PROJECT: 18-1711 REST, TEANAWAY COMMUNITY FOREST FLOODPLAIN RESTORATION

Sponsor: Mid-Columbia RFEG Program: Salmon Federal Projects Status: Active
Project Start Date: 12/06/2018 Agreement End Date: 12/31/2022

Final Report Status: Accepted 02/13/2023

Description

PROJECT AGREEMENT DESCRIPTION

The Teanaway River lies northwest of Ellensburg and is the largest undammed tributary to the Yakima River. The Mid-Columbia Fisheries (MCF) proposes to restore Teanaway River complexity by placing up to 1,000 pieces of wood at strategic locations along 12 miles in the NF, MF and WF of the Teanaway River. In addition, the MCF will re-contour c 5000 feet of artificial ditch networks in Indian Creek (left bank tributary to the NF Teanaway) to reduce artificial drainage, and will hand place bundles of wood slash throughout Indian Creek floodplain to improve the function of a previous large wood placement project (no new structures are being installed). The project site lies within the state-owned Teanaway Community Forest, which was purchased in 2013 as an element of the Yakima Basin Integrated Plan. By placing woody material and re-contouring artificial ditch networks, the project will benefit the spring Chinook, coho, steelhead that are extant to this watershed. Restored streams will retain spawning substrate and floodwaters will inunc broad, formerly-wet meadows. The project scope and budget is shaped by similar work implemented by Yakama Nation. Enhanced recreation opportunities include fishing, hun in recovered riparian areas, and outdoor observations.

FINAL PROJECT DESCRIPTION

The Mid-Columbia Fisheries (MCF) proposed to restore Teanaway River complexity by placing up to 1,000 pieces of wood at strategic locations along 12 miles in the NF, MF a WF of the Teanaway River, which is the largest undammed tributary to the Yakima River located northwest of Ellensburg. This work was planned to complement and expand upc the large wood trapping structures designed and installed under SRFB #17-1177.

Within the grant performance period, MCF completed wood replenishment in the NF Teanaway and re-grading along Indian Creek. With grant funds, MCF and the Yakama Nat (YN) placed 1000 pieces of unanchored large wood in 1.5 miles of the North Fork Teanaway (approximately RM 4.6 – 5.6 and 6.3 – 6.7) in 2019 using helicopter and ground-based equipment. In 2020, MCF and YN re-contoured over 5000 feet of artificial ditch networks in Indian Creek (left bank tributary to the NF Teanaway) to reduce artificial drainage, and rearranged logs throughout the Indian Creek floodplain to improve the function of a previous large wood placement project implemented by the YN (no new structures were installed).

MCF will continue working with a Technical Advisory Team and Natural Systems Design to assess alternatives and a phasing plan for restoration work in the Middle Fork and W Fork Teanaway under SRFB 20-1390. The permitting and design timeline did not allow this grant to support work in those forks.

The project site lies within the state-owned Teanaway Community Forest, which was purchased in 2013 as an element of the Yakima Basin Integrated Plan. By placing woody material and re-contouring artificial ditch networks, the project benefited the spring Chinook, coho, and steelhead that are extant to this watershed. The wood is already helping retain spawning substrate and aggrade the channel bed. Enhanced recreation opportunities include fishing, hunting in recovered riparian areas, and outdoor observations.

See the Final Report Narrative for more information, including complementary projects implemented with other funding.

Narrative

SRFB grant #18-1711 supported a portion of a larger wood replenishment project in the North Fork Teanaway River work in 2019, floodplain regrading along Indian Creek in 20 and, in 2022, planning for future restoration work in the Middle and West Fork Teanaway Rivers in Kittitas, WA.

Multiple grants supported the North Fork Teanaway River large wood replenishment work, which can be categorized by River Mile (RM), or the distance upstream from the confluence of the North Fork (NF) Teanaway River and the mainstem, as follows:

2019 NF Teanaway Large Wood Placements, downstream to upstream
- RM 4.5 – 4.7: Three engineered, anchored wood trapping structures, RCO #17-1177, Worksite 1
- RM 4.6 – 5.2: Three unengineered, unanchored splitter type log jams and four deflector type log jams, additional loose wood, SRFB #18-1711 and matching funds
- RM 5.0 – 5.2: Three engineered, anchored wood trapping structures, RCO #17-1177, Worksite 1
- RM 5.2 – 5.6: Helicopter placed unanchored wood, SRFB #18-1711 and matching funds
- RM 6.3 – 6.7: Helicopter placed unanchored wood, SRFB #18-1711 and matching funds

In sum, MCF and the Yakama Nation (YN) placed 1000 pieces of unanchored large wood in 1.5 miles of the North Fork Teanaway in 2019 using helicopter and ground-based equipment. The work was completed concurrent with the construction of the six large wood trapping structures at RM 4.7 and RM 5.2, funded under RCO #17-1177 (Worksite 1 which were designed to trap the unengineered replenishment wood (that was placed with funding from this project) and build jams. The construction contract distinguished betw the large wood trapping structures and the unengineered wood placements, and the two work types were billed separately.

In 2020, MCF and YN re-contoured over 5000 feet of artificial ditch networks in Indian Creek (left bank tributary to the NF Teanaway) to reduce artificial drainage, and rearran logs throughout the Indian Creek floodplain to improve the function of a previous large wood placement project implemented by the YN. The Indian Creek re-grading was funded through SRFB #18-1711 and BPA support to YN.

