LIFE DEPENDS ON WATER, WE DEPEND ON YOU.
Irreplaceable Region
Local Definition of Success:

- **USE OF:**
  - 150,000 (500 cfs) – Acre-Feet (500 CFS = .0025% of average daily flow, or .004% at low flow) of Columbia River water.
    - Negotiated down to 180 cfs for first phase due to mitigation water right totals

- **AND:**
  - Infrastructure penetrating our four critical groundwater areas
    - The designs are done!

- **WHICH WILL:**
  - Give large and small acreage owners a chance to make a difference
  - Encourage innovation and entrepreneurship
  - Generate billions in economic activity and thousands of local and regional jobs (all sectors)
  - Take pressures off of over-appropriated groundwater and Columbia River tributaries
  - Guarantee commitment to and access to future long-term main-stem projects
  - Build a customer base for regional partnerships in NE Oregon
The Vision
PROJECT STEPS

1\textsuperscript{st} Biennium (2015-2017): Water rights and infrastructure
- Facilitates economic benefit
- Facilitates environmental benefit
- Facilitates social benefit if protections are established to prevent speculation and splinter efforts

2\textsuperscript{nd} Biennium: Permanent Mitigation Program and Basalt Relief/Bank (May need a work group)
- This is the true social benefit

3\textsuperscript{rd} Biennium: A storage project (Juniper Dam study, etc.)
What we mean by Geographically Limited and Irreplaceable

LITERALLY: THE BEST HIGH-VALUE AG IN THE WORLD

- WATER LIFT
- WEATHER
- EXISTING SYSTEMS
- TERRAIN
- PROCESSING
- ALTERNATIVE FUEL NEEDS

VALUE OF WATER

“From Dry to Fry”

- Dryland wheat - $100
  - 40 bushel fallow wheat
- 1st Acre Foot - $500
  - 100 bushel irrigated wheat
- 2nd Acre Foot - $1,500
  - Hay, Some vegetables, grass seeds, etc.
- 3rd Acre Foot - $5,000+
  - High value root crops
  - Full Rotation
OBC and State Leadership Recognize the Value of High-Value Irrigated Agriculture

THE CASE: The "Ag-Base" that Supports Job Creation and Innovation

Geographically limited: Existing acreage and "in-fill" growth

The POTENTIAL: Jobs, Funds, Future (Source: Bruce Sorte, OSU)

<table>
<thead>
<tr>
<th>Type of Effect</th>
<th>Employment Full &amp; Part-Time</th>
<th>Labor Income ($)</th>
<th>Total Value Added ($)</th>
<th>Output ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct (Manufacturer)</td>
<td>5,989</td>
<td>158,052,082</td>
<td>225,015,545</td>
<td>1,063,288,422</td>
</tr>
<tr>
<td>Indirect (Suppliers)</td>
<td>3,054</td>
<td>99,471,765</td>
<td>173,184,004</td>
<td>357,002,946</td>
</tr>
<tr>
<td>Induced (Household Spending)</td>
<td>1,209</td>
<td>37,182,718</td>
<td>75,567,449</td>
<td>124,808,178</td>
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<tr>
<td>Total Effect</td>
<td>10,252</td>
<td>294,706,566</td>
<td>473,766,999</td>
<td>1,545,099,547</td>
</tr>
</tbody>
</table>
RAW PRODUCT AND A 20 MINUTE DRIVE
EXAMPLE 1: SWEET CORN - AN OREGON STAPLE

