Yakima River Basin Water Enhancement Project Workgroup Technical Update

Webex Meeting June 2, 2021







Presented by:

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Yakima Basin Integrated Plan Surface Water Storage Element - Status



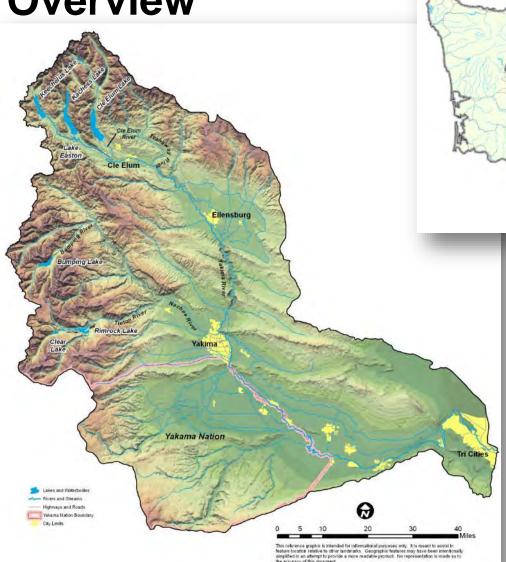


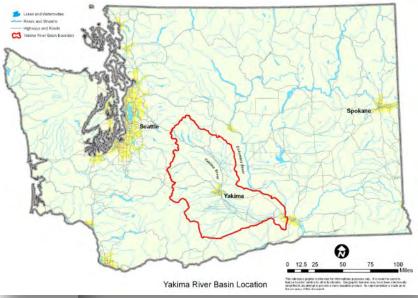






Yakima River Basin Overview



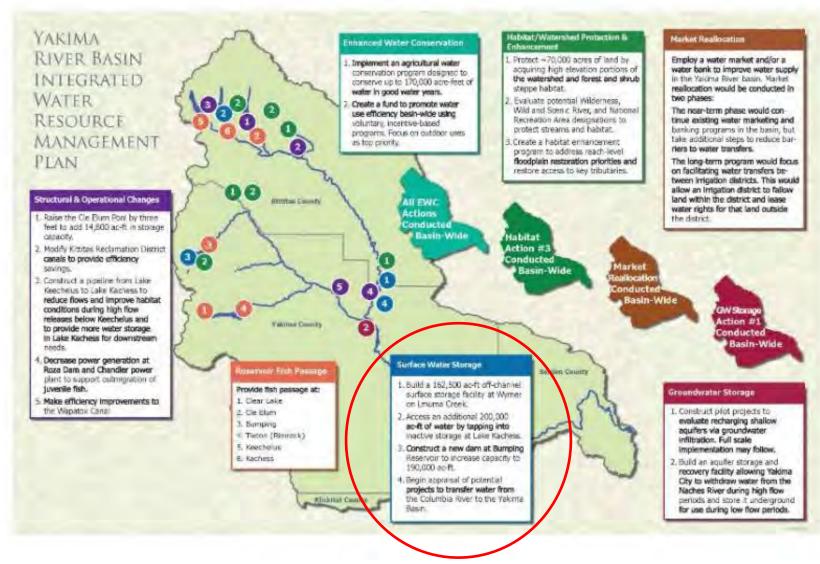


- 6,155 sq. miles w/464,000 irrigated acres
- 5 reservoirs w/ 1M AF capacity, irrigation deliveries 2.3M AF
- Droughts in 1992-1994, 2001, 2005, 2015 and 2019
- ESA Listed Species: Bull Trout & Steelhead
- \$4.5 Billion agriculture economy



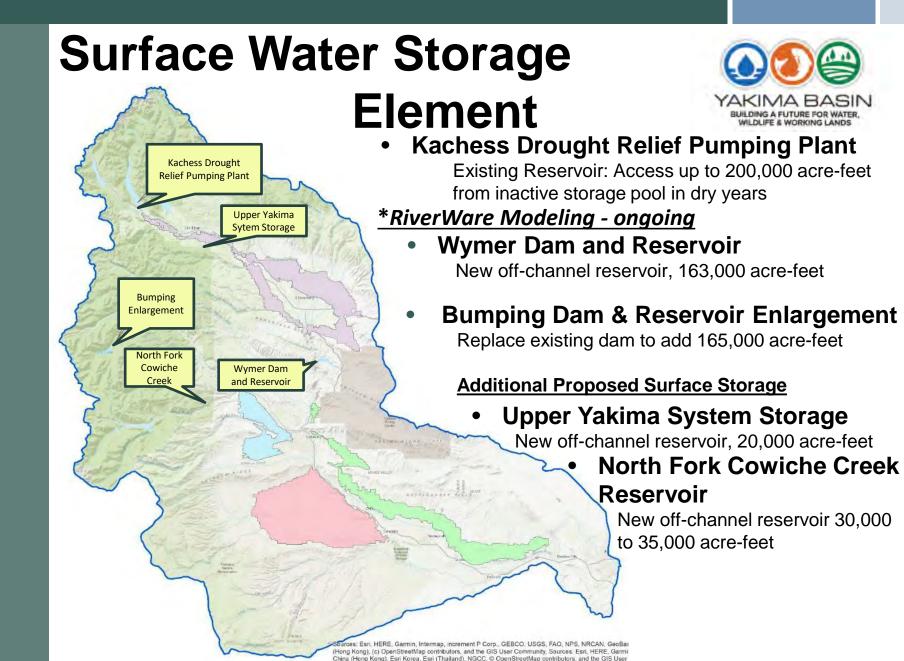


Yakima Basin Integrated Plan Overview





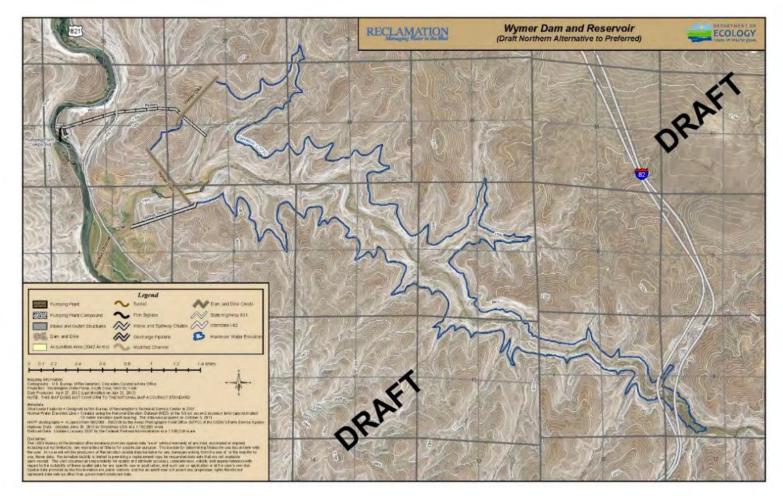






Wymer Dam & Reservoir – Pump from Yakima River









Wymer Reservoir via Kittitas Reclamation District - Gravity Overview

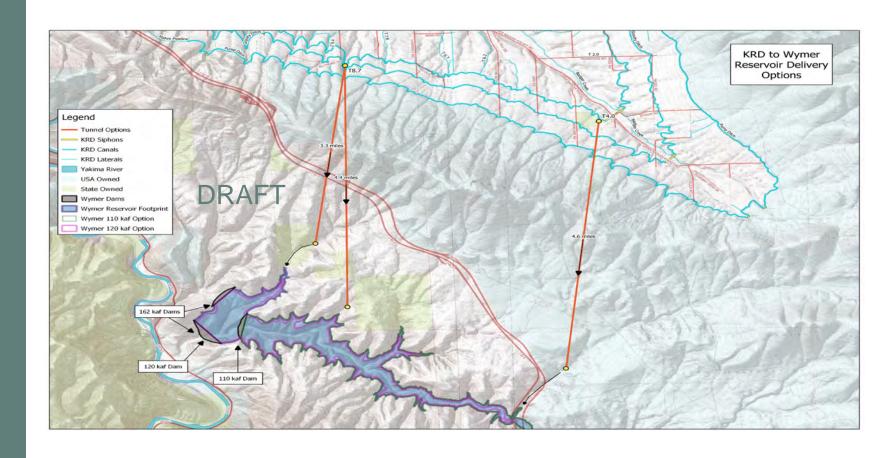


Wymer Dam & Reservoir - Potential Flexibility
Yakima River Basin Integrated Water Resource Management Plan



Potential Tunnel Options to Wymer Reservoir via KRD Canal YAKIMA BASII









Wymer Dam & Reservoir



Status

- Yakima River Basin Study Analysis 2011
- Geotechnical and Seismic Investigations 2014
- Temperature Modeling 2014
- Fish & Wildlife Habitat Impact Study, WDFW 2015
- Data Gap Analysis 2020
- RiverWare Modeling ongoing
- Land Acquisition in process





Bumping Dam & Reservoir Enlargement







Bumping Dam & Reservoir



Status

- Yakima River Basin Analysis 2011
- Fish Passage Analysis 2008, 2011
- Fish & Wildlife Habitat Impact Study, WDFW 2015
- Geotechnical and Seismic Investigations 2016
- Data Gap Analysis 2020
- RiverWare Modeling ongoing



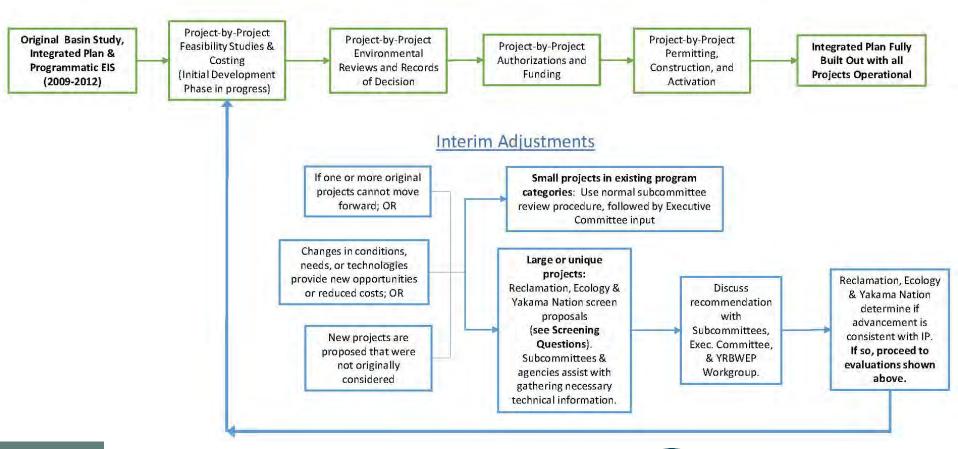


Adaptive Management

Process Overview



Process from Plan Approval to Implementation

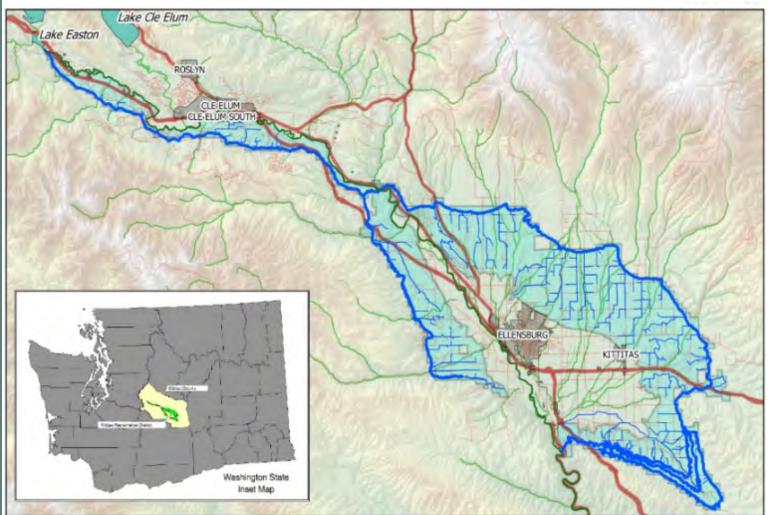






KRD Service Area









KRD Upper Yakima System Storage



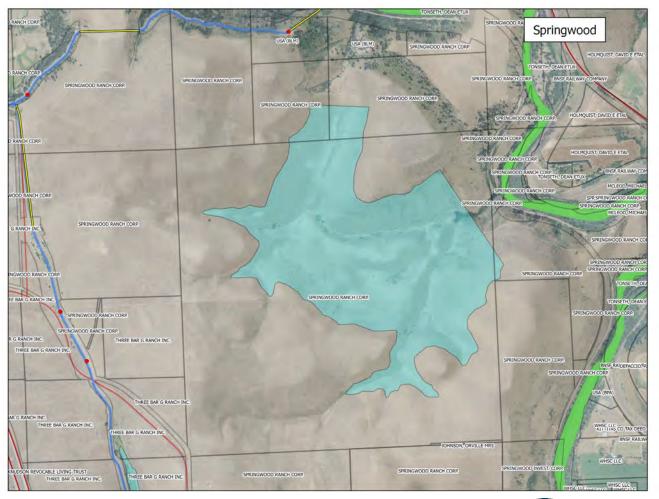






Springwood Reservoir via KRD North Branch









Springwood Reservoir



- Status
 - Data Gap Analysis 2020
 - Geologic Exploration 2021
 - RiverWare Modeling ongoing
 - Land Acquisition TBD

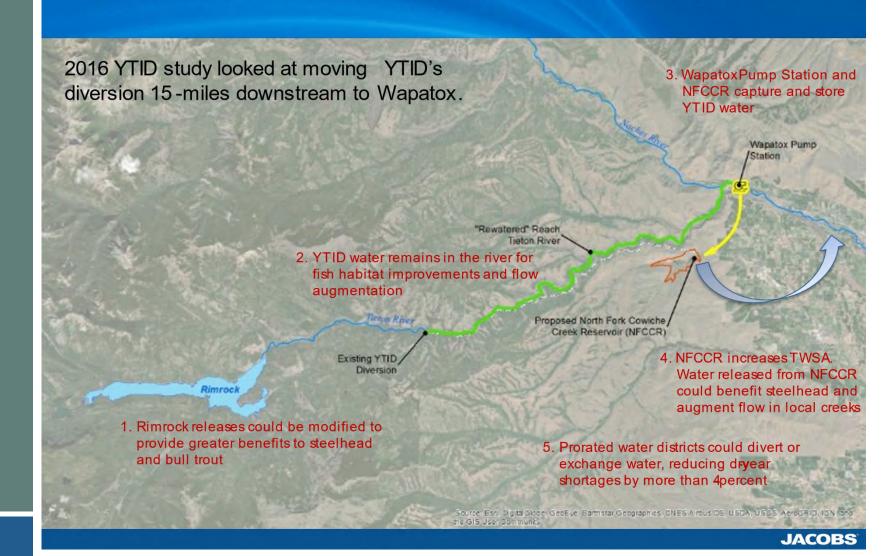




Tieton River Restoration

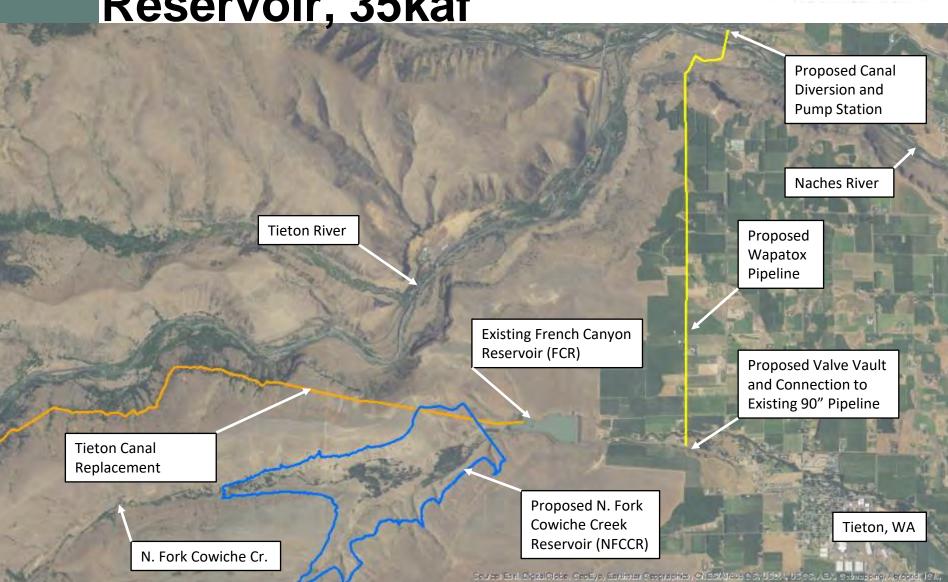


Alternative 1 – Tieton River Fisheries Enhancement



Tieton River Restoration – North Fork Cowiche Canyon Reservoir, 35kaf





North Fork Cowiche Reservoir



- Status
 - WaterSMART Pilot Study Reclamation/YTID
 - Data Gap Analysis 2020
 - Geotechnical Investigations ongoing
 - RiverWare Modeling ongoing
 - Land Acquisition TBD









Anything above 0% is successful, all of the 603 Kachess fish and 64 Gold Creek fish





Adaptive Management Strategies 2020-2021

- Lower Tank Densities
- Condense Rescue Window
- Increase Feed Rations and Frequency
- Increase Habitat in Tank
- Delay Introducing Fry in Diet

Increase in Survival: Kachess 74%

Gold 22%

Kachess		Gold	
2019-2020		2019-2020	
Starting Inventory	1162	Starting Inventory	107
Released	152	Released	78
			0.7
Survival @ LaSalle	<u>0.13</u>	Survival @ LaSalle	<u>0.7</u> <u>3</u>
2020-2021		2020-2021	
Starting Inventory	594	Starting Inventory	64
Released	531	Released	61
Keleaseu	331	Released	91
			<u>0.9</u>
Survival @ LaSalle	0.89	Survival @ LaSalle	<u>5</u>



Kachess 2019-2020		
Date	Length (mm)	Weight (g)
August	41.5	1.35
September	63	3.21
October	72.75	4.35
November	78.9	5.04
December	88	7.13
January	93.1	8.22
February	106.16	13.53
March	115.9	16.97
April	133.6	24.06
May	153.2	36.2

Kachess 2020-2021		
Date	Length (mm)	Weight (g)
August	50.60	1.50
September	59.10	2.16
October	69.20	3.77
November	72.10	4.72
December	84.75	6.52
January	106.25	10.91
February	120.4	18.11
March	135.38	21.95
April	144.17	26.28
May	161.26	41.5



Gold 2019-2020		
Date	Length (mm)	Weight (g)
August	50	1.5
September	71.6	4.56
October	83.6	6.15
November	81.9	5.59
December	84.4	6.06
January	94.6	8.4
February	100.08	11.82
March	116.4	15.83
April	138.2	29.52
May	167.2	45.3

Gold 2020-2021			
Date	Length (mm)	Weight (g)	
August	58.00	1.80	
September	88.40	7.33	
October	90.20	9.32	
November	107.90	14.42	
December	127.75	24.50	
January	143.89	31.46	
February	155.90	41.62	
March	177.83	49.38	
April	179.83	63.83	
May	216.19	124.44	

Post Tagging/Release Survival to Date

2020 Release Gold Creek

- 47 Released 35 detected at Gold Creek Detector from May through November (last detection 11/4)
 - An additional 7 tags were detected that were determined to be mortality tags reused from early salmonid studies, but were actually Bull Trout
 - Possible 42 of the 47 released at Gold Creek Bridge were detected
 - Average length 158mm
- 29 Released 2 detected at Gold Creek Detector
 - Average length 176mm

2020 Kachess Releases

- 81 Released 1 detected (Mouth of Gale, and Thetis Creeks)
- 69 Released 0 detected (Mouth of Kachess River)

5 acoustic tagged Bull Trout released 2 survived

- 1 into Box Canyon Creek (240 mm)
- 1 in lake survived winter and still foraging (Jeremy 250mm)

Cle Elum Fish Passage Overview and Sockeye Study Update



Intake Gate & Helix - Update Looking Downstream into Intake Conduits







Intake Gate & Helix





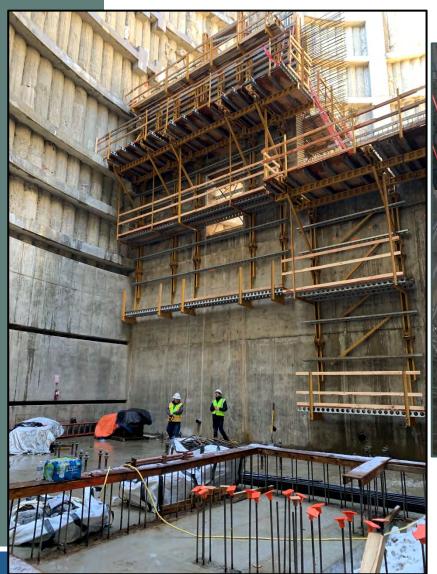








Intake Gate & Helix Separation and Access Walls Construction









Tunnel Construction – Mobilized, March 2018









Tunnel Steel Plates and Concrete Placement





Liner Placement

- Excavate
- Outer Liner Plates
- Invert Placement
- Repair as needed
- Crown Placement



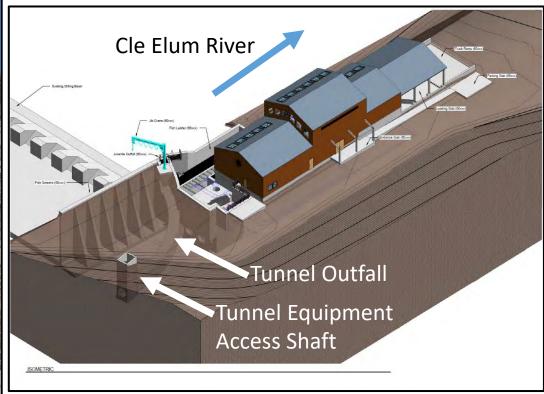




Tunnel Construction, Completed March 2021



Tunnel Outfall will be constructed as part of the Adult Collection Facility





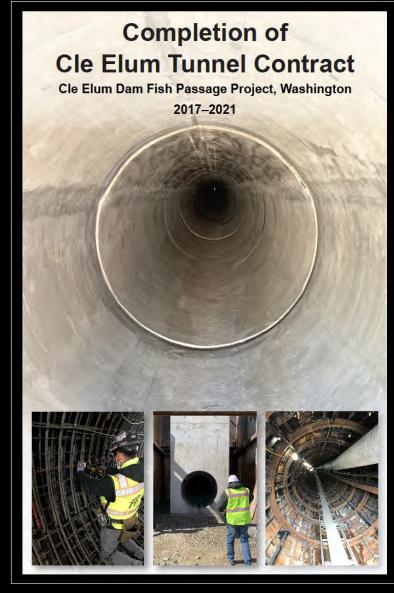


Cle Elum Fish Passage Construction Status

Completed three of five construction contracts to date



Go, Team!













Thank You!





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

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



