



Yakima River Basin Water Enhancement
Project Workgroup

Yakima Basin Integrated Plan Bull Trout Programs and Actions

Richard Visser USFWS in place of Walt Larrick - USBOR

June 16, 2016





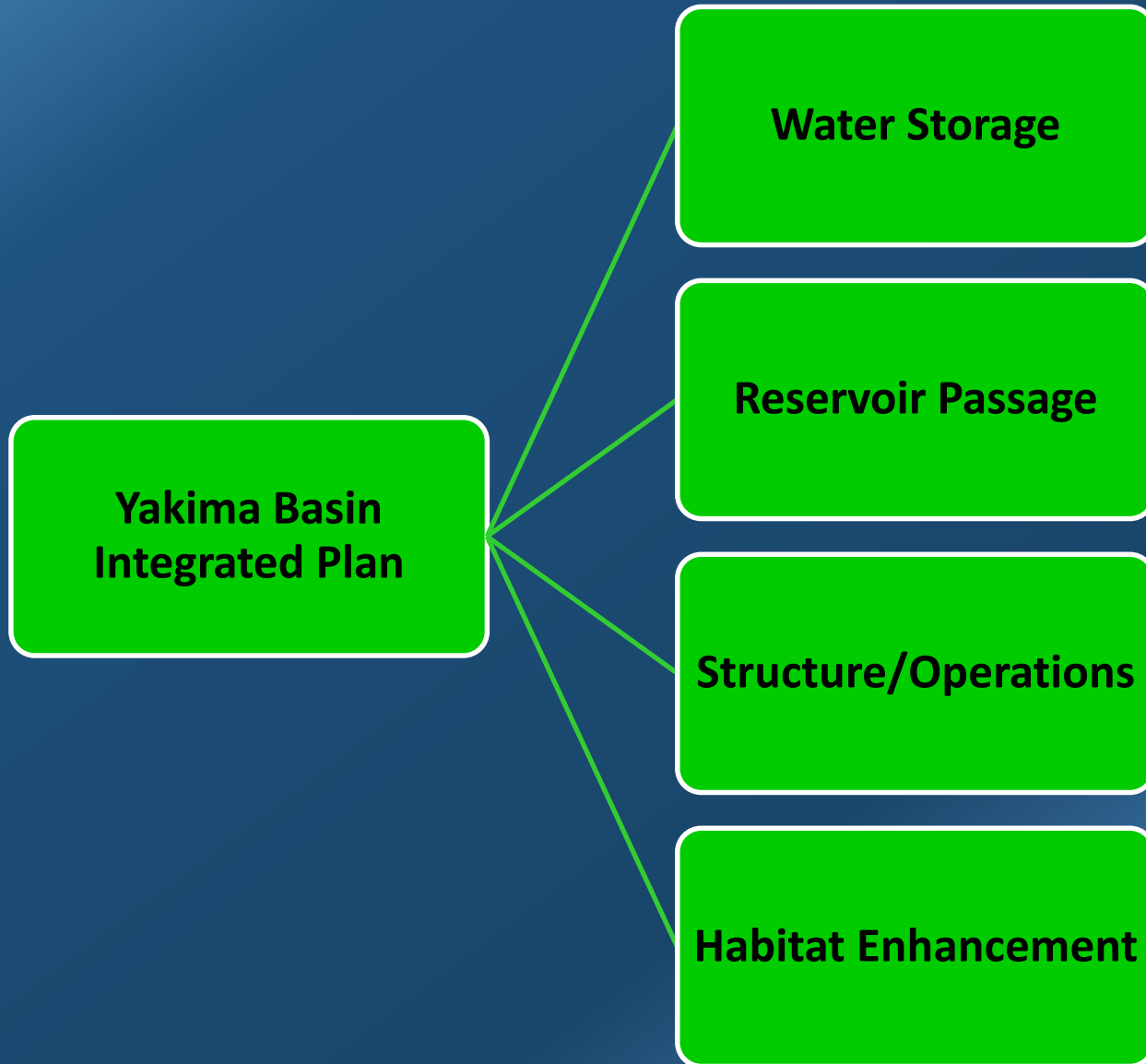
Yakima Basin Integrated Plan



Seven Elements:

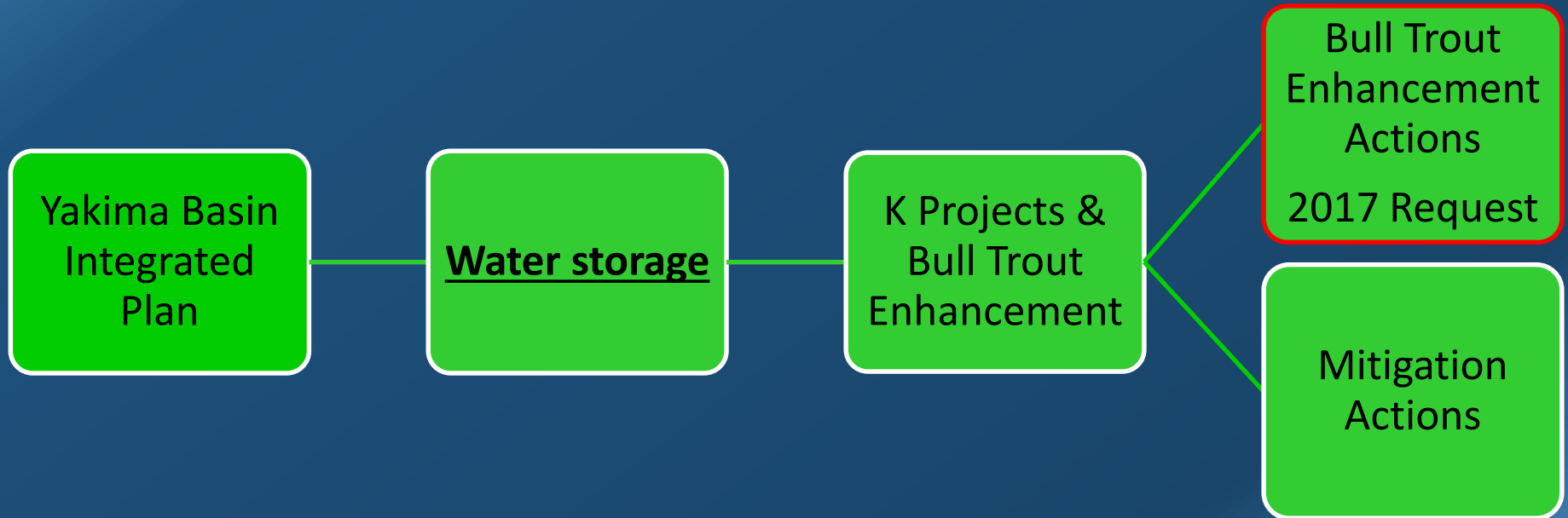
1. Reservoir Fish Passage
2. Structural and Operational Changes
3. Surface water storage
4. Groundwater storage
5. Water Conservation
6. Water Marketing
7. Habitat Enhancement and Protection

YBIP Elements - Bull Trout Action Pathways



YBIP Water Storage Element

K Projects and BT Enhancement Actions



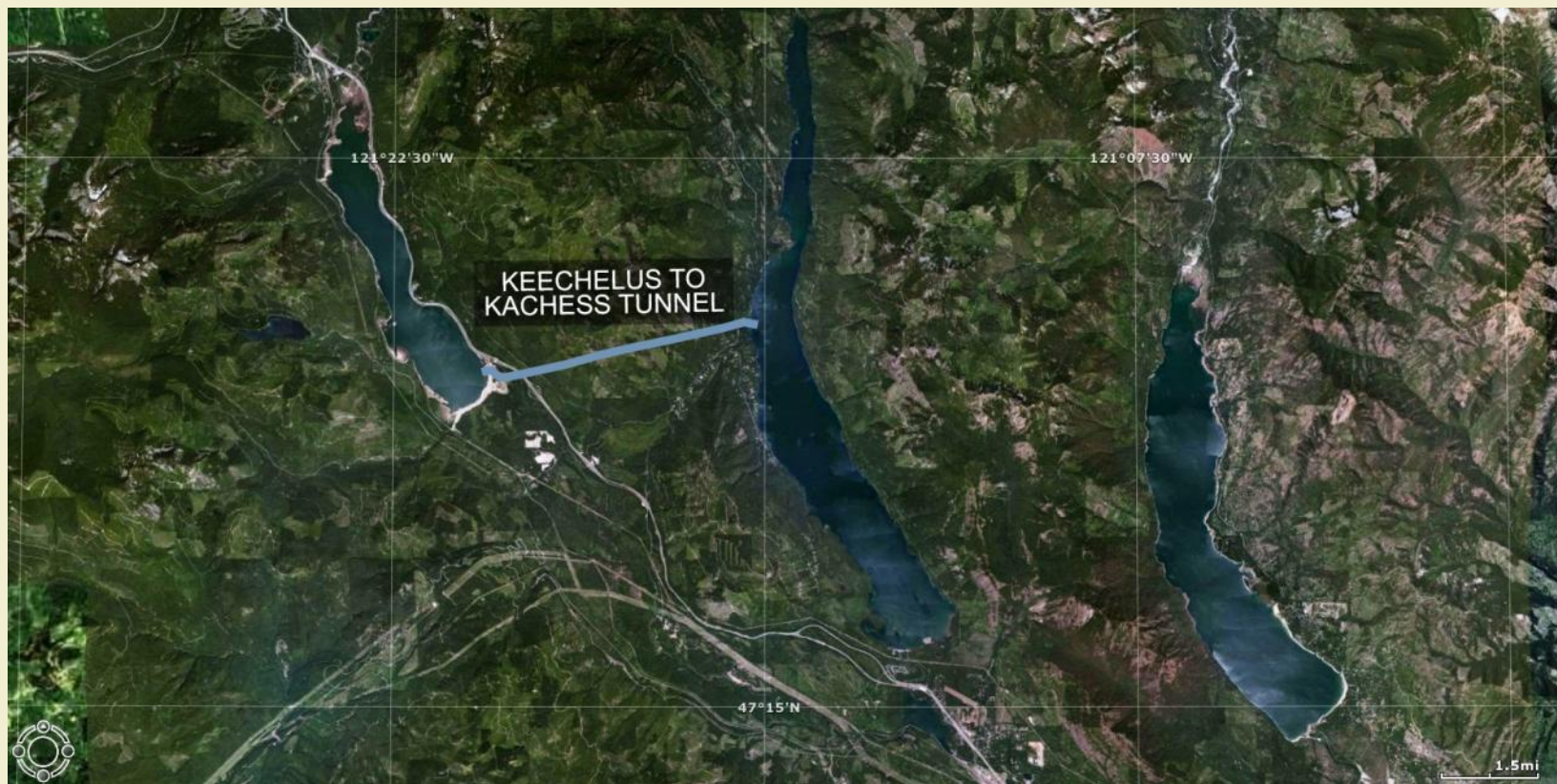


Kachess Inactive Storage





K to K Conveyance Project



Bull Trout Enhancement

- Reclamation and Ecology have coordinated with USFWS, USFS, Yakama Nation, WDFW, and NMFS to formulate Bull Trout Enhancement program.
- BTE is part of all action alternatives in KKC/KDRPP EIS
- MOU with Reclamation, Ecology, Yakama Nation, USFWS, WDFW, USFS – signed October 2015



Bull Trout Enhancement Phase I & Phase II

Project	Assessment and Design Costs	Construction and Implementation	Total
Gold Creek Passage & Habitat Improvements*	\$250,000	\$3,000,000	\$3,250,000
Gold Creek USFS Bridge Replacement	N/A	\$5,600,000	\$5,600,000
Cold Creek Passage Improvement*	\$250,000	\$1,600,000	\$1,850,000
Bull Trout Task Force	N/A	\$66,000	\$66,000
Kachess River & Box Canyon Passage & Habitat Assessment and Design*	\$600,000	TBD	\$600,000
Box Canyon Passage Assessment and Design	\$200,000	TBD	\$200,000
South Fork Tieton River Passage Assessment & Design*	\$550,000	TBD	\$550,000
Bull Trout Population Enhancement Evaluation*	\$500,000	TBD	\$500,000
Improve Productivity and Food Resources (nutrient enhancement)*	\$200,000	\$500,000	\$700,000
		Grand Total	\$13,316,000

K Projects & Bull Trout Enhancement - State Funding Request

Draft*
2017-2019 Request
For BT Enhancement
6 Projects = \$1,700,000

Bull Trout Draft Project list - (Upper Yakima Water Supply Projects)

Project Summary: This project is a set of draft actions that will benefit upper Yakima River basin Bull Trout that are currently at high risk of becoming extirpated. Actions will focus on evaluation, design, and construction projects that will benefit Gold Creek, Box Canyon Creek, and Kachess River Bull Trout populations. These actions are part of the Bull Trout Enhancement projects identified in the proposed alternatives for the Kachess Drought Relief Pumping Plant (KDRPP) and Keechelus to Kachess Conveyance (KKC) tunnel water supply projects.

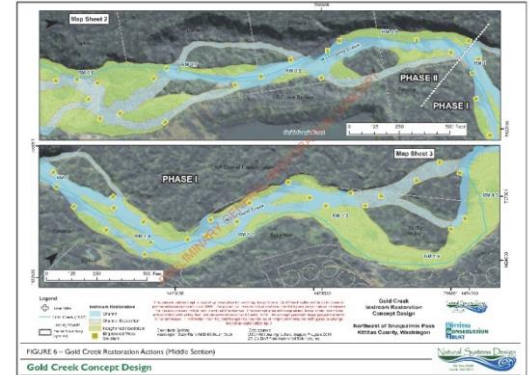
Component Activities:

1. Restore channel configurations (Gold Creek and Kachess River)
2. Improve passage from reservoirs to tributary habitat (Gold Creek, and Kachess River)
3. Provide BT outreach and enhance passage (Bull Trout Task Force)
4. Evaluate population enhancement management options (Upper Yakima Populations)

Benefits:

- Maintain and improve instream flows
- Restore instream rearing and spawning habitat
- Restore floodplain processes enhancing rearing habitat
- Enhance and restore fish passage to spawning and rearing habitat
- Reduce Bull Trout predation

Request: \$1,700,000



Gold Creek Instream Restoration Concept Design – Phase I and II



Bull Trout spawning above Rimrock Lake



Draft - Bull Trout Project List	Request
Gold Ck. Channel Restoration Phase 1 Final Design	\$ 100,000
Gold Ck. Channel Restoration Phase 1 Construction	\$ 1,080,000
Gold Ck. USFS Bridge Replacement - Final Design	\$ 30,000
Kachess River Passage & Floodplain Assessment/Design	\$ 210,000
Bull Trout Task Force (Basin)	\$ 80,000
Bull Trout Population Enhancement Evaluation (Basin)	\$ 200,000
Total	\$ 1,700,000

Bull Trout Restoration YBIP 2017-2019 State Project #1 & 2

**Gold Creek
Channel
Restoration
Phase 1
Final Design
\$100,000**

**Gold Creek
Channel
Restoration
Phase 1
Construction
\$1,080,000**

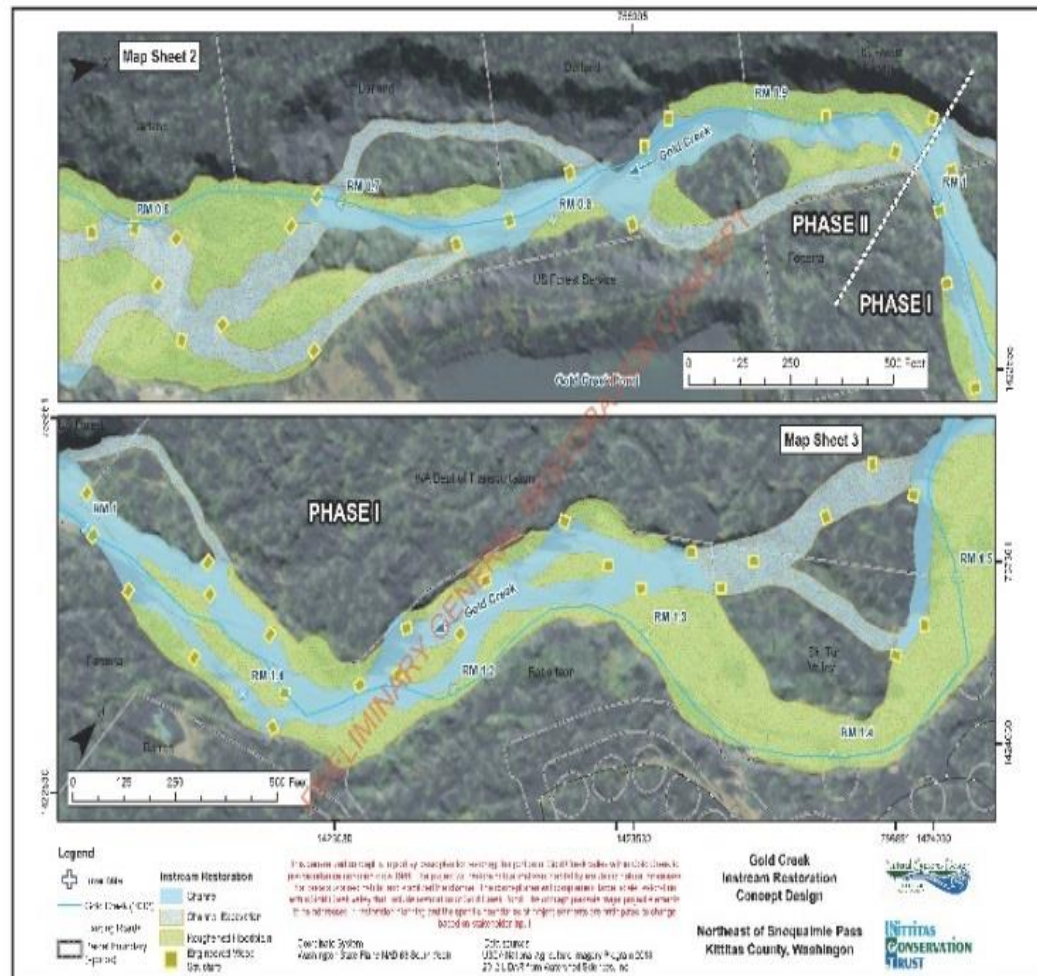


FIGURE 6 – Gold Creek Restoration Actions (Middle Section)

Gold Creek Concept Design



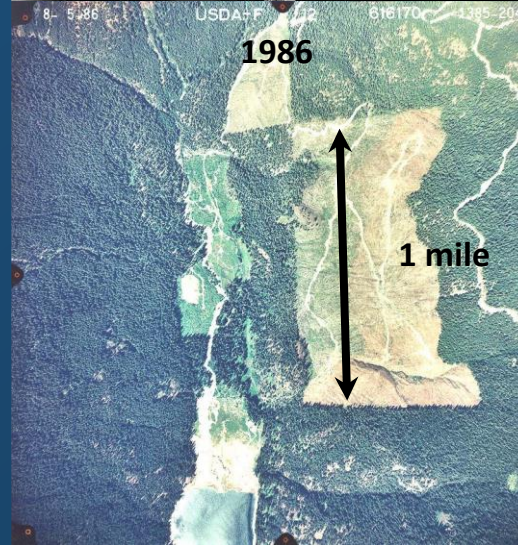
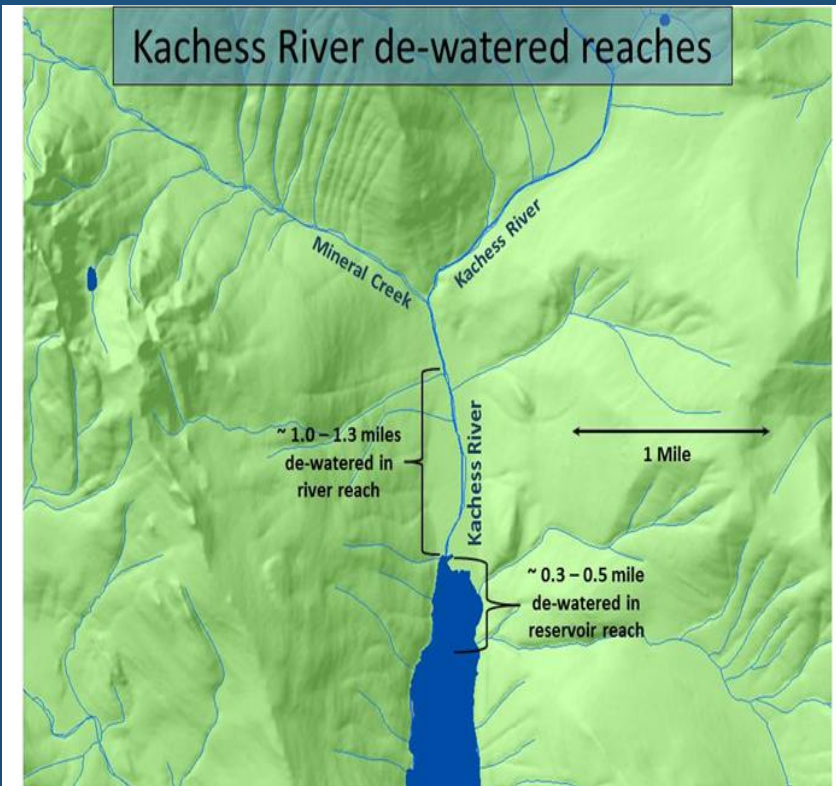
Bull Trout Restoration YBIP 2017-2019 State Project # 3

Forest
Service
Bridge
Replacement
Final Design
\$30,000



Bull Trout Restoration YBIP 2017-2019 State Project #4

Kachess River Passage & Floodplain Assessment & Design \$210,000



Bull Trout Restoration YBIP 2017-2019 State Project #5

Bull Trout Task Force \$80,000



Bull Trout Task Force Proposed Scope of Work, 2017-2019

Project Summary: The Yakima Basin Bull Trout Task Force, piloted in 2011, directly addresses conservation needs for bull trout, one of two ESA-listed fish species in the Yakima basin. There are 15 identified local bull trout populations in the basin that occupy a wide range of habitat, primarily foraging and overwintering in mainstem rivers and reservoirs, with spawning and rearing in headwater tributaries. These habitats are also where recreation is focused and user-built recreational dams are constructed during low flow using rocks and debris to back-up water for a swimming or fishing hole.

The intent of the Bull Trout Task Force (BTTF) is to provide an on-the-ground crew to mitigate recreational impacts to bull trout and their habitat. The Bull Trout Task Force's primary goals are to remove recreation dams that are potential passage barriers to fall-spawning salmonids, educate the public about the consequences of recreation dams and bull trout protection, evaluate passage conditions and dewatering in spawning tributaries, and assist with population monitoring and research projects.

Component activities:

- Maintain passage for fall-spawning salmonids through recreation dam removal;
- Assess passage conditions;
- Reduce intentional and accidental poaching through direct education;
- Monitor bull trout populations; and
- Support agency bull trout projects as needed.

Benefits: The crew works in the Upper Yakima, Naches and Lower Yakima subwatersheds of the Yakima basin where bull trout are found. In 2015, the crew maintained passage to spawning habitat through the removal of more than 160 recreation dams. With dam removal as the primary emphasis, the crew also managed to educate 630 people.

Cost: \$70,000.



BTTF members remove a channel-spanning rock dam on the South Fork of Ahtanum Creek in 2015.

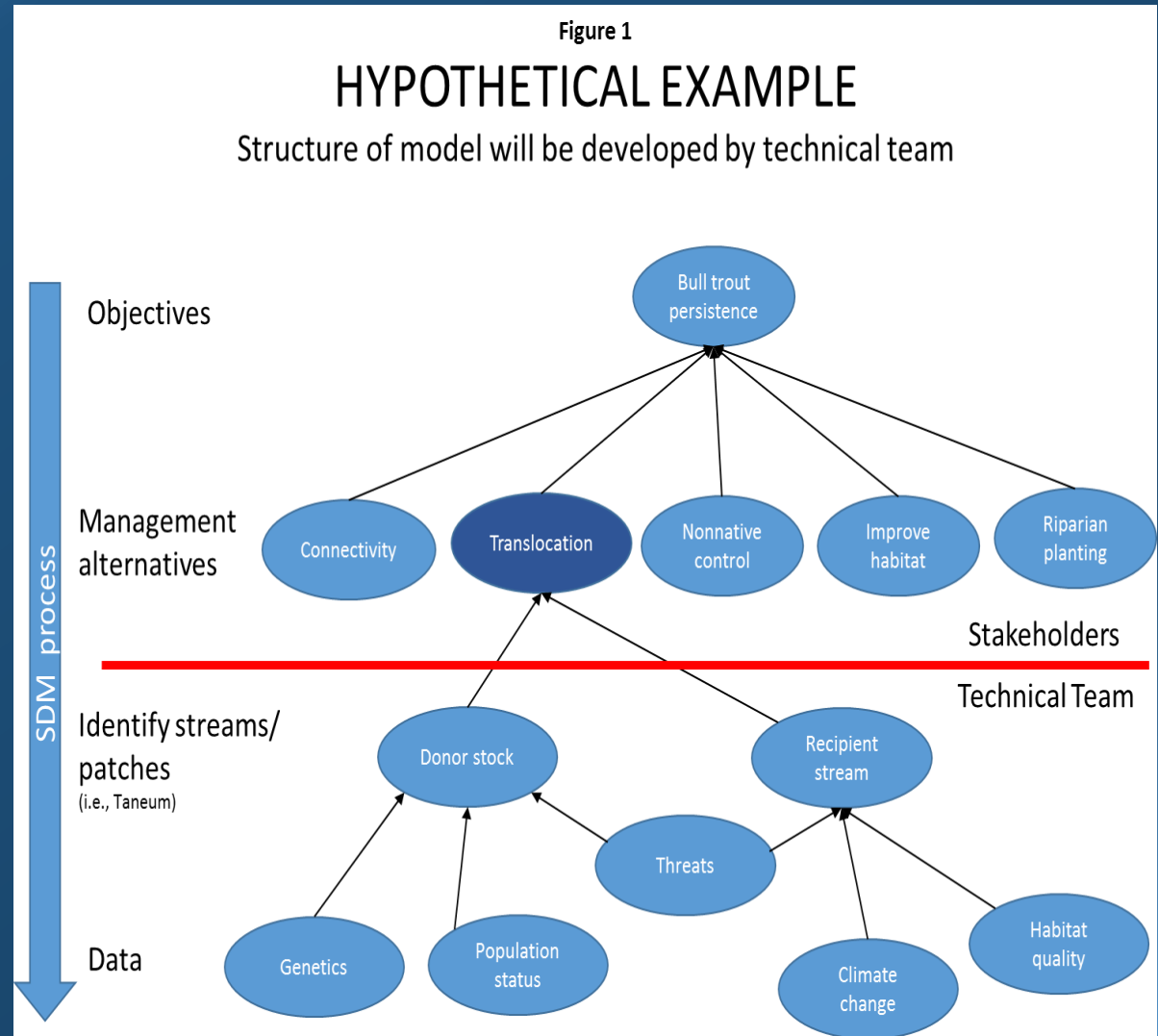


BTTF supervisor Cassandra Weekes emphasizes that the mouth of Indian Creek is closed to fishing.

Bull Trout Restoration YBIP 2017-2019 State Project #6

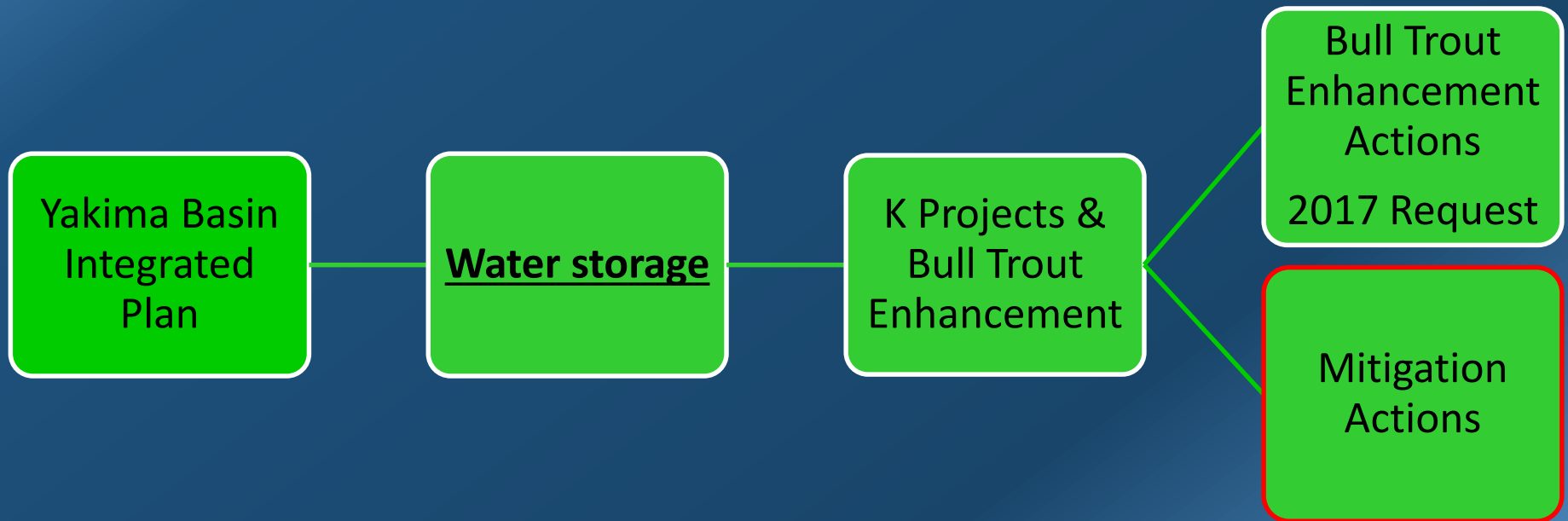
**Bull Trout
Population
Enhancement
Evaluation
\$200,000**

- **Translocation**
- **Supplementation**

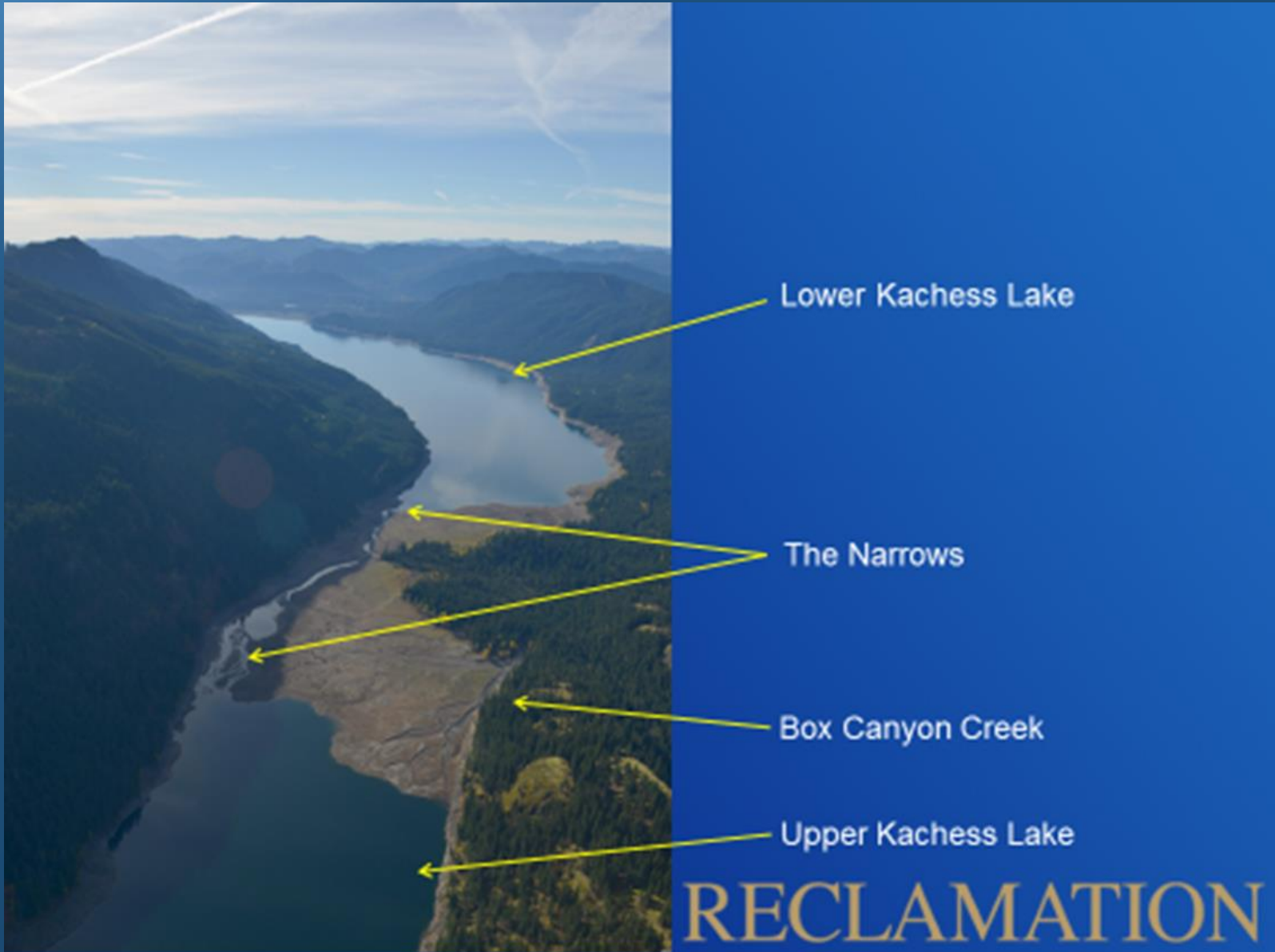


e.g. Decision Support Modeling – Joseph Benjamin & Jason Dunham USGS

YBIP Water Storage Element BT Mitigation



K Projects Mitigation Needs?



YBIP Passage Element BT Restoration Pathway

Yakima Basin
Integrated Plan

Reservoir
Passage

YBIP 2017
Request



Clear Lake Passage YBIP 2017-2019 State Request =1,500,000



North Fork Tieton Passage for Bull Trout

Project Summary: This project will work to restore fish passage into high quality N.F. Tieton spawning and rearing habitat for Bull Trout and other native fish species.

Problem Statement

The N.F. Tieton River bull trout population is split between two segments which are genetically identical. One segment currently spawns in the river above Clear Creek Dam and the other is trapped below it. The size of these two population segments are approximately equivalent with neither being large in number. For all intents and purposes it appears to be nearly impossible for an adult bull trout to migrate up the spillway channel, the only migratory route past the dam. Both hydraulics and water temperature contribute to the passage problem. A denil fish ladder in the lower portion of the spillway channel has not and will not provide adequate passage when needed. Migrating fish must ascend a steep bedrock channel with extreme water velocities to reach a serviceable ladder in the upper portion of the spillway. Water temperatures in the spillway channel, exceeds temperatures in excess of those that limit bull trout distribution (15°C), likely deterring bull trout from entering the channel from late spring through early September. As a result, significant numbers of bull trout migrate up the dam outlet channel and congregate in the stilling basin below Clear Creek Dam where water temperatures are 4-8°C cooler on average than in the spillway.

Component Activities:

1. Identify and evaluate fish passage options.
2. Design preferred fish passage alternative.
3. Conduct environmental review and obtain project permits.
4. Begin project construction

Benefits:

- Completed project will provide passage to critical spawning and rearing habitat.
- Passage will restore genetic connectivity
- Passage will significantly reduce population losses
- Passage may improve prey abundance above the barrier and restore ecological functions and resources

Request: \$1,500,000



Clear Lake Dam – No Fish Passage Facilities

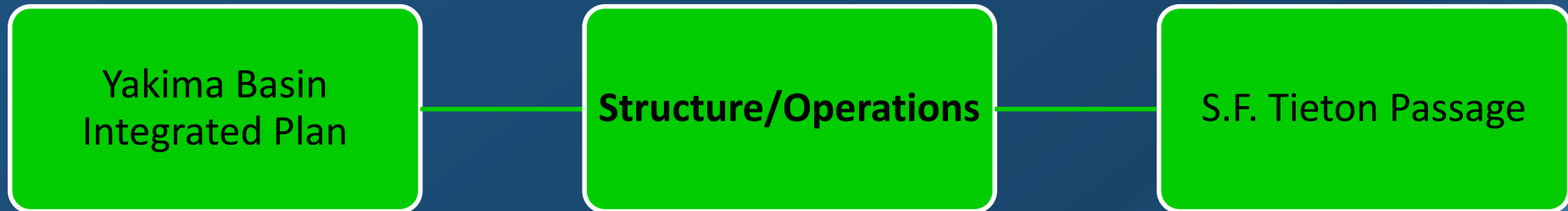


Clear Lake Spillway – No Functional Fish Passage Facilities



Non-functional Denil fish ladder at low flow

YBIP Structure and Operations Element Bull Trout Action Pathways



S.F. Tieton Fish Passage 2015 Funding (Assessment & Design)



YBIP Habitat Enhancement Element BT Restoration Pathway



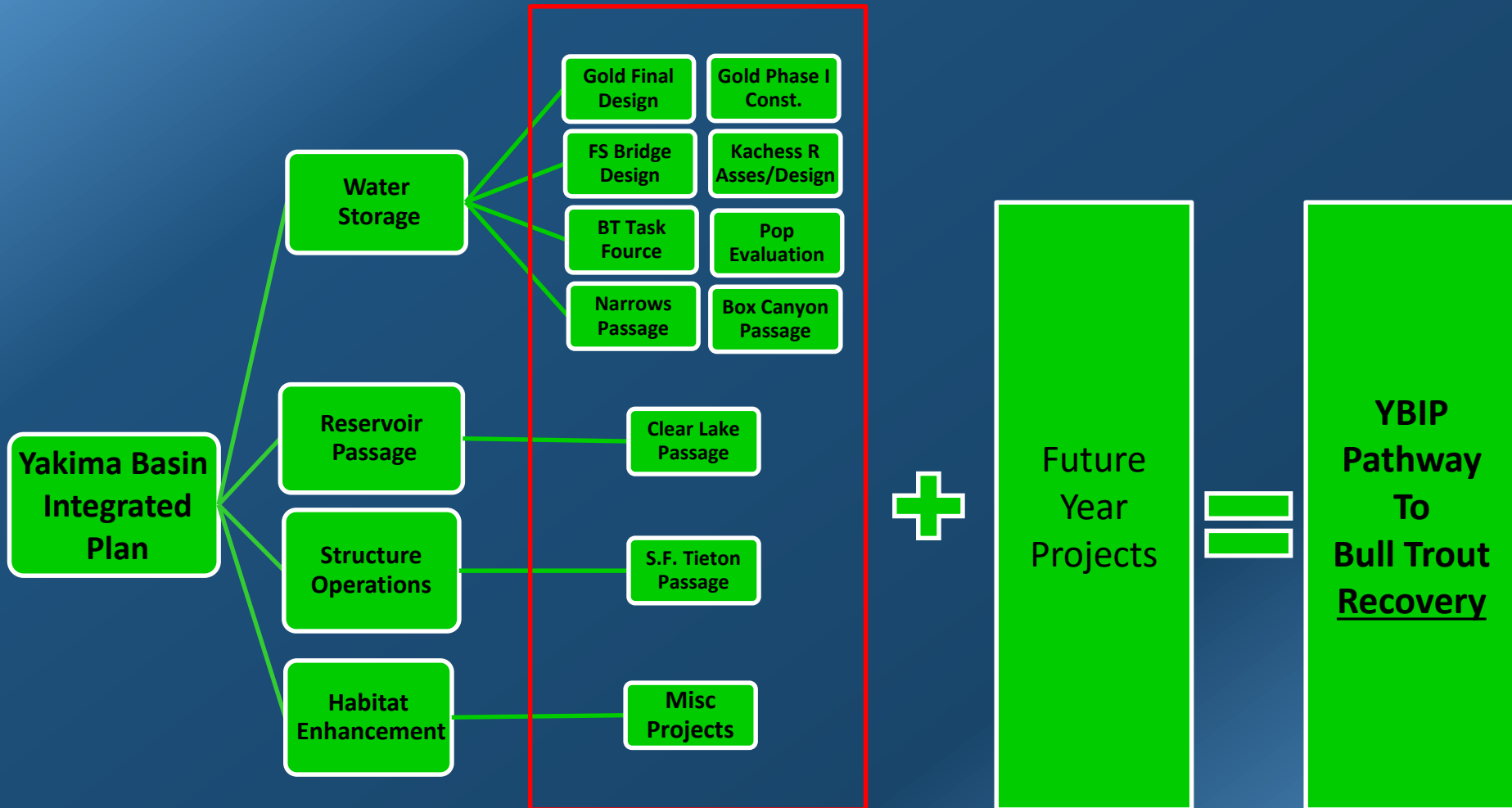
Habitat Enhancement Request for 2017 - 2019

Table 1. Habitat Subcommittee 2017- 2019 Project Proposal

Projects	\$5M Request	\$9M Request
Lower Yakima River Projects		
Bateman Island	\$300,000	\$300,000
Thermal Refuge & Aquifer Recharge	\$150,000	\$150,000
Wapato Reach (WR) & Tributaries		
WR - Riparian project	\$300,000	\$400,000
WR - Lamprey project	\$0	\$200,000
WR - Acquisition & Restoration (Left Bank)	\$250,000	\$420,000
WR Tributaries (Starvation Flats, Toppenish, Ahtanum)	\$800,000	\$1,500,000
Union Gap/Naches - Floodplains & Tributaries		
Gap to Gap - Locally Preferred Alternative	\$0	\$300,000
Naches River and Cowiche Creek Floodplains Restoration	\$500,000	\$500,000
Ramblers Park Phase VI	\$500,000	\$500,000
USFS - Little Naches & Crow Watershed Aquatic Restoration	\$500,000	\$500,000
Kittitas County Floodplains & Tributaries		
Protection Acquisitions (Thorp Reach)	\$1,200,000	\$3,000,000
Teaway Instream Restoration	\$500,000	\$500,000
North Fork Manastash/Taneum Restoration	\$0	\$230,000
Priority Tributary Flow Supplementation		
	\$0	\$500,000
Total Request for 2017 - 2019	\$5,000,000	\$9,000,000



YBIP Elements - Bull Trout Action Pathways



Summary

- Work on more than 12 Projects over 5 years
 - Habitat
 - Passage
 - Habitat & Passage
- These projects will cost at least 5.0M (does not include mitigation)
- Most of these project will be tied to Water Storage Projects
 - Bull Trout Enhancement Actions
 - Potential Mitigation Needs
- YBIP = Working to meet communities needs tied to water





YBIP Work Group Members



Federal Agencies

Bureau of Reclamation
National Marine Fisheries Service
U.S. Fish and Wildlife Service
U.S. Forest Service

Yakama Nation

Yakama Nation Natural Resources
Yakima/Klickitat Fisheries Project

Washington State Agencies

Department of Ecology
Department of Agriculture
Department of Fish and Wildlife

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

Questions?

Water Storage and Delivery
Operation and Management “Biological Opinion”
“Reasonable and Prudent Alternatives”

