Application Name: Upper Fly Restortation Project

By: Grande Ronde Model WS Foundation

Offering Type: Upper Grande Ronde Initiative

Application Type: Restoration

OWEB Region: Eastern Oregon
County: Union
Coordinates: 45.125826,-118.451306

Applicant:
Jesse Steele
1114 J Avenue
La Grande OR 97850-2073
(541) 663-0570
jesse@grmw.org

Payee:
Mary Estes
1114 J Avenue
La Grande OR 97850
(541) 663-0570
mary@grmw.org

Project Manager:
Joe Platz
3502 HWY 30
LaGrande OR 97850
(541) 962-8571
jplatz@fs.fed.us

Budget Summary:
OWEB Amount Requested: $0
Total Project Amount: $0

Administrative Information

Abstract

Provide an abstract statement for the project. Include the following information: 1) Identify the project location; 2) Briefly state the project need; 3) Describe the proposed work; 4) Identify project partners.

The Upper Fly Restoration Project is located on Fly Creek, tributary to the Grande Ronde River. The project is located on 2 miles of Fly Creek (RM 7.0 -9.0) this project involves implementing restoration to improve habitat for listed spring/summer chinook and summer steelhead. The project is located in the Lower Fly Creek Subwatershed (170601040108) (T 5S, R35E, S 8, 17, 20, 27, 28, 29). Fly Creek is spawning and rearing habitat for Snake River Basin summer steelhead and redband trout and rearing habitat for Snake River Basin spring chinook salmon. Hjstoric beaver trapping, roading, timber harvest, and grazing have created a confined channel with limited floodplain interaction. The project would prioritize LWD placement to add roughness, increase floodplain interaction and habitat complexity, and promote out of channel flooding. It is expected that the project will promote longer periods of hydrologic production, decreased stream temperatures, increased low velocity habitat, and increased fish cover. The project would place wood within 2.0 miles of Fly Creek and 2500 seedlings and 20,000 cuttings would be planted. Project partners include: Grande Ronde Model Watershed, Bonneville Power Administration and the US Forest Service.

Location Information

What is the ownership of the project site(s)?

✓ *Public land (any lands owned by the Federal government, the State of Oregon, a city, county, district or municipal or public corporation in Oregon)*

What agency(ies) are involved?

US Forest Service

❑ *Private (land owned by non-governmental entities)*

❑ *Not applicable to this project*

❑ *This grant will take place in more than one county.*

Permits

Other than the land-use form, do you need a permit, license or other regulatory approval of any of the proposed project activities?

● Yes
❍ No

For Details Go to Permit Page

I acknowledge that I am responsible for verifying applicable permits, licenses, and General Authorizations required for the project, and can update information at grant agreement execution.

✓*Yes*

Racial and Ethnic Impact Statement

Racial and Ethnic Impact Statement

❍ The proposed grant project policies or programs could have a disproportionate or unique POSITIVE impact on the following minority persons. (indicate all that apply)

❍ The proposed grant project policies or programs could have a disproportionate or unique NEGATIVE impact on the following minority persons. (indicate all that apply)

● The proposed grant project policies or programs WILL HAVE NO disproportionate or unique impact on minority persons.

Insurance Information

If applicable, select all the activities that are part of your project - These require a risk assessment tool unless otherwise noted (check all that apply).

❑*Working with hazardous materials (not including materials used in the normal operation of equipment such as hydraulic fluid)*

❑*Earth moving work around the footprint of a drinking water well*

❑*Removal or alteration of structures that hold back water on land or instream including dams, levees, dikes, tidegates and other water control devices (this does not include temporary diversion dams used solely to divert water for irrigation)*

❑*Applicant's staff or volunteers are working with kids related to this project (DAS Risk assessment tool not required, additional insurance is required)*

❑*Applicant's staff are applying herbicides or pesticides (DAS Risk assessment tool not required, additional insurance is required)*

❑*Insurance not applicable to this project*

Additional Information

❑ *This project affects Sage-Grouse.*

Problem Statement

Describe the watershed problem(s) that this restoration project seeks to address.

Overall problem: The Upper Fly Creek reach is not in proper functioning ecological condition (hydrologic and geomorphic), due to historic management that included beaver trapping, roading, timber harvest, and livestock grazing.

Sub-problem 1 - Floodplain form and function

The Upper Fly Creek reach has limited water capture and retention capacities due to past anthropogenic influences. The deficiencies have lowered ground water tables. This has resulted in: (1) A decreased ability to store water and buffer water temperature; (2) Less connection to the floodplain to moderate in-channel velocity; and (3) Lower quality fish habitat. Lack of floodplain form and function has resulted in:

* Potential increase of in-stream water temperatures from decreased groundwater recharge.
* Increase of in-channel velocity where the channel has downcut, and doesn't spread water out onto the floodplain during high flows. The process of downcutting causes vertical erosion, which increases fine sediment levels and decreases habitat complexity.
* Decrease in the amount of zero velocity habitat, which provide juvenile salmonids protection, temperature buffering, food sources and feeding areas, and resting areas.

Sub-problem 2 - Side channel habitat and activation

There are old channel scrolls within the floodplain that are rarely activated, due to many of the issues identified in Sub-Problem 1.

* Channel incision and lack of woody debris have isolated side channel scrolls from the existing channel. These channels only flow during high flow events.

Sub-problem 3 - Fish habitat complexity

The Upper Fly Creek fish habitat complexity (cover, pool quality, and zero velocity habitat) is limited.

* Channel incision and lack of instream woody material has affected the quantity and quality of spawning, rearing, and over wintering habitat in the Upper Fly Creek Reach.

How have past or current land management practices contributed to the problem?

Historic management that included beaver trapping, roading, timber harvest, livestock grazing and an altered fire regime have degraded the Upper Fly Creek watershed's ecological form and function. The loss of functional stream habitat adversely effects the survival and rearing of native salmonids, other fish, and wildlife species.

Beaver trapping pressure in the 19th Century almost caused extirpation of this species in the western United States. The decrease in beaver populations on Fly Creek has contributed to channel incision, decreased habitat complexity, altered vegetative communities, and an altered flow/temperature regime. Beavers serve as ecological engineers by building dams that decrease the velocity of peak flows and spread flows out over longer periods of time. This increase of water retention time decreases erosive forces that cause stream incision. Higher levels of surface and subsurface water retention expands riparian and wetland habitat along the stream. As beavers move in and out of systems, side channels often form, and more woody vegetation ends up in the stream. This leads to increased habitat complexity for fish and wildlife.

High densities of roads near the Upper Fly Reach have likely caused a variety of compounding problems. Impermeable road surfaces increase the rate of overland flow. This affects the timing and volume of flow in downstream areas of the watershed. Roads that are built on the sides of stream systems (which is the case on this section of Fly Creek) often result in long-term soil compaction. The soil compaction can lead to a reduction in water holding capacity and infiltration into nearby meadow systems.

Historic overgrazing of sheep and cattle caused bank erosion, channel over widening, and soil compaction. This has caused vertical erosion and channel incision. Channel incision has altered the Fly Creek system by lowering streambeds and groundwater tables. Currently, the stream is only grazed by sheep with limited access to Fly Creek.

Historic logging practices caused a variety of problems in Fly Creek. Removal of wood from the system resulted in a confined channel, limited spawning gravels, low pool quality and quantity and less instream large woody debris (LWD).

Altered natural and human ignited fire (Native American and sheep herders) regimes due to 20th century fire suppression have likely affected the vegetative, hydrologic, and geomorphic processes of Fly Creek. Less frequent intense wildfires are more likely to have negative effects on the erosion of uplands than more frequent low-intensity fires. Historically, naturally caused and human ignited low intensity fires were likely more common. Conifer encroachment due to lack of regular fire intervals has caused dense under and mid-story fir/pine species on the edges of headwater meadows. This early stage forest ecosystem dynamic increases competition for large tree regeneration, and contributes to water loss through evapotranspiration.

The restoration of the Upper Fly Reach's form and function will address a combination of these interrelated problems through a physical approach to stream and floodplain restoration.

Level II Stream Habitat Survey data from 2014 indicates the following conditions for this stream reach.

(1) Sinuosity: 1.01
(2) Gradient: 1%
(3) Dominant/Subdominant Substrate: Gravel/Cobble
(4) Bankfull Width to Depth Ratio: 31.6'
(5) Average wetted Width: 13.59'
(6) Pools per mile: 34
(7) Average Residual Pool Depth: 1.1'
(8) Large Woody Debris per mile: 53 pieces
(9) Rosgen Stream Type: C

Project History

Continuation - Are you requesting funds to continue work on a project previously funded by OWEB where that work did not result in a completed project?

❍ Yes
● No

Resubmit - Have you submitted, but were not awarded an OWEB application for this project before?

❍ Yes
● No

Phased - Is proposed work in this application a phase of a comprehensive watershed restoration plan or project?

❍ Yes
● No

Plans

Salmon

Will this project benefit salmon or steelhead?

● Yes
❍ No

✓Snake River Basin - Steelhead
✓Snake River Spring/Summer-run - Chinook Salmon

How will the resulting restoration project benefit salmon or steelhead or their habitat?

The project will increase floodplain inundation, habitat complexity, pool quality/quantity and side channel activation. The spring/summer chinook, and summer steelhead need these habitat components and water quality improvements to improve spawning, rearing and migratory habitats.

Does the project address a restoration action identified in a regional assessment or recovery plan?

❍ Yes
● No

Does the project address a restoration action identified in a regional assessment or recovery plan?

● Yes
❍ No

Provide name of local plan, Watershed assessment or other locally relevant document.

The project is located in the Upper Grande Ronde Restoration Atlas. The Upper Grande Ronde Restoration Atlas. The Upper Grande Ronde Atlas is a geo-spatial restoration prioritization plan developed in coordination with BPA by local fish biologists, researchers, engineers, hydrologists, practitioners and stakeholders. The plan divides the subbasin into biologically significant reaches (BSR) and prioritizes those reaches for restoration based on fish species present, fish use, fish life stages, limiting factors and floodplain availability. Restoration actions were identified during the planning process to address limiting factors for each BSR. Each reach is assigned a Tier with Tier 1 being the highest priority and Tier 2 being the lowest priority. The Upper Fly Creek Project is within a Tier 1 (Node) BSR.