Also in 2020, MCF built three more engineered large wood trapping structures at RM 6.1 – 6.2 (RCO #17-1177, Worksite 2). MCF and YN placed approximately 1000 pieces of unanchored wood using ground-based equipment further upstream, in a one-mile reach that had not received wood from the helicopter the year before (NF Teanaway RM 5.8 - 6.2, 7.8 – 8.3, and 8.6 – 8.7). This work was funded by Yakima Basin Integrated Plan (RCO #20-1527) and YN BPA and NOAA Fisheries grants.

In 2021, MCF and YN built one final wood trapping structure at NF Teanaway RM 5.9 (RCO #17-1177, Worksite 1). We placed additional wood and breached portions of a ber

the same location with RCO #17-1177, Worksite 2, RCO #20-1527 and YN BPA funds.

From 2021 – 2023, MCF and YN planned for restoration in the Middle and West Forks of the Teanaway River. We will continue this work under SRFB #20-1390.

HOW PROJECT WAS IDENTIFIED
At 134,000 acres, the Teanaway Watershed is the largest undammed tributary to the Yakima River. Much of the Teanaway's stream network was impacted in part by splash da logging in the early 1900's, followed by railroads constructed within geomorphic floodplains. GIS analysis suggests that over 60 miles of the railroad were constructed in active floodplains. Dynamite was readily available, and managing landscapes for human betterment included draining wetlands and moving streams to facilitate railroad alignments, farming, and ranching also occurred. Consequently, instream wood was removed as it was undesirable. Streams were managed for drainage.

In 2013, the State of Washington acquired 100,000 acres of the Teanaway watershed for management as the Teanaway Community Forest (TCF). The TCF management plan prioritizes watershed stewardship, further stating that other management must be consistent with same. Yakama Nation biologists proposed to begin large scale wood replenishn in the Teanaway River forks with SRFB grant 18-1711, which they expected could support 1.5 miles of work in the North Fork Teanaway River and set the stage for future work the other river forks. Mid-Columbia Fisheries assumed sponsorship of the grant in 2019.

LANDOWNER ENGAGEMENT
MCF and YN made multiple presentations to the TCF Advisory Committee before and after the implementation of this project. The Advisory Committee asked pertinent questions and ensured that the project sponsors considered public perceptions and downstream landowner concerns.

HOW PROJECT CONCEPT, FEASIBILITY, & DESIGN WERE DEVELOPED
Hydrologic, hydraulic, geomorphic, topographic, and biological research formed the basis of design and guided the approach of this project. Log Pearson type 3 hydrologic analysis was performed utilizing the Bureau of Reclamation stream gage below the forks (TNAW). Washington Department of Fish and Wildlife contracted near infrared and bathymetric LiDAR of the entire Teanaway Community Forest. Utilizing recurrence intervals generated from the hydrologic analysis and topography generated from LiDAR surf topography, YN staff were able to perform hydraulic analysis of existing and proposed river conditions. Hydraulic analysis coupled with geomorphic assessment guided final designs and supported engineering products. An interagency group of local fisheries experts developed the Aquatic Restoration Strategy to further prioritize restoration based o potential for ecological lift. A restoration strategy founded in biological and physical processes was subsequently produced.

DESIGN CONSULTANTS
Hoda Sondossi, a licensed geomorphologist, identified the priority wood replenishment reaches and designed the unanchored wood structures.

Waterfall Engineering, LLC, designed the wood trapping structures, which were supported through RCO #17-1177.

Natural Systems Design is working on the design of restoration work in the Middle and West Fork Teanaway Rivers, which is primarily supported through SRFB #20-1390.

CONSULTANT CONTRACTORS
The 2019 helicopter work was completed by Columbia Helicopters, and ground-based work was completed by ReClaim and Gibson and Sons. Wood replenishment and Indian Creek re-grading in 2020 was completed by Thayer Excavating.

CONSTRUCTION SUPERVISOR
Construction work was supervised by Ryan DeKnikker, formerly with YN, Hoda Sondossi, and Rebecca Wassell, with MCF.

SIGNIFICANT CHANGE ORDERS
This project was originally proposed by Yakama Nation Fisheries, and was intended to offer partial support to longer term, large scale wood replenishment in the 12 miles of the Teanaway Forks located on the TCF. The proposal stated "… in the 12-mile reach of the three Teanaway forks, funding limitations prevent restoration at all opportunities. Therefore, site selection within the reaches (now underway via a BPA-funded contract with a fluvial geomorphologist) will focus in areas expected to affect the greatest floodplai response." In the YN YKFP TCF Large Wood Project: Strategy for selecting sites, developing designs document, submitted with the SRFB proposal at the request of local reviewers, YN staff wrote: "Overall project footprint totals 12 stream miles in the west, middle and north forks. It is estimated that Salmon Recovery Funding will produce 1.5 mile restoration within the North Fork Teanaway River." The inclusion of both 12 miles and 1.5 miles in the proposal documents created some confusion when MCF assumed grant sponsorship, and the contracted grant metrics were for 1 mile of treatment in the North Fork Teanaway, 0.95 mile of treatment along Indian Creek, 0.7 mile in the West Fork an 0.3 mile in the Middle Fork.
SRFB 18-1711 funding supported the addition of 1,000 pieces of wood to 1.5 mile of the North Fork Teanaway River and re-grading along 0.95 mile of Indian Creek, as origina intended by the YN staff who built the project budget. The project was not able to support wood additions in the West Fork and Middle Fork Teanaway Rivers due to timing and funding constraints.

FISH PRESENCE
MCF staff have heard reports of large Oncorhyncus mykiss, possibly steelhead, utilizing the new pools formed from the wood additions in the North Fork Teanaway River. The accumulation of spawning gravels is evident, and beaver have begun to build on the new wood.

