



# Meeting Handouts

April 17, 2018

1. Agreement Status of 2017-2019 FBRB Funded Projects
2. Initial Review of 2019-2021 Coordinated Pathway Project Proposals
3. Memo: Signage for funded projects
4. Estimate of Anadromous Barriers in Washington State
5. Mill Creek Flume presentation

**Agreement Status of 2017 - 2019 FBRB Funded Projects**

Updated 04.15.2018

Project Rank	Project Name	WDFW TRT Bio	RCO Grant Manager	Board Award Amount (amt. in 'Binder')	Real Match	Final Project Estimates	Notes	PRISM Application Status
1	Chico Cr Fish Passage_SiteID 15.0229 1.00	Piazza	Caudill	\$3,472,000		\$3,472,000		Preapplication
2	Johnson Cr Fish Passage_SiteID R261020014604	Piazza	Caudill	\$2,759,000	\$98,200.00	\$2,158,432	Final contract amount less than Board Award based on final project estimate. Agreement signed and back to RCO for signatures.	RCO Approved
3	Buford Cr Fish Passage_SiteID 990048	Collins	Lambert	\$3,100,000	\$249,253.00	\$4,160,031*	Full designs have already been funded by another SRFBoard grant. Sponsor has another have pre-application in with SRFBoard to cover overrun.	RCO Approved
4	MF Newaukum Fish Passage_SiteID 021(45011)(07070)	Roler	Lambert	\$525,000	\$0.00	\$880,461*	If cost increase request is denied, sponsor will submit a scope change request to 'design-only'.	RCO Approved
5	<del>Trib to Arkansas Cr Fish Passage_SiteID 106c0042</del>	<del>Roler</del>		<del>\$261,000</del>		<del>\$0</del>	<del>Funded through FEMA—removed from list.</del>	<del>Withdrawn</del>
6	Coleman Cr Fish Passage_SiteID Col03.41	Collins	Caudill	\$606,762		\$606,762		Application Complete
7	Catherine Cr Fish Passage_SiteID 993471	Piazza	Lambert	\$519,500	\$8,962.00	\$307,427	Final contract amount less than Board Award based on final project estimate.	RCO Approved
8	Trib to Coffee Cr Fish Passage_SiteID 115 MC182	Piazza	Caudill	\$300,000		\$563,475*		Preapplication
9	Johnson Cr Fish Passage_Site ID 114JC001	Collins	Caudill	\$499,000	\$353,118.00	\$499,000		Preapplication
10	Baxter Cr Fish Passage_SiteID 106c0048	Roler	Lambert	\$2,001,000		\$2,520,882*		RCO Approved
11	Turner Cr Fish Passage_SiteID 106c0152	Roler	Lambert	\$1,000,000		\$1,000,000		Preapplication
12	Cottonwood Cr Fish Passage_SiteID 602004	Collins	Lambert	\$57,200	\$0.00	\$57,200		Application Submitted
13	Trib to Johnson Cr Fish Passage_SiteID 80001263	Piazza	Caudill	\$1,683,000		\$1,683,000	If a bridge is req'd and costs increase above 1.6M\$, County will cover the overrun.	Preapplication

\*per anticipated cost increase request

Total Award Amount	Match Total	New Total	Balance
\$16,783,462	\$709,533.00	\$17,908,670.00	<b>-\$1,125,208.00</b>

Alternates			
Rank	Project	Cost Estimate in Binder	TRT BIO
14	MF Newaukum	\$850,500	Roler
15	<b>Dayton Cr</b>	\$460,000	Piazza
16	Coleman Cr	\$1,560,734	Collins
17	Catherine Cr	\$400,000	Piazza
18	Johnson Cr	\$550,951	Collins
19	Thorndyke Cr	\$1,412,000	Roler

Budget Summary for \$19,747,000 in Capital Budget	
Item	Amount
Total Grant Awards for Top 13 Projects	\$16,783,462
Facilitation Contract	\$68,500
RCO Administration and Project Management (4.12%)	\$813,576
WDFW Administration and Program Implementation	\$798,233
Total	\$18,463,771
Reserved for Cost Overruns/Alternates	\$1,283,229

\$19,747,000



## **Initial Review of 2019-2021 Coordinated Pathway Project Proposals**

April 15, 2018

Draft Applications for the Brian Abbott Fish Barrier Removal Board (FBRB)'s 2019-2021 Coordinated Pathway were due March 29, 2018. The FBRB received 49 applications that included design and/or construction funding requests for 61 barriers.

Breakdown by feature type:

Culvert – 56

Dam – 2

Flume – 1

Unknown – 2 (one is in FPDSI as a gradient barrier, the other is a headcut)

Breakdown by ownership type:

City – 8

County – 36

None – 1 (barrier is a headcut, need more info)

Private - 15

Tribal - 1

Of the 61 barriers, 28 of them were submitted for 'design-only' funding, and the other 33 were submitted for construction funding.

The total requested dollar amount from the FBRB is 24,594,123\$.

