Market-Based Reallocation of Water Resources

Yakima River Basin Study Task 4.12

November 19, 2010
Market Reallocation Element

- One element of the Integrated Plan
- Legislative and funding proposals to create a flexible water market system
- Based on concepts developed in Ecology’s 2009 EIS
- Barriers to flexible markets identified:
  - Inefficiencies in transfer process
  - Lack of knowledge about availability of water, water prices, etc.
  - Limited ability to transfer water out of irrigation districts
Purpose of Market Reallocation

- Increase flexibility for voluntary reallocation of water
- Reduce delays and costs of transactions to reallocate water
- Incorporate consideration of third-party impacts
- Short-term and long-term options
Short-term Proposal

- Evaluate ways to make processing water rights transfers more efficient
- Amend the “Hillis Rule” to designate water rights transfers in a market or bank system as eligible for priority processing
- Allow the issuance of temporary or seasonal transfers while a permanent transfer is being processed
Short-term Proposal

- Allow a private entity to administer water markets by serving as an information clearinghouse and broker
- Enact legislation to protect water rights in a bank from relinquishment (if outside TWRP)
- Evaluate ways to expand water banking opportunities, expanding on the water bank in upper Kittitas County
Long-term Proposal

- Allow an irrigation district to fallow some of its land and lease water rights outside the district
- Similar to “Super Ditch” in Colorado
- Requires changes to state and Reclamation law
How Will Changes Affect Water Market Activity?

- Impossible to accurately predict
- Cannot account for all factors influencing willingness of buyers and sellers to participate
  - Crop prices and types
  - Availability of water
  - Socio-economics
How Will Changes Affect Water Market Activity?

- Based on trends in Yakima basin and other areas, if transfers are made more efficient, number and type of transfers will increase.
- However, water marketing is not a reliable source of water.
Economic Analysis

- Objective
- Background & Key Assumptions
- Baseline Scenario (Future Without Integrated Plan)
- Market-Based Element in Isolation
- Complementing Other Elements of the Plan
Objective

- Objective: estimate the potential for market-based reallocation of water to offset irrigation-related economic losses from future severe drought conditions within the Yakima Project
Background

- Anticipate permanent transfers
  - Mitigation for post-1905 residential, M/I use: <50,000 AF
  - Environmental purposes: ~5,000 AF
  - Ag-ag purchases: ~2,000 AF
- Update/expand model from PNW National Lab
- Economic indicator: potential gain in annual net farm earnings (crop receipts minus variable costs)
- Respond to comments from Out-of-Stream Subcommittee
Key Assumptions

- Severe drought: 40% of proratable entitlement
- Current crop mix, irrigation requirements, prices, costs
- 30,000 AF baseline trading during severe drought
- Intra-district trading for Tieton and Wapato; intra- and inter-district trading for Roza, Kittitas, and Sunnyside
- Constraint on crops receiving water
- Constraint on out-of-district leases to no more than 10% of supply
## Potential Effects: Baseline

<table>
<thead>
<tr>
<th></th>
<th>Water Traded (acre-feet)</th>
<th>Annual Net Farm Earnings ($mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inter-District</td>
<td>Intra-District</td>
</tr>
<tr>
<td>Avg. Non-Drought</td>
<td>Zero</td>
<td>Zero</td>
</tr>
<tr>
<td>Severe Drought</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Trading</td>
<td>Zero</td>
<td>Zero</td>
</tr>
<tr>
<td>Baseline Trading</td>
<td>30,000</td>
<td>Zero</td>
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</tbody>
</table>
### Potential Effects: Market-Based Element Only

<table>
<thead>
<tr>
<th></th>
<th>Water Traded (acre-feet)</th>
<th>Annual Net Farm Earnings ($mil)</th>
<th>Loss from Drought</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inter-District</td>
<td>Intra-District</td>
<td>Total</td>
</tr>
<tr>
<td>Core Scenario&lt;sup&gt;a&lt;/sup&gt;</td>
<td>50,000</td>
<td>130,000</td>
<td>$260</td>
</tr>
<tr>
<td>Alternative Scenarios&lt;sup&gt;b&lt;/sup&gt;</td>
<td>50,000 – 110,000</td>
<td>90,000 – 230,000</td>
<td>$260 – $270</td>
</tr>
</tbody>
</table>

<sup>a</sup> Buyers lease water only for crops with net farm earnings at least $150/AF; out-of-district sales no more than 10% of each district’s water supply for Roza, Kittitas, and Sunnyside.

<sup>b</sup> Tighter constraints: at least $300/AF; looser constraints: all crops can trade.
### Potential Effects: Complement Other Elements

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<th>Water Traded (acre-feet)</th>
<th>Annual Net Farm Earnings ($mil)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inter-District</td>
<td>Intra-District</td>
</tr>
<tr>
<td>w/o the Market-Based Element</td>
<td>30,000</td>
<td>Zero</td>
</tr>
<tr>
<td>With the Market-Based Element</td>
<td>60,000</td>
<td>60,000</td>
</tr>
</tbody>
</table>
Next Steps

- Finalize and distribute technical memorandum

Disclaimer

- Modeling represents estimate of water that would be transferred given the assumptions used. It is not intended to predict actual transfers.