

Office of Columbia River's Municipal & Domestic Water Supplies & Water Banking Solutions

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Office of Columbia River

AWRA Washington Chapter 2016 Annual Conference - October 26, 2016



OCR's Mission....

Aggressively pursue water supply development for both instream and out-of-stream uses.



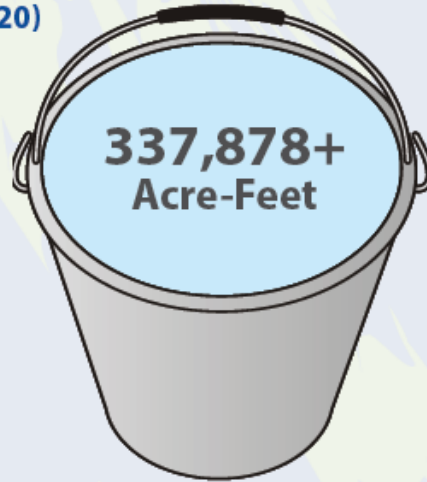
Water Supply Development - 2016

Developed (2006-2016)



- » Barker Ranch: 6,436 ac-ft
- » Columbia Basin ID Piping: 33,822 ac-ft
- » Conservation Commission Irrigation Efficiency: 3,476 ac-ft
- » Donations: 13,060 ac-ft
- » KID/Red Mountain: 11,005 ac-ft
- » Kennewick General Hospital: 4,000 ac-ft
- » Lake Roosevelt: 132,500 ac-ft
- » Lower Wenatchee Piping: 7,823 ac-ft
- » Manastash: 1,300 ac-ft
- » Methow Trust Water Acquisition: 79 ac-ft
- » Methow Projects: 2854 ac-ft
- » Odessa Subarea: 164,000 ac-ft
- » Peshastin ID Piping: 360 ac-ft
- » Potholes Feed Route (conveyance)
- » Pine Creek Acquisition: 900 ac-ft
- » Sullivan Lake: 14,000 ac-ft
- » Port of Walla Walla Leases: 4,761 ac-ft
- » Weber Siphon (conveyance)
- » Yakima City ASR: 10,000 ac-ft

Near-Term Development (2016-2020)



- » 508.14 Rule Change: TBD
- » Cle Elum Pool Raise: 14,600 ac-ft
- » Columbia Basin ID Piping: 5000 ac-ft
- » Kachess Drought Relief Pumping Plant: 200,000 ac-ft
- » East Low Canal Widening: (conveyance)
- » Icicle Creek Water Management Strategy Projects: 20,000+ ac-ft
- » Kennewick ASR: 318+ ac-ft
- » Pasco Municipal Supply Improvements: 5,000 ac-ft
- » SVID: 7,815 ac-ft
- » White Salmon ASR: 145 ac-ft
- » Yakima Basin Enhanced Conservation: 85,000 ac-ft
- » Yakima Basin Shallow Aquifer Recharge: TBD










Long-Term Development (2020+)



- » Regional Aquifer Storage and Recover: TBD
- » Conservation Commission Retiming: TBD
- » Goose Lake & Nine Mile Flat Storage: TBD
- » Horse Heaven Hills: 105,000 ac-ft
- » Lincoln CD Passive Rehydration: TBD
- » Mill Creek Storage: 2,000 to 11,000 ac-ft
- » Peshastin Pump Exchange: TBD
- » Spokane-Rathdrum ASR: 105,000 ac-ft
- » Walla Walla Flow Enhancement: 30,000 ac-ft
- » Yakima Basin Integrated Plan Projects: 226,000 ac-ft



RCW 90.90 Statutory Focus

1. Find alternatives to groundwater for the Odessa subarea aquifer  
2. Develop water supply for pending water right applications   
3. Create uninterruptible supply of water for interruptible water right holders 
4. Meet new (future) municipal, domestic, industrial and irrigation water needs  
5. Provide water for instream needs 



Columbia River Basin Water Management Act (2006)