LESSONS LEARNED
The project is performing well: the river has rearranged the unanchored wood to form jams, and gravels are accumulating around the jams. Using a combination of helicopter a ground-based methods allowed us to treat a long reach of river with minimal soil disturbance. Many of the unengineered jams placed in 2019 rearranged that first winter, suggesting that the time spent on their construction was not warranted. Placing the wood in the river in locations where it can be easily mobilized would have accomplished the same objectives at a lower cost.

A key lesson learned was in the grantwriting and contracting elements of the project. The YN biologist who first proposed this project intended for the requested $200,000 to support a small portion (1.5 mile of the NF Teanaway) of a long-term, large scale wood replenishment effort on the Teanaway Community Forest. The nuances of that intention were lost as grant sponsorship moved to MCF, and the grant deliverables included wood placement in the Middle and West Teanaway, which we were not able to achieve within timeline and budget of the grant. When sponsorship moves between partners in the future, we will be careful to ensure that the grant deliverables reflect the intent of the origina proposal and are feasible with the funds and time available.

Worksites

Worksite #1: Northfork Teanaway

Worksite Address (Optional)
Street Address North Fork Teanaway Road
City Cle Elum
State, Zip WA 98922

Worksite #2: Indian Creek Section 16

Worksite Address (Optional)
Street Address North Fork Teanaway Road
City Cle Elum
State, Zip WA 98922

Worksite #3: Westfork Teanaway

Worksite Address (Optional)
Street Address Teanaway West Fork Road
City Cle Elum
State, Zip WA 98922

Worksite #4: Middlefork Teanaway

Worksite Address (Optional)
Street Address Teanaway Middle Fork Road
City Cle Elum
State, Zip WA 98922

Worksite Details

Worksite #1: Northfork Teanaway

Worksite Name Northfork Teanaway

WORKSITE DESCRIPTION
Work was done along the floodplain of the North Fork Teanaway. Activities included staging and placing large wood and slash.

Geographic Coordinates

From mapped point:	Latitude	47.312204	Longitude	-120.858034
For Directions:	Latitude	47.312291	Longitude	-120.854760

SITE ACCESS DIRECTIONS
From Cle Elum travel east of SR 903 for approximately three miles. Stay straight onto SR 970, traveling easterly for approximately five miles. Turn left (north) onto Teanav Road. Travel 11.4 miles. After finding a place to park, project area is west approximately 200 yards, and extends upstream and downstream approximately five miles.

Worksite #2: Indian Creek Section 16

Worksite Name Indian Creek Section 16

WORKSITE DESCRIPTION
Work was done along the floodplains of Indian Creek. Activities included rearranging small wood and recontouring artificial drainage features.

Geographic Coordinates

From mapped point:	Latitude	47.307897	Longitude	-120.846104
For Directions:	Latitude	47.301262	Longitude	-120.854545

SITE ACCESS DIRECTIONS
From Cle Elum travel east of SR 903 for approximately three miles. Stay straight onto SR 970, traveling easterly for approximately five miles. Turn left (north) onto Teanav Road. Travel 11 miles. After crossing the Indian Creek culvert, park in front of (but not blocking) the yellow access gated road on the right. Restoration area is east approximately 500 yards, and extends upstream along Indian Creek for 1+ mile.

Worksite #3: Westfork Teanaway

Worksite Name Westfork Teanaway

WORKSITE DESCRIPTION
Work included conceptual design on future restoration work.

Geographic Coordinates

From mapped point:	Latitude	47.261347	Longitude	-120.927429
For Directions:	Latitude	47.263182	Longitude	-120.918403

SITE ACCESS DIRECTIONS

From Cle Elum travel east of SR 903 for approximately three miles. Stay straight onto SR 970, traveling easterly for approximately five miles. Turn left (north) onto Teanav Road. Travel approximately 7.3 miles. Take a left (west) onto West Fork Teanaway Road. Travel 1.2 miles. After finding a place to park, project area continues from her upstream (west) on both sides of the West Fork Teanaway for most of the next six river miles, skipping two privately owned inholdings that include 1.7 stream miles.

Worksite #4: Middlefork Teanaway

Worksite Name Middlefork Teanaway

WORKSITE DESCRIPTION

Work included conceptual design on future restoration work.

Geographic Coordinates

From mapped point:	Latitude	47.292880	Longitude	-120.960302
For Directions:	Latitude		Longitude	

SITE ACCESS DIRECTIONS

From Cle Elum travel east of SR 903 for approximately three miles. Stay straight onto SR 970, traveling easterly for approximately five miles. Turn left (north) onto Teanav Road. Travel approximately 7.3 miles. Take a left (west) onto West Fork Teanaway Road. Travel .7 miles. Turn right (north) onto Middle Fork Teanaway Road. Travel 4. miles. After finding a place to park, project area continues from here upstream along the Middle Fork for .3 miles, and downstream for approximately 1.5 miles.