Does this project address one or both of the following:

✓*Habitat needs for one or more Endangered Species Act-listed species and/or species of concern*

❑*Concerns identified on 303(d) listed streams*

❑*No*

Proposed Solution

Goal, Objectives, and Activities

State your project goal. A goal statement should articulate desired outcomes (the vision for desired future conditions) and the watershed benefit.

Overall Goal: To achieve proper ecological form and function of Upper Fly Creek and thereby restore habitat for the imperiled Snake River Basin Spring/Summer Chinook and Snake River Basin Steelhead.

Subgoal 1: Physical - Restore Hydrologic Function
Increase hydration of a laterally confined channel to improve groundwater retention through channel spanning log jam construction.

Subgoal 2: Physical - Activate Side Channel Scrolls
Encourage and create perennial side channels through channel spanning log jam construction.

Subgoal 3: Biological - Improve Fish Habitat
Restore habitat complexity. Additional whole trees will be placed. These structures will encourage fish cover.

List specific and measurable objectives. Objectives support and refine the goal by breaking it down into steps for achieving the goal. (NOTE: If you quantify your objectives, ensure all numbers match the metrics listed in your selected habitat types.) Provide up to 7 objectives.

Objective #1

Objective

Objective #1

Hypothesis 1: If channel spanning wood structures using trees and racking material are constructed in strategic locations then: 2 years post implementation: (1) 20% more of the floodplain will be inundated in the summer season (June-July)(Reduced to 15% for Alternative 2). Water storage will be quantified in terms of floodplain acres using drone technology. (2) 68 new backwater pools will develop (Reduced to 55 pools for Alternative 2). Pools will be measured by USFS Level II habitat surveys.(3) .5 mile of activated new side channels will occur in June and July (Reduced to .4 mile for Alternative 2). Side channel lengths will be measured by USFS using GPS Tracking.
Strategy and Objectives 1: Mimic beaver dam function at pool tails and where accessible side channel habitats exist by constructing channel spanning wood structures to:
- Deflect water into the floodplain for groundwater storage.
- Activate side channel scrolls.
- Promote gravel deposition & spawning gravel recruitment.
- Recruit deciduous vegetation.
- Improve habitat for future use by beaver populations.
- Create backwater pools.

Hypothesis 2: If large wood is placed than instream wood will increase by 1100 pieces (Reduced to 891 pieces for Alternative 2).
- Pool depth and wood will be measured by USFS Level II habitat surveys.

Strategy and Objectives 2: Place logs, rootwads, racking material and whole trees to encourage: fish cover and habitat complexity.

Describe the project activities. Activities explain how the objective will be implemented.

Alternative 1 - Full project: The project would construct debris jams and habitat structures at 68 sites within 2.0 miles of Fly Creek (RM 7.0 – RM 9.0). This would include approximately 1500 pieces of large wood (1300 trees) and 3,400 yards of racking material. All of the wood will be placed with excavators/log loaders. There will be 1-3 pieces of large wood dug into the stream bank at each structure site. In addition, 2 – 5 pieces of large wood will be pinned at each site.

• The 68 debris jams will mimic the Large Channel Spanning Log Structure in the attached design. Each jam would include 2 large trees with rootwads (> 20" dbh) & 50' long), 4 medium trees with rootwads (14" – 20" dbh & 50' long), 6 small trees/logs (10" – 14" dbh & 30' – 50' long), 2 whole trees, and 5: 10 yard loads of racking material. These structures are designed for floodplain inundation and habitat complexity.

• There will be additional 150 whole trees and 398 logs placed within the stream and floodplain to provide habitat complexity, fish cover, and floodplain roughness.

• Total of 1500 large wood pieces in 2022.

Access for machinery to the stream would also occur off of Roads 5155 400.
There are a total of 1300 large trees needed for the project. Of these, 136 trees will be over 20", 422 trees will be between 14" and 20" dbh, and 542 trees will be between 10" and 14" dbh. All of the trees will be a minimum of 50' long (whole trees could be longer).

There will be 1100 trees with rootwads attached obtained from the 5155, 5155 400, 428 & 430 Roads. There will be 200 trees felled within 300' of Fly Creek (~5% - 35% slopes). Trees within 100' of Fly creek would not removed, where possible. Approximately, 3,400 yards of racking material will be obtained from the road prisms of the 5155, 5155 400, 428, & 430, and the 5156. The large wood with rootwads attached will be obtained within 20' of the road prism. The racking material will be obtained within 5' of the road prism.

All of the disturbed areas will be seeded. Disturbed areas will be ripped. Disturbed areas adjacent to Fly Creek will be replanted with 2,500 deciduous seedlings (cottonwood, willow, alder, aspen) and 20,000 cuttings by the USFS.

Alternative 2 - Partial project (This project excludes those structure sites with upper Fly Creek that the GRMW Tech team suggested adding gravel to the riffles).

The project would construct debris jams and habitat structures at 55 sites within 1.5 miles of Fly Creek (RM 7.5 – RM 9.0). This would include approximately 1215 pieces of large wood (1053 trees) and 2,750 yards of racking material. All of the wood will be placed with excavators/log loaders. There will be 1-3 pieces of large wood dug into the stream bank at each structure site. In addition, 2 – 5 pieces of large wood will be pinned at each site.

• The 55 debris jams will mimic the Large Channel Spanning Log Structure in the attached design. Each jam would include 2 large trees with rootwads (> 20" dbh) & 50' long), 4 medium trees with rootwads (14" – 20" dbh & 50' long), 6 small trees/logs (10" – 14" dbh & 30' – 50' long), 2 whole trees, and 5: 10 yard loads of racking material. These structures are designed for floodplain inundation and habitat complexity.

• There will be additional 122 whole trees and 323 logs placed within the stream and floodplain to provide habitat complexity, fish cover, and floodplain roughness.

• Total of 1215 large wood pieces in 2022.

Access for machinery to the stream would also occur off of Roads 5155 400.
There are a total of 1053 large trees needed for the project. Of these, 110 trees will be over 20", 342 trees will be between 14" and 20" dbh, and 439 trees will be between 10" and 14" dbh. All of the trees will be a minimum of 50' long (whole trees could be longer).

There will be 891 trees with rootwads attached obtained from the 5155, 5155 400, 428 & 430 Roads. There will be 162 trees felled within 300' of Fly Creek (~5% - 35% slopes). Trees within 100' of Fly creek would not removed, where possible. Approximately, 2,750 yards of racking material will be obtained from the road prisms of the 5155, 5155 400, 428, & 430, and the 5156. The large wood with rootwads attached will be obtained within 20' of the road prism. The racking material will be obtained within 5' of the road prism.

All of the disturbed areas will be seeded. Disturbed areas will be ripped. Disturbed areas adjacent to Fly Creek will be replanted with 2,500 deciduous seedlings (cottonwood, willow, alder, aspen) and 20,000 cuttings by the USFS.

List the major project activities and time schedule for each, including post project implementation.

Element	Description	Start Date	End Date
Tree Removal and Stage	Trees and racking material will be removed and staged within the 100' zone of upper Fly Creek.	5/2022	7/2022
Structure Construction/Wood Placement	Construct 68 large channel spanning structures.	7/2022	8/2022
Seeding	Seed all disturbed areas.	9/2022	11/2022
Planting seedlings and cuttings	Plant 2500 deciduous seedlings and 10,000 cuttings.	10/2022	6/2023

Element	Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023
Tree Removal and Stage					
Structure Construction/Wood Placement					
Seeding					
Planting seedlings and cuttings					

Habitat Types

In which habitat type(s) are you proposing to work?

✓*Instream Habitat: below the ordinary high water mark (includes in-channel habitat restoration, bank stabilization, flow, fish screening, and fish passage) -- Details will follow.*

✓*Riparian Habitat: above the ordinary high-water mark of the stream and within the stream's floodplain. -- Details will follow.*

❑*Upland Habitat: above the floodplain and improves native habitat and watershed function.*

❑*Wetland Habitat: land or areas covered, often intermittently, with shallow water or have soil saturated with moisture.*

❑*Estuarine Habitat: tidally influenced areas.*

Instream Habitat

Select all applicable Instream categories.

❑**Bank stabilization**

❑**Fish passage improvement**

❑**Fish screening project**

❑**Instream Flow**

✓**Instream habitat restoration**

Select all the actions you propose to implement to address the problem.

✓*Placement of materials in channel*

Does the proposed project follow:

✓*ODFW Guidelines*

✓*NOAA Guidelines*

❑*Other*

What types of instream habitat materials are you proposing to install? (select all that apply)

✓*Large wood*

Number of structures.

68

Average number of logs per structure.

14

Average length of logs per structure (feet)

50

Average diameter of logs per structure (feet)

1.2

❑*Boulders*

❑*Combination log/boulder*

❑*Other materials: Materials that stabilize the streambed*

❑*Channel reconfiguration and connectivity, including alcoves and side channel reconnection*

❑*Spawning gravel placement*

❑*Beaver reintroduction*

❑*Non-native plant control*

❑*Nutrient enrichment*

❑*Animal species removal*

Is the primary purpose of the instream habitat restoration treatment(s) to address water quality limiting factors?

● Yes

❍ No

✓Sediment

✓Nutrients

✓High Temperature

Total miles of stream to be treated with all instream habitat restoration treatments

2.0

❑**Stockpiling logs**

Riparian Habitat

Select all applicable Riparian categories.

❑**Riparian road activities**
❑**Fencing and other materials for habitat protection**

✓**Vegetation establishment or management**

Select all the actions you propose to implement to address the problem.

✓*Planting*

For Details Go to Plant Page

❑*Non-native plant control*
❑*Prescribed burnings, stand thinning, stand conversions, silviculture*
❑*Juniper treatment*

❑**Livestock management**
❑**Debris and Structure Removal**

Is an objective of the riparian treatment(s) to address water quality limiting factors?

