Oregon Irrigators Meeting

March 30, 2012

Presented By
Derek Sandison
Office of Columbia River
Columbia River Basin Water Management (Development) Act - 2006

- Ecology directed to aggressively pursue development of new water supplies for both instream and out-of-stream uses

- Significant investment in new storage and conservation
  - Capital: authorization for bonds of up to $200 million
  - Operating: $2.1 million and 15 FTEs

- 2/3 of funds for study & construction of new storage & pump exchanges
  - 1/3 of new storage for improving streamflows to benefit fish
  - 2/3 of new storage for new out-of-stream uses

- 1/3 of funds for all other water supply projects

- Legislative reporting on water supply and demand forecasts
Water Supply Development Account Uses

- Assess, plan, and develop new storage
- Improve or alter existing storage facilities
- Implement conservation projects
- Any other actions to provide access to new water supplies (e.g., acquisitions, leases, marketing)
RCW 90.90 – Statutory Focus

- Alternatives to groundwater for agricultural users in the Odessa subarea aquifer
- Sources of water supply for pending water right applications
- New uninterruptible supply of water for interruptible water right holders
- New municipal, domestic, industrial and irrigation water needs in basin
- Water for instream purposes
Accomplishments

• Developed about 100,000 acre-feet of water for agricultural, municipal and industrial uses.

• More than 50,000 acre-feet of water to support stream flows for fish in the Columbia River and tributaries.

• A dozen new M&I water rights issued December 2011

• Permits for the balance of the M&I water (about 80) will be issued in 2012 - benefit cities like Bridgeport, Pasco, Kennewick, Richland and West Richland.
Office of Columbia River

Water Development Progress - 2011

Developed

- Barker Ranch: 6,436 ac-ft
- Columbia Basin Irrigation District Piping: 5,450 ac-ft
- Donations: 6,066 ac-ft
- Lake Roosevelt: 132,500 ac-ft
- Potholes Supplemental Feed Route (conveyance)
- Okanogan Water Right Acquisition: 79 ac-ft

Near Term Development (2011-2015)

- Boise Cascade ASR: 1,657 ac-ft
- Columbia Basin I.D.: 5,337 ac-ft
- Conservation Commission I.E.: TBD
- 508.14 Rule Change: TBD
- Kennewick ASR: 318+ ac-ft
- Lower Wenatchee: 1,493 ac-ft
- Manashtash: 454 ac-ft
- Odessa Subarea: 164,000 ac-ft
- Peshastin I.D.: Piping: 360 ac-ft
- Red Mountain: 20,423 ac-ft
- Okanogan Water Right Acquisition: 958 ac-ft
- SRB & Tribal Fisheries: TBD
- Sullivan Lake: 14,000 ac-ft
- White Salmon ASR: 145 ac-ft
- Weber Siphon (conveyance)

Long Term Development (2016+)

- Aquifer Storage & Recovery Exploration: TBD
- Chelan PUD Pump Storage: 50,000 ac-ft
- Conservation Commission Retiming: TBD
- Foster C.D. Moses Coulee S.A.R.: TBD
- Goose Lake & 9 Mile Flat Storage: 4,750,000 ac-ft
- Klickitat County Horse Heaven Hills: 105,000 ac-ft
- Lincoln CD Passive Rehydration: 300,000 ac-ft
- Mill Creek Storage: between 2000-11,000 ac ft
- Peshastin Pump Exchange: TBD
- Spokane-Rathdrum Prairie A.S.R.: TBD
- Walla Walla Pump Exchange: 30,000 ac-ft
- Yakima River Water Enhancement: 450,000 ac-ft