- 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

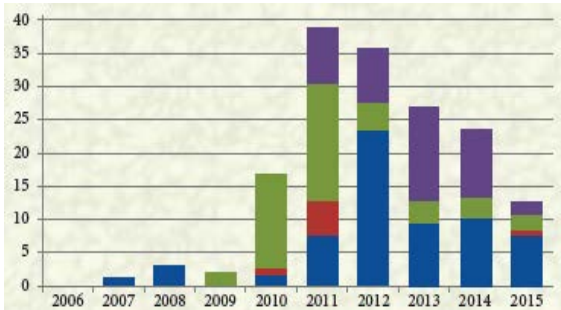


Ecology was tasked with managing the funds & created the Office of Columbia River (OCR) to use these funds to develop new water supplies

Develop Sources of Water Supply for PENDING New Water Right Applications RCW 90.90.020(3)(b)



Issued 161 water
right decisions
between
2007 – 2015

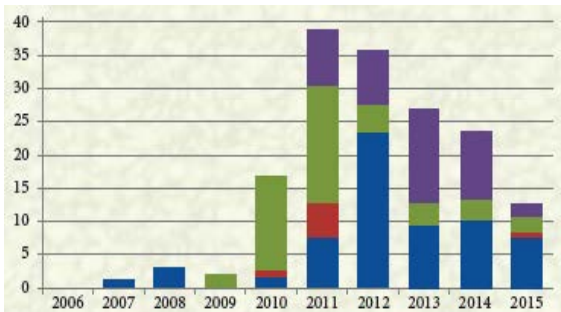


- **Lake Roosevelt Incremental Storage and Releases Program** (25,000 ac-ft Municipal and Industrial)
- **Sullivan Lake** (9,333 ac-ft Municipal, Industrial, Irrigation)
- **Port of Walla Walla Leases** (4,761 ac-ft Irrigation)
- **Kennewick Irrigation District – Red Mountain AVA Project** (2,678 ac-ft irrigation)
- **City of Pasco Piping Project** (5,000 ac-ft municipal)
- **MVID & Town of Twisp** (248 ac-ft municipal)
- **City of Yakima Aquifer Storage and Recovery Project** (10,000 ac-ft municipal)
- **Kennewick General Hospital** (4,000 ac-ft irrigation)

Develop Sources of Water Supply for PENDING New Water Right Applications RCW 90.90.020(3)(b)



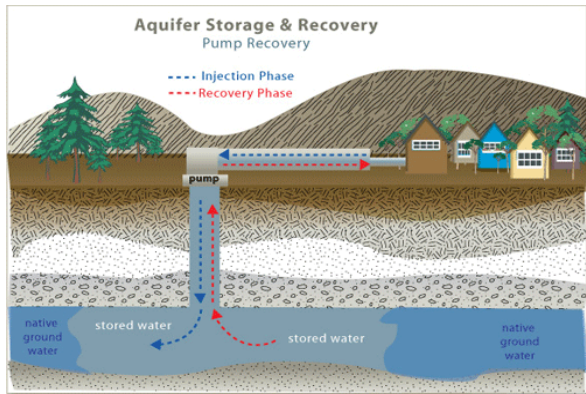
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Develop Sources of Water Supply for Future Municipal, Domestic, Industrial, and Irrigation Water Needs

RCW 90.90.020(3)(d)



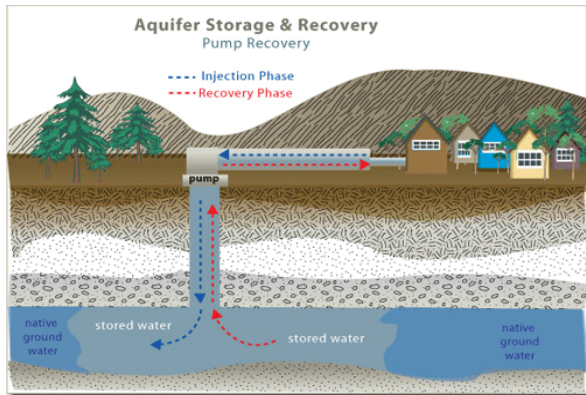
Many projects in feasibility phase for exploration of water supply development

- **Icicle Creek Water Resource Management Strategy** (4 cfs irrigation, 5 cfs domestic, 77 cfs instream flow)
- **Aquifer Storage and Recovery Projects** (~500 ac-ft White Salmon, Kennewick, Othello)
- **Horse Heaven Hills Water Storage** (44,000 ac-ft Switzler Canyon)
- **Lincoln County Passive Rehydration** (1,000's ac-ft)
- **WAC 508-14 Future Rulemaking** (16,000 ac-ft Pasco Basin)
- **Colville Tribes Cooperative Water Supply Development Projects** (10,000's ac-ft)



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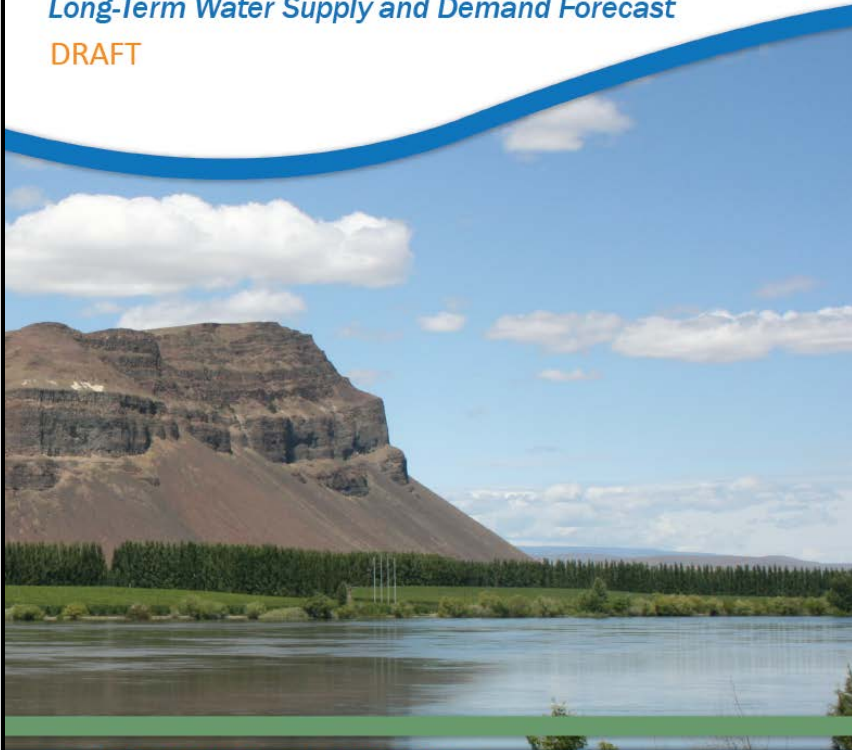
Columbia River Basin Long Term Water Supply and Demand Forecast

2016 Washington State Legislative Report

Columbia River Basin

Long-Term Water Supply and Demand Forecast

DRAFT



Submitted November 2016 Pursuant to RCW 90.90.040 by:

in collaboration with



WASHINGTON STATE
UNIVERSITY



WRE
WASHINGTON STATE UNIVERSITY
WATER RESEARCH CENTER

Publication No. 16-12-001

- **Update required every 5 years**
- **Audience includes policy makers, water managers, general public**
- **Water and economic modeling**
- **Predicts agricultural, municipal, instream, and hydropower needs**
- **Guide for future investment**
- **Emerging policy issues**
- **2016 Forecast**
 - **Draft released in June 2016**
 - **Final Report due November 2016**

Water Banking



- Water Banking is only one tool in the water supply development toolbox.
- A water bank (also referred to as a "water exchange") is a mechanism to help the transfer of existing water rights to new uses.
- Water banking is being used in several areas of the state to offset impacts to surface water in return for permitting new uses



Other Water Supply Development Tools



- Surface Storage
- Structural & Operational Changes
- Aquifer Storage and Recovery
- Shallow Aquifer Recharge (aka Passive Rehydration)
- Water Right Acquisition & Leases
- Pump Exchanges
- Conservation/Piping/Lining



Lake Roosevelt Incremental Storage and Releases Program

Lake Roosevelt Incremental Storage Releases

Operational change of 1 foot annually and 1.8 feet during drought

The Lake Roosevelt storage release would divert up to 82.5K ac-ft of water for:



Instream Flows:

- low stream flows
- ESA listed
 - sturgeon
 - lamprey
 - bull trout
 - cutthroat trout
 - chinook salmon
 - chum salmon
 - coho salmon
 - sockeye salmon
 - steelhead salmon

27.5K (33%)
Instream Flow

30K (36%)
Odessa

25K (30%)
Municipal Needs



Municipal Needs:

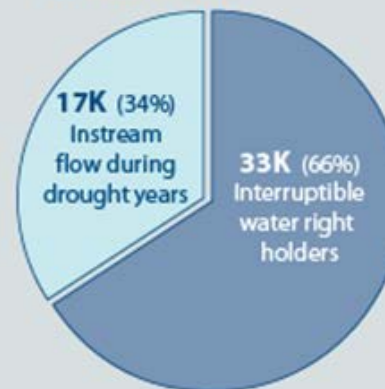
- population growth
- increasing industrial demands



Odessa Farmers:

- declining ground-water supplies
- 10 foot drop per year
- 170,000 acres

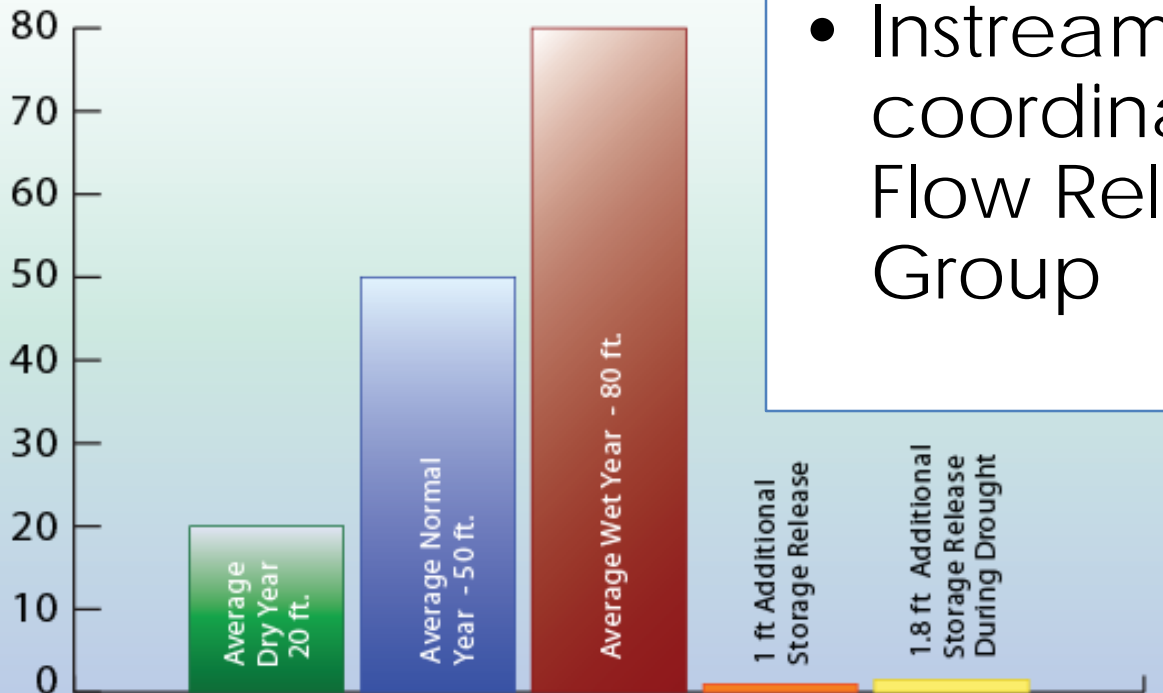
In a drought year an additional 50K ac-ft of water for:



LRISRP

- Completed EIS/EA in 2008
- Ecology entered into a Water Service Contract w/ USBR in 2011
- Ecology actively issuing **M&I** permits (25 KAF)
- Instream Flow Releases coordinated with a Fish Flow Releases Advisory Group

The New Lake Roosevelt
Incremental Storage Releases



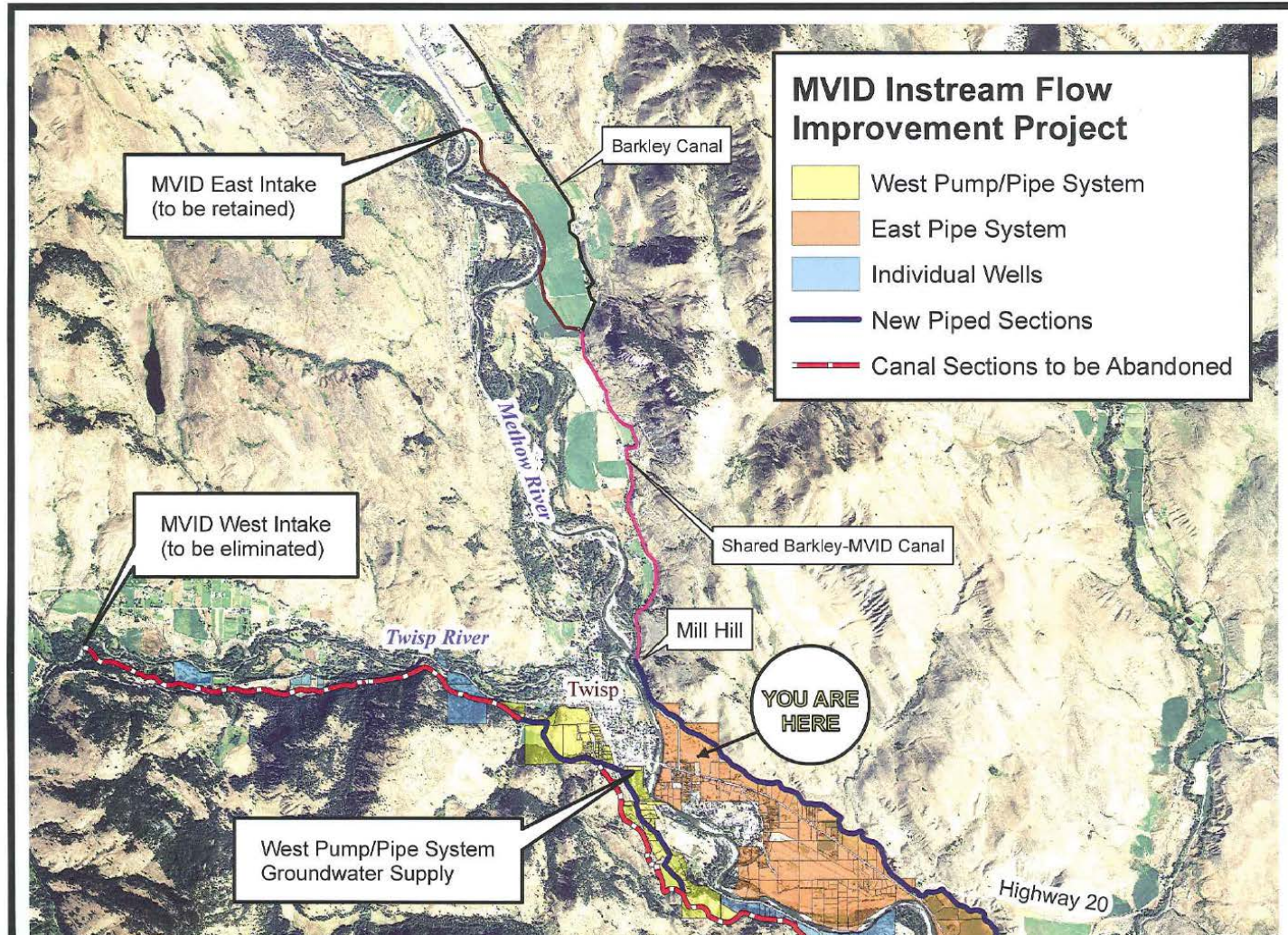
Sullivan Lake Reoperation



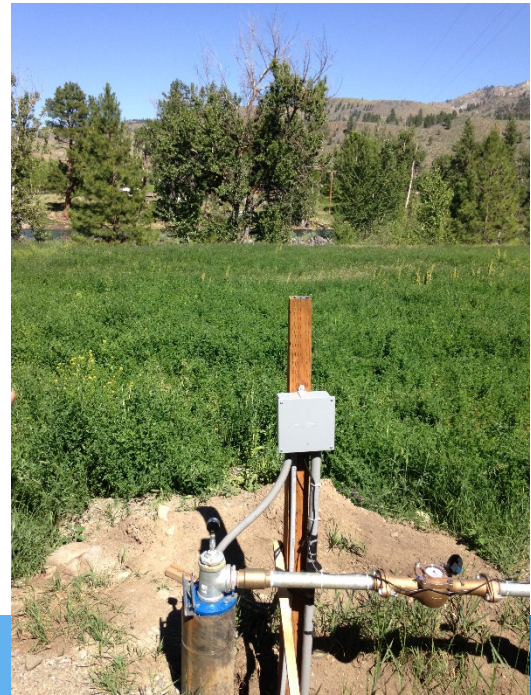
Sullivan Lake Reoperation

- OCR agreement with Pend Oreille County PUD to convert former hydropower facility to water supply operation.
- Creates 14,000 acre-feet of additional supply in NE counties.
 - 9,333 acre-feet for out-of-stream uses
(50% for municipal/domestic)
 - 4,667 acre-feet for instream uses

Town of Twisp & MVID



MVID



Aquifer Storage and Recovery

- Cities of
 - White Salmon
 - Kennewick
 - Yakima
 - Othello



- Source Water Supply
- Appropriate Geology to hold water
- Water Quality
- Economical Infrastructure
- Enabling Permitting Environment



Drivers for ASR

- Environmental Benefits
 - Small footprint
 - Insignificant adverse impacts upon terrestrial and freshwater ecosystems
 - Reduced adverse impacts upon estuarine ecosystems
- Economic Benefits
 - Low cost relative to other water supply and water storage options (10 to 50%)
 - Can be built incrementally
- Proven Performance
 - About 400 operating ASR wells nationwide
 - Very few failures



Icicle Creek Water Resource Management Strategy



Estimated Supply:

84 cfs

OCR Directives:

Instream (76 cfs)

New Muni/Dom Water Rights (5 cfs)

Interruptible Rights (3 cfs)

Where have we been: Convened Icicle Workgroup, developed Guiding Principles & finalized integrated project list of conservation, fish habitat, fish passage, storage optimization & hatchery improvements to meet out-of-stream demands and restore stream flows in Icicle Creek.

Where are we now: Initiated Programmatic SEPA EIS, seek funding partners to begin to early action implementation of integrated project.

Horse Heaven Hills Switzler Canyon Storage



Estimated Supply: 44,000 ac-ft

OCR Directives:

Pending Applications,
Instream Flows
New Demands

Where have we been: Feasibility and fatal flaw analysis of a surface storage reservoir to be constructed in Switzler Canyon in WRIA 31. Reservoir is filled during periods of water availability on the Columbia River and released from the reservoir as mitigation for new water demands when water is not available.

Where are we now: Survey of potential landowners & water users, SEPA EIS scoping



Questions or Discussion

<http://www.ecy.wa.gov/programs/wr/cwp/crwmp.html>