## Initial Review of Draft Applications for 2019-2021 FBRB Coordinated Pathway

Updated 04.16.2018

FBRB ID	Stream	Trib To	Road Name	Feature Type	WRIA	County	Ownership	Applicant - POC	Scope	Current Design Level	Requested Amount
01	Cayou Cr	Deadman Bay	South Shore Rd	Culvert	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	None	\$125,000
02	Cedar Cr	Juanita Cr	100th Ave NE	Culvert	8	King	City - Kirkland	City of Kirkland PW - Kyle Butler	Planning	None	\$500,000
03a	Chumstick Cr	Wenatchee R	Motteler Rd	Culvert	45	Chelan	County - Chelan	Chelan Co Nat Res - Jennifer Hadersberger	Restoration	None	
03b	Chumstick Cr	Wenatchee R	Eagle Ridge Rd	Culvert	46	Chelan	County - Chelan	Chelan Co Nat Res - Jennifer Hadersberger	Restoration	None	\$499,000
03c	Chumstick Cr	Wenatchee R	private; SR 209	Culvert	47	Chelan	Private	Chelan Co Nat Res - Jennifer Hadersberger	Restoration	None	
04	Unnamed Trib	Curley Cr	None	Dam	15	Kitsap	Private	Kitsap Co CD - Carin Anderson	Planning	None	\$85,160
05	Dickerson Cr	Chico Cr	private; David Rd NW	Natural / Fishway	15	Kitsap	Tribal	Kitsap Co CD - Carin Anderson	Restoration	None	\$454,100
06	Ebright Cr	Lk Sammamish	E Lake Samm Prkwy	Culvert	8	King	City - Sammamish	City of Sammamish PW - Danika Globokar	Restoration	None	\$1,650,000
07	Fisher Cr	Carpenter Cr	Starbird Rd	Culvert / Fishway	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	None	\$48,000
08	Fisher Cr	Carpenter Cr	Cedardale Rd	Culvert / Fishway	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	None	\$138,000
09a	Geissler Cr	Wynoochee R	driveway; Geissler Rd	Culvert	22	Grays Harbor	Private	Chehalis Basin Task Force - Brett Demond	Restoration	Preliminary	
09b	Geissler Cr	Wynoochee R	driveway; Geissler Rd	Culvert	22	Grays Harbor	Private	Chehalis Basin Task Force - Brett Demond	Restoration	Preliminary	
09c	Geissler Cr	Wynoochee R	Geissler Rd	Culvert	22	Grays Harbor	County - Grays Harbor	Chehalis Basin Task Force - Brett Demond	Restoration	Preliminary	\$846,000
09d	Geissler Cr	Wynoochee R	Wynoochee Rd W	Culvert	22	Grays Harbor	County - Grays Harbor	Chehalis Basin Task Force - Brett Demond	Restoration	Final	
10a	George Davis Cr	Lk Sammamish	None	Culvert	8	King	Private	City of Sammamish PW - Danika Globokar	Planning	None	
10b	George Davis Cr	Lk Sammamish	E Lake Sammamish Parkway	Culvert	8	King	City	City of Sammamish PW - Danika Globokar	Planning	None	\$600,000
11	Unnamed Trib	Grader Cr	private forest rd	Culvert	20	Clallam	Private	Pacific Coast Salmon Coal - Alex Huelsdonk	Restoration	Conceptual	\$75,000
12	Kenney Cr	NF Nooksack R	North Fork Rd	Culvert / Fishway	1	Whatcom	County - Whatcom	Whatcom Co PW - John Thompson	Planning	None	\$450,000
13	King Cr	Olequa Cr	private; King Rd	Culvert	26	Lewis	Private	Lewis Co CD - Kelly Verd	Restoration	None	\$178,000
14	King Cr	Olequa Cr	King Rd	Culvert	26	Lewis	County - Lewis	Lewis Co PW - Ann Weckback	Restoration	None	\$371,000
15	Kristoferson Cr	Triangle Cove	E Camano Dr	Culvert	6	Island	County - Island	Island Co DNR - Dawn Pucci	Restoration	Conceptual?	\$544,753
16	Langlois Cr	Snoqualmie R	None	Culvert	7	King	County - King	Snoqualmie Valley Improve Dist - Andy Obst	Planning	None	\$29,530
17	Lyon Cr	Lk Washington	SR 104	Culvert		King	City - Lake Forest Park	City of Lake Forest Park - Aaron Halverson	Planning	Preliminary	\$200,000
18	Mason Cr	EF Lewis R	NE 102nd Ave	Culvert	27	Clark	County - Clark	Clark Co PW - Jennifer Taylor	Planning	None	\$155,200
19	Unnamed Trib	Quilceda Cr	None	Culvert	7	Snohomish	City - Marysville	Adopt A Stream - Zac Mallon	Restoration	None	\$386,236
20	Mill Cr	Walla Walla R	None	Flume	32	Walla Walla	City - Walla Walla	Tri State Steelheaders - Aaron Mettler	Restoration	Final	\$3,622,403
21	Mill Cr	Peshastin Cr	Mountain Home Ranch Rd	Culvert	45	Chelan	County - Chelan	Kane Natural Resources - Mike Kane	Restoration	Preliminary	\$492,432
22	Miller Cr	Puget Sound	Des Moines Memorial Dr	Culvert	9	King	Private	Otak - Frank Reinart	Restoration	"Permit" (60%)	\$3,018,000
23	Minter Cr	Henderson Bay	188th Ave NW	Culvert	15	Pierce	County - Pierce	Pierce Co PW - Marty Ereth	Planning	None	\$90,000
24a	Naylors Cr	Chimacum Cr	W Valley Rd	Culvert / Fishway	17	Jefferson	County - Jefferson	Jefferson Co PW - Wendy Clark-Getzin	Planning	None	
24b	Naylors Cr	Chimacum Cr	None	Culvert	17	Jefferson	Private	Jefferson Co PW - Wendy Clark-Getzin	Planning	None	\$250,000
24c	Naylors Cr	Chimacum Cr	Gibbs Lake Rd	Culvert	17	Jefferson	County - Jefferson	Jefferson Co PW - Wendy Clark-Getzin	Planning	None	
25	Unnamed Trib	Nelson Cr	private; Reynold Rd	Dam	19	Clallam	Private	North Olympic Land Trust - Lorrie Mittman	Restoration	None	\$30,350
26	Unnamed Trib	Newskah Cr	Newskah Rd	Culvert	22	Grays Harbor	County - Grays Harbor	Chehalis Basin Task Force - Brett Demond	Planning	None	\$22,500
27	Ostrander Cr	Cowlitz R	Railroad X-ing	Culvert	26	Cowlitz	Private	Cowlitz Indian Tribe - Pete Barber	Restoration	Preliminary	\$540,677
28a	Ravensdale Cr	Lk Sawyer	None	Culvert	9	King	County - King Co Parks	King Co Parks and Rec - Linda Frkuska	Restoration	None - Prelim. "underway"	\$1,830,395
28b	Ravensdale Cr	Lk Sawyer	None	Culvert	9	King	County - King Co Parks	King Co Parks and Rec - Linda Frkuska	Restoration		
29	Scammon Cr	Chehalis R	Graf Rd	Culvert	23	Lewis	County - Lewis	Lewis Co PW - Ann Weckback	Restoration	Final	\$561,560
30a	Scammon Cr	Chehalis R	Graf Rd	Culvert	23	Lewis	County - Lewis	Lewis Co PW - Ann Weckback	Planning	None	\$84,780
30b	Scammon Cr	Chehalis R	Blanchard Rd	Culvert	23	Lewis	County - Lewis	Lewis Co PW - Ann Weckback	Planning	None	\$75,220
31	Scammon Cr	Chehalis R	private; Cooks Hill Rd	Culvert	23	Lewis	Private	Lewis Co CD - Kelly Verd	Restoration	None	\$97,727
32	Schoolyard Cr	NF Stillaguamish R	127th Ave NE	Culvert	5	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Planning	Conceptual	\$99,700
33	Seabeck Cr	Hood Canal	Holly-Seabeck Rd	Culvert / Fishway	15	Kitsap	County - Kitsap	Hood Canal SEG - Tamara Cowles	Restoration	Preliminary	\$1,383,000

## Initial Review of Draft Applications for 2019-2021 FBRB Coordinated Pathway

Updated 04.16.2018

FBRB ID	Stream	Trib To	Road Name	Feature Type	WRIA	County	Ownership	Applicant - POC	Scope	Current Design Level	Requested Amount
34	Secret Cr	Pilchuck Cr	4th Ave NW	Culvert / Fishway	5	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Planning	Conceptual	\$143,800
35	Unnamed Trib	Pilchuck Cr	W Sunday Lake Rd	Culvert	5	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Planning	Conceptual	\$170,300
36	Unnamed Trib	Pilchuck Cr	268th St	Culvert	5	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Restoration	Final	\$603,500
37	Sexton Cr	Pilchuck R	Sexton Rd	Culvert / Fishway	7	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Planning	Conceptual	\$166,800
38a	Spurgeon Cr	Deschutes R	Chehalis W Trail	Culvert	13	Thurston	County - Thurston	Thurston Co PW - Jeanne Kinney	Restoration	Conceptual	\$1,325,000
38b	Spurgeon Cr	Deschutes R	Latigo St SE	Culvert	13	Thurston	County - Thurston	Thurston Co PW - Jeanne Kinney	Restoration	Conceptual	
39	Squalicum Cr	Bellingham Bay	Squalicum Pkwy	Culvert	1	Whatcom	City - Bellingham	City of Bellingham PW - Analiese Burns	Restoration	Preliminary	\$482,000
40	Squilchuck Cr	Columbia R	S Wenatchee Ave	Culvert	40	Chelan	County - Chelan	Cascadia CD - Ken Muir	Planning	Preliminary (but 'expired')	\$121,500
41	Starbird Cr	Fisher Cr	Bulson Rd	Culvert	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	Conceptual	\$30,000
42	Starbird Cr	Fisher Cr	Starbird Rd	Culvert	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	Conceptual	\$70,000
43	Unnamed Trib	Starbird Cr	Starbird Rd	Culvert	3	Skagit	County - Skagit	Skagit Co PW - Emily Derenne	Planning	Conceptual	\$54,000
44	Taneum Cr	Yakima R	None	Headcut	39	Kittitas	State - WDFW	Yakima Nation - Scott Nicolai	Restoration	None	\$111,000
45	Thorndyke Cr	Hood Canal	Thorndyke Rd	Culvert	17	Jefferson	County - Jefferson	Jefferson Co PW - Wendy Clark-Getzin	Planning	None	\$180,000
46	Unnamed Trib	Silver Lk	Silver Lake Rd	Culvert	8	Snohomish	City - Everett	City of Everett PW - Erik Emerson	Planning	Conceptual	\$290,000
47a	Unnamed Trib	Skykomish R	driveway; Mann Rd	Culvert	7	Snohomish	Private	Snohomish CD - Alex Pittman	Restoration	None	\$300,000
47b	Unnamed Trib	Skykomish R	driveway; Mann Rd	Culvert	7	Snohomish	Private	Snohomish CD - Alex Pittman	Restoration	None	
47c	Unnamed Trib	Skykomish R	driveway; Mann Rd	Culvert	7	Snohomish	Private	Snohomish CD - Alex Pittman	Restoration	None	
48	Unnamed Trib	Williams Cr	private; S Machias Rd	Culvert	7	Snohomish	County - Snohomish	Snohomish Co PW - Rob Schurman	Planning	Conceptual	\$75,000
49	Willows Cr	Sammamish R	Willows Rd NE	Culvert	8	King	City - Redmond	City of Redmond Nat Res. - Roger Dane	Restoration	Preliminary	\$937,500
<b>\$24,594,123</b>											

## MEMORANDUM

DATE: March 9, 2018

TO: Fish Passage Barrier Removal Board

FROM: Neil Aaland

SUBJECT: Signage for funded projects

At the February FBRB meeting, I was assigned to review previous discussions of the Board regarding signage. There were two earlier discussions from spring of 2017; the relevant portions of the meeting notes from those meetings are below:

From April 2017 meeting notes:

“Tom handed out a picture provided by Dave Caudill of a project that was dedicated to someone. He is proposing that the first couple of projects would be dedicated to Brian. Members liked that idea. Jon wanted the FBRB to be clear on who would be responsible for maintaining or replacing the sign if it was damaged. Dave Caudill will check on the cost of signs and the point Jon mentioned. Paul liked the idea, and he wonders if we need to think about general signage for fish passage projects, so people see the work being done in the field and have an opportunity to better understand that work. We will discuss this at a future meeting.”

From May 2017 meeting notes:

“At the April meeting the Board briefly discussed the idea of general signage for fish passage projects, so people see the work being done in the field and have an opportunity to better understand that work. One issue around signage for projects is whether the signage is permanent or temporary. The general idea for signage came from an RCO staff member, who saw one in Canada. Several Board members like the idea of temporary signage during construction. Casey is not so sure about a permanent requirement, although Paul liked the idea of permanent signage.

Recommendations

It appears that the Board did not make a final decision on this issue. I recommend the Board consider the following questions at the next meeting:

1. Should funding for projects include a requirement for signage?
2. If so, should the signage be temporary or permanent?
  - a. Should all projects be required to install signage, or just the first few?
3. Who would be responsible for maintaining the signage, if permanent?



## Estimate of Anadromous Barriers in Washington State March 30, 2018

**Contacts:** Ryan Gatchell  
Information Technology Specialist  
[ryan.gatchell@dfw.wa.gov](mailto:ryan.gatchell@dfw.wa.gov)

Justin Zweifel  
Fish Passage Biologist  
[justin.zweifel@dfw.wa.gov](mailto:justin.zweifel@dfw.wa.gov)

### Barriers to salmon and steelhead recovery

In 2018, WDFW estimated the number of transportation-related anadromous salmon and steelhead barriers throughout Washington State. The purpose of the assessment was to update and narrow the scope of the previously estimated 40,000 fish passage barriers, which was developed over 20 years prior and included impediments to all species (anadromous and non-anadromous).

Through an analysis of WDFW's fish passage inventory database and a GIS-based approach to identifying potential barriers at road and stream junctions, WDFW estimates that there are at least **18,000 - 20,000** barriers to salmon and steelhead across Washington State. Note: this estimate does not include barriers in resident-only waters (i.e., upstream of fully blocking natural barriers).

This estimate is assumed to be conservative due to limitations in available statewide fish distribution data.

### Barrier Estimate Information

There are uncertainties and inherent limitations when using GIS for data analysis. While the best available complete and consistent datasets were used for this barrier estimate, the primary limitations to the results were those imposed by the datasets themselves and are best described by the individual data sources.

The following GIS data were used in the 2018 salmon and steelhead barrier estimation:

- [Statewide Integrated Fish Distribution](#) (SWIFD)
- [National Hydrography Dataset](#) (NHD)
- [Washington Department of Natural Resources Transportation](#) (TRANS)
- [Washington Department of Fish and Wildlife Fish Passage and Diversion Screening Inventory](#) (FPDSI)

The SWIFD dataset is a single NHD event layer for the state of Washington. The SWIFD features that were used in this analysis were limited to those that describe Chinook salmon, chum

salmon, coho salmon, pink salmon, sockeye salmon, and steelhead use, where the Distribution Type was not Documented-Historic.

FPDSI is updated multiple times per week with the assessment results from many fish passage barrier inventories conducted by various groups statewide. The barrier data used in this estimate represent a snapshot of the FPDSI database on February 20, 2018.

Within GIS, an intersect analysis was performed using SWIFD and TRANS. The resulting intersect points were attributed with stream order values from NHD. Each intersect point that had a nearby (within 250 feet) FPDSI record was also attributed with the barrier status of that FPDSI record. The resulting data were used to develop a 'barrier rate by stream order' that represents the probability of an intersect point being a barrier based on its stream order.

Intersect points that did not have a nearby FPDSI record were assigned a barrier status based on the calculated 'barrier rate by stream order.' The number of these intersect points that were assigned a barrier status of 'Yes' represents Summand A.

On February 20, 2018, FPDSI contained records for more than 13,000 barriers that: 1. include information indicating the barrier affects anadromous species (salmon or steelhead), and/or 2. are located within 250 feet of a SWIFD feature as described above (salmon/steelhead use, excluding Documented-Historic distribution). The total number of these FPDSI barriers represents Summand B.

The lower end of the barrier estimate (~18,200) represents Summand A plus Summand B.

On February 20, 2018, FPDSI also contained records for more than 2,000 barriers that: 1. had no information about species and 2. are not located within 250 feet of a salmon or steelhead SWIFD feature. The upper end of the barrier estimate (~20,200) is based on the potential for all of these 2,000 barriers to affect salmon/steelhead.



# Mill Creek: *a unique seven-mile long fish passage barrier*



**Presentation to the Brian Abbott Fish Barrier Removal Board**  
April 17, 2018

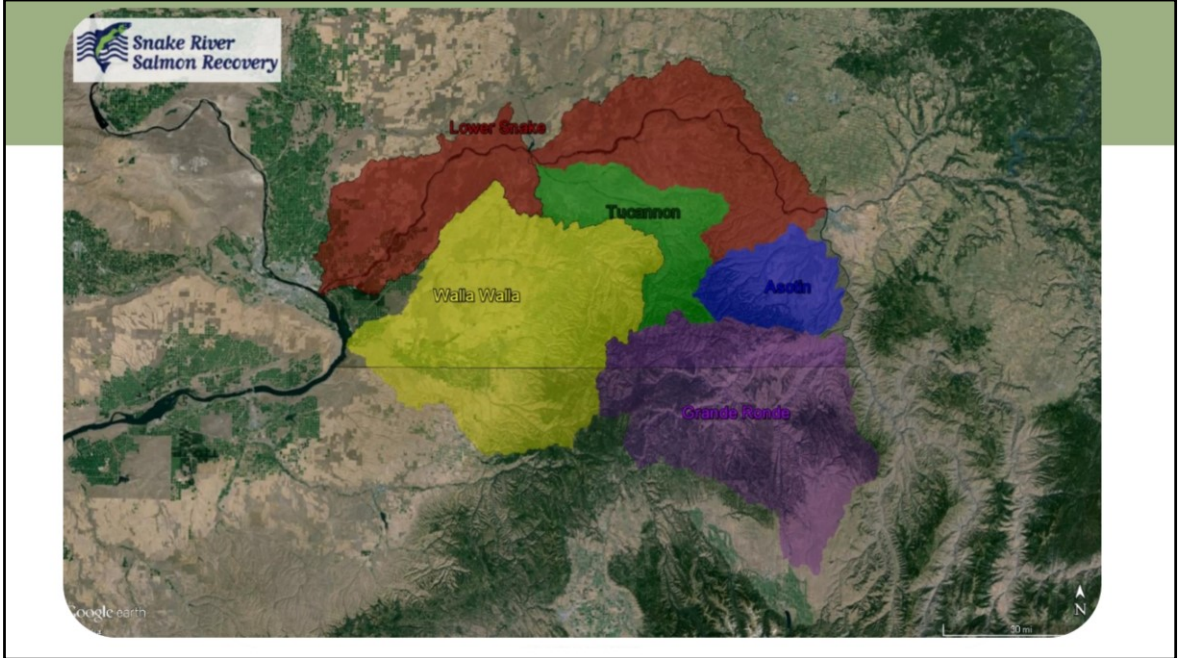


Ali Fitzgerald, Confederated Tribes of the Umatilla Indian Reservation  
Brian Burns, Tri-State Steelheaders Regional Fisheries Enhancement Group  
Mark Wachtel, Washington Department of Fish and Wildlife  
John Foltz, Snake River Salmon Recovery Board

## Presentation Outline

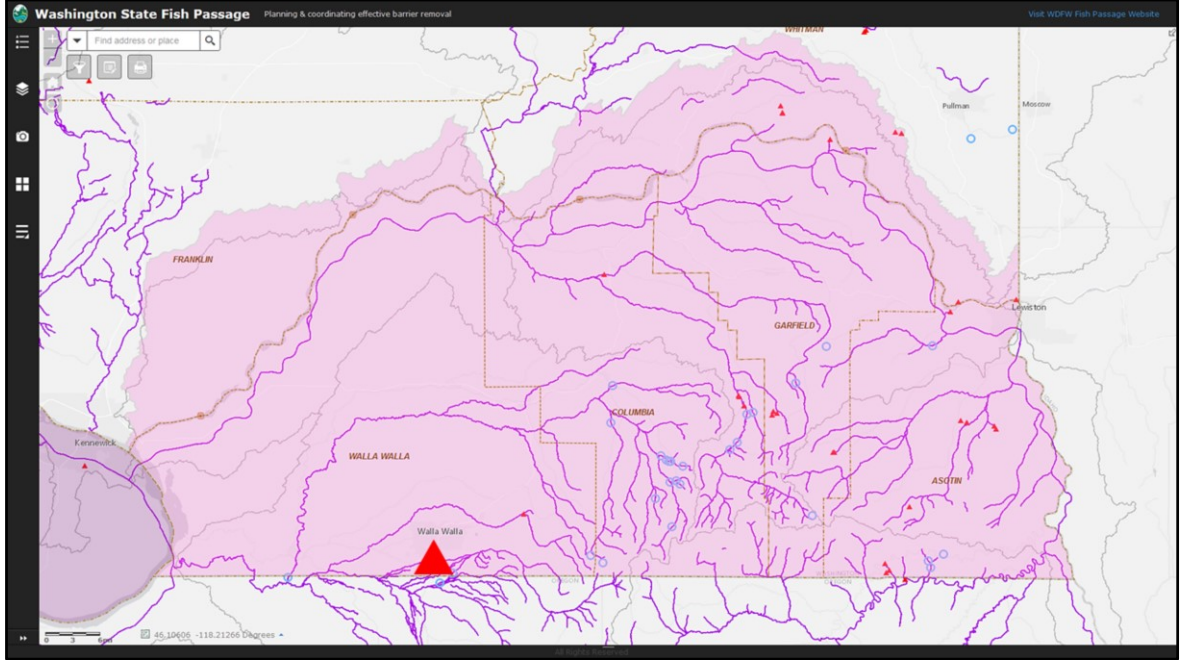
- Snake River Regional Overview for passage
- Introduce Mill Creek and related passage issues
- Highlight ongoing Collaboration and Coordination
- Discuss how the Fish Passage Barrier Board Can Help

Goals: Provide a brief overview of passage barriers in the Snake Region  
Introduce Mill Creek and related passage issues to the FBRB  
Provide context to potential FBRB funding requests for components of Mill Creek  
Passage



Snake Recovery Region, one of 7 recovery regions in Washington. Tasked with the implementation of the Recovery Plan with our partners, funded and focus on habitat.

The subwatersheds are broken out here, we will focus on the WW in a moment.

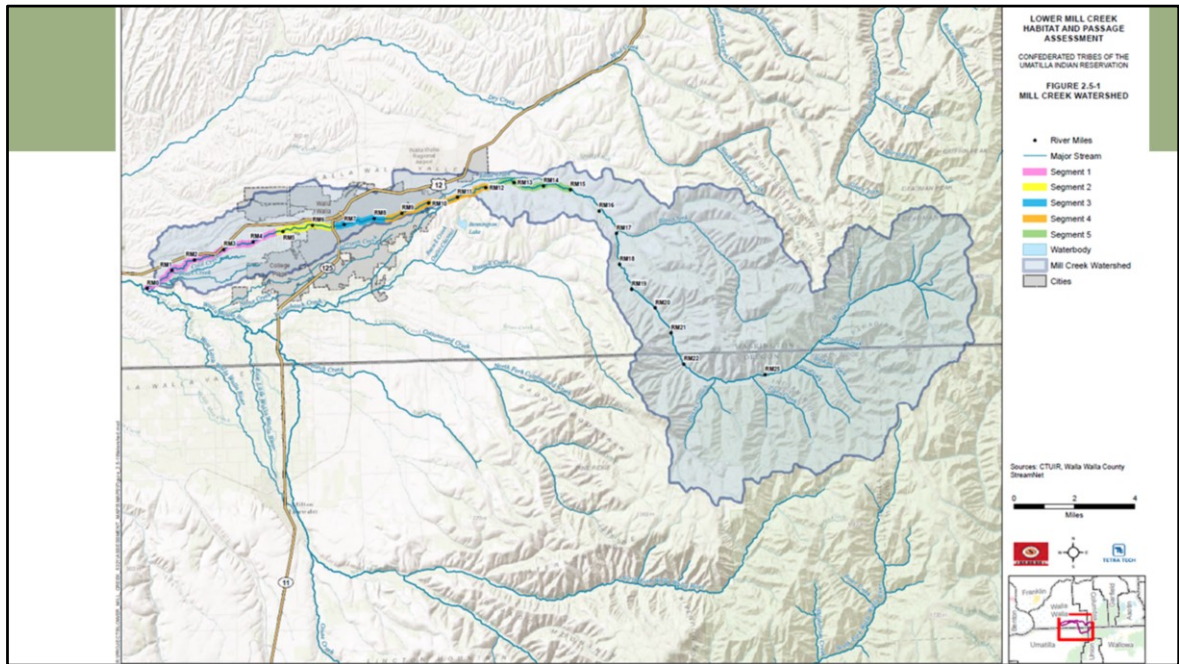


(update this figure, take out pink highlight – it is wrong – also try to highlight barriers better, point out MC watershed)

**Through the Recovery Board with our partners, we have addressed 66 regional barriers, 398+ miles of habitat opened or improved accessibility (blue circles)**

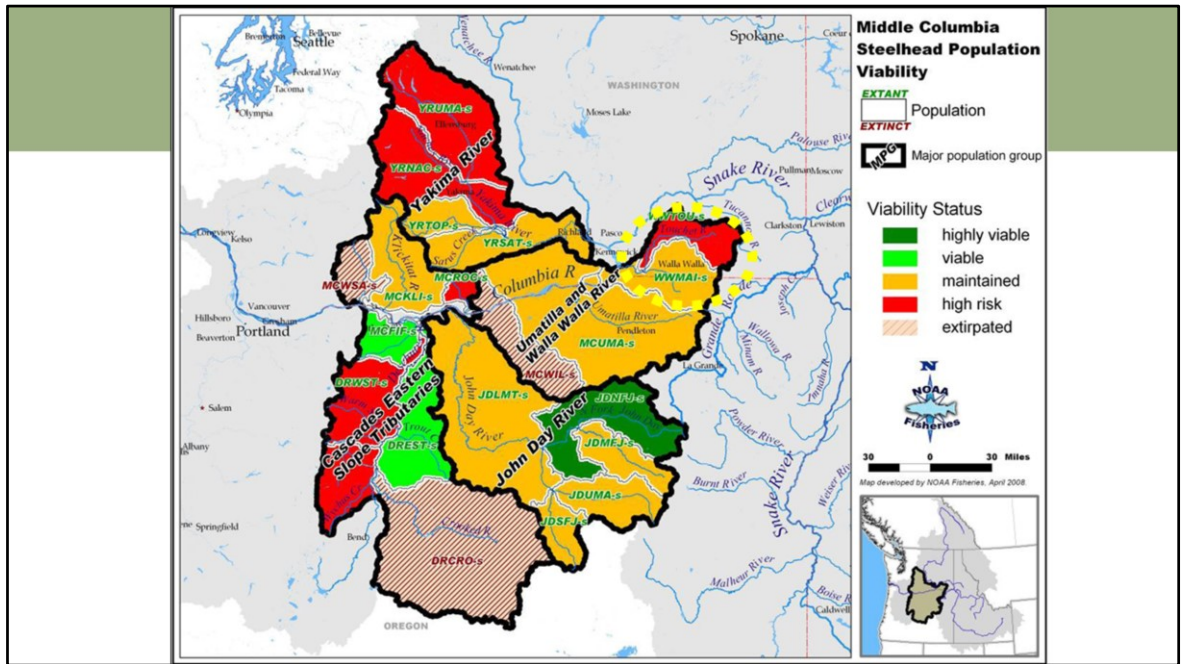
Focus on this red triangle, not a point, but a unique barrier...





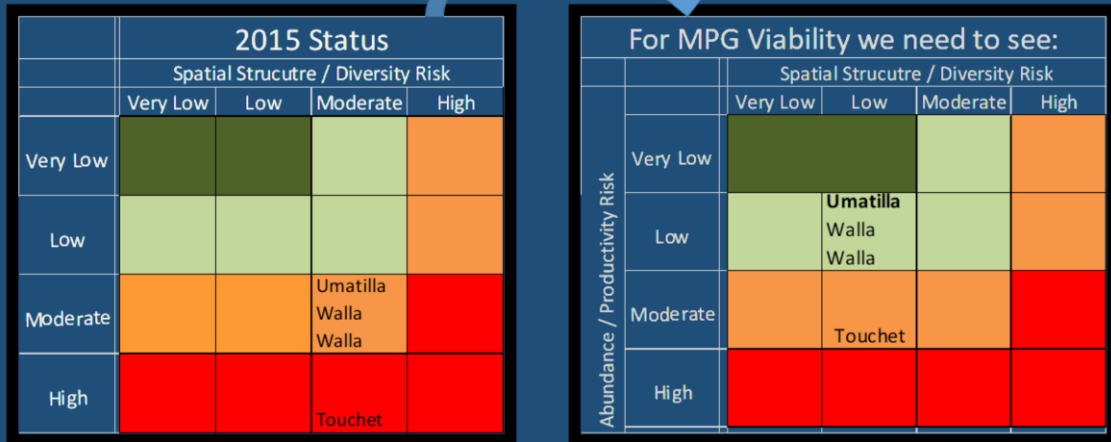
## Zoom into Walla Walla Basin, and highlight Mill Creek Watershed

- Unique in that the River rises in Washington, goes into Oregon, and back into Washington
- Tributary to the Walla Walla River
- Source for city water supply
- Fish Species and ESA listing
  - Mid-Columbia steelhead: Threatened
    - currently about 20-200 adults (rough estimates- somewhat of a data gap-estimates are made through redd surveys)
  - Columbia River bull trout: Threatened
    - currently about 500 adults (genetically distinct from touchet population); migratory and resident life histories
  - Spring Chinook: Extirpated with active reintroduction by CTUIR ongoing
    - Currently about 50 adults (rough estimate). TARGET 450 Spawning adults in MC- with new SF Walla Walla Hatchery being built in 2019- supplementation program planned for CH. Actively outplanting adults CH to Mill Creek
  - Pacific Lamprey: Extirpated
- **Recovery of Walla Walla population is critical for viability (delisting) of Mid-C steelhead DPS**
- **Mill Creek is an identified barrier to recovery – LAST SIGNIFICANT BARRIER IN THE REGION**



Recovery Context for Mid-C Steelhead:

## Umatilla/Walla MPG Scenario



Current situation on the left and goal on the right. To get to the goal the strategy to move Walla Walla up a row is to increase abundance by restoring passage into an unoccupied MSA (Mill Creek). This should also move the Walla Walla one column to the left as it reduces spatial structure risk.

This is critical for salmon recovery goals

Umatilla is the only "large population" in the MPG so it has to be viable. Walla Walla and Touchet are "intermediate populations" and one must be viable and one maintained. Based on current status, it is presumed the Walla Walla will reach viability before the Touchet.

To move Walla Walla to viable (low risk for population size and productivity) and moderate spatial structure, the population needs to be above 1,000, productivity needs to remain at 1.65 or increase (approximately 500 from Mill Creek, currently we have 20-200, big data gap)

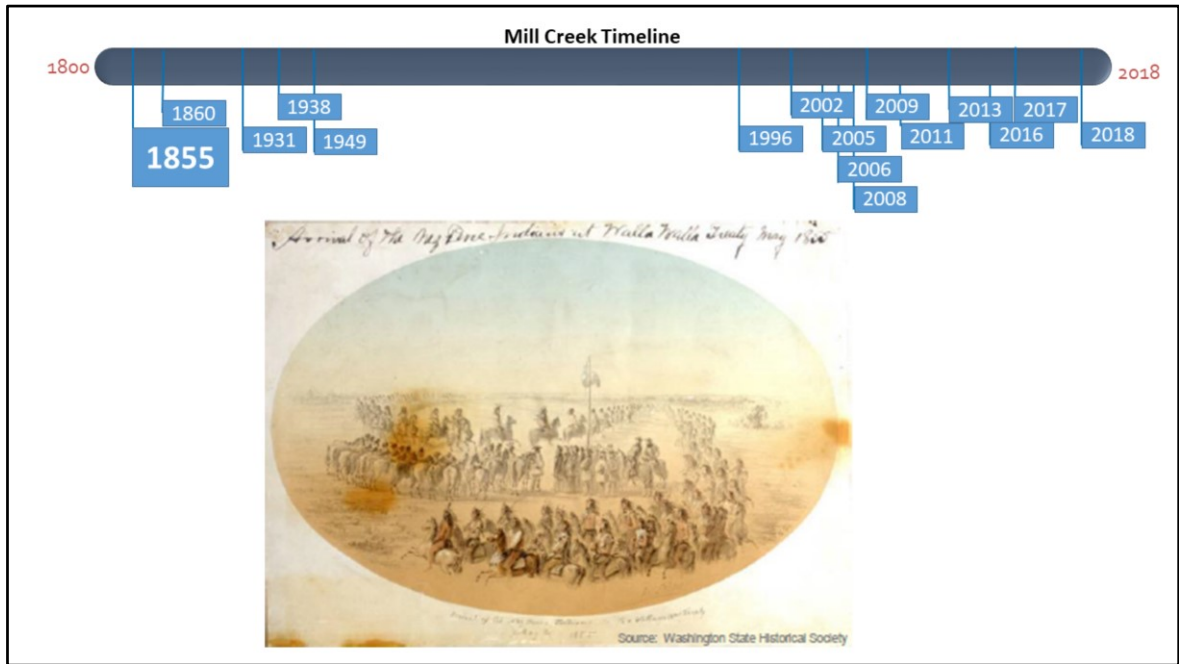
Strategy to move Touchet up one row is to restore habitat so abundance increases; it should move one column to the left with conversion to natural brood program.

## Mill Creek Video

Hard to explain the extent of the Mill Creek Barrier, so I'll show you by taking a quick tour of Mill Creek to give you a better understanding of this 7-mile long barrier and what we are dealing with...

Note the purpose of Bennington dam and lake here (per Glen's request)

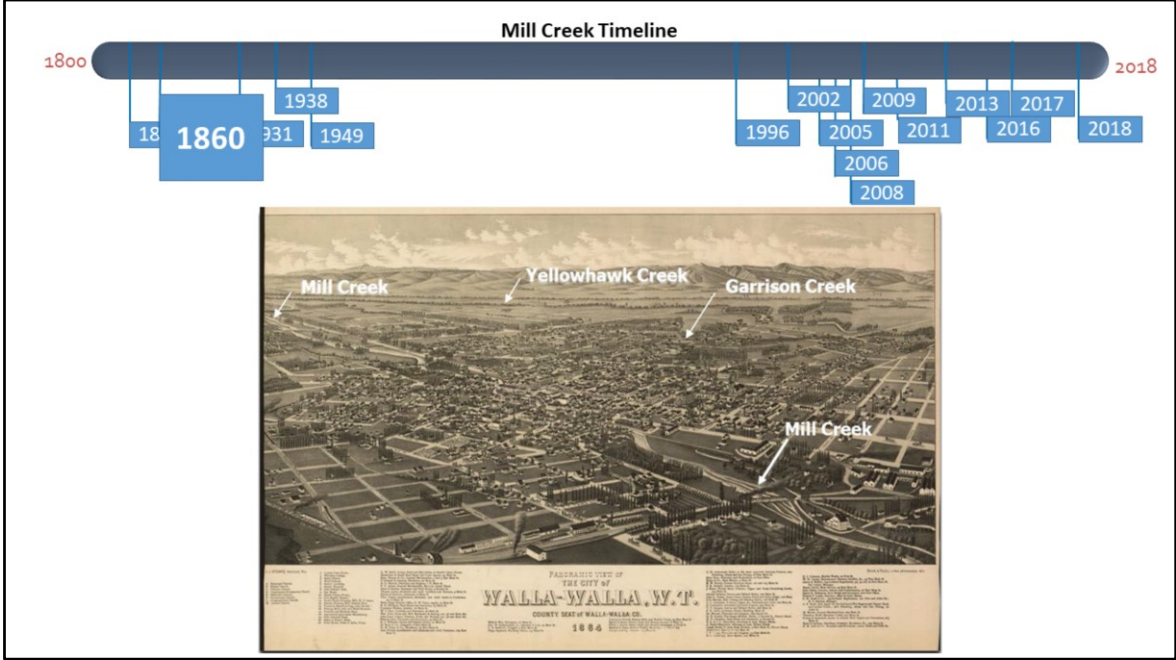




So how did we get to here...?

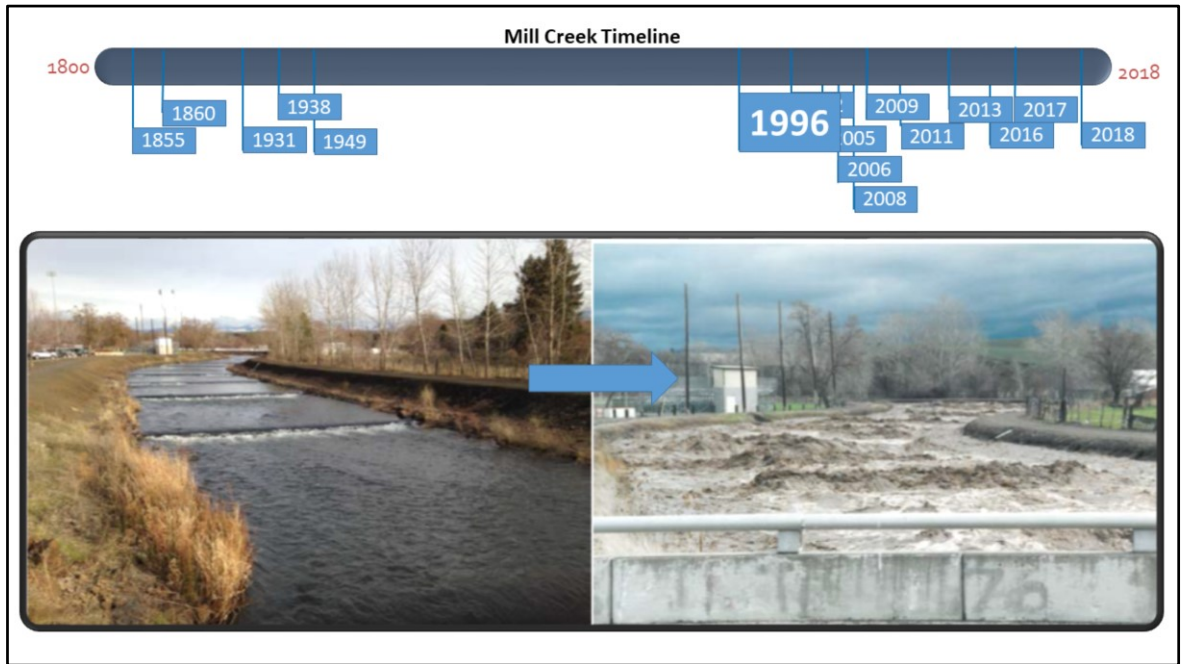
Starting in 1855- Treaty signed (at Mill Creek)

Mill Creek is culturally important to the Umatilla Tribe. Salmon recovery is integral to the tribal culture and first foods of the CTUIR.



1860- City of Walla Walla is incorporated

1938 – Congress authorizes two flood control projects on Mill Creek  
1949 – Construction is completed



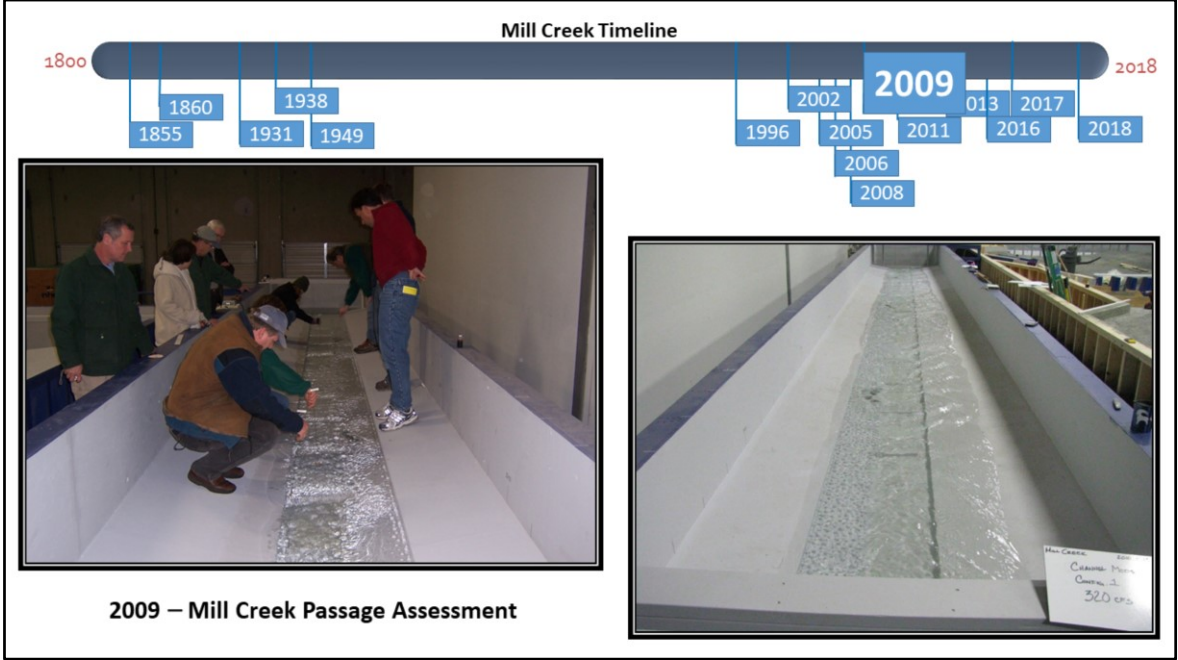
1996- Major flood (approx. 70 yr return interval) pushes MCFCP to its limits



2005- Kooskooskie Dam removed (Mill Creek Mainstem)

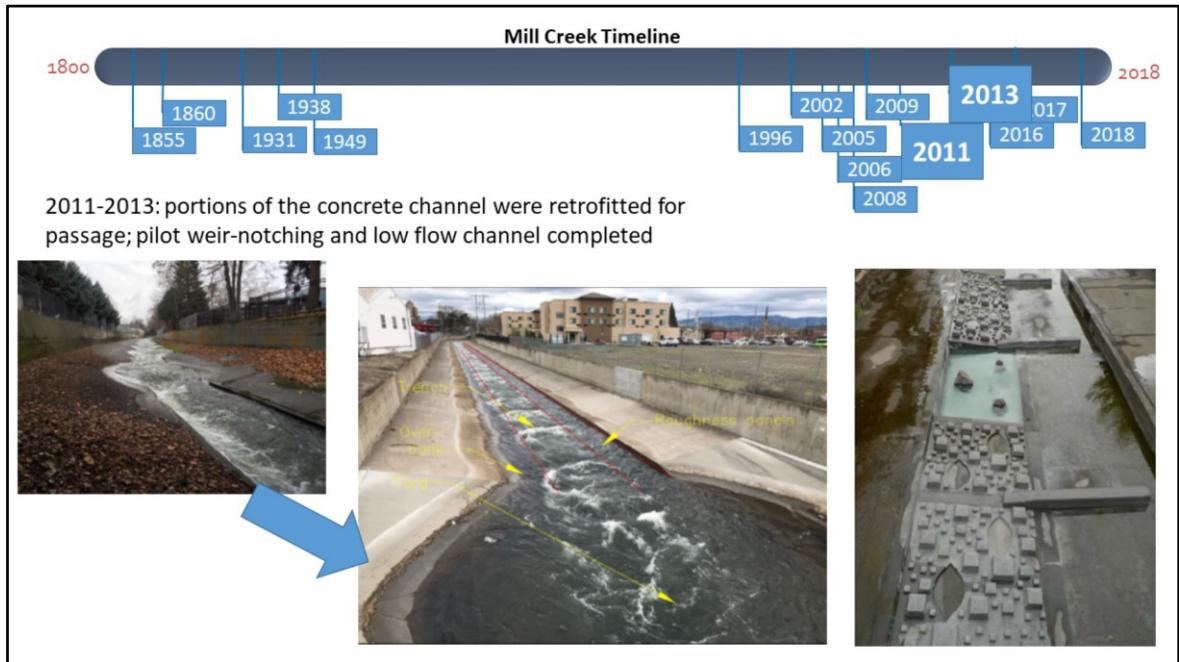
2006- Gose Street Fish Passage Project (Mill Creek Mainstem, end of flood control project)

2008- Garrison Creek screening (distributary)



**Mill Creek Passage Assessment and scale model complete to develop passage designs for the concrete channel.**

**TSS and MCWG work – funded by SRFB and matched by CTUIR**



2009- NMFS released Mid-Columbia Steelhead Recovery Plan – noted Bennington Dam passage issues & viability can't be met for DPS with Mill Cr. portion at risk

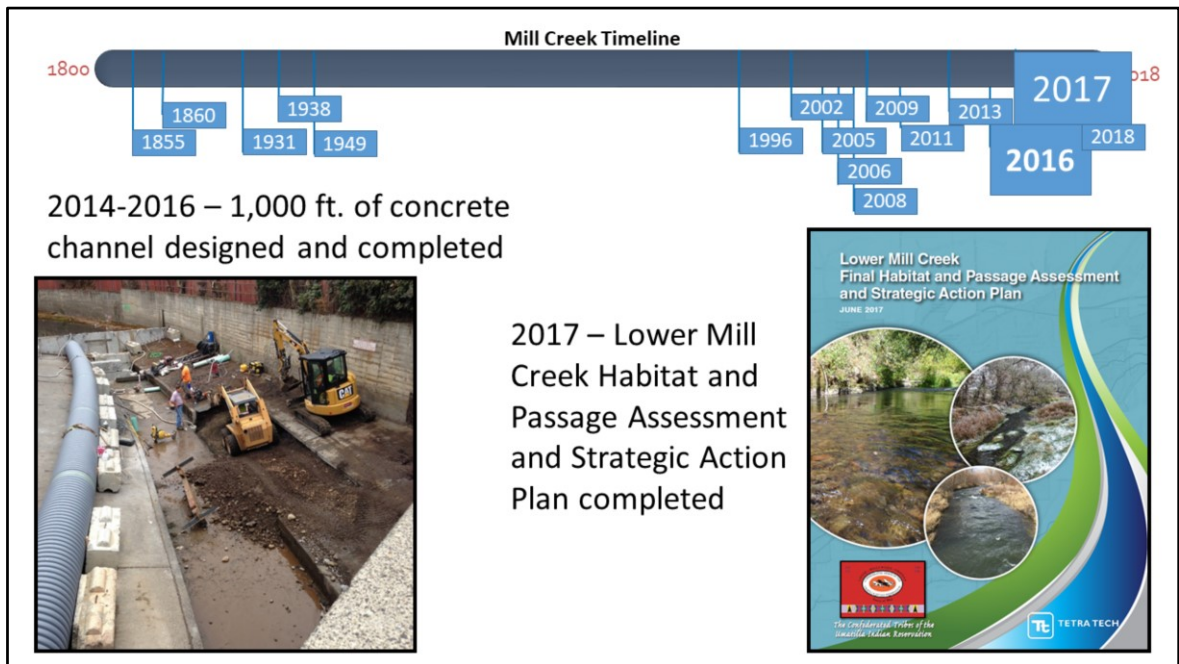
2011- TSS completed fish passage projects at 9<sup>th</sup> Ave, plus at top of concrete channel

2013- USACE constructed low flow passage (ladders) at 3 weirs (of ~250)

2013- TSS completed fish passage improvement from Spokane to Colville St.

**TSS projects are designed based on WDFW fish passage criteria, specifically depth and velocity to allow passage and holding at a range of design flows**





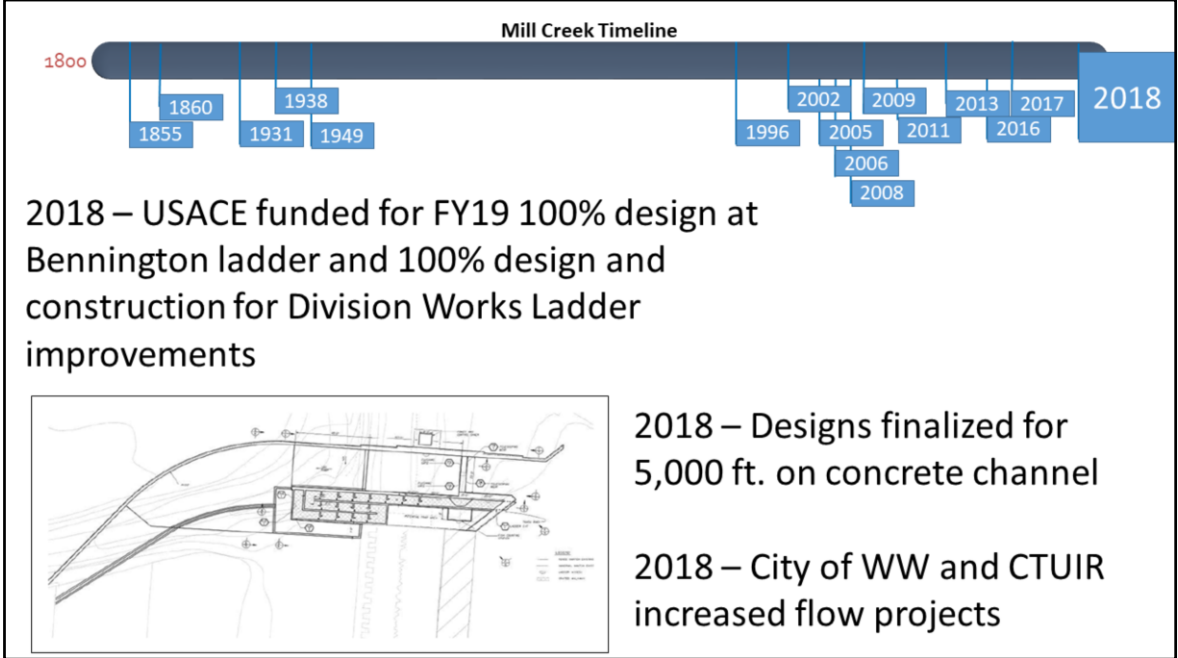
2014-2016- TSS completed ~1000 ft of concrete channel upstream of 9<sup>th</sup> Ave.

**Implemented reaches are field validated for flow velocity, meeting passage criteria and exceeding modeled flow expectations for passage.**

2017- Lower MC Assessment and SAP-compiled existing data on Mill Creek and developed a multi-purpose, multiuse goal and objectives that seek to address fish passage, habitat, floodplain connectivity, riparian habitat, cultural, recreational and economic amenities while maintaining or improving flood risk management

**Also identified passage through the concrete section as an immediate priority**





2018- USACE Bennington Design funding received

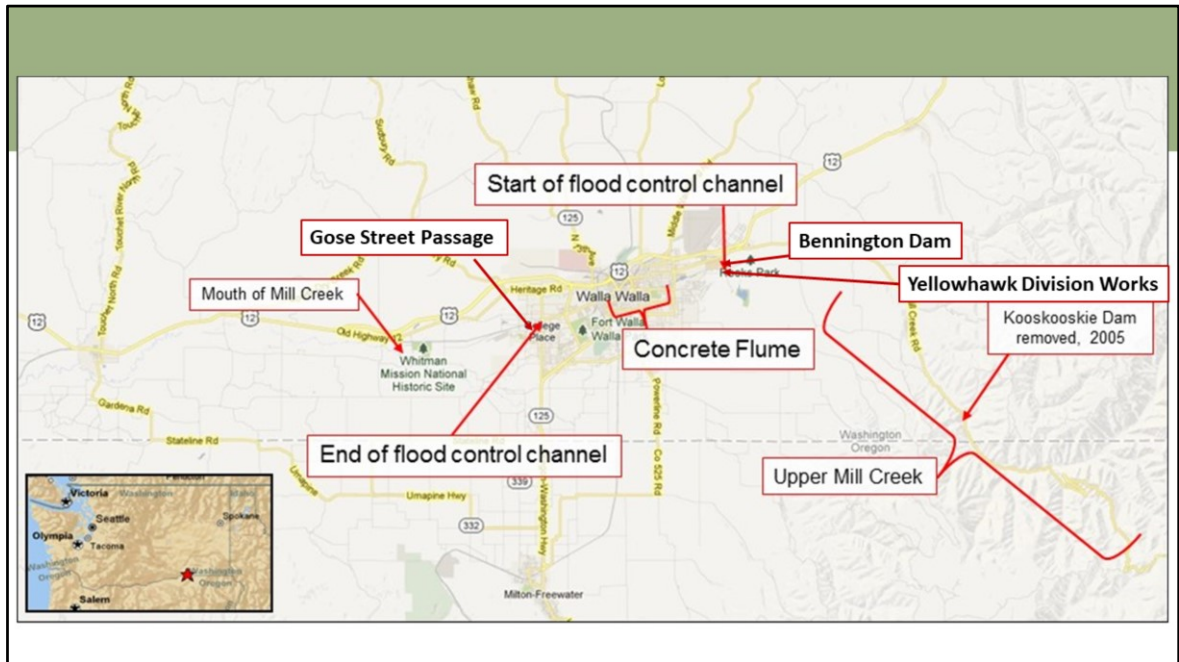
2018- USACE receives funding for 100% design for new Bennington Diversion ladder and 100% design and construction funding for Yellowhawk Divisions Works Ladders improvements for FY2019

2018- Designs ready for 5,000 ft on concrete channel, 880 set for construction in

2018- well infrastructure and water savings with city of walla walla water supply with CTUIR – water savings of 6 cfs in 2019 planned, with 20+ cfs over 10 years. The MC assessment baseflow target is aggressive at 30 cfs...

Top 3 passage priorities out of MCWG:

1. Concrete flume
2. Bennington ladder
3. Diversion ladder



Return to the overview:

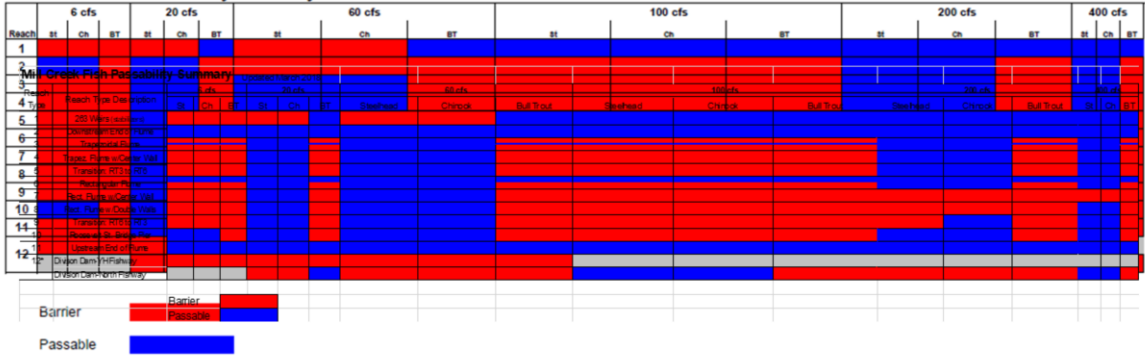
Highlight completed projects

- Gose Street
- Weir pilots
- Design and implementation of portions of the concrete flume
- Bennington Design funded
- Division Works Design and Implementation funded
- TSS Kooskooskie ,dam
- Other Mill Creek distributary barriers have also been addressed on Garrison and Yellowhawk
- Plans and Assessments

Then zoom to concrete channel as the prioritization of MCWG because of issues w/ adult passage

# Concrete Channel Progress- Spring 2018

Mill Creek Fish Passability Summary



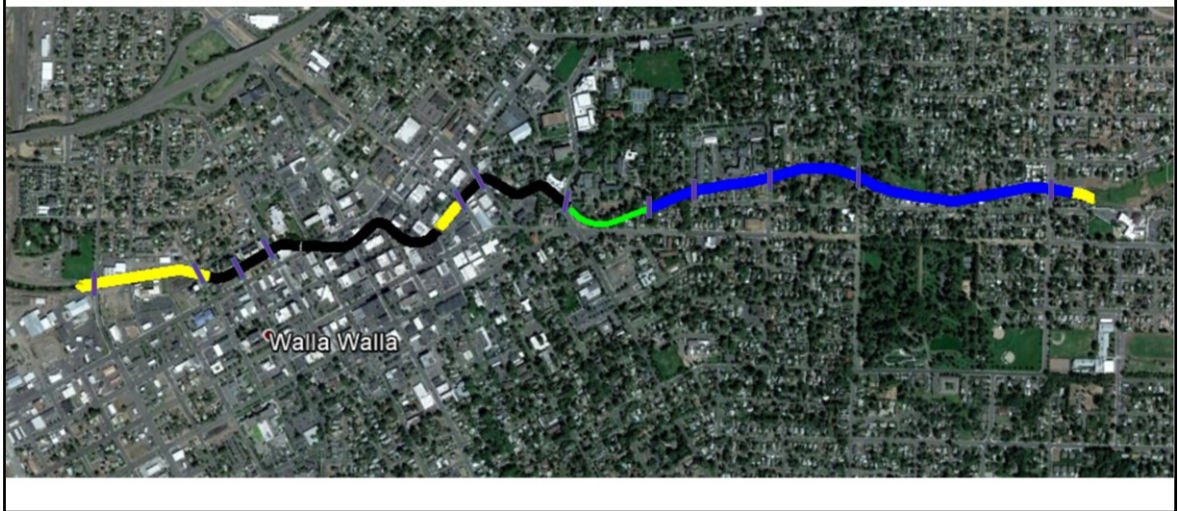
Again, this is a complex, 7 mile long barrier..., not a complete barrier but

At any given flow, there is a barrier somewhere in the channel.

At any given location in the channel, there is a barrier at some flow.

Our goal is to provide passage throughout the entire channel.

## Concrete Channel Progress- Spring 2018



- Through prioritization by the Mill Creek Working Group, the concrete channel has been the focus as a barrier for adult passage.
- The Barrier isn't just structural, also can be a thermal barrier in summer, low flow barrier in the summer, and high flow barrier in the winter and spring.
- Matching funds, some funding, designs in hand, etc
- Yellow- Completed passage projects
- Blue- 4200' of completed designs
- Green- 880' set for 2019/20 construction
- Purple – bridge locations
- Black- Unfunded sections
- Funding from SRFB, CTUIR/BPA, RFEG, ACOE
- Brad (from City of WW) noted that there are 5 Bridges with piers (some in the yellow section) which we haven't been able to address passage yet
- This is all MCFCD owned, ACOE owns the reach just below Bennington Dam

How are we getting things done?  
***Coordination and Collaboration.***



What are we doing and how are we doing it? Coordination and Collaboration.

FBRB coordinated funding pathway is synonymous with Mill Creek barrier.

Active Stakeholders:

MCWG, MC Coalition, Downtown Foundation, City, County, ACOE, WDFW, CTUIR, NOAA, SRSRB (key in on this and local governments – concrete channel O&M maintained by the County, except bridges)

**Still lots to do...**

Ongoing flow enhancement work with City of WW – water savings with the city water supply planned to be 20+cfs over years; 6cfs in 2019. Assessment for MC: baseflow aggressive target of 30cfs



## What is at Stake?

- 50+ miles of designated critical spawning/rearing habitat upstream
  - Summer steelhead
  - Bull trout
  - Spring Chinook
- Headwaters are completely closed and protected
- Population Viability



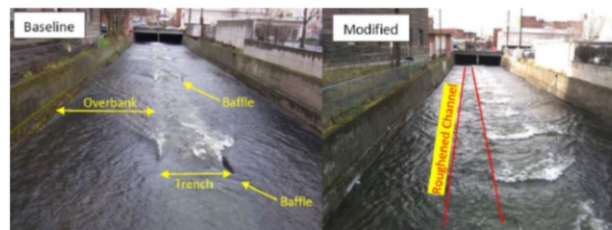
ST: Approx 15 miles of ST spawning habitat upstream of bennington, approx. 20 mi for rearing

CH: Approx 10 miles of CH spawning habitat upstream of bennington, approx. 17 mi for rearing

BT: Approx 10 miles of spawning habitat upstream of bennington, approx. 25 of rearing

## Conclusions

- Leave you with a better understanding of Mill Creek Passage and what has been done
- Shared what is at stake – critical habitat and viability
- Identified what is left to do – several passage components are moving forward and we need support for the designed reaches



- Leave you with a better understanding of the complex mill creek passage issue
- Tie back to recovery plan and goal, Mill Creek passage is critical to viability
- Have 5,000 feet designed and ready to go pending funding (pre-app in).
- Need continued funding (NOAA/PCSRF, BPA, ACOE in federal budget)

# How can the FBRB help with the most significant fish passage barrier in southeast Washington?



## Thank You



TSS will be submitting a pre-application for construction of 5,000 ft of concrete channel work to the FBRB - designs are in hand and match is secured.

Additional support and/or funding could be used to help resolve remaining barriers within USACE project reaches

Bennington Fish Ladder construction (USACE project area)

Weir-notching and low flow channel design (USACE project area, County project area)

~3,800 ft of concrete channel still needs designs

Resolving remaining passage barriers on Mill Creek Distributaries

Ask board for their thoughts and seek feedback on pre-application TSS

Letter of support to Washington's Congressional+ Delegation for ACOE projects