Properties

Worksite #	Worksite Name	Property Name	Sponsor Verified	RCO Verified	RCO Verified Map
1	Northfork Teanaway	Teanaway Community Forest NF		✓	N/A
2	Indian Creek Section 16	Washington DNR		✓	N/A
3	Westfork Teanaway	Teanaway Community Forest WF		✓ Clarification	N/A
4	Middlefork Teanaway	Teanaway Community Forest MF		✓ Clarification	N/A

Restoration Metrics

Worksite: Northfork Teanaway (#1)

	Current Agreement	Final
Targeted salmonid ESU/DPS (A.23)	☐ No Salmon ESU or Steelhead DPS ☑ Chinook Salmon-Middle Columbia River spring-run ESU ☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU ☐ Chinook Salmon-unidentified ESU ☑ Steelhead-Middle Columbia River DPS ☐ Steelhead/Trout-unidentified DPS	☐ No Salmon ESU or Steelhead DPS ☑ Chinook Salmon-Middle Columbia River spring-run ESU ☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU ☐ Chinook Salmon-unidentified ESU ☑ Steelhead-Middle Columbia River DPS ☐ Steelhead/Trout-unidentified DPS

Targeted species (non-ESU species)	None Unknown Brook Trout Brown Trout ✓ Bull Trout ✓ Cutthroat Forage Fish Kokanee Lamprey ✓ Rainbow Searun Cutthroat	None Unknown Brook Trout Brown Trout ✓ Bull Trout ✓ Cutthroat Forage Fish Kokanee Lamprey ✓ Rainbow Searun Cutthroat
Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	1.00 **Note:** Estimated for total project is based upon recent project costs - 1000 pieces of wood treats two stream miles. 25% of the large wood contain rootwads, purchased and installed at a cost of $250/piece. Other large wood purchased and installed at a cost of $100/piece. Slash included at no additional cost. Ditch network recontouring estimate $10/foot x 5000 feet.	1.50
Project Identified In a Plan or Watershed Assessment (C.0.c)	Conley, A., J. Freudenthal, D. Lind, P. Mees, and R. Visser. 2009. Yakima Steelhead Recovery Plan, Extracted from the 2005 Yakima Subbasin Salmon Recovery Plan with Updates. Yakima Basin Fish & Wildlife Recovery Board, Yakima WA. Creech, J. 2003a. Teanaway Temperature Total Maximum Daily Load: Detailed Implementation Plan. Pub. No. 03-10-025. Washington State Department of Ecology. Olympia, WA. WA-DNR, WDFW, April 2015., Teanaway Community Forest Management Plan, WA-DNR, Olympia, WA.	*Not Collected at Closure*

Priority in Recovery Plan	See Attached notes. **Note:** 1. This project addresses specific actions in the steelhead Recovery Plan, including: Upper Yakima Action #4. Improve instream flows in the Swauk and Teanaway watersheds. Upper Yakima Action #14. Restore instream and floodplain habitat complexity in Swauk and Taneum creeks and Teanaway and lower Cle Elum rivers. Upper Yakima Action #15. Restore tributary riparian areas. Upper Yakima Action #20. Restore tributary headwater meadows. 2. The water quality plan calls for riparian revegetation, re-activating historic side channels, adding large woody material, and promoting groundwater storage. 3. The Teanaway Management Plan's chapter on water supply and water protection lists "Increase the water storage capacity of forests, meadows, and floodplains" as an objective. The first strategy listed for achieving this is using "large woody debris or other approaches as appropriate in streams and floodplains to capture sediment to achieve a more natural stream channel and reconnect streams to their floodplains".	*Not Collected at Closure*
Type Of Monitoring (C.0.d.1)	✓ Implementation Monitoring None	✓ Implementation Monitoring None
Monitoring Location (C.0.d.2)	✓ No monitoring completed Downstream Onsite Upslope Upstream	No monitoring completed Downstream ✓ Onsite Upslope Upstream

Instream Habitat Project

Total Miles Of Instream Habitat Treated (C.4.b)	1.00	1.50
Channel structure placement (C.4.d.1)		
Total cost for Channel structure placement	$97,134	*Not Collected at Closure*

Material Used For Channel Structure (C.4.d.2)	Deflectors/Barbs	Deflectors/Barbs
	Flood Fencing	Flood Fencing
	Gabions	Gabions
	✓ Individual Logs (Anchored)	Individual Logs (Anchored)
	✓ Individual Logs (Unanchored)	✓ Individual Logs (Unanchored)
	✓ Logs Fastened Together (Logjam)	Logs Fastened Together (Logjam)
	None	None
	Other Engineered Structures	Other Engineered Structures
	Rocks/Boulders (Fastened Or Anchored)	Rocks/Boulders (Fastened Or Anchored)
	Rocks/Boulders (Unanchored)	Rocks/Boulders (Unanchored)
	Stumps With Roots Attached (Rootwads)	Stumps With Roots Attached (Rootwads)
	Weirs	Weirs
Miles of Stream Treated for channel structure placement (C.4.d.3)	1.00	1.50
Pools Created through channel structure placement (C.4.d.5)	20	20
Number of structures placed in channel (C.4.d.7)	20	20 **Note:** Estimated number of jar formed after wood has rearran in stream. Will continue to mor via satellite imagery and drone flights.

Architectural & Engineering

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)		*Not Collected at Closure*
Did A&E costs exceed billed amount (Yes/No)	*Collected at Closure*	Yes

Worksite: Indian Creek Section 16 (#2)

Targeted salmonid ESU/DPS (A.23)	☐ No Salmon ESU or Steelhead DPS	☐ No Salmon ESU or Steelhead DPS
	☐ Chinook Salmon-Middle Columbia River spring-run ESU	☐ Chinook Salmon-Middle Columbia River spring-run ESU
	☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU	☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU
	☐ Chinook Salmon-unidentified ESU	☐ Chinook Salmon-unidentified ESU
	✓ Steelhead-Middle Columbia River DPS	✓ Steelhead-Middle Columbia River DPS
	☐ Steelhead/Trout-unidentified DPS	☐ Steelhead/Trout-unidentified DPS
Targeted species (non-ESU species)	None	None
	Unknown	Unknown
	Brook Trout	Brook Trout
	Brown Trout	Brown Trout
	Bull Trout	Bull Trout
	Cutthroat	Cutthroat
	Forage Fish	Forage Fish
	Kokanee	Kokanee
	Lamprey	Lamprey
	✓ Rainbow	✓ Rainbow
	Searun Cutthroat	Searun Cutthroat

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.95	0.95
Project Identified In a Plan or Watershed Assessment (C.0.c)	Conley, A., J. Freudenthal, D. Lind, P. Mees, and R. Visser. 2009. Yakima Steelhead Recovery Plan, Extracted from the 2005 Yakima Subbasin Salmon Recovery Plan with Updates. Yakima Basin Fish & Wildlife Recovery Board, Yakima WA. 2. Teanaway Water Quality Plan 3. Teanaway Management Plan	*Not Collected at Closure*
Priority in Recovery Plan	See attached notes **Note:** 1. This project addresses specific actions in the steelhead Recovery Plan, including: Upper Yakima Action #4. Improve instream flows in the Swauk and Teanaway watersheds. Upper Yakima Action #14. Restore instream and floodplain habitat complexity in Swauk and Taneum creeks and Teanaway and lower Cle Elum rivers. Upper Yakima Action #15. Restore tributary riparian areas. Upper Yakima Action #20. Restore tributary headwater meadows. 2. The water quality plan calls for riparian revegetation, re-activating historic side channels, adding large woody material, and promoting groundwater storage. 3. The Teanaway Management Plan's chapter on water supply and water protection lists “Increase the water storage capacity of forests, meadows, and floodplains” as an objective. The first strategy listed for achieving this is using “large woody debris or other approaches as appropriate in streams and floodplains to capture sediment to achieve a more natural stream channel and reconnect streams to their floodplains”.	*Not Collected at Closure*
Type Of Monitoring (C.0.d.1)	✓ Implementation Monitoring None	✓ Implementation Monitoring None
Monitoring Location (C.0.d.2)	✓ No monitoring completed Downstream Onsite Upslope Upstream	No monitoring completed Downstream ✓ Onsite Upslope Upstream

Instream Habitat Project

Total Miles Of Instream Habitat Treated (C.4.b)	0.95	0.95 **Note:** No in-stream work was completed; all work was focuse on reconnecting stream and floodplain.

Channel reconfiguration and connectivity (C.4.c.1)

Total cost for Channel reconfiguration and connectivity	$46,400	*Not Collected at Closure*

Type of change to channel configuration and connectivity (C.4.c.2)	Channel Bed Restored Creation of Instream Pools ✓ Creation/Connection to Off-Channel Habitat Levee removal/Alteration Meanders Added None	Channel Bed Restored Creation of Instream Pools ✓ Creation/Connection to Off-Channel Habitat Levee removal/Alteration Meanders Added None
Miles of Stream Treated for channel reconfiguration and connectivity (C.4.c.3)	0.95	0.95
Miles of Off-Channel Stream Created or Connected (C.4.c.4)	0	0
Acres Of Channel/Off-Channel Connected Or Added (C.4.c.5)	30.0	30.0
Instream Pools Created/Added (C.4.c.6)	0	0
Unspecified or other instream habitat project. (C.4.j.1)		
Total cost for unspecified or other instream habitat projects	$3,600 **Note:** Hand-placing approximately 100 bundles of wood slash throughout the floodplain to supplement previous wood placement.	*Not Collected at Closure*
Unspecified Or Other Instream Habitat Project (C.4.j.2)	0.95	0.95

Architectural & Engineering

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)		*Not Collected at Closure*
Did A&E costs exceed billed amount (Yes/No)	*Collected at Closure*	Yes **Note:** YN provided a staff archaeologist to the project.

Worksite: Westfork Teanaway (#3)

Targeted salmonid ESU/DPS (A.23)	☐ No Salmon ESU or Steelhead DPS ✓ Chinook Salmon-Middle Columbia River spring-run ESU ☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU ☐ Chinook Salmon-unidentified ESU ✓ Steelhead-Middle Columbia River DPS ☐ Steelhead/Trout-unidentified DPS	☐ No Salmon ESU or Steelhead DPS ✓ Chinook Salmon-Middle Columbia River spring-run ESU ☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU ☐ Chinook Salmon-unidentified ESU ✓ Steelhead-Middle Columbia River DPS ☐ Steelhead/Trout-unidentified DPS
Targeted species (non-ESU species)	None Unknown Brook Trout Brown Trout Bull Trout Cutthroat Forage Fish Kokanee Lamprey ✓ Rainbow Searun Cutthroat	None Unknown Brook Trout Brown Trout Bull Trout Cutthroat Forage Fish Kokanee Lamprey ✓ Rainbow Searun Cutthroat
Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.70	0

Project Identified In a Plan or Watershed Assessment (C.0.c)	Conley, A., J. Freudenthal, D. Lind, P. Mees, and R. Visser. 2009. Yakima Steelhead Recovery Plan, Extracted from the 2005 Yakima Subbasin Salmon Recovery Plan with Updates. Yakima Basin Fish & Wildlife Recovery Board, Yakima WA. 2. Teanaway Water Quality Plan 3. Teanaway Management Plan	*Not Collected at Closure*
Priority in Recovery Plan	See attached notes **Note:** 1. This project addresses specific actions in the steelhead Recovery Plan, including: Upper Yakima Action #4. Improve instream flows in the Swauk and Teanaway watersheds. Upper Yakima Action #14. Restore instream and floodplain habitat complexity in Swauk and Taneum creeks and Teanaway and lower Cle Elum rivers. Upper Yakima Action #15. Restore tributary riparian areas. Upper Yakima Action #20. Restore tributary headwater meadows. 2. The water quality plan calls for riparian revegetation, re-activating historic side channels, adding large woody material, and promoting groundwater storage. 3. The Teanaway Management Plan's chapter on water supply and water protection lists “Increase the water storage capacity of forests, meadows, and floodplains” as an objective. The first strategy listed for achieving this is using “large woody debris or other approaches as appropriate in streams and floodplains to capture sediment to achieve a more natural stream channel and reconnect streams to their floodplains”.	*Not Collected at Closure*
Type Of Monitoring (C.0.d.1)	✓ Implementation Monitoring None	Implementation Monitoring ✓ None
Monitoring Location (C.0.d.2)	✓ No monitoring completed Downstream Onsite Upslope Upstream	✓ No monitoring completed Downstream Onsite Upslope Upstream

Instream Habitat Project

Total Miles Of Instream Habitat Treated (C.4.b)	0.70	0
Channel structure placement (C.4.d.1)		
Total cost for Channel structure placement	$68,633	*Not Collected at Closure*

Material Used For Channel Structure (C.4.d.2)	Deflectors/Barbs	Deflectors/Barbs
	Flood Fencing	Flood Fencing
	Gabions	Gabions
	✓ Individual Logs (Anchored)	Individual Logs (Anchored)
	✓ Individual Logs (Unanchored)	Individual Logs (Unanchored)
	✓ Logs Fastened Together (Logjam)	Logs Fastened Together (Logjam)
	None	✓ None
	Other Engineered Structures	Other Engineered Structures
	Rocks/Boulders (Fastened Or Anchored)	Rocks/Boulders (Fastened Or Anchored)
	Rocks/Boulders (Unanchored)	Rocks/Boulders (Unanchored)
	Stumps With Roots Attached (Rootwads)	Stumps With Roots Attached (Rootwads)
	Weirs	Weirs

Miles of Stream Treated for channel structure placement (C.4.d.3)	0.70	0
Pools Created through channel structure placement (C.4.d.5)	14	0
Number of structures placed in channel (C.4.d.7)	14	0

Architectural & Engineering

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)		*Not Collected at Closure*
Did A&E costs exceed billed amount (Yes/No)	*Collected at Closure*	No

Worksite: Middlefork Teanaway (#4)

Targeted salmonid ESU/DPS (A.23)	☐ No Salmon ESU or Steelhead DPS	☐ No Salmon ESU or Steelhead DPS
	✓ Chinook Salmon-Middle Columbia River spring-run ESU	✓ Chinook Salmon-Middle Columbia River spring-run ESU
	☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU	☐ Chinook Salmon-Upper Columbia River summer/fall-run ESU
	☐ Chinook Salmon-unidentified ESU	☐ Chinook Salmon-unidentified ESU
	✓ Steelhead-Middle Columbia River DPS	✓ Steelhead-Middle Columbia River DPS
	☐ Steelhead/Trout-unidentified DPS	☐ Steelhead/Trout-unidentified DPS
Targeted species (non-ESU species)	None	None
	Unknown	Unknown
	Brook Trout	Brook Trout
	Brown Trout	Brown Trout
	Bull Trout	Bull Trout
	Cutthroat	Cutthroat
	Forage Fish	Forage Fish
	Kokanee	Kokanee
	Lamprey	Lamprey
	✓ Rainbow	✓ Rainbow
	Searun Cutthroat	Searun Cutthroat

Miles of Stream and/or Shoreline Treated or Protected (C.0.b)	0.30	0

Project Identified In a Plan or Watershed Assessment (C.0.c)	Conley, A., J. Freudenthal, D. Lind, P. Mees, and R. Visser. 2009. Yakima Steelhead Recovery Plan, Extracted from the 2005 Yakima Subbasin Salmon Recovery Plan with Updates. Yakima Basin Fish & Wildlife Recovery Board, Yakima WA. 2. Teanaway Water Quality Plan 3. Teanaway Management Plan	*Not Collected at Closure*
Priority in Recovery Plan	See attached notes **Note:** 1. This project addresses specific actions in the steelhead Recovery Plan, including: Upper Yakima Action #4. Improve instream flows in the Swauk and Teanaway watersheds. Upper Yakima Action #14. Restore instream and floodplain habitat complexity in Swauk and Taneum creeks and Teanaway and lower Cle Elum rivers. Upper Yakima Action #15. Restore tributary riparian areas. Upper Yakima Action #20. Restore tributary headwater meadows. 2. The water quality plan calls for riparian revegetation, re-activating historic side channels, adding large woody material, and promoting groundwater storage. 3. The Teanaway Management Plan's chapter on water supply and water protection lists "Increase the water storage capacity of forests, meadows, and floodplains" as an objective. The first strategy listed for achieving this is using "large woody debris or other approaches as appropriate in streams and floodplains to capture sediment to achieve a more natural stream channel and reconnect streams to their floodplains".	*Not Collected at Closure*
Type Of Monitoring (C.0.d.1)	✓ Implementation Monitoring None	Implementation Monitoring ✓ None
Monitoring Location (C.0.d.2)	✓ No monitoring completed Downstream Onsite Upslope Upstream	✓ No monitoring completed Downstream Onsite Upslope Upstream

Instream Habitat Project

Total Miles Of Instream Habitat Treated (C.4.b)	0.30	0
Channel structure placement (C.4.d.1)		
Total cost for Channel structure placement	$30,633	*Not Collected at Closure*

Material Used For Channel Structure (C.4.d.2)	Deflectors/Barbs	Deflectors/Barbs
	Flood Fencing	Flood Fencing
	Gabions	Gabions
	✓ Individual Logs (Anchored)	Individual Logs (Anchored)
	✓ Individual Logs (Unanchored)	Individual Logs (Unanchored)
	✓ Logs Fastened Together (Logjam)	Logs Fastened Together (Logjam)
	None	✓ None
	Other Engineered Structures	Other Engineered Structures
	Rocks/Boulders (Fastened Or Anchored)	Rocks/Boulders (Fastened Or Anchored)
	Rocks/Boulders (Unanchored)	Rocks/Boulders (Unanchored)
	Stumps With Roots Attached (Rootwads)	Stumps With Roots Attached (Rootwads)
	Weirs	Weirs
Miles of Stream Treated for channel structure placement (C.4.d.3)	0.30	0
Pools Created through channel structure placement (C.4.d.5)	6	0
Number of structures placed in channel (C.4.d.7)	6	0

Architectural & Engineering

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)		*Not Collected at Closure*
Did A&E costs exceed billed amount (Yes/No)	*Collected at Closure*	No

Overall Metrics

	Current Agreement	Final
Completion Date		
Projected date of completion	10/15/2022	12/31/2022
Project Goals		
Goals, purpose, and expected benefits (A.17)	The goal of this project is to enhance overall aquatic habitat productivity for spring Chinook, coho, steelhead in treated reaches, including improved groundwater recharge and storage, increased pool habitat, improved spawning gravel retention, improved stream flow complexity, and improved water quality.	The goal of this project is to enhance overall aquatic habita productivity for spring Chinook coho, steelhead in treated reaches, including improved groundwater recharge and storage, increased pool habita improved spawning gravel retention, improved stream flo complexity, and improved wate quality.

Restoration Costs

Final amounts include a pending b
Date of Last Released Billing 09/26/2

		Proposed	Final
Worksite: Northfork Teanaway (#1)			
	SPLIT OUT FINAL TOTAL BELOW	$97,134	$191,152
Instream Habitat Costs (C.4.a)		$97,134	$172,205
Architectural & Engineering Costs			$18,947
	Difference		$0
Worksite: Indian Creek Section 16 (#2)			
	SPLIT OUT FINAL TOTAL BELOW	$50,000	$7,484
Instream Habitat Costs (C.4.a)		$50,000	$4,142
Architectural & Engineering Costs			$3,342
	Difference		$0
Worksite: Westfork Teanaway (#3)			
	SPLIT OUT FINAL TOTAL BELOW	$0	$12,152
Instream Habitat Costs (C.4.a)		$68,633	$0
Architectural & Engineering Costs			$12,152
	Difference		$0
Worksite: Middlefork Teanaway (#4)			
	SPLIT OUT FINAL TOTAL BELOW	$0	$15,340
Instream Habitat Costs (C.4.a)		$30,633	$0
Architectural & Engineering Costs			$15,340
	Difference		$0

Billed Summary

Final amounts include a pending billi
Date of Last Released Billing 09/26/20

	Project Agreement		Totals To Date		
Category	**RCO**	**Total**	**Expended**	**Non Reimbursable**	**Total Bille**
Restoration					
Construction	153,846.63	189,539.00	129,947.32	46,400.00	176,347.3
AA&E	46,153.37	56,861.00	49,779.50		49,779.5
Restoration Total	**200,000.00**	**246,400.00**	**179,726.82**	**46,400.00**	**226,126.8**
Total	200,000.00	246,400.00	179,726.82	46,400.00	226,126.8

Sponsor Match

	Proposed	Final
Project Funding		
Federal Funds	$199,999.00	$167,508.65
State Funds (A.11)	$1.00	$0.00
Pending Billing - RCO Share Approved	*Collected at Closure*	$12,218.17

Match Details

Match Category	Match Type	Proposed	Final
Converted Match	Converted Matching Share		
Amount		$6,400.00	$0.00
Other Monetary Funding	Grant - Federal		
Amount		$40,000.00	$0.00
Funding Organization			
Grant Program			
Other In-Kind Contributions	Donated Services		*Unable to tie Billed match t Proposed match. Please ma corrections as needed, or lea correct.*
Amount		*N/A*	$31,100.00 **Note:** Total was actually, $46,4
Funding Organization			Match: Yakama Nation

Project Funding Total	$200,000.00	81.17 %	$179,726.82	85.25 %
Sponsor Match Total	$46,400.00	18.83 %	$31,100.00	14.75 %
Project Total	$246,400.00	100.00 %	$210,826.82	100.00 %
Total Billed			$226,126.82	
Difference Final Project Total must equal Total Billed.			($15,300.00)	

Attachments

PHOTOS (JPG, GIF)

Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Sh
	02/12/2023	Design document (as built)	As_built_air_photos.pdf	RebeccaW	As_built_air_photos.pdf, 551477 Final Report, 02/13/2023, Accepted	

Certify & Submit

Status History

Report Status	Date	User	Note
Accepted	02/13/2023	Elizabeth Butler	Hooray! Do you think it will be too early to get out for the final site visit on March 14th? We'll need to keep the project active until that's complete. If March is too early, let's plan ahead and get a date on the calendar. Look forward to closing this project this spring!
Submitted	02/13/2023	Rebecca Wassell	Hooray!
Draft	11/23/2022	Elizabeth Butler	

