoor Varies by Location in Mitigation Area**

### Estimated Consumptive Use

**Table 6 - Total Household Consumptive Water Use in Gallons per Day**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
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<th>Apr</th>
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<th>Jul</th>
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</thead>
<tbody>
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<td>Indoor Only</td>
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</table>

- **Indoor Consumption – 20 percent**
- **Outdoor Consumption – 90 percent**

### Range for Mitigation: 2018 - 2038

**Table 7 - Estimated Consumptive Use (Acre-Feet)**

<table>
<thead>
<tr>
<th>Growth Rate</th>
<th>Indoor Only</th>
<th>Indoor + 1/12 Acre</th>
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</thead>
<tbody>
<tr>
<td>Low</td>
<td>2.30</td>
<td>9.26</td>
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<tr>
<td>High</td>
<td>3.91</td>
<td>15.37</td>
</tr>
</tbody>
</table>

- **Minimum Indoor – 46 AF**
- **Upper Amount – 307 AF**

### Securing Mitigation Water

- **75 AF of consumptive water acquired in October 2018 (former Boise-Cascade site in Yakima)**
- Ecology maintaining existing trust water right conditions (with seller) until County/Ecology Trust Water Right Agreement put in place
- County actively seeking to purchase other rights
Draft Program Elements

- Reserved mitigation water for households in mitigation area permitted between Feb 2018 and date program approved (summer 2019?)
- Mitigation Packages *(values subject to change)*
  - A = 200 GPD indoor with 675 GPD max
  - B = 200 GPD indoor + 100 GPD outdoor with 900 GPD max (for up to 1500 square feet for landscape area)
  - C = same as B except up to 250 GPD outdoor (up to 4000 square feet for landscape area)

Draft Program Elements

- Metering – costs for meter installation and annual maintenance cost
- Annual reporting
- County Commissioners to make final decision on all program elements

Status and Next Steps
**Status and Next Steps**

- Finalize FutureWise Settlement Agreement
- Continue outreach efforts
- Coordinate with Technical Team
- Internal county meetings and Board of County Commissioners workshops

**Status and Next Steps**

- Define other program elements in more detail
- Secure additional water rights
- Establish program by summer 2019

Additional Questions/Comments?