● Yes
❍ No

✓High Temperature

Total linear stream miles to be treated.
2.0

Total riparian acres to be treated.
15

Left streambank miles to be treated.
2.0

Right streambank miles to be treated.
2.0

Wrap-Up

Watershed Benefit

Describe the watershed or ecosystem function(s) that the project will address through the proposed restoration actions and the resulting benefits to water quality, native fish and wildlife habitat, and/or watershed health. Explain why the project is a priority for investment at this time.

The project will increase floodplain inundation, habitat complexity, pool quality/quantity and side channel activation. The spring/summer chinook, and summer steelhead need these habitat components and water quality improvements to improve spawning, rearing and migratory habitats. This project is a priority, due to the emphasis on Tier 1 projects within the Upper Grande Ronde River Watershed.

Public Awareness

Does this proposed project include public awareness activities?

❍ Yes
● No

Design

Were design alternatives considered?

● Yes
❍ No

Describe the design alternatives that were considered and why the preferred alternative was selected.

Two Alternatives are being proposed. The first alternative includes approximately 2 miles of Upper Fly Creek, 68 sites, and 1500 large wood pieces. This was the original alterative proposed.

The second alternative includes approximately 1.5 miles of Upper Fly Creek, 55 sites and 1215 large wood pieces. The second alternative takes approximately .5 mile of stream out of the original proposed project. This is due to the GRMW Tech team's recommendation for adding gravel to the riffles in this section of stream. The GRMW Team suggested that this technique has the potential to provide more uplift in the system. However, directly upstream of the project area, there are sections of stream that become intermittent during low flows. This is a concern with applying this technique within this stream reach. If Alternative 2 is selected, then the approximately .5 stream mile removed from the original proposal will be designed and proposed as a future project.

Design alternatives were analyzed using flow mapping, Lidar and hydraulic modeling.

Select the appropriate level of design for your project.

❍ No design is required.
❍ 10-30%: Conceptual design (evaluation of alternatives, concept-level plans, design criteria for project elements, rough cost estimates).
❍ 30-85%: Preliminary design (selection of the preferred alternative, draft plans, draft design report, preliminary

cost estimates).

- 85-100%: Final design (final design report, plans, and specifications, contracting and bidding documents, monitoring plan, final cost estimate).

If work remains on the project's design, describe the work that remains to be done and when you expect to have it completed. If no design is required put "N/A"

The design is 85% complete with one final review needed.

Describe the steps you will take to minimize adverse impacts to the site and adjacent lands during and after project implementation.

Project implementation will avoid wetlands, use existing/closed road prisms, and stay on designated skid trails where possible. All disturbed areas will be rehabilitated with an excavator to mimic natural conditions and add floodplain wood. The areas will also be seeded. Straw mulch will be applied where erosion potential is high.

Project Management

List the key individuals, their roles, and qualifications relevant to project and post project implementation. At a minimum include the following: project management, project design, project implementation, and project inspection.

Role	Name	Affiliation	Qualifications	Email	Phone
Project Design, Implementation, and Inspection	Joe Platz	USFS (Biological Technician)	Joe Platz is a Biological Technician for the US Forest Service. Joe Platz has a Bachelor of Science degree from OSU in Fisheries Science. He has been involved in designing and implementing restoration projects since 1989.	joseph.platz@usda.gov	(541) 962-8571
Project Design	Allen Childs	CTUIR - Fish Habitat Program Leader	Allen has a wealth of habitat restoration experience going back at least 25 years. He has implemented many successful projects on USFS and private lands and has worked with a multiple of agencies when doing so.	allenchilds@ctuir.org	(541) 969-3142

Climate Considerations

Briefly describe your understanding of how the characteristics and functions of the watershed where the proposed project will occur are anticipated to change due to climate impacts in the future. In particular, describe how species, habitat, and/or water quality or water quantity variables relevant to the project site location are expected to be affected. Refer to Technical Resources now available on this webpage, if needed: https://www.oregon.gov/oweb/resources/Pages/Field-Tech-Guidance.aspx

The project will contribute to increased water storage in the floodplain, of which will promote cooler summer water temperatures and promote riparian vegetation growth. This should benefit chinook and steelhead populations in the midst of potential climate change.

How have you accounted for these climate-impact considerations in your project planning, design or implementation? Please describe briefly.

The project planning, design and implementation did not specifically account for climate-impact considerations. However, the type of project will reduce the effects of potential climate change on steelhead and chinook.

Are there any constraints on your ability to incorporate climate considerations into project planning? For example: Lack of information about climate impacts at the project planning scale; Gaps in understanding what nursery or seed stock to use given potential climate impacts; Gaps in accessing these stocks; Lack of methods to quantify climate benefits; Uncertainty about how to define a baseline for assessing potential change; Metrics for understanding climate resilience are not well-defined.

❍ Yes
● No

Climate benefits from OWEB project activities can broadly be categorized into three types: (1) Carbon sequestration benefits (2) Mitigation benefits and (3) Adaptation benefits. Project activities may offer multiple climate benefits. Please review these categories below, select all the apply, and provide specific examples where possible:

✓ *Carbon sequestration (Capturing, securing and storing carbon dioxide from the atmosphere), including:*

Sequestration benefits from habitats: Project activities that avoid natural habitat conversion, or increase plant biomass within the habitat area, may contribute sequestration benefits. Select any that apply:

❑ *Upland forest*
✓ *Riparian*
❑ *Grassland*
❑ *Wetland*
❑ *Estuary*
❑ *Other habitat*

❑ *Sequestration benefit through fire management/fuels reduction. Activities that help manage fire frequency and severity will help provide sequestration benefits, because catastrophic wildfires reduce the sequestration potential of upland habitats.*

❑ *Other sequestration benefit*

✓ *Mitigation through reduced emissions*

Please describe climate mitigation benefit:

❑ *Adaptation Benefits. Project activities may offer multiple climate adaptation benefits for species, habitats and communities, and there may be some overlap in the terminology used to describe these benefits. Check all that apply below, and provide*

additional and more specific description if possible.

The State of Oregon is committed to identifying ways it can reduce impacts from harmful emissions. While the overall outcomes of OWEB funded projects may have many climate benefits, some necessary activities that occur during projects will result in increased emissions. To help us understand the current situation, please check all of the following that might apply to your project:

✓*Driving gas-powered automobiles, including trucks and All Terrain Vehicles (ATVs)*

✓*Operating gas-powered machinery other than automobiles (for example, chainsaws or other hand-held equipment)*

✓*Operating gas-powered machinery larger than automobiles (for example, excavators)*

❑*Boats*

❑*Other*

❑*Not applicable to project activities*

Are you considering alternative approaches that could reduce emissions (e.g., use of electric chainsaws or motors)?

-

❍ Yes

● No

Optional Monitoring

OPTIONAL: Restoration Project Monitoring

❑ *Salmonid Monitoring*
❑ *Non-salmonid biological monitoring*
❑ *Water (quantity) flow monitoring*
✓ *Water quality monitoring*
❑ *Rangeland monitoring*
✓ *Onsite*
✓ *Downstream*
❑ *Upstream*
❑ *Upslope*

Will effectiveness monitoring be conducted for this project?

● Yes
❍ No

Please describe the monitoring activities and any additional sources of funding (amount and source) to support this effort.

Monitoring consists of the following:

(1) Stream Survey: Region6 Level II Stream Habitat Inventory would be conducted prior to (completed) and @ year 1 and year 5 after completion. This monitoring will be completed by the USFS.

(2) GPS tracking: GPS tracking of side channel activation will occur prior to and at year 1 and year 5 after completion.

(3) Drone imagery: Drone imagery will occur prior to and at year 1 after completion.

(4) Structure Construction: Monitoring of structures would involve photo points of before and after implementation. Follow up photo points would occur at year 1 - 3 after project completion. This monitoring will be completed by the USFS.

(5) Plant/seed survival: Native plantings and seeded areas would be evaluated for survival on a yearly basis for three years after project completion through photo points and determining plant survival. If plant/seed survival is poor, then subsequent planting and/or seeding would occur (depending on funding). This monitoring will be completed by the USFS.

(6) Noxious weeds: Noxious weeds would be monitored, yearly, for three years after project completions. This monitoring will be completed by the USFS.

Budget

Item	Unit Type	Unit Number	Unit Cost	OWEB Funds	External Cash	External In-Kind	Total Costs
Salaries, Wages and Benefits							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Contracted Services							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Travel and Training							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Materials and Supplies							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Equipment							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Other							
			$0	$0	$0	$0	$0
Category Sub-total				$0	$0	$0	$0
Modified Total Direct Cost Amounts				$0	$0	$0	$0
Indirect Costs							
	0%			$0	$0		$0
Total				$0	$0	$0	$0

* = OWEB funds excluded from indirect.

Provide context and justification for how your budget was developed. Explain how project costs and/or rates were determined.

Project costs were developed using 12 years of similar types of stream restoration contracts to calculate costs for tree removal, log spanning jam construction, rehabilitation and planting.

Does the budget identify a contingency amount for specific line item(s) within the Contracted Services and/or Material and Supplies budget category?

❍Yes

●No

Funding and Match

Fund Sources and Amounts

Organization Type	Name	Source Note	Contribution Type	Amount	Description	Status
Federal	US Forest Service	Trees, seedllings, rebar, cuttings, seed, mulch	In-Kind - Materials	$260,269	seedlings, rebar, trees, cuttings, seed, mulch	Secured
Federal	US Forest Service and CTUIR	Labor	Cash	$91,252	Labor	Secured
Fund Source Cash Total	**$91,252**		**Fund Source In-Kind Total**	**$260,269**		

Match

Contribution Source-Type: Description	Amount
US Forest Service-In-Kind - Materials: seedlings, rebar, trees, cuttings, seed, mulch	$0
US Forest Service and CTUIR-Cash: Labor	$0
Match Total	**$0**

Do match funding sources have any restrictions on how funds are used, timelines or other limitations that would impact the portion of the project proposed for OWEB funding?