WASHINGTON STATE Recreation and Conservation Office

Property Report

PROJECT: 18-1711 REST, TEANAWAY COMMUNITY FOREST FLOODPLAIN RESTORATION

Sponsor: Mid-Columbia RFEG Program: Salmon Federal Projects Status: Active
Project Start Date: 12/06/2018 Agreement End Date: 12/31/2022

PROPERTY: Teanaway Community Forest NF (1: Northfork Teanaway)

Property Basics

Acquisition ✓**Restoration**

Property Location

Property Name Teanaway Community Forest NF
Property Address (optional)
City
State **Zip**

Property Description The 50241 acre Teanaway Community Forest was acquired in 2013 through fee purchase by Washington State. The law that enabled the purchase established clear goals for the landscape, including protection of water supply, and restoration of aquatic habitats

Associated Worksite Northfork Teanaway (#1)

Landowner

Landowner Name WDNR
Address (optional) Natural Resources Building Headquarters 47000
City Olympia
State WA **Zip** 98504
Landowner Type State

Control and Tenure

Instrument Type Landowner Agreement
Timing Existing
Term Type Perpetuity
 # Yrs
Expiration Date
Note \

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
No parcels			

Recording Numbers

Instrument Type	Recording Number	Notes
No recordings		

RCO Notes

✓**Property data verified by RCO Staff**

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No attachments match filter criteria						

WASHINGTON STATE Recreation and Conservation Office

Property Report

PROJECT: 18-1711 REST, TEANAWAY COMMUNITY FOREST FLOODPLAIN RESTORATION

Sponsor: Mid-Columbia RFEG Program: Salmon Federal Projects Status: Active
Project Start Date: 12/06/2018 Agreement End Date: 12/31/2022

PROPERTY: Washington DNR (2: Indian Creek Section 16)

Property Basics

Acquisition ✓**Restoration**

Property Location

Property Name Washington DNR
Property Address (optional)
City
State **Zip**

Property Description Section 16 has been held by Washington State as a school trust parcel since statehood. Yakama Nation implemented restoration on that parcel in 2015, through a collaborative partnership involving WDFW (co-managers with YN in fish management in the Yakima)
Associated Worksite Indian Creek Section 16 (#2)

Landowner

Landowner Name WDNR
Address (optional) Natural Resources Building Headquarters 47000
City Olympia
State WA **Zip** 98504
Landowner Type State

Control and Tenure

Instrument Type Landowner Agreement
Timing Proposed
Term Type Fixed # of years
 # Yrs 10
Expiration Date 10/15/202
Note Five years of monitoring is anticipated to be sufficient to ensure weeds have been controlled to a reasonable degree.

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
No parcels			

Recording Numbers

Instrument Type	Recording Number	Notes

RCO Notes

✓**Property data verified by RCO Staff**

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No attachments match filter criteria						

WASHINGTON STATE Recreation and Conservation Office

Property Report

PROJECT: 18-1711 REST, TEANAWAY COMMUNITY FOREST FLOODPLAIN RESTORATION

Sponsor: Mid-Columbia RFEG Program: Salmon Federal Projects Status: Active
Project Start Date: 12/06/2018 Agreement End Date: 12/31/2022

PROPERTY: Teanaway Community Forest WF (3: Westfork Teanaway)

Property Basics

Acquisition ✓**Restoration**

Property Location

Property Name Teanaway Community Forest WF
Property Address (optional)
City
State **Zip**

Property Description The 50241 acre Teanaway Community Forest was acquired in 2013 through fee purchase by Washington State. The law that enabled the purchase established clear goals for the landscape, including protection of water supply, and restoration of aquatic habitats
Associated Worksite Westfork Teanaway (#3)

Landowner

Landowner Name WDNR
Address (optional) Natural Resources Building Headquarters 47000
City Olympia
State WA **Zip** 98504
Landowner Type State

Control and Tenure

Instrument Type Landowner Agreement
Timing Existing
Term Type Perpetuity
 # Yrs
Expiration Date
Note

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
No parcels			

Recording Numbers

Instrument Type	Recording Number	Notes
No recordings		

RCO Notes

No work occurred in WF.
✓**Property data verified by RCO Staff**

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No attachments match filter criteria						

WASHINGTON STATE Recreation and Conservation Office

Property Report

PROJECT: 18-1711 REST, TEANAWAY COMMUNITY FOREST FLOODPLAIN RESTORATION

Sponsor: Mid-Columbia RFEG Program: Salmon Federal Projects Status: Active
Project Start Date: 12/06/2018 Agreement End Date: 12/31/2022

PROPERTY: Teanaway Community Forest MF (4: Middlefork Teanaway)

Property Basics

Acquisition ✓**Restoration**

Property Location

Property Name Teanaway Community Forest MF
Property Address (optional)
City
State **Zip**

Property Description The 50241 acre Teanaway Community Forest was acquired in 2013 through fee purchase by Washington State. The law that enabled the purchase established clear goals for the landscape, including protection of water supply, and restoration of aquatic habitats
Associated Worksite Middlefork Teanaway (#4)

Landowner

Landowner Name WDNR
Address (optional) Natural Resources Building Headquarters 47000
City Olympia
State WA **Zip** 98504
Landowner Type State

Control and Tenure

Instrument Type Landowner Agreement
Timing Existing
Term Type Perpetuity
 # Yrs
Expiration Date
Note

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
No parcels			

Recording Numbers

Instrument Type	Recording Number	Notes
No recordings		

RCO Notes

No work occurred in MF.

✓**Property data verified by RCO Staff**

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No attachments match filter criteria						