125 ACRES = $120,000 = $3.2 MILLION

<table>
<thead>
<tr>
<th>#</th>
<th>SUPPLY CHAIN</th>
<th>PRICE UNIT</th>
<th>$/UNIT</th>
<th>%</th>
<th>TONS</th>
<th>POUNDS</th>
<th>OUNCES</th>
<th>$</th>
<th>TONS</th>
<th>POUNDS</th>
<th>OUNCES</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farm</td>
<td>Harvested Corn</td>
<td>Ton</td>
<td>$ 95.00</td>
<td>1.00</td>
<td>20,000</td>
<td>320,000</td>
<td>1,250.00</td>
<td>2,500,000</td>
<td>40,000,000</td>
<td>120,000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Farm</td>
<td>Usable Corn</td>
<td>Ton</td>
<td>$ 105.56</td>
<td>9.00</td>
<td>18,000</td>
<td>288,000</td>
<td>$ 950</td>
<td>1,125.00</td>
<td>2,250,000</td>
<td>36,000,000</td>
<td>$ 118,750</td>
</tr>
<tr>
<td>3</td>
<td>Processor</td>
<td>Bulk Finished</td>
<td>Pound</td>
<td>$ 0.30</td>
<td>60%</td>
<td>5.40</td>
<td>172,800</td>
<td>$ 3,240</td>
<td>675.00</td>
<td>1,350,000</td>
<td>21,600,000</td>
<td>$ 405,000</td>
</tr>
<tr>
<td>4</td>
<td>Repackage Facility</td>
<td>Packaged Finished</td>
<td>Pound</td>
<td>$ 0.10</td>
<td>100%</td>
<td>5.40</td>
<td>172,800</td>
<td>$ 1,080</td>
<td>675.00</td>
<td>1,350,000</td>
<td>21,600,000</td>
<td>$ 135,000</td>
</tr>
<tr>
<td>5</td>
<td>Retail</td>
<td>Store Sales</td>
<td>Ounce</td>
<td>$ 0.15</td>
<td>100%</td>
<td>5.40</td>
<td>172,800</td>
<td>$ 25,920</td>
<td>675.00</td>
<td>1,350,000</td>
<td>21,600,000</td>
<td>$ 3,240,000</td>
</tr>
</tbody>
</table>
## RAW PRODUCT - CARROTS

### EXAMPLE 2: OREGON’S OTHER ORANGE POWERHOUSE

125 ACRES = $475,000 = $8.6 MILLION

<table>
<thead>
<tr>
<th>#</th>
<th>SUPPLY CHAIN</th>
<th>PRICE UNIT</th>
<th>PRICE UNIT</th>
<th>$/UNIT</th>
<th>%</th>
<th>TONS</th>
<th>POUNDS</th>
<th>OUNCES</th>
<th>$</th>
<th>TONS</th>
<th>POUNDS</th>
<th>OUNCES</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farm</td>
<td>Harvested Carrots</td>
<td>Ton</td>
<td>95.00</td>
<td></td>
<td>40.00</td>
<td>80,000</td>
<td>1,280,000</td>
<td>3,800</td>
<td>5,000.00</td>
<td>10,000,000</td>
<td>160,000,000</td>
<td>475,000</td>
</tr>
<tr>
<td>2</td>
<td>Farm</td>
<td>Usable Carrots</td>
<td>Ton</td>
<td>105.56</td>
<td>90%</td>
<td>36.00</td>
<td>72,000</td>
<td>1,152,000</td>
<td>3,800</td>
<td>4,500.00</td>
<td>9,000,000</td>
<td>144,000,000</td>
<td>475,000</td>
</tr>
<tr>
<td>3</td>
<td>Processor</td>
<td>Finished Product</td>
<td>Pound</td>
<td>0.35</td>
<td>60%</td>
<td>21.60</td>
<td>43,200</td>
<td>691,200</td>
<td>15,120</td>
<td>2,700.00</td>
<td>5,400,000</td>
<td>86,400,000</td>
<td>1,890,000</td>
</tr>
<tr>
<td>4</td>
<td>Repackage Facility</td>
<td>Packaged Finished</td>
<td>Pound</td>
<td>0.10</td>
<td>100%</td>
<td>21.60</td>
<td>43,200</td>
<td>691,200</td>
<td>4,320</td>
<td>2,700.00</td>
<td>5,400,000</td>
<td>86,400,000</td>
<td>540,000</td>
</tr>
<tr>
<td>5</td>
<td>Retail</td>
<td>Store Sales</td>
<td>Ounce</td>
<td>0.10</td>
<td>100%</td>
<td>21.60</td>
<td>43,200</td>
<td>691,200</td>
<td>69,120</td>
<td>2,700.00</td>
<td>5,400,000</td>
<td>86,400,000</td>
<td>8,640,000</td>
</tr>
</tbody>
</table>
### Example 3: Paradise for Potatoes

**Table: Supply Chain Price Unit**

<table>
<thead>
<tr>
<th>#</th>
<th>Supply Chain</th>
<th>Price Unit</th>
<th>Price Unit $/Unit</th>
<th>%</th>
<th>Tons</th>
<th>Pounds</th>
<th>Ounces</th>
<th>$</th>
<th>Tons</th>
<th>Pounds</th>
<th>Ounces</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Farm</td>
<td>Harvested Potatoes</td>
<td>Ton</td>
<td>$150.00</td>
<td>40.00</td>
<td>80,000</td>
<td>1,280,000</td>
<td>$1,280</td>
<td>5,000.00</td>
<td>10,000,000</td>
<td>160,000,000</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Farm</td>
<td>Usable Potatoes</td>
<td>Ton</td>
<td>$176.47</td>
<td>34.00</td>
<td>68,000</td>
<td>1,088,000</td>
<td>$6,000</td>
<td>4,250.00</td>
<td>8,500,000</td>
<td>136,000,000</td>
<td>$750,000</td>
</tr>
<tr>
<td>3</td>
<td>Processor</td>
<td>Finished Product</td>
<td>Pound</td>
<td>$0.35</td>
<td>20.40</td>
<td>40,800</td>
<td>652,800</td>
<td>$14,280</td>
<td>2,550.00</td>
<td>5,100,000</td>
<td>81,600,000</td>
<td>$1,785,000</td>
</tr>
<tr>
<td>4</td>
<td>Retail</td>
<td>Store Sales</td>
<td>Ounce</td>
<td>$0.30</td>
<td>20.40</td>
<td>40,800</td>
<td>652,800</td>
<td>$195,840</td>
<td>2,550.00</td>
<td>5,100,000</td>
<td>81,600,000</td>
<td>$24,480,000</td>
</tr>
</tbody>
</table>

**Total: 125 Acres = $750,000 = $24 Million**

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**Diagram:**

1. **Farm:** Harvesting Potatoes
2. **Processor:** Processing Potatoes
3. **Retail:** Selling Potatoes

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**Image:**

- Tractor harvesting potatoes
- Potatoes being processed into chips
- French fries in a McDonald's container
THE ROTATION

1. Potatoes
2. Grass/Wheat/Feed
3. Grass/Wheat/Feed
4. Onions/Carrots/Other Root Crop
5. Double Crop/Other Vegetable

VALUE ADDED, PROCESSING, INTEGRATION

1. Potato Plant: $300 million, 10,000 acres = $30,000/acre
2. Grass Plant: $25 million, 10,000 acres = $2,500/acre
3. Dairies & Milk Proc.: $50 million, 10,000 acres = $5,000/acre+
4. Onion Pack & Proc.: $50 million, 10,000 acres = $5,000/acre
5. Vegetable Plant: $100 million, 10,000 acres = $10,000/acre
The Full Project Return (Using 2006 Figures to be Conservative)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Total</td>
<td>Direct</td>
</tr>
<tr>
<td>SSRD 1 – Options 2&amp;3</td>
<td>$80,635,422</td>
<td>$116,265,246</td>
<td>$12,573,426</td>
</tr>
<tr>
<td>SSRD 1 – Option 1</td>
<td>$144,770,763</td>
<td>$208,720,310</td>
<td>$22,656,434</td>
</tr>
<tr>
<td><strong>Full Project</strong></td>
<td><strong>$239,020,310</strong></td>
<td><strong>$344,264,806</strong></td>
<td><strong>$37,346,288</strong></td>
</tr>
</tbody>
</table>

* Labor income consists of employee compensation plus proprietor’s income.

- At 5% expect a direct income tax stream of no less than $3.5 million annually
- Local property tax on land value increase alone is no less than $1.5 million annually
### Costs of Water: What Works

<table>
<thead>
<tr>
<th></th>
<th>$500</th>
<th>$550</th>
<th>$600</th>
<th>$650</th>
<th>$700</th>
<th>$750</th>
<th>$800</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Rent</strong></td>
<td>$500</td>
<td>$550</td>
<td>$600</td>
<td>$650</td>
<td>$700</td>
<td>$750</td>
<td>$800</td>
</tr>
<tr>
<td><strong>Return on Land - 3%</strong></td>
<td>$(250)</td>
<td>$(250)</td>
<td>$(250)</td>
<td>$(250)</td>
<td>$(250)</td>
<td>$(250)</td>
<td>$(250)</td>
</tr>
<tr>
<td><strong>$ Available for Water</strong></td>
<td>$225</td>
<td>$275</td>
<td>$325</td>
<td>$375</td>
<td>$425</td>
<td>$475</td>
<td>$525</td>
</tr>
<tr>
<td><strong>Acre Feet</strong></td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>$/Acre Foot</strong></td>
<td>$75</td>
<td>$92</td>
<td>$108</td>
<td>$125</td>
<td>$142</td>
<td>$158</td>
<td>$175</td>
</tr>
</tbody>
</table>

+/- $125/AF target:

Three inputs: Cap EX, O&M, Mitigation (New Territory)
THE PROJECT COST

1. Central Project
   - Total Phase I Project Cost: $14 million ($1,750/af)
     • $4 million of $11 million targeted to Central Project
     • Landowners to commit $10 million in equity and debt service
     • State investment: 28% of Project cost
   - Phase II (Aquifer Recharge & Recovery) Cost: $10 million

2. East Project
   - Total Phase I Project Cost: $46 million ($1,486/af)
     • $7 million of $11 million targeted to East Project
     • Landowners to commit $39 million in equity and debt service
     • State investment: 15% of Project Cost

3. West Project
   - Total Phase I Project Cost: $35 million ($803/af)
     • Not enough earmarked funding for West Project (i.e. $11 million only helped with 2 of 3)
     • Sought $10 million from SB 839 grant program (Denied in May)
     • Port of Morrow forced to abandon freshwater component
     • West Project status unknown

Return on Investment: 3,000 jobs and $600 million in increased business activity (Port of Morrow and 2008 SB 1069 economic study), $114 million additional assessed property values (Umatilla County)
Water 2.0 (Our Needs)

• Development of Permanent Upper Columbia Mitigation Program
  – Mainstem Mitigation Credit program above John Day Dam

• Umatilla Basin “Basalt Bank”
  – Need a work group to develop basalt banking rules in the CGA’s of the Umatilla Basin

• Targeted Water Supply Infrastructure Funding
  – Note: The upper Columbia/Snake, Willamette, Deschutes and Klamath basins may be too large in scale and return to fit within the 839 program
The New Business of Water Infrastructure
“Assessing the Multiple Benefits of a Water Molecule and the Value-Multipliers that lead to successful project funding”

Funding Gap between baseline and desired project

Baseline Conditions → Primary direct Economic benefit → Ecological and Fish Benefit → Any Secondary direct economic benefits → Project Cost(s)

State Investment based on statewide return

Funding Gap to be filled for project to commence

Map of Oregon with labeled regions.
Notes from Washington

- WA has Water Resource Inventory Areas for all watersheds (statewide planning and funding for all watersheds)

- WA has a targeted infrastructure investment program for the Columbia and its major tributaries (Looking for reauthorization this year)
  - Seeded with $200 million in multiple bond sale investments
  - Legislative mandates on targets for the funds
  - Requirement for annual progress reports on legislative directives due to size and scale of projects
Question: Could the same model work in Oregon?

• SB 839 program for all watersheds in the State (efficiency improvements, small storage and recharge projects)
  – Projects that don’t generate “sticker shock”
  – Note: Some question duplication of water development programs (IFA, OWEB, SB 839)

• Targeted investment program for large main-stem basins (Deschutes, Willamette, Klamath, Upper Columbia)
  – Legislative directives and funding for the basins (i.e. a chunk of change with clarity on the intended results)
  – Ability to utilize accounts to build up funding for large projects (multi-bienieum investment account)
**Take Away:**

- **Mitigation is doable with partnerships and access**
  - Without partnerships mitigation is cost prohibitive
  - Without a regional program there is no access to mitigation credits and, therefore, no deals to be made

- **Oregon, as the downstream state, can either be a litigator or a partner**

- **Broad market based mitigation opens the door to speculation. Oregon will lose in a speculative market**
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