rev. 12.5.11
The pie chart shows the current appropriation of funds from the Columbia River Account. Under RCW 90.90.010(2)(b), two-thirds of the account must be spent on storage & pump exchanges, and one third for “other purposes.” The pie slices in the circle reflect the allocated and unobligated funds. The pie will grow in coming years as cost-recovery of water supply projects occurs.
<table>
<thead>
<tr>
<th>Demand Type</th>
<th>Estimated Volume (ac-ft)</th>
<th>Source</th>
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<tbody>
<tr>
<td>2030 Irrigation Demand (new irrigation, Odessa replacement, Yakima Basin supply, and Columbia River interruptibles)</td>
<td>800,000 – 1.1 Million</td>
<td>WSU Integrated Model, Odessa EIS, Yakima EIS, and Ecology 2001 Drought Database</td>
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<td>2030 New Municipal Demand (including municipally-supplied commercial and self-supplied domestic)</td>
<td>108,500</td>
<td>WSU Integrated Model</td>
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<td>Unmet Columbia River Instream Flows</td>
<td>13,400,000</td>
<td>Ecology data, McNary Dam, 2001 drought year</td>
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<td>Unmet Tributary Instream Flows</td>
<td>500,000</td>
<td>Ecology Data, tributaries with adopted instream flows, 2001 drought year</td>
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<td>2030 New Hydropower Demand</td>
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<td>WSU Surveys and Planning Forecast Review</td>
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Approach to Finding Alternatives to Groundwater for Odessa

- Supplemental Feed Route and Other Infrastructure Upgrades
- Lake Roosevelt Incremental Storage Releases
- Coordinated Conservation Plan
- Odessa Subarea Special Study
  - Banks Lake Re-Operation
Aquifer Decline
Potholes Supplemental Feed Route

- Frenchman Hills Wasteway
  - Additional Capacity
    - 25,000 acre-feet

- Crab Creek
  - Annual Capacity
    - 100/500 cfs
    - 126,000 acre-feet
  - Spring Flow Capacity
    - 500 cfs
    - 54,000 acre-feet
Potholes Supplemental Feed Route

- Road C
- Brook Lake
  - 4x4 gate and outlet
- Road 16
- Acquisition
  - 64 Landowners
  - 123 Parcels
30,000 Acre-Feet of Water for the Odessa Subarea

- First large block of surface water for ground water replacement
- Weber Siphon under construction. It will allow the delivery of 21,000 acre-feet to the southern portion of the Odessa Subarea
## Coordinated Conservation

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<th>Type</th>
<th>Length (ft)</th>
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<td>Quincy District</td>
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Odessa Subarea Special Study
Purpose and Need

- Replace current groundwater irrigation in Odessa Subarea with surface water
- Avoid economic loss and address declining groundwater for agriculture & other uses
- Fulfill obligation made by Reclamation and Ecology in the Columbia River MOU
• Deliver water up to 70,000 acres
• 164,000 acre-foot diversion from Columbia River
• Maximize use of existing infrastructure
• Provides replacement water both north and south of I-90
• Would allow phased construction
Water Supply Options

- Rocky Coulee Reservoir (new)
- Banks Lake Drawdown
- Lake Roosevelt
Sullivan Lake Reoperation

- OCR agreement with Pend Oreille County PUD to convert former hydropower facility to water supply operation.
- Creates 14,000 ac-ft of additional supply in NE counties.
  - 9,333 ac-ft for out-of-stream uses (at least 50% for municipals)
  - 4,667 ac-ft for instream uses
- $14M=$1,000 per ac-ft
Red Mountain AVA Pump Project

The Project
Move Kennewick Irrigation District (KID) Diversion on the Yakima River 20 miles downstream from Prosser to Kiona.

Expected Outcomes
- Increased water supply will allow for additional 1,785 acres of wine grape vineyards to be planted.
- An additional 11,005 ac-ft of water will be added to Yakima River stream flows.

Timeline

- Cost – $10.595 Million
- Economic Benefits – $9.2 Million Annually
  – 103 jobs added
- Environmental Benefits – 11,005 ac-ft of water added to a low-flowing stretch of the Yakima River (between Prosser and Benton City)
  – 1,200 ac-ft of shrub steppe habitat protected
- Community Benefits – 1,785 acres of new irrigation
- Quote
"It benefits the wine, the fish, the state, the landowners out there and our ratepayers," said Scott Revell, planning manager for KID.
Yakima River Integrated Water Resource Management Plan

- Basin size = 6,155 sq. miles
- Irrigated cropland = 500,000 acres
- Avg. runoff = 3.3 MAF, Reservoirs store 1.0 MAF Deliveries = 1.7 MAF
Yakima Basin Background

- Surface water over-appropriated
- Proratable irrigation districts reduced to as little as 37% of allotments
- Instream flows greatly reduced by out-of-stream diversions
- Climate change effects – less snow, more rapid runoff
Yakima Basin Background

