Roza Irrigation District Farmland

Mt. Rainier in the distance
Roza Irrigation District Farmland
Roza Irrigation District Overview

• 72,000 irrigated acres over 95 miles w/ 450 miles of canals.

• 80% high value perennial crops (tree fruit, hops, wine and juice grapes) with very high efficiency on-farm irrigation.

• 20% annual crops (silage corn, pasture, row crops) which support a large dairy industry.

• Total crop value of $1 billion +/- on mostly 2nd and 3rd generation family farms.

• **47% water supply in 2015**….**$77M in crop losses**

• Supply ranged from **35%** to **68%** in five prior drought years since 1992…
Roza Irrigation District Farmland

Apples and Pears
Yakima Basin Water Management

- Managed by Bureau of Reclamation
- Five reservoirs with 1 million acre-feet of capacity
  (average annual runoff 3.3 million acre-feet)
- Irrigation deliveries: 1.7 million acre-feet
- Snowpack is the “sixth reservoir”
Yakima River Basin Water Rights

Roza is 100% Proratable Water
Roza Irrigation District Farmland

Cherries and Nectarines
Unwatered Apple Trees Removed
Peach trees (Removed 2015)
Roza Water Conservation Projects

- $82 Million in total improvement costs since 1983.
  - $44 Million Roza dollars.
  - $38 Million Federal/State grants.

- 46,000 acre feet in reduced diversions annually, including 300+ miles of canal piped.

- $33 million in Roza funded improvements over the next 12 years to complete the lateral canal enclosure program to conserve 8,500 additional acre feet.

- $100M+ of grower funded on-farm efficiency and conservation measures (ponds, drip lines, sprinkler conversions, etc.)
## Roza Drought Response Measures

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Delivery Restrictions*</th>
<th>Shut Down(s)</th>
<th>Roza Pump backs</th>
<th>Leases</th>
<th>End season before Sept. 30</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Restrictions on some days</td>
</tr>
<tr>
<td>75%</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Possibly</td>
<td>Season ends early</td>
</tr>
<tr>
<td>70%</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Possibly</td>
<td>Possibly</td>
<td>Season ends early</td>
</tr>
<tr>
<td>65%</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Possibly</td>
<td>Yes-varies</td>
<td>Leases optional-varies</td>
</tr>
<tr>
<td>60%</td>
<td>Yes</td>
<td>Possibly</td>
<td>Yes</td>
<td>Possibly</td>
<td>Yes-varies</td>
<td>Leases optional-varies</td>
</tr>
<tr>
<td>55%</td>
<td>Yes</td>
<td>Probably</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-varies</td>
<td>6,500 AF from leases &amp; PB</td>
</tr>
<tr>
<td>50%</td>
<td>Yes</td>
<td>Yes (15+ days)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-varies</td>
<td>6,500 AF from leases &amp; PB</td>
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<tr>
<td>45%*</td>
<td>Yes</td>
<td>Yes (possibly 2)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-varies*</td>
<td>6,500 AF from leases &amp; PB</td>
</tr>
<tr>
<td>40%*</td>
<td>Yes</td>
<td>Yes (possibly 2)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-Aug. 30*</td>
<td>6,500 AF from leases &amp; PB</td>
</tr>
<tr>
<td>35%*</td>
<td>Yes</td>
<td>Yes -2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-Aug. 18*</td>
<td>6,500 AF from leases &amp; PB</td>
</tr>
<tr>
<td>30%*</td>
<td>Yes</td>
<td>Yes -2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes-Aug. 8*</td>
<td>18 day shutdowns</td>
</tr>
</tbody>
</table>
Roza Main Canal pumpbacks to recover canal seepage in four locations
Initial Development Phase (cont.)

• Kachess Drought Relief Pumping Plant ($205M)
  - Bull Trout Enhancement Plan
• Keechelus-to-Kachess Conveyance ($159M)
• 3 foot pool raise at Lake Cle Elum ($18M)
• Cle Elum Reservoir Fish Passage ($125M)
• Evaluate, design, construct second fish passage facility at Tieton Dam ($100M)
• Habitat and land acquisitions ($100M)
• Aquifer Storage and Recovery ($6M)
• Agricultural Conservation ($85M)
• Water Marketing ($0.5M)
Kachess Drought Relief Pumping Plant

Schematic Hydraulic Profile Showing Inactive Pool, Natural Lakes, Existing Kachess Dam & Reservoir, and Proposed KDRPP Drawdown

- **Kachess Dam (Post - 1910)**
- **Existing Gravity Outlet Works**
  - Elev. 2,192.75 ft
  - 239,000 AF of Water

- **Normal Full Pool Kachess Reservoir**
  - WSEL = 2,262 ft (Post - 1910)

- **Natural Lake**

- **Proposed KDRPP Drought Refill Pool**
  - WSEL = 2,110 ft
  - 200,000 AF of Water

- **Big Kachess Inactive Pool**
  - WSEL = 2,192.75 ft
  - 586,000 AF of Water

- **Little Kachess Inactive Pool**
  - WSEL = 2,220 ft
  - 57,000 AF of Water

- **Proposed Maximum Drawdown by KDRPP**
  - 82.75 ft

**WSEL = Water Surface Elevation**

Not to Scale
Takeaways

- Confront the brutal facts early
- Plan like crazy before the crisis hits but be flexible
- Relationships matter most when the chips are down!
- Continuity is priceless
- Communicate, communicate, communicate! (water users, media, internally, USBR/State)
- 2019 Could be worse…