OFFICE OF COLUMBIA RIVER

EMERGING TRENDS IN COST OF WATER IN OCR WATER SUPPLY DEVELOPMENT

PAG Meeting
Dan Haller and Rick Roeder

May 5, 2010
Includes multiple configurations of single projects.
Example 1: Columbia Basin Irrigation Districts Piping

• $1M OCR funding plus local match.
• 2,521 ac-ft of water savings.
• Approximately $400 per ac-ft.
• Savings to be used in the Odessa Subarea in 2011.
Example 2: Horse Heaven Hills Pre-Appraisal Study

Alder Reservoir

Switzler Reservoir
Example 2: Horse Heaven Hills Pre-Appraisal Study

<table>
<thead>
<tr>
<th></th>
<th>Alder</th>
<th>ASR</th>
<th>Switzler</th>
<th>All</th>
<th>Alder</th>
<th>ASR</th>
<th>Switzler</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ac-ft</td>
<td>55.8K</td>
<td>5K</td>
<td>44.4K</td>
<td>105.2K</td>
<td>55.8K</td>
<td>5K</td>
<td>44.4K</td>
<td>105.2K</td>
</tr>
<tr>
<td>Cost</td>
<td>$167.3M</td>
<td>$23.2M</td>
<td>$187.7M</td>
<td>$378.2M</td>
<td>$256.9M</td>
<td>$30M</td>
<td>$273M</td>
<td>$560M</td>
</tr>
<tr>
<td>$/ac-ft</td>
<td>$2,999</td>
<td>$4,636</td>
<td>$4,228</td>
<td>$3,595</td>
<td>$4,604</td>
<td>$6,006</td>
<td>$6,150</td>
<td>$5,323</td>
</tr>
<tr>
<td>ALTC*</td>
<td>$12.9M</td>
<td>$2.7M</td>
<td>$14M</td>
<td>$29.6M</td>
<td>$18.8M</td>
<td>$3.2M</td>
<td>$19.7M</td>
<td>$41.7M</td>
</tr>
<tr>
<td>ALTC/ac-ft</td>
<td>$232</td>
<td>$538</td>
<td>$316</td>
<td>$282</td>
<td>$632</td>
<td>$443</td>
<td>$396</td>
<td>$396</td>
</tr>
</tbody>
</table>

*Annual Long Term Costs = O&M + pumping power costs + amortized annual cost
Example 3: Foster CD Pre-Appraisal Study

**Upper Rock Island**
- $1.3B
- 65,900 ac-ft
- $20,200/ac-ft

**Lower Rock Island**
- $864M
- 85,300 ac-ft
- $10,130/ac-ft

**Foster Coulee**
- $692M
- 69,700 ac-ft
- $9,900/ac-ft
### Example 4: Mill Creek Storage

<table>
<thead>
<tr>
<th>Alt.</th>
<th>Type</th>
<th>Height</th>
<th>ac/ft</th>
<th>Cost</th>
<th>$/ac-ft</th>
<th>Production*</th>
<th>Revenue**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alt. #1</td>
<td>Earthen</td>
<td>118’</td>
<td>1,400</td>
<td>$62.5M</td>
<td>$44,700</td>
<td>1.2M kWh</td>
<td>$61,200</td>
</tr>
<tr>
<td>Alt. #2</td>
<td>Earthen</td>
<td>68’</td>
<td>200</td>
<td>$37.7M</td>
<td>$188,600</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Alt. #3</td>
<td>Concrete</td>
<td>118’</td>
<td>1,900</td>
<td>$36.2M</td>
<td>$19,100</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Alt. #4</td>
<td>Concrete</td>
<td>68’</td>
<td>400</td>
<td>$15.3M</td>
<td>$38,300</td>
<td>686,400 kWh</td>
<td>$34,300</td>
</tr>
</tbody>
</table>

*Mean

**Wholesale price: $0.05/kWh
Policy Issues: How does the cost of water supply development affect funding choices?

- Funding amongst types of projects (surface vs. ASR storage, mainstem vs. tributary investments).
- Coordination with 2011 WSU demand study, areas of high or low demand.
- At what price do we put projects “on hold” and investigate other options?
2010-2011 Projects

- Foster Creek Storage Study
  - $93,750

- Peshastin Pipeline Construction
  - $325,000

- TU, Pioneer Pipeline Construction
  - $1,100,000

- Horse Heaven Hills Study
  - $300,000

- Sullivan Lake Reoperation
  - $7.5 M to $14M

- Chelan PUD
  - $500,000 (Rocky Reach EIS)
  - $200,000 (Pump Storage Study)

- Col. Basin ID Piping Construction
  - $1M-$3M

- KID Kiona/Red Mountain Studies, Construction
  - $10.5M

- SRB/Tribal Fisheries
  - $1M (region-wide)

- Walla² Pump Exchange Construction
  - $2M-$3M ($40M Total)

- SRB/Tribal Fisheries
  - $1M (region-wide)