❍ Yes
● No

Do you need state OWEB dollars (not Federal) to match the requirements of any other federal funding you will be using to complete this project?

❍ Yes
● No

Does the non-OWEB cash funding include Pacific Coast Salmon Recovery Funds?

❍ Yes
❍ No

Uploads

Figures and Tables: Headwaters UGR Partnership - Upper Fly Restoration.pdf **- Budget**

Project Design: Upper Fly Construction Drawings Hydraulics.pdf **- Project Design**

Photos: UPPER FLY CREEK RESTORATION PROJECT Power point.pdf **- Photos with power point**

Figures and Tables: Headwaters UGR Partnership - Upper Fly Restoration Alternative 2.pdf **- Alterantive 2 Budget for Upper Fly Creek**

Road Page

Road Questions

Select all the Road Activities you will be doing.

- ❑**Road closures/decommissioning for the purpose of restoration**
- ❑**Road Obliteration**
- ❑**Road Relocation**
- ❑**Road drainage system improvement**
- ❑**Road Surface Improvement**

Total miles of road treated

Plant Page

Planting Questions

Relationship to other conservation programs

❑*This project will use OWEB funds to increase the planting density on CREP acres.*

Planting Activities

Describe the current condition of the site(s) to be planted.

The 2500 deciduous seedlings will be planted in disturbed areas. The 20,000 deciduous cuttings will be planted adjacent to the stream and in the floodplain where floodplain inundation and side channel activation occurs.

Describe how you will prepare the site(s) prior to planting and how those activities are appropriate considering the site conditions described in the previous question.

The seedlings will be planted in soil adjacent to the stream that is devoid of vegetation due to equipment operation during wood placement. The cuttings will be planted in areas where soils will remain wetted during most of the year.

Fill out the table below. Identify the vegetation communities you plan on planting in, the acres each vegetation community encompasses, and the density of your planting.

Vegetation Community	Acres	Density
Riparian	12	1875

Fill out the table below for each vegetation community listed in the table above, provide the common and scientific names of up to five plants that will be planted, the form(tree, shrub, grass), type of plant (bare root, cutting, etc) and the planting timing.

Vegetation Community	Plants: Common Name	Plants: Scientific Name	Form	Type	Year	Month
Riparian	Willow	Salix spp.	Shrub	Plugs	2022	October
Riparian	Cottonwood	Populus trichocarpa	Tree	Plugs	2022	October
Riparian	Willow spp.	Salix spp.	Shrub	Cutting	2023	April/May
Riparian	Cottonwood	Populus trichocarpa	Tree	Cutting	2023	April/ May

Plant Stewardship

After the plantings are installed, will you conduct plant stewardship (“free to grow”)?

❍ Yes
● No

Explain

All planting is funded by the USFS. We will continue to monitor survival and replant as needed.

Measures of Planting Success

Use the table below to explain how you will document and determine success for the plantings.

Vegetation Community	Parameter	Percentages
Riparian	Percent Survival	50%

If, in the course of the 3-5 years following planting, the success rate falls below your standard, what is your plan?

We will replant if planting survival falls below 50% survival.

Permit Page

Project Activity Requiring a Permit or License	Name of Permit or License	Entity Issuing Permit or License	Status
Instream Wood/Boulder Placement	Regional General Permit or General Permit	Army Corps of Engineers &Department of State Lands	Programmatic permits - obtained March 2022
Entire Project	NEPA	USFS	Will be completed in February of 2022.
Entire Project	ESA clearance	USFWS and NOAA	Programmatic (ARBOII) will be completed March 2022

BUDGET

UPPER FLY CREEK RESTORATION PROJECT

Totals automatically round to the nearest dollar

A	B	C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Unit Number**	**Unit Cost**	**Unit Type**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of days)	(e.g., daily rate)					(add columns D, E, F)
SALARIES, WAGES AND BENEFITS. List position titles, include only costs of employees charged to this grant.							
SUBTOTAL (1)			0	0	0	0	89,980
CONTRACTED SERVICES. Labor, supplies, and materials to be provided by *non-staff* for project implementation.							
Biological Technician (Joe Platz)	100	$360	8 hr day		36,000		36,000
Biological Technician	50	$250	8 hr day		12,500		12,500
Allen Childs (Design)	20	$404	8 hr day		8,080		8,080
NEPA/Support Staff	100	$334	8 hr day		33,400		33,400
Tree removal, racking material and stage contract	1	$190,000	contract	190,000			190,000
Log loader to construct structures	160	$220	hr	35,200			35,200
Excavators to construct structures/rehab.	450	$175	hr	78,750			78,750
SUBTOTAL (2)			0	303,950	89,980	0	393,930
TRAVEL. Mileage, per diem, lodging, etc. Must use current State of Oregon rates.							
USFS vehicle	40	$4.30	day		172		172
Truck mileage	2000	$0.55	mile		1,100		1,100
SUBTOTAL (3)			0	0	1,272	0	1,272
MATERIALS/SUPPLIES. Refers to items that are "used up" in the course of the project. Costs to OWEB must be directly related to the implementation of this grant.							
Deciduous seedlings for replanting	2500	$2.00	seedling			5,000	5,000
Rebar	1750	$3	foot			5,469	5,469
Trees (FS$)	1500	$150	tree			225,000	225,000
Cuttings	20000	$1	cutting			20,000	20,000
Native Seed	420	$10	pound			4,200	4,200
Mulch	100	$6	bale			600	0
SUBTOTAL (4)			0	0	0	260,269	259,669
EQUIPMENT/SOFTWARE. List portable equipment costing **$300** or more per unit. Must remain property of a governmental entity, tribe, watershed council, SWCD, institution of higher learning or school district.							
							0
							0
SUBTOTAL (5)			0	0	0	0	0
OTHER. Costs must be necessary and reasonable for successful completion of this grant.							
							0
							0
SUBTOTAL (6)			0	0	0	0	0
[Add subtotals above] MODIFIED TOTAL DIRECT COSTS (7)			0	303,950	91,252	260,269	744,851

GRANT ADMIN. Select one of the methods below. Fill in the requested rate. Compute by multiplying MTDC (7) line by this rate.							
Federally Negotiated Indirect Cost Rate							
Federally Accepted 10% *de minimis*	☐						0
OWEB Negotiated Indirect Cost Rate	☐						0
SUBTOTAL (8)			0	0	0	0	0
POST-GRANT. Pre-paid costs ($3,500 or less) that are associated with either post implementation status reporting or effectiveness monitoring or plant							
Post-Implementation Status Reporting ($3,500 or	/yr						0

A	B	C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Unit Number**	**Unit Cost**	**Unit Type**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of days)	(e.g., daily rate)					(add columns D, E, F)
Effectiveness Monitoring ($3,500 or less)	/yr						0
Plant Establishment ($3,500 or less)	/yr						0
SUBTOTAL (9)			0	0	0	0	0

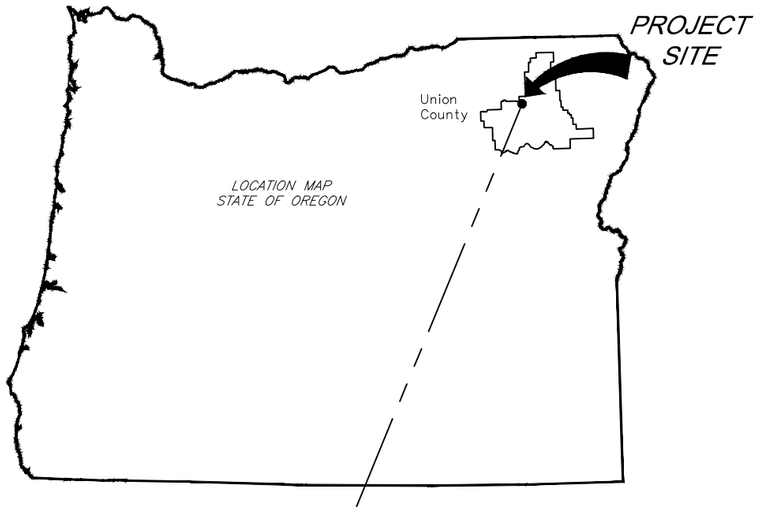
GRANT BUDGET TOTAL ***Totals automatically round to the nearest dollar**

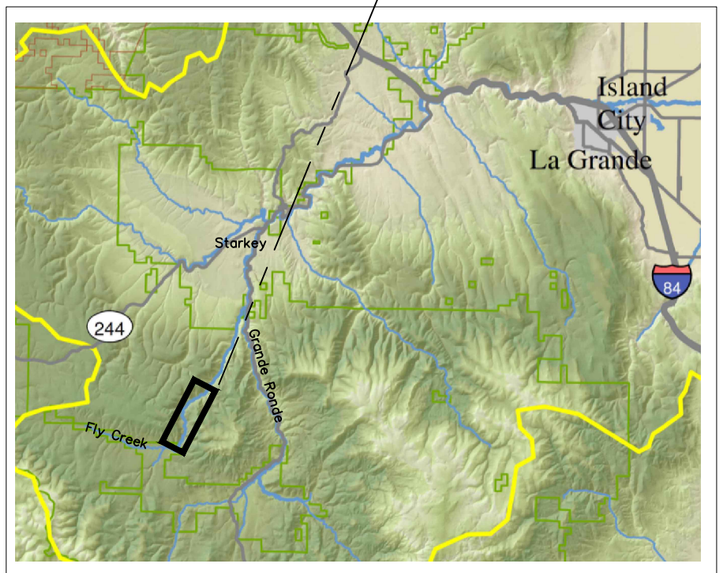
GRANT BUDGET TOTAL [Add Totals (10), (11), and (12) as applicable]	0	303,950	91,252	260,269	744,851

UPPER FLY CREEK RESTORATION FISH HABITAT PROJECT

Upper Grande Ronde River Basin

Construction Drawings





PROJECT LOCATION MAP

Township 5 South, Range 35 East
SECTIONS: 8, & 17, 20, 27, 28, & 29
450928 N, 1182545 W
UNION COUNTY, OREGON

USGS Quadrangle: Marley Creek, Oregon
45118-B4-TF-024

Project Elevation - 4,000 Feet Above Mean Sea Level

Lower Fly Creek Subwatershed 170601040108
6th Field HUC, Upper Grande Ronde River #17060104

PROJECT DESCRIPTION

The US Forest Service, Wallowa-Whitman National Forest, LaGrande Ranger District, seek to enhance and restore fish habitat and floodplain process and function to benefit fishery resources along an 5 mile reach along Fly Creek in the Upper Grande Ronde River Basin. The project is scheduled for construction during summer 2021. Targeted fish populations include ESA listed Snake River spring-summer Chinook salmon and summer steelhead. Additional species of interest include bull trout, Pacific lamprey, freshwater mussels, and resident native fish. The project area provides critical spawning and rearing habitat for targeted fish populations. Planned habitat enhancement includes installation of large wood material to increase habitat complexity, promote pool development, and activate floodplain and side channel habitats.

Goal/Objectives

1: Activate Side Channel Scrolls

Encourage and create perennial side channels through channel spanning log jam construction.

2: Restore Hydrologic Function

Increase hydration of a laterally confined channel to improve groundwater retention through channel spanning log jam construction.

3: Improve Fish Habitat

Restore habitat complexity. Existing LWD structures will be modified and additional whole trees will be placed. These structures will encourage scour pool habitat, and fish cover.

Large wood structures will be constructed using ground based equipment. Project wood material will be staged by helicopter an placed by track-mounted excavator. Additional wood material will be felled locally and placed instream for cover and complexity. Targeted life history requisites for adult spawning and juvenile summer and winter rearing include: habitat complexity and diversity, large pools, decreased channel width:depth ratio, sediment sorting, routing, storage and decreased streambed embeddedment and sub-pavement, increased cold water refuge and hyporheic exchange. The Project was designed in accordance with ARBO II, Aquatic Restoration Activities Biological Opinion conservation measures and project design criteria.

INDEX OF DRAWING SHEETS

Date July 2021
Designed J. Platz
Drawn AC July 2021
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project
Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

COVER

GENERAL CONTRACTOR REQUIREMENTS

Work shown on these plans will be performed for the United States Forest Service Wallowa–Whitman National Forset, LaGrande Ranger District (USFS WWNF) herein referred to as "Contracting Agency." Contact information for Contracting Agency's representative is included on these construction drawings. Contracting Agency's representative (or other persons assigned by Contracting Agency to act as Contracting Agency's representative) are herein referred to as the "Contracting Officer."

The Contractor shall conduct stream enhancement construction in accordance with the plans "Approved for Construction." These plans will be provided to the Contractor by the Contracting Agency prior to construction. Work shall not be done without the current set of approved construction plans.

The project designs depicted herein are approximate and are intended to express the overall design intent of the project. These designs may need to be adjusted in the field during construction in order to meet the specific site conditions and intended function. Adjustments are to be authorized by the Contracting Officer.

The Contractor shall pursue work in a continuous and diligent manner to ensure timely completion of the project per construction subcontract.

The Contractor shall be responsible for the general safety during construction, and all work shall conform to pertinent safety regulations and codes. The Contractor shall be solely and completely responsible for compliance with all applicable provisions of OSHA and OAR Chapter 437, in the construction practices for all employees directly engaged in the construction of this project.

All material and workmanship furnished on or for this project must meet the minimum requirements of project permits, approving agencies, specifications as set forth herein, or whichever is more restrictive.

Contractor shall be responsible for obtaining, at Contractor's expense, all construction permits as required by local, state and federal agencies. Contractor shall provide all material, labor, and equipment required to comply with all applicable permit conditions and requirements.

Prior to commencement of work, Contractor shall provide the Contracting Agency with a detailed construction schedule and work plan for approval. The Contractor shall not begin any construction work until the construction schedule and work plan is approved by the Contracting Officer.

Project design drawings and specifications represent the construction documents. Any deviations from these drawings and associated specifications without written approval from the Contracting Officer may result in this project not meeting specifications and may affect the terms and conditions of the construction contract.

All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the Contracting Officer.

Excavation, grading, and trenching shall be the responsibility of the contractor performing the work. The design drawings are not intended to provide means or methods of construction.

All excess materials and excavation to be placed at location identified by the Contracting Officer with coordination with the contractor.

Existing Data & Coordinate System

Elevations and distances shown are in feet and decimals.

Horizontal datum is US State Plane Coordinate System, Oregon North Zone, NAD 83, International Feet. The vertical datum is NAVD 88, feet.

Topographic mapping along the Grande Ronde River is based on LIDAR Survey Data. The geometry of the stream at the time of construction could be different than shown on these plans due to channel evolution.

Aquatic Restoration Activities Biological Opinion II in States of Oregon and Washington (ARBO II)

TERMS AND CONDITIONS AND BEST MANAGEMENT PRACTICES
The Contractor will comply with the General Aquatic Conservation Measures and Project Design Criteria in the NOAA Fisheries ARBO II that requires the utmost care is taken when construction activity is taking place in or near the waterway.

All work within the actively flowing Fly Creek channels shall occur only within designated in–water work window (July 1 –July 31)

Anytime work occurs within the actively flowing channel, the Contractor shall monitor in–stream turbidity once per hour at a location 100 feet downstream of the construction activity using turbidity monitoring equipment provided by the Contracting Officer.

In–stream turbidity shall be limited to levels listed in permits and specifications, and the Contractor shall modify work procedures if necessary comply with specifications. The Contracting Officer will assist the Contractor during initial measurements to ensure testing equipment is used correctly. The Contractor will be responsible for all measurements and maintain a log that documents date, time, and turbidity level of all measurements taken.

The Contractor shall install and maintain appropriate sediment control devices throughout the project site, including the construction staging area and stockpile area if there is potential for impacting waters of the State. Temporary construction and permanent erosion control measures shall be designed, constructed and maintained in accordance with all applicable local, state and federal regulations.

Discharges entering active streams on site shall satisfy all state and federal standards and project permit requirements for contaminants and turbidity.

Work Area Isolation, Fish Rescue and Avoidance

In–water work will be completed during in–water work window identified above or as modified through formal in–water work extension approval.

Work area isolation and fish rescue, if necessary, will include a combination of techniques based on individual treatment sites and presence of fish. Activities may include block netting, seining work areas to relocate fish from immediate work areas, and limited electrofishing.

Project site may include presence of freshwater mussels which will be surveyed prior to project construction. Documented mussel beds will be avoided where feasible and salvaged/transplanted as necessary to construct project.

Contractor and CO will coordinate during construction to schedule fish rescue and isolation of individual work sites.

Site and Resource Protection

Construction will be proceed with emphasis on minimizing damage to riparian and wetland vegetation. Contractor and CO will coordinate closely on equipment access and staging areas to minimize impacts on existing vegetation. Access, staging, and construction sites will be reviewed onsite by Contractor and CO to define access and flag vegetation that needs to be cleared .

Trees, shrubs and sod expected to be damaged by access and/or construction will be carefully cleared and stored for re–use/replanting.

Cultural Resources Inadvertent Discovery

If construction work comes into contact with any of the following cultural resources:
–Native American cultural artifacts (flakes, arrowheads,stone tools, bone tools, pottery, etc.)
–Historic era artifacts (building foundations, homesteads, mining camps, etc)
–Human skeletal remains and bone fragments:

Ground disturbing construction in the area must immediately discontinue. Do not touch or move the objects and maintain the confideniallity of the site. Follow procedures listed in the BPA Inadvertent Discovery Procedure and await further direction from BPA's Cultural Resource Staff.

Utilities

The USFS WWNF makes no representation as to the existence or non–existence of utilities. It is the responsibility of Contractor to comply with the provisions of ORS 757.541 to 757.571. Contractor will be liable for any damage resulting from disruption of service caused by construction activities. The telephone number for utility locates is 1–800–424–5555.

Project Material Notes and Specifications

Prior to commencement of work, Contractor shall provide the Contracting Agency with a detailed schedule and work plan for materials acquisition and delivery to designated material stockpile locations. Materials acquisition plan will be approved by Contracting Officer.

Contractor shall confirm the access point, route(s), and locations of temporary staging and storage areas with the Contracting Officer prior to transporting materials and equipment to the project site.

Project design drawings and specifications represent the construction documents. Any deviations from these drawings and associated specifications without written approval from the Contracting Officer may result in this project not meeting specifications and may affect the terms and conditions of the construction contract.

All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the Contracting Officer.

All excess materials and excavation to be placed at location identified by the Contracting Officer with coordination with the contractor.

Date
Designed J. Platz July 2021
Drawn AC July 2021
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project
Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

NOTES

EXISTING DATA AND COORDINATE SYSTEM

1. Elevations and distances shown are in feet and decimals.

2. Horizontal datum is US State Plane Coordinate System, Oregon North Zone, NAD 83, International Feet. The vertical datum is NAVD 88, feet.

3. Topographic mapping along Fly Creek is based on 2012 LIDAR data. The geometry of the stream at the time of construction could be different than shown on these plans due to channel evolution.

HELICOPTER FLIGHT SAFETY PLAN

1. Project staging, landing and servicing locations are located along the project reach on USFS WWNF lands. It is the responsibility of helicopter contractor to provide security at the helicopter land and staging area.

2. Communications between aircraft and ground crew will be via hand held FM radios provided by helicopter contractor.

3. Project aircraft shall monitor VHF–AM 122.9 throughout the project. This is a standard FAA aviation frequency used in general airspace for pilots to coordinate with one another. Helicopter technical contact will coordinate and communicate with Blue Mountain Interagency Dispatch Center (BMIDC) regarding daily routine (likely radio communications due to poor cellular phone operation) prior to flight operations.

4. Wallow–Whitman radio frequencies for the Emily and Tower radio tower repeaters are listed below:

Group 2: Wallowa–Whitman LaGrande/Whitman Repeaters:

Channel	Name	Display	RX Freq	TX Freq	RX Tone	Tx Tone
1	WWF Emily	WWF EMLY	170.5250	164.8000	131.8	167.9
2	WWF Tower	WWF TOWR	170.5250	164.8000	131.8	103.5

5, U.S. Forest Service Coordination coordination contact are:

BMIDC Aircraft Desk
541–975–5401

Mike Hancock
Unit Aviation
U.S Forest Service Wallowa–Whitman & Umatilla National Forests

BMIDC Main Number
541–962–7171

Work: 541–974–5418
Mobile: 541–786–1357
Email: miles.hancock@usda.gov

6. Helicopter contractor will conduct a pre–operation and daily safety meeting with all personnel on the job. Hazards will be addressed and land and stream crews will be given written directions and maps of the project area. Ground crews will conduct their own hazard assessments as they proceed through the work areas. The air crew will be constantly surveying for hazardous conditions and will advise ground crew by radio. Aircraft support equipment includes a flyable Stokes Litter in case of personal injury for emergency. A formal evacuation and emergency safety plan will be prepared before work commences.

7. The pre–operations and daily safety meetings will also include USFS WWNF's project staff responsible for project construction oversight and administration. Safety discussions will include review of signage, placement of road guards and communications and necessary to ensure safe construction observations.

PROJECT DESCRIPTION & MATERIALS

UPPER FLY CREEK RESTORATION PROJECT

Introduction

This project involves implementing restoration in Upper Fly Creek to improve habitat for listed spring/summer chinook and summer steelhead. The project is located in T 5S, R 35R, S 8, 17, 20, 27, 28, 29. It is located in the Lower Fly Creek Subwatershed (170601040108).

Existing Condition

Upper Fly Creek is currently apart of the McCarty Sheep Allotment. Fly Creek is only used for watering and not used for any significant grazing. In the late 1980s/early 1990s, sill logs were added into the stream at specific locations. In 2006, large wood was added to the stream to enhance pool development and was ineffective in many parts of the project area. In 2009 and 2010, a streambottom road was partially recontoured and the riparian area was planted. Currently, the stream channel is simplified with low levels of large wood and lack of quality pool habitat. Floodplain inundation and function is limited.

Goal/Objectives

1: Activate Side Channel Scrolls

Encourage and create perennial side channels through channel spanning log jam construction.

2: Restore Hydrologic Function

Increase hydration of a laterally confined channel to improve groundwater retention through channel spanning log jam construction.

3: Improve Fish Habitat

Restore habitat complexity.

Project Description

The project would construct debris jams and habitat structures at 68 sites within the middle 2.0 miles of Fly Creek (RM 7.0 – RM 9.0). This would include approximately 1500 pieces of large wood (1300 trees) and 3,400 yards of racking material. All of the wood and boulders will be placed with excavators/log loaders. There will be 1–3 pieces of large wood dug into the stream bank at each structure site. In addition, 2 – 5 pieces of large wood will be pinned at each site.

- The 68 debris jams will mimic the Type A Full Spanning Log Jam (Lower Fly Creek Restoration Project, 2020), which includes 2 large trees with rootwads (> 20" dbh) & 50' long), 4 medium trees with rootwads (14" – 20" dbh & 50' long), 6 small trees/logs (10" – 14" dbh & 30' – 50' long), 2 whole trees, and 5: 10 yard loads of racking material. These structures are designed for floodplain inundation and habitat complexity.
- There will be additional 150 whole trees and 398 logs placed within the stream and floodplain to provide habitat complexity, fish cover, and floodplain roughness.
- Total of 1500 large wood pieces in 2022.

Access for machinery to the stream would also occur off of Roads 5155 400.

There are a total of 1300 large trees needed for the project. Of these, 136 trees will be over 20", 422 trees will be between 14" and 20" dbh, and 542 trees will be between 10" and 14" dbh. All of the trees will be a minimum of 50' long (whole trees could be longer).

There will be 1100 trees with rootwads attached obtained from the 5155, 5155 400, 428 & 430 Roads. There will be 200 trees felled within 300' of Fly Creek (~5% – 35% slopes). Trees within 100' of Fly creek would not removed, where possible. Approximately, 3,400 yards of racking material will be obtained from the road prisms of the 5155, 5155 400, 428, & 430, and the 5156. The large wood with rootwads attached will be obtained within 20' of the road prism. The racking material will be obtained within 5' of the road prism.

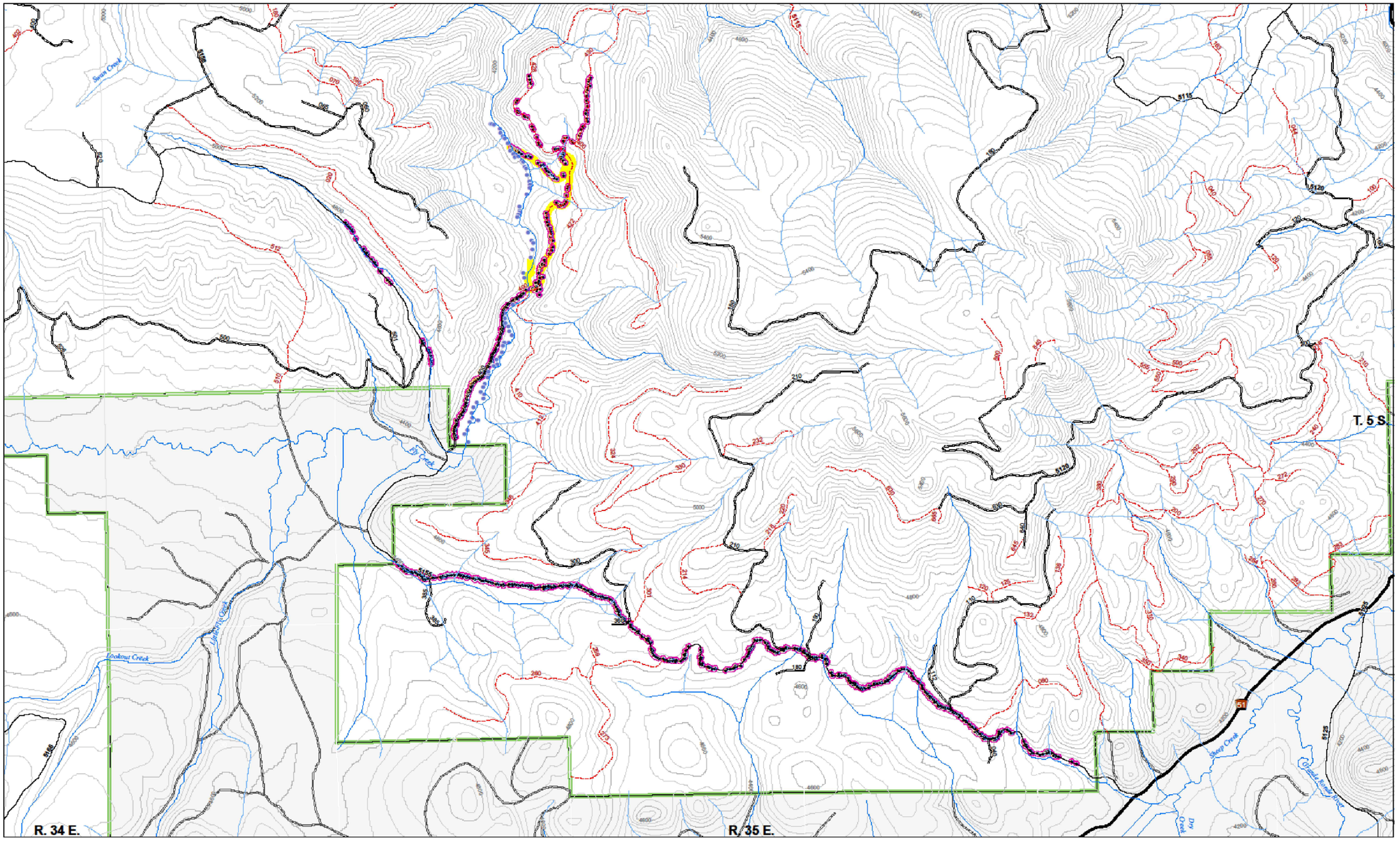
All of the disturbed areas will be seeded. Disturbed areas will be ripped. Disturbed areas adjacent to Fly Creek will be replanted with 10,000 deciduous seedlings (cottonwood, willow, alder, aspen) and 20,000 cuttings by the USFS.

The project will occur from May 15, 2022 – May 31, 2023. All of the instream work will occur in July. Tree removal and haul from roads will occur from May 15 – June 30. Rehabilitation, seeding and planting will occur from May 15 – May 31, 2023.

Date
Designed J. Platz July 2021
Drawn A. Childs July 2021
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project
Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

NOTES, DESCRIPTION, MATERIALS



Date: 11/17/2020

UPPER FLY
Restoration Project

N

0 0.4 0.8 1.2 Miles

1:15,840

40 Foot Contour Interval

- Upper Fly Tree Harvest Locations
- Structure Locations
- APE: Tree Harvest Buffer: 20FT
- Project Access
- Major Road
- Collector Road
- Local Road
- Off Forest Road
- Perennial Stream/Creek
- Intermittent Stream/Creek
- Closed Road - OPML = 1
- Ranger District
- Private Land
- U.S. Forest Service
- Undetermined

Author: MSutton
Path: T:\FS\NFS\Wallowa Whitman\Project\JagSmallProjects2020\GIS\Workspace\Melanie\UpperFlyRestoration_093020.mxd

Date
Designed J. Platz July 2021
Drawn AC July 2021
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project
Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

PROJECT OVERVIEW

Sheet 4 of 9

UPPER FLY CREEK PROJECT AREA 2021

LEGEND

- Fly Creek
- Fly Creek CL Station
- Road
- Stream Flow Direction (flow)
- Lg. Wood Structure

PLAN VIEW

0 590

Scale in feet

Fly Meadows

Fly Valley Rd

NF-5155

Private

USFS

flow

Fly Creek

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Date

Designed J. Platz July 2021

Drawn AC July 2021

Checked

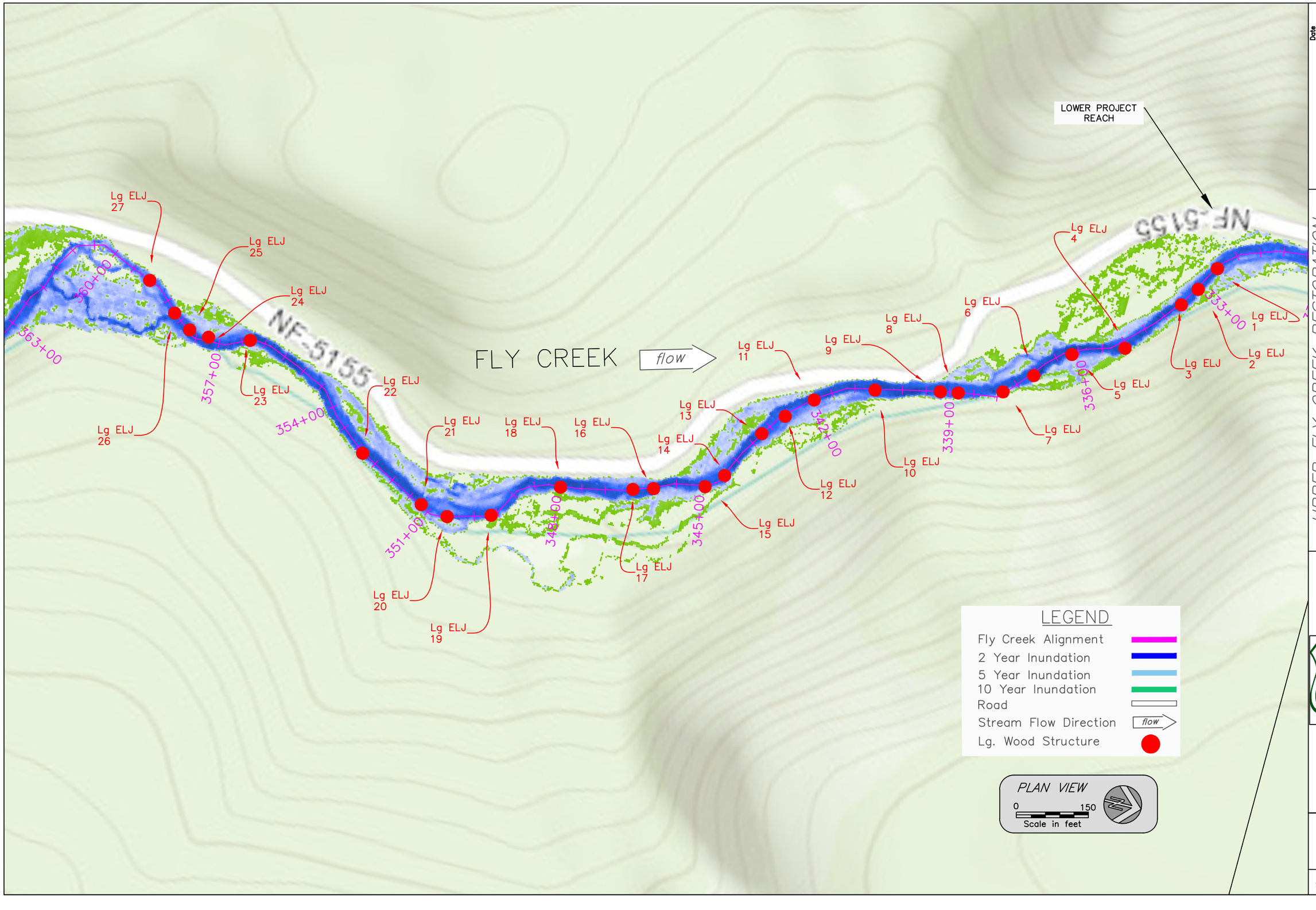
Approved

Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project

Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

PROJECT LOCATION



Date
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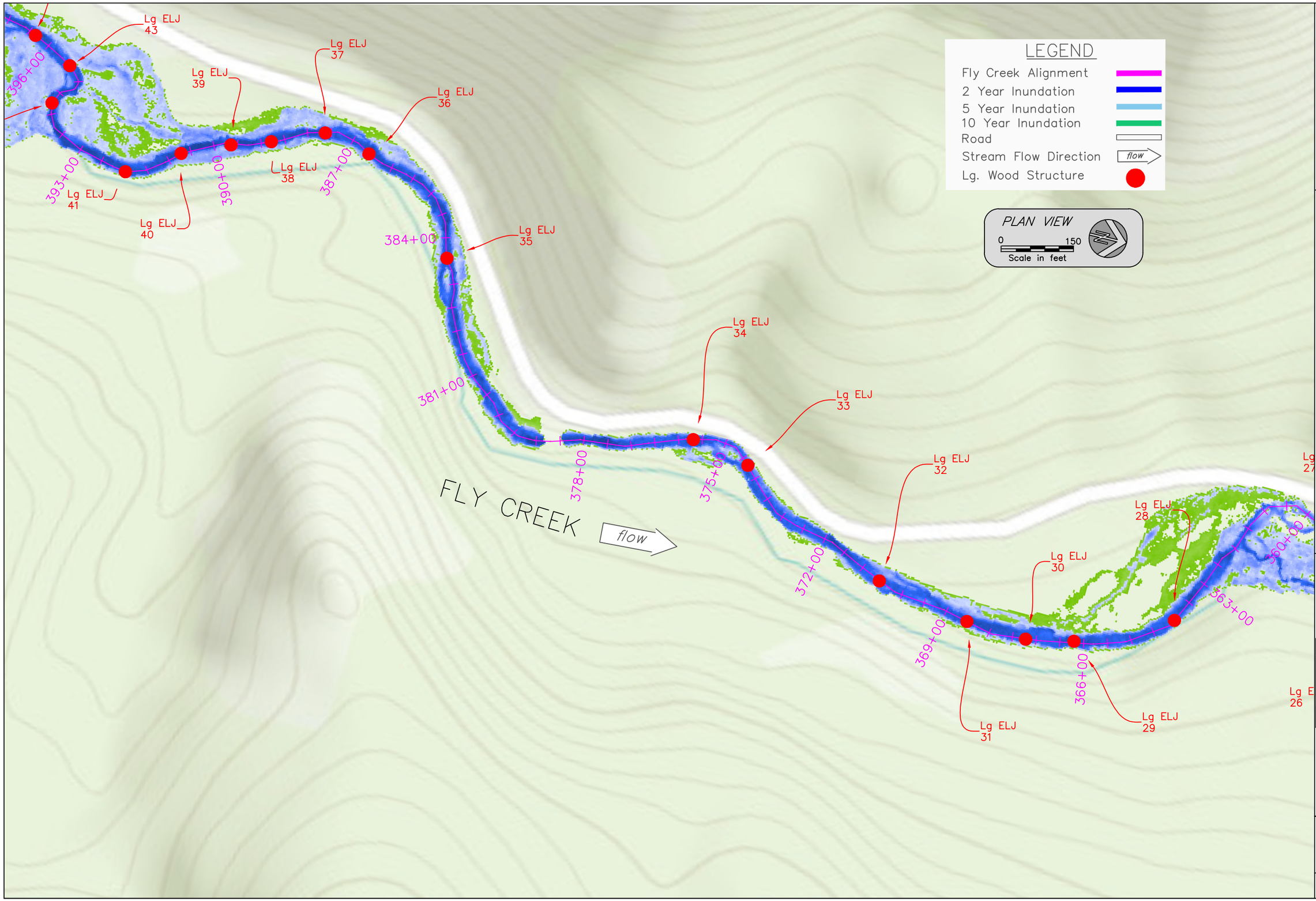
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project

Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

PLANVIEW
STATIONS
333+00 TO
363+00

Sheet 6 of 9



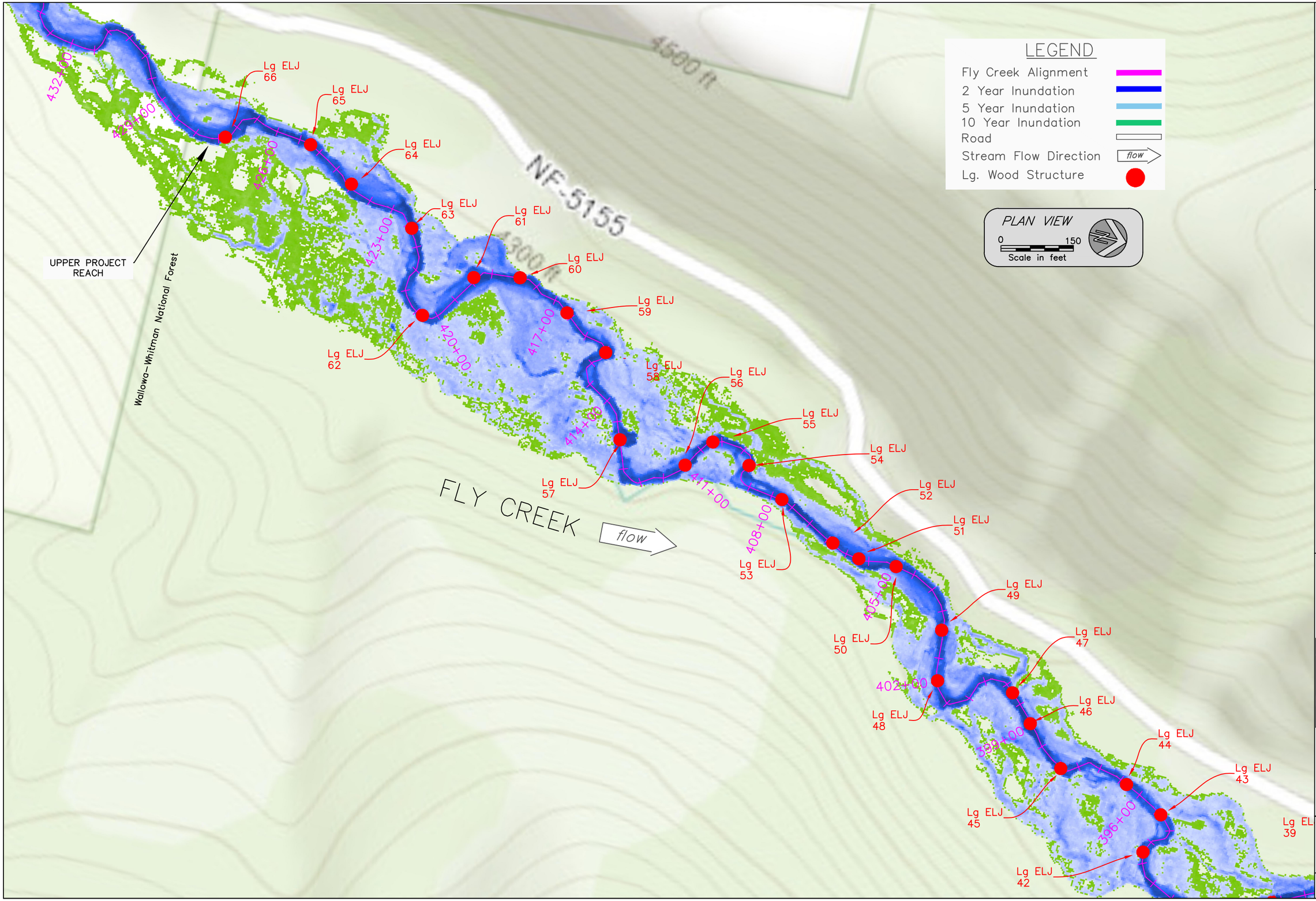
Date
Designed J. Platz July 2021
Drawn AC July 2021
Checked
Approved
Title

UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project

Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

PLANVIEW
STATIONS
363+00 TO
393+00

Sheet 7 of 9



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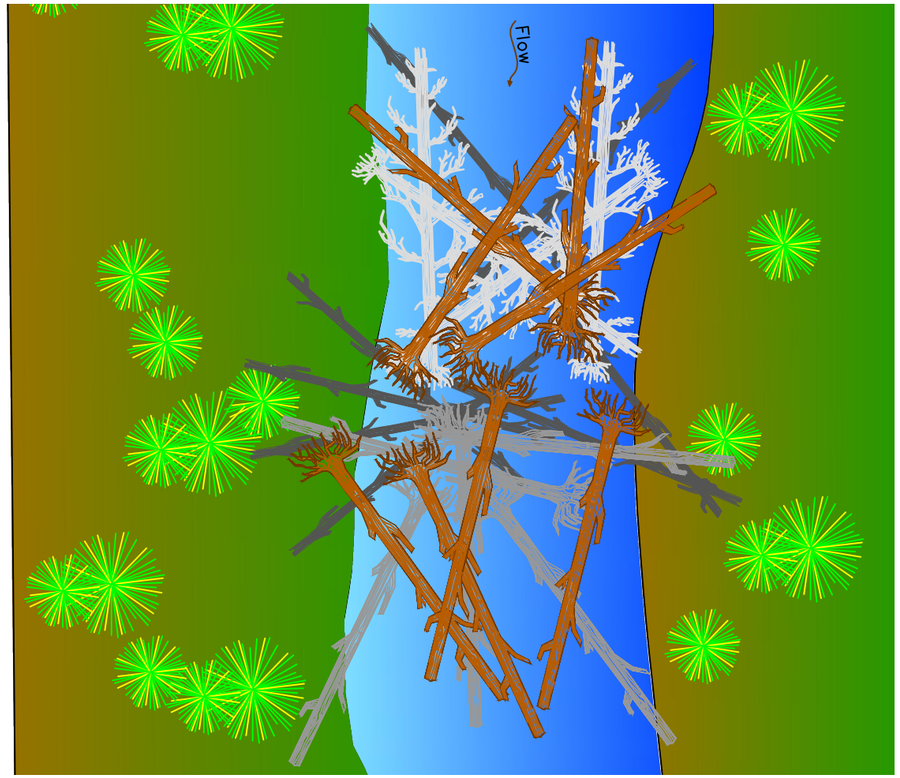
UPPER FLY CREEK RESTORATION
UPPER GRANDE RONDE BASIN
Fish Habitat Project

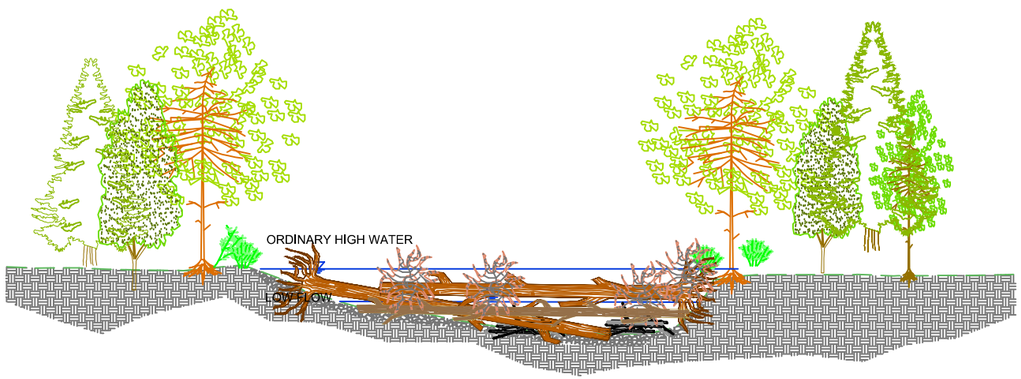
Wallowa Whitman National Forest LaGrande Ranger District
Union COUNTY, OREGON

PLANVIEW
STATIONS
393+00 TO
426+00



1 **PLAN VIEW**

HORIZ 1" = 25'



2 **SECTION VIEW**

HORIZ 1" = 25'

LARGE CHANNEL SPANNING LOG STRUCTURE
BIOLOGICAL OBJECTIVES - DESIGN INTENT

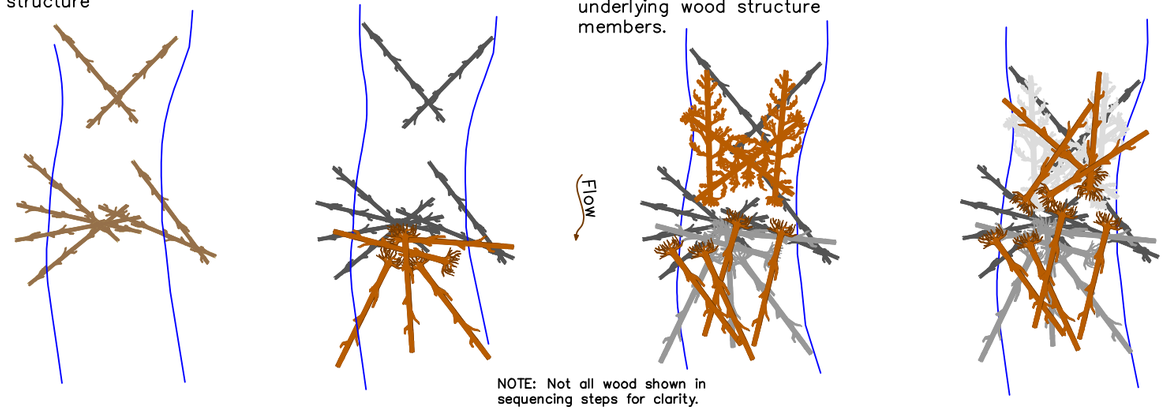
- PURPOSE OF TYPE A LARGE CHANNEL SPANNING LARGE WOOD STRUCTURE IS TO INCREASE WATER SURFACE ELEVATION AND DEPTH, DECREASE WATER VELOCITY, PROMOTE SEDIMENT DEPOSITION AND STORAGE, PROVIDE HABITAT COVER AND COMPLEXITY, AND PROMOTE FLOODPLAIN CONNECTIVITY AND INCREASED GROUNDWATER AND HYPORHEIC FUNCTIONS TO IMPROVE WATER TEMPERATURE DIVERSITY AND PROVIDE COLD WATER REFUGE.
- PROMOTES DEVELOPMENT AND MAINTENANCE OF LARGE POOL HABITAT, COMPLEXITY AND DIVERSITY, COVER, VELOCITY REFUGE, AND ORGANIC NUTRIENTS THAT SUPPORT FOOD WEB PROCESSES.

STEP 1 – Install small logs/racking material on streambed as shown to form base of wood structure

STEP 2 – Place large logs on top of underlying racking material

STEP 3 – Place additional large logs on top of base structure materials for cover, structure, and mass of underlying wood structure members.

STEP 4 – Place top layer of large logs for ballast and cover over structure base.



NOTE: Not all wood shown in sequencing steps for clarity.

3 **ASSEMBLY DETAIL & INSTALLATION SEQUENCE**

HORIZ 1" = 65'

PROJECT ELEMENT NOTES

1. WOOD MATERIAL SHALL COME FROM FIR, SPRUCE, LODGEPOLE PINE, OR PINE TREES.
2. LOCATION OF WOOD STRUCTURE SHALL BE STAKED AT EACH LOCATION BY CO.
3. WOOD STRUCTURE SHALL BE CONSTRUCTED WITH GROUND-BASED EQUIPMENT.
4. STRUCTURE WILL BE CONSTRUCTED IN LAYERS FOLLOWING THE ASSEMBLY DETAIL ILLUSTRATED ABOVE.
5. CONSTRUCTION WILL BE INITIATED BY PLACING BASE WOOD MATERIAL, FOLLOWED BY LARGE KEY MEMBER LOGS AND INTERWOVEN WITH ADDITIONAL RACKING MEMBERS.
6. TOP KEY MEMBER LOGS WILL BE PLACED LAST, OVER-TOPPING BASE MEMBERS TO PROVIDE BALLAST AND ANCHORING OF UNDERLYING WOOD MATERIAL AS DIRECTED BY CO.
7. WOOD STRUCTURE INSTALLATION INCLUDES TRENCHING AND BