Jennifer Anders Chair Montana

> Bo Downen Montana

Guy Norman Washington

Patrick Oshie Washington



October 8, 2019

Richard Devlin Vice Chair Oregon

> **Ted Ferrioli** Oregon

> > Jim Yost

Jeffery C. Allen

MEMORANDUM

TO: Fish Committee Members

FROM: Stacy Horton, Washington Policy Analyst/Biologist

SUBJECT: Yakima Basin Integrated Plan Update

BACKGROUND:

Presenters: Urban Eberhart, Manager, Kittitas Reclamation District, Wendy

McDermott, Director, Puget Sound and Columbia Basin, American Rivers,

Michael Garrity, WDFW Columbia River/Water Policy Manager

Summary:

It has now been ten years since negotiations began on the Yakima Basin Integrated Plan (YBIP) and six years since YBIP was ratified by the Washington State Legislature. Earlier this year, federal authorization for the first phase of YBIP became law as well. YBIP, which aims to significantly improve both Yakima Basin water supply reliability and fish populations, has benefitted from an unusually broad coalition including the Yakama Nation, local irrigation districts, local counties, conservation organizations, and numerous federal and state agencies including the Bureau of Reclamation, NOAA Fisheries, Washington Department of Ecology, and Washington Department of Fish and Wildlife. YBIP projects draw from seven different elements, including water supply, water conservation, fish passage, structural and operational improvements, habitat and watershed protection and enhancement, water markets, and groundwater storage. Two key participants in YBIP, Urban Eberhart of the Kittitas Reclamation District in the Ellensburg area, and Wendy McDermott of American Rivers, will provide brief background on YBIP and an update on recent legislative and on-the-ground progress, including a major fish passage project underway at Cle Elum Reservoir.

More Info:

Yakima Basin Integrated Plan: https://ecology.wa.gov/Water-supply/Water-supply-projects-EW/Yakima-River-Basin-projects/Yakima-integrated-plan

Yakima Basin Integrated Plan Update

Northwest Power and Conservation Council October 15, 2019





Urban Eberhart, Kittitas Reclamation District Wendy McDermott, American Rivers





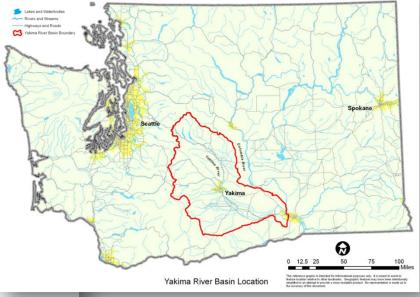
Outline

- Overview Yakima Basin Integrated Plan and Goals
- Yakima River Basin Water Enhancement Project Timeline
- Legislation
- YBIP Status Update
 - Teanaway Community Forest and Habitat Projects
 - Surface Water Storage Element
 - Cle Elum Pool Raise and Shoreline Protection
 - Cle Elum Fish Passage
 - Kittitas Reclamation District Tributary Supplementation
 - Schaake Floodplain Restoration
 - Yakima Delta Restoration
- Federal Funding Table





Yakima River Basin **Overview** akama Nation leatons location relative to offer landmate. Geographic fluctuations provided a specific is simplified in an effort properties a room research product. He representation is needed as to the assumption of the document.



- 6,155 sq. miles w/464,000 irrigated acres
 - 5 reservoirs w/ 1M AF capacity, irrigation deliveries 2.3M AF
 - Droughts in 1992-1994, 2001,
 2005, 2015 and 2019
- Reduced Fisheries
- \$4.5 Billion agriculture economy





YRBWEP Workgroup Members

Federal Agencies

- Bureau of Reclamation
- National Marine Fisheries Service
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. Army Corps of Engineers

Yakama Nation

- Yakama Nation Natural Resources
- Yakima/Klickitat Fisheries Project

Washington State Agencies

- Department of Ecology
- Department of Agriculture
- Department of Fish and Wildlife
- Department of Natural Resources



Local Governments

- Benton County
- Kittitas County
- Yakima County
- · City of Yakima

Irrigated Agriculture

- Kennewick Irrigation District
- Kittitas Reclamation District
- Roza Irrigation District
- Sunnyside Valley Irrigation District
- Yakima-Tieton Irrigation District

Other Stakeholders

- American Rivers
- Yakima Basin Fish & Wildlife Recovery Board
- Yakima Basin Storage Alliance
- Trout Unlimited





Yakima Basin Integrated Plan

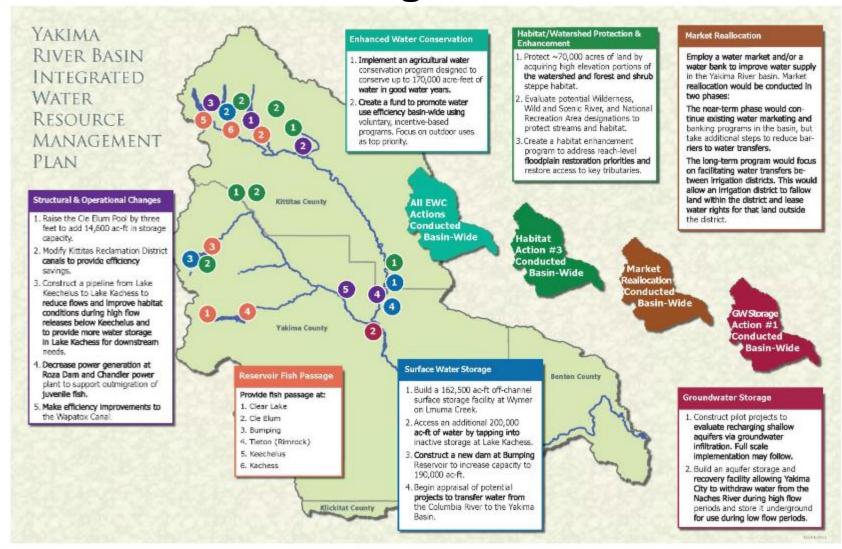
Goals:

- Restore and enhance environment, fish and wildlife, including fish passage at federal dams
- Improve water supply during drought years (70% proratable supply)
- Provide for efficient and adaptable water supply management
- Contribute to sustainable economy and environment





Yakima Basin Integrated Plan Overview

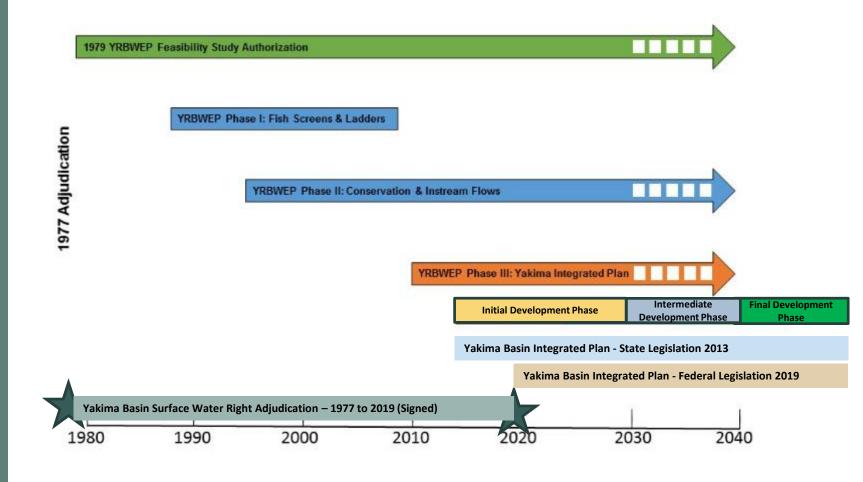






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Yakima River Basin Water Enhancement Project Timeline







John D. Dingell, Jr. Conservation, Management, and Recreation Act



Sponsors: Senator Cantwell (D-WA) and Senator Murkowski (R-AK) and Yakima Title: Senator Cantwell, Congressman Newhouse (R-WA) and Congresswoman Schrier (D-WA)

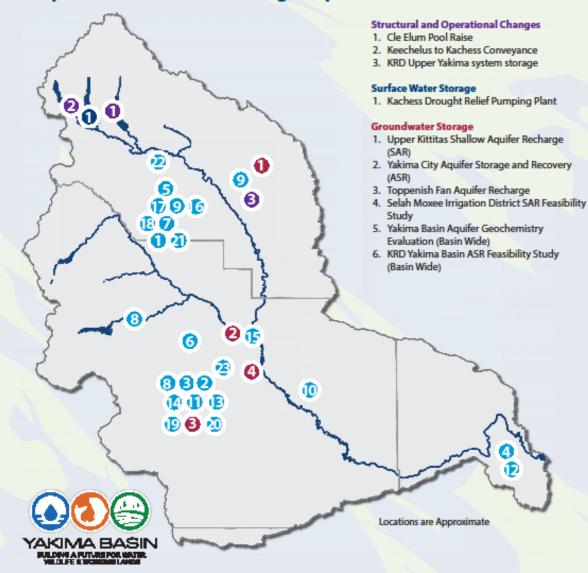
Passed Republican controlled Senate – February 12, 2019