- Historic fish runs 300,000 to 960,000 anadromous fish
- 1981-1990 average fish runs 8,000
- Native sockeye, summer Chinook extirpated
- Spring and fall Chinook and coho seriously reduced
- Steelhead ESA Threatened species
- Bull trout ESA Threatened species
Climate Change Forecast

2040 Projected Climate Change Impact on Summer Flows by WRIA

Legend:
- Green: Low impact on summer low flows
- Orange: Significant impact on summer low flows
- Red: Severe impact on summer low flows
- Purple: Signifies one of the 16 critical basins (basins with a current shortage of water for fish)
Yakima River Basin Water Supply Efforts

1979
YRBWEP Feasibility Study Authorization

YRBWEP Phase I: Fish Screens & Ladders

YRBWEP Phase II: Conservation & Instream Flows

Storage Study EIS

Ecology EIS

YRBWEP Workgroup Involvement

Work Group Basin Study Integrated Plan
**YRBWEP Workgroup Members**

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<td>Roza Irrigation District</td>
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<td>Bureau of Reclamation</td>
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Yakima Basin Integrated Plan Elements

- **Water Supply**
  - Market driven reallocation of water
  - Enhanced conservation
  - Surface storage
  - Aquifer storage (passive and active recovery)

- **System operation modifications**

- **Watershed/fish habitat improvements**

- **Fish passage**
Yakima River Basin Integrated Water Resource Management Plan

Market Reallocation Element

Near-term effort
- Build on existing water market programs
- Take steps to reduce barriers

Longer-term effort
- Focus on water transfers between districts
- Allow fallowing within district; leases to outside district
- Requires substantial changes to existing laws/policies
Yakima River Basin Integrated Water Resource Management Plan
Enhanced Water Conservation Element

Agricultural Conservation –
Up to 70,000 acre-feet
- Lining/piping canals and laterals
- Re-regulation reservoirs
- Irrigation efficiency – reduce seepage, evaporation, and spills

Municipal and Domestic Conservation Program
- Promote efficient landscape irrigation practices
- Expand education/incentives to encourage voluntary efficiency
- Establish best practice standards
Wymer Dam and Pump Station
- 162,500 acre-foot-capacity reservoir
- Options for pump station at Thorp or upstream of Lmuma Creek

Lake Kachess Inactive Storage
- Access 200,000 acre-feet from inactive storage in drought years

Bumping Lake Enlargement
- Construct new dam for additional 164,500 acre-feet storage
- Provide carryover storage
Groundwater storage actions would use surface water to recharge aquifers and store water for later withdrawal and use:

**Aquifer Storage and Recovery**
- Divert water into designed ground infiltration systems (ponds, canals) during periods of excess runoff

**Shallow Aquifer Recharge**
- Passive Recharge
Yakima River Basin Integrated Water Resource Management Plan
Structural and Operational Changes Element

- Lake Keechelus-to-Lake Kachess Pipeline

- Aquifer Storage and Recovery
  - Lining and piping laterals – mail canal and south branch canal
  - Construct re-regulation reservoir at Manastash Creek
  - Pump Yakima River water to Manashtash Creek irrigators

- Reduce power diversions at Roza and Chandler Dams – Fish
- Outmigration flows
- Wapatox Canal – Piping/lining; diversions consolidations
- Raise Cle Elum Lake by 3-feet
Targeted Watershed Protections and Enhancements

- Three key areas proposed for land acquisition actions
  - 46,000 acres in Teanaway River Basin
  - 15,000 acres in Yakima River Canyon
  - 10,000 acres at Little Naches River headwaters

- Consider potential Wilderness and Wild and Scenic River designations
Provide upstream and downstream fish passage

Benefits:
- Increase anadromous species abundance
- Allow reintroduction of sockeye runs
- Provide greater genetic interchange for bull trout
- Providing access to high quality habitat at higher elevations
Challenges Ahead

• Spatial and temporal distribution of water makes it a scarce resource.

• Many competing demands for water – some exclusive (consumptive), some non-exclusive (non-consumptive).

• Many parties with a stake in the game: tribes, federal, state, and local governments; agricultural groups; environmental groups.

• Columbia-Snake River System:
  - Extensively developed for hydropower, flood control, irrigated agriculture, municipal water supplies, navigation, and recreation.
  - Enormously important from ecosystem perspective (e.g., salmonids, resident fish).

• Uncertainties – FCRPS BiOp, Canadian Treaty, yearly fluctuations in hydrology, long-term climate variability
Questions?