Passed Democratic controlled House – February 26, 2019

Signed March 12, 2019



Yakima Basin Integrated Plan Initial Development Phase Map I - Conservation, Storage, Operations, and Water Market Projects



Agricultural and Municipal Conservation (2013-2019)

- KRD 13.6, 13.8 Lateral Piping Project
- Wapato Irrigation Project (WIP) Piping Lateral 4-414C
- WIP Piping Satus East Lateral E73
- Kennewick Irrigation District (KID) Division IV Lining
- Manastash Creek Sprinkler Conversions
- Yakima-Tieton ID Diversion Relocation
 Feasibility Study
- Manastash Consolidated Pipeline & Manastash Water Ditch Association (MWDA) Pipeline Construction
- WIP Piping of Unit 2 L672 and Headworks Rebuild
- 9. KRD North Branch Canal Lining
- 10. Roza Canal Lining Phases I, II, III, IV
- 11. WIP Lining of Unit 2 (167+20 to 173+80)
- 12. KID Reregulation Reservoir Design
- WIP Unit 2 Upper Dam Rebuild and Lower Dam Removal
- 14. WIP Water Conservation Plan
- 15. City of Yakima Xeriscape Demonstration Project
- 16. Reed Pipeline Design Manastash Creek
- Anderson Diversion Irrigation Water Acquisition
- KRD South Branch Canal Lining, Phases I and II
- 19. WIP Unit 2 West Piping
- 20. WIP Unit 2 West Lining
- 21. KCCD Irrigation Efficiancy Improvements
- 22. KRD Upper Tributary Supplementation
- 23. WIP Track D Lateral Pipeline
- Heritage Gardens Municipal Conservation Program (Basin Wide)

Water Bank/Exchange Programs

KRD/TU Yakima basin Water Market
 Structure and Strategic Development (Basin Wide)

Rev. 6.18.19 Pub #16-12-009





Yakima Basin Integrated Plan Initial Development Phase Map 2 - Fish Passage and Habitat Enhancement Projects



- 13. Trout Meadows Acquisition /Enhancement
- 14. Little Naches Land Acquisition
- Teanaway Valley Farm Acquisition and Restoration
- 16. Cowiche Easement/Design
- Gap-to-Gap Outfall Relocation and Levee Removal Design and Restoration
- South Fork Tieton Bull Trout Passage Feasibility and Design, Phase I, II, III
- Teanaway/Indian Creek Restoration and Large Wood Replacement
- 20. Yakima Rivermile 89.5 Levee Breach
- Island Road Floodplain Reconnection -Toppenish Creek
- 22. Toppenish Creek Pop Pom Road
- Teanaway Habitat Restoration and Fencing, Phase I, II, III
- 24. Lower River Thermal Refuge
- 25. Wapato reach Riparian Project
- Yakima Basin Tributary Restoration (Starvation Flats, Ahtanum, Toppenish)
- Naches River and Cowiche Creeek Restoration
- 28. Little Naches Large Wood Project
- 29. Fawn Creek Culvert Replacement
- Kachess River Passage and Floodplain Assessment
- 31. Box Creek Large Wood Replenishment
- 32. Donald Wapato Bridge Restoration
- 33. Little Naches River Watershed Aquatic Restoration

Fish Passage

- Cle Elum Dam
- 2. Tieton (Rimrock) Dam
- Clear Creek Dam

To ask about the availability of this document in a format for the visually impaired, call Office of Columbia River at 509-575-2490. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-634.





TEANAWAY COMMUNITY FOREST he Teanaway Community Forest is a 50,272-acre forest situated at the headwaters of the Yakima Basin watershed. The forest will be managed through a partnership between the Washington state departments of Natural Resources (DNR) and Fish & Wildlife, with input from the local community and interested stakeholders. TEANAWAY COMMUNITY DNR designed the community forest model, which was approved by state lawmakers in 2011. The model is a tool to involve local citizens in protecting working forests that support healthy communities through FOREST grazing, forestry, recreation, and conservation. The Teanaway property was identified as part of the Yakima Basin Integrated Plan as an area of importance to safeguard the Yakima Basin water supply and associated habitat, and to support the economy by preserving working lands and enhancing recreation opportunities. The Basin Plan was developed by a coalition of public and private organizations committed to increasing the quantity and quality of Dickey Creek water in the Yakima River Basin. **FACILITIES** ROADS HYDROGRAPHY LAND MANAGEMENT Interstate Building Rivers Teanaway Community Forest - Major Highway Streams Washington Dept. of Natural Resources LEARN MORE Acclimation Pond ---- Road USFS Wilderness Areas http://bit.ly/teanaway **Natural Resources** Local Road US Forest Service WDFW Water Access Sites Unimproved Road Washington State Parks Washington Dent, of Fish & Wildlife







Teanaway Community Forest

Recreation, Working Lands & Floodplain Restoration



Teanaway Community Forest

Before: Briefing Congressman Reichert







Project designed to:

- Increase base flows, improve downstream supply, and decrease peak flows
- Restore stream-floodplain interactions
- Moderate temperature





Teanaway Watershed Restoration: 33 miles of watershed functions restored







Box Canyon Creek Large Wood Project

- Designated critical habitat for federally listed Columbia River bull trout
- Implemented by Kittitas Conservation Trust:
 - \$330,000 funded by WA Department of Ecology through YBIP
 - \$80,000 funded by US Fish and Wildlife Service
- 1.4 miles of stream habitat enhanced
- 1,000,000 pounds of wood delivered







Little Naches Culvert Replacements







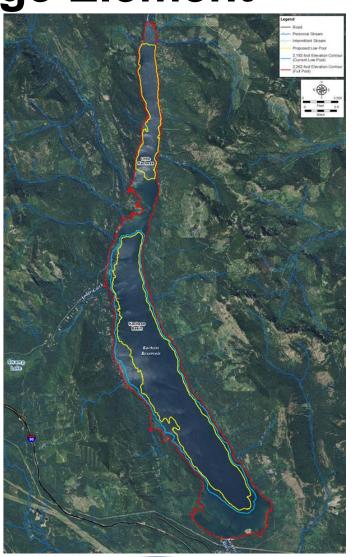
- Designated critical habitat for federally listed Columbia River bull trout and Mid-Columbia River steelhead
- 13 culvert replacements will reconnect over 20 miles of fish habitat
- Fawn Creek culvert first contract awarded
 - \$517,000 total cost
 - \$175,000 funded by WA
 Department of Ecology through YBIP





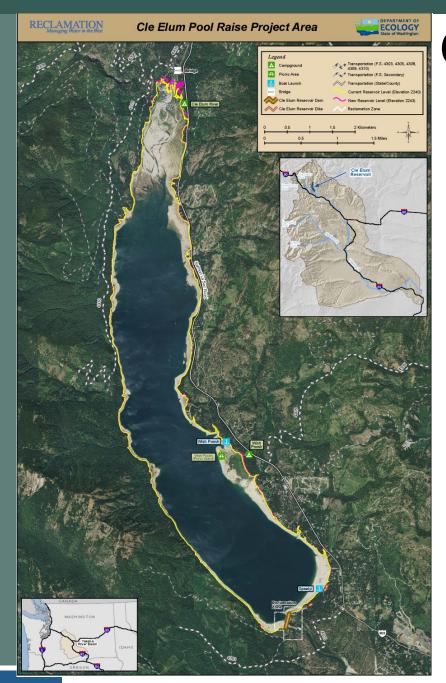
Surface Water Storage Element

- Kachess Drought Relief Pumping Plant
 - Existing Reservoir: Access up to 200,000 acre-feet from inactive storage pool in dry years
- Wymer Dam & Reservoir
 - New off-channel reservoir, 163,000 acre-feet
- Bumping Dam & Reservoir Enlargement
 - Replace existing dam to add 165,000 acre-feet









Cle Elum Pool Raise

14,600 acre-feet managed for instream flows

- Modify radial gates complete
- Shoreline protection under construction
- Land acquisition in process







Cle Elum Reservoir Shoreline Protection



Construction Complete May 15, 2019

Fish Passage at Reservoirs

- Benefits: Opens up high quality, cool water habitat.
 Allows Sockeye restoration
- Without the lake and upper river habitat, full restoration of Yakama Nation Treaty fishery is impossible
- Sockeye restoration began in 2009





Habitat above Cle Elum Dam





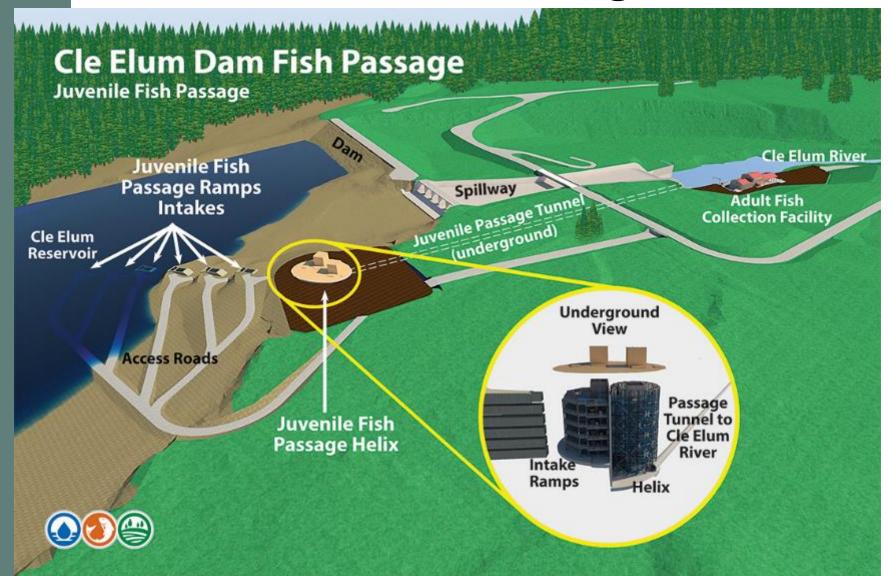
2013 - First Sockeye to be born and raised in the Yakima River Basin in over 100 years to return, released into Cle Elum Reservoir







Cle Elum Dam Fish Passage

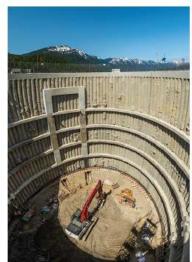


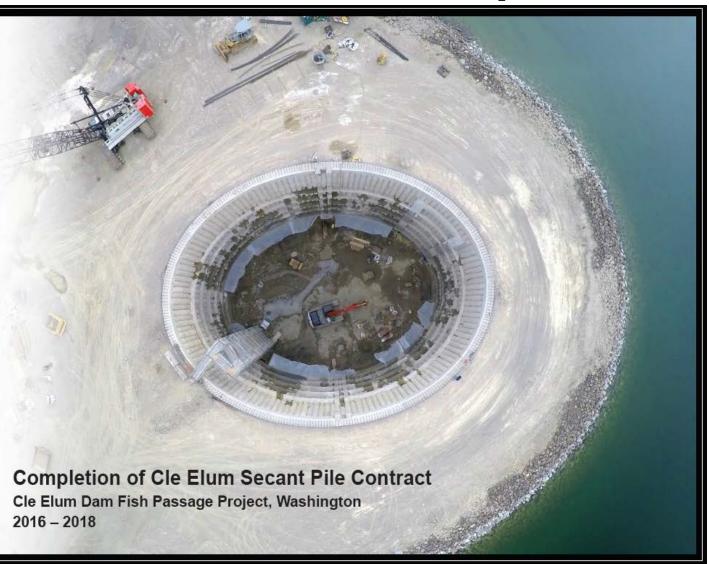




Secant Pile Contract – Complete









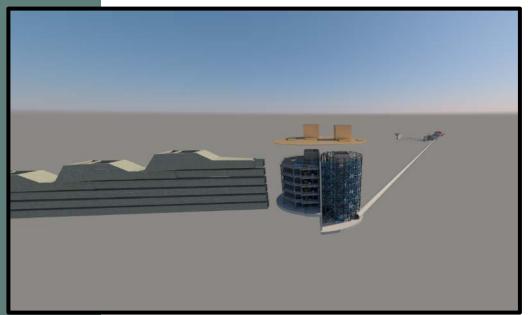








Intake, Gate and Helix







Kittitas Reclamation District (KRD)

Water Conservation Projects Benefits and Costs

ID No.	Facility Name	Estimated Length of Canal Lining or Piping (LF)	Estimated Annual Water Savings (Acre Feet)	Estimate Project Cost (Millions)
1	MB 13.6 Pipe	9,497	743	\$3.1
2	MB Lining	35,892	2,526	\$15.0
3	Main Branch Weep Drains	N/A	3,570	\$1.4
4	Lateral NB 4.1	33,230	900	\$7.0
5	Lateral NB 5.8	4,860	400	\$0.9
6	Lateral NB 6.4	6,890	900	\$1.4
7	Lateral NB 7.7 Sub Laterals 1.59, 2.9R	26,640	1,300	\$5.7
8	Lateral NB 8.3	22,110	2,100	\$5.9
9	NB 4.0 – 14.7	54,235	4,925	\$20.8
10	Lateral NB 20.2	8,590	1,400	\$2.5
11	Sub Lateral NB 20.8-0.8	8,060	1,400	\$2.5
12	Lateral NB 22.0	9,230	3,800	\$4.7
13	Lateral NB 22.8	650	300	\$0.3
14	NB 23.3 = 31.1	43,582	3,958	\$16.8
15	Lateral NB 26.7 Sub Laterals 1.7, 3.1, 4.4, 4.61 Sub Sub Lateral 4.4-0.4	40,790	3,200	\$11.4
16	Lateral NB 27.5	5,330	700	\$1.1
17	Lateral NB 28.6	2,100	200	\$0.6
18	NB 31.3 – NB to Johnson Spill	N/A	1,000	\$1.4
19	Lateral NB 33.5 Sub Laterals 2.0, 3.0 Sub Sub Lateral 2.0-1.8	35,050	2,200	\$8.2
20*	North Branch Canal lining between Johnson Siphon and Wippel Pumping Plant	17,109	2,715	\$5.8
21	Lateral NB 35.1	4,420	500	\$1.0
22	WW 0.0 – Wippel Headworks>100cfs	N/A	1,949	\$1.0
23*	Pump Ditch Piping (includes 2018 PD lining 5-mile project)	76,200	4,400	\$29.7
24	Turbine Ditch Lining	48,188	4,376	\$18.5
25	Gravity Ditch Lining	71,824	6,522	\$27.6
26	Turbine 12.0 – Billiter Spill	N/A	1,428	\$1.0
27	Turbine Ditch Piping	21,650	2,400	\$6.7
28	Lateral SB 14.3	16,500	600	\$4.1
29	SB Extension	12,390	600	\$4.2
30	SB 14.0 – SB to Manastash Spill	N/A	2,019	\$1.0
31	SB Canal Lining from Robinson Canyon to Manastash	21,648	1,427	\$8.0
32	Lateral SB 11.7	6,190	300	\$1.4
33*	Lateral SB 9.9	6,584	400	\$0.9
34	TD 7.0 – Taneum Ditch Tail Spill	N/A	2,133	\$1.0
35*	SB Canal Lining from Swede Tunnel to Robinson Canyon	13,862	2,000	\$5.8
36	SB 3.9 - 7.0	16,560	1,078	\$5.8
37	Lateral SB 4.8	2,540	300	\$0.8
38	Turner Ditch	7,187	520	\$2.0
39	Taneum Ditch	8,634	624	\$2.4
40	TD 0.00 – Taneum Chute Spill	N/A	1,317	\$1.0
41	Lateral SB 1.7	7,210	200	\$1.6
42	SB 0.9 - 1.7	4,182	272	\$1.5
A**	NB 1.0	N/A	21,363	\$147.0
B**	NB 14.7	N/A	8,892	\$35.1
C**	NB 29.2	N/A	5,122	\$11.5
D**	NB 30.4	N/A	3,893	\$11.9
E**	PD 1.0	N/A	3,017	\$62.1
F**	SB 7.7	N/A	5,707	\$38.1
G**	SB 5.15	N/A	1,498	\$17.1
тота	ıs		123,094 AF	\$566.3



Kittitas Reclamation District Water Conservation and Habitat Improvement **Program**































 $Note: All \ costs \ and \ water \ savings \ are \ preliminary \ and \ subject \ to \ refinement \ during \ conceptual \ and \ preliminary \ design. Water \ saving \ figures \ were \ generated \ utilizing \ information \ provided$ by the Kittitas Reclamation District Feasibility Investigation, dated March 2015, Yakima River Basin Study KRD Canal Modifications Technical Memorandum, dated March 2011 and various





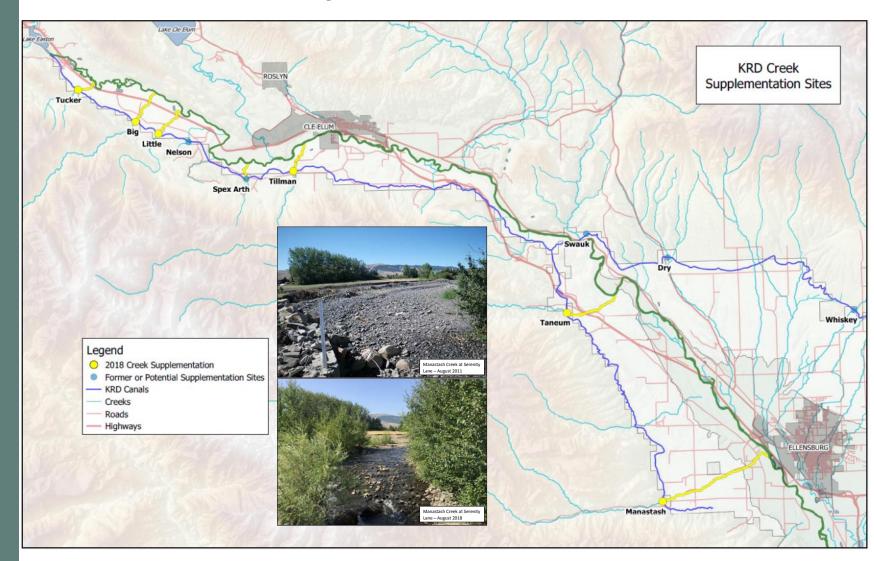
KRD Water Conservation and Habitat







KRD Tributary Supplementation







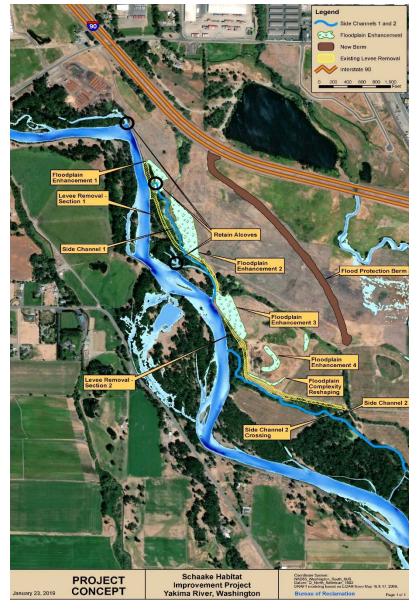
Schaake Floodplain Restoration

Phase 1 (June through Sept., 2019)

- Levee Removal
- Berm Construction
- Floodplain Excavation
- Permanent roads (BPA/KPUD)
- Revegetation

Phase 2 (July – October, 2020)

- Side channel construction
- Large wood structure installation
- Alcove excavation
- Floodplain wood installation
- Revegetation



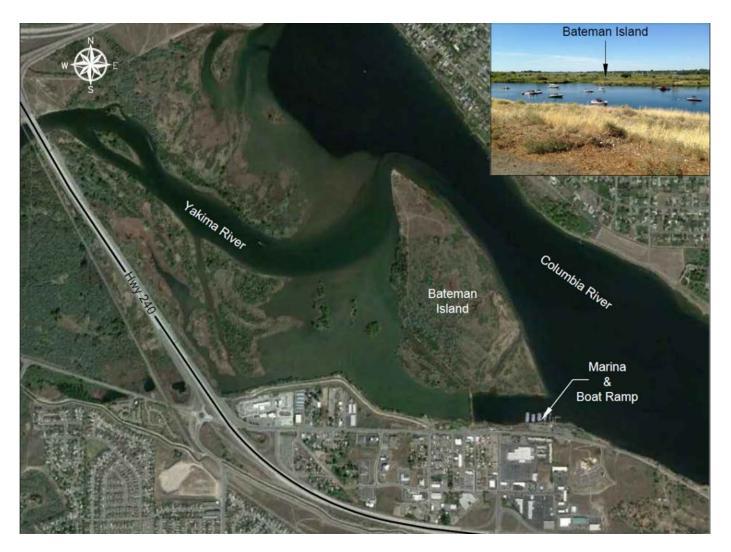




Schaake - Levee Removal & Berm Construction



Yakima Delta Restoration







Yakima Delta Restoration

- Integral to basin-wide efforts to address issues to recover salmon and steelhead throughout the basin
- USACE Phase 1 Product: Integrated Feasibility Report/NEPA Compliance Initiated
 - Recommended Action & Environmental Compliance Documentation
 - Engineering/Technical Feasibility
 - Benefits
 - Costs to construct and maintain
- Address the following habitat issues:
 - Fish passage
 - Flow rates and patterns
 - Water temperature/quality
 - Predation





Yakima River Basin Integrated Water Resource Management Plan

FY 2011 – FY 2021 Federal Projects Funding Table

Agency	Projects/Programs Supporting the Integrated Plan	FY 2011 Funding	FY 2012 Funding	FY 2013 Funding	FY 2014 Funding	FY 2015 Funding	FY 2016 Funding	FY 2017 Funding	FY 2018 Funding	FY 2019 Funding	FY 2020* Funding	FY 2021 Funding	Purpose for funds
Reclamation	Yakima River Basin Water Enhancement Project (YRBWEP)	\$12.3M	\$10.9M	\$9.5M	\$9.3M	\$14.5M	\$22.1M	\$23.8M	\$28.1M	\$23.7 M	\$10.8 M		Water Conservation, Tributary Habitat Restoration, Fish Passage, Water Supply, Water/Land Acquisitions and Restoration Note: \$1.3 M was appropriated in FY2010 for the Yakima Basin Study
Bonneville Power Administration	Northwest Power and Conservation Council's Fish and Wildlife Program	\$22.7M	\$20.5M	\$20.0M	\$17.6M	\$18.6M	\$19.6M	\$20.4M	\$18.1M				Water Conservation, Tributary Habitat Restoration, Fish Passage, Water/Land Acquisitions and Restoration, Monitoring and Evaluation, Artificial Production
US Forest Service	Land and Water Conservation Fund	\$845k	\$2.6M	\$874k	\$3M	\$3.4M	\$2.2M	\$1.5M	\$5M	\$4M			Purchase Property consistent with Land Acquisition areas identified in Yakima Integrated Plan
NOAA Fisheries	Pacific Coastal Salmon Recovery Fund	\$1.2 M	\$1.2M	\$1.2 M	\$1.2 M	\$1.2M	\$1.2M	\$1.2M	\$1.2M	\$1.2M	\$1.2M		Yakima Basin habitat projects
US Department of Agriculture, Natural Resources Conservation	Regional Conservation Partnership Program					\$105k	\$1.9M	\$1.5M	\$1.8M	\$2.3M	\$2.4M	\$1.6M	Water conservation and habital restoration projects on Yakama Nation reservation and across the Yakima River Basin
Service	Environmental Quality Incentives Program	\$1.83M	\$1.36M	\$826k	\$1.37M	\$1.07M	\$2.6M						Irrigation efficiencies, water quality, and fish habitat improvements on agricultural land.
Bureau of Indian Affairs	Lining and piping on Wapato Irrigation Project		\$630k	\$1.1M	\$200k	\$700k	\$1.35M	\$2.8M	\$1.9M				Water Conservation
US Fish and Wildlife	Partners for Fish and Wildlife National Fish Passage Program	\$190k	\$124k	\$190k	\$90k	\$55k	\$200k	\$256k	\$200k				Habitat Restoration/ Fish Passage
Bureau of Land Management	Region Water Conservation program												Water Conservation
Corps of Engineers	Flood plain restoration		\$6.6M	\$380k	\$100k	\$270k	\$170k	\$40k	\$700k				Levee Reconfiguration Setback and Removal

^{*}President's budget request. Subject to change.





Questions



http://www.usbr.gov/pn/programs/yrbwep/2011integratedplan/

http://www.ecy.wa.gov/programs/wr/cwp/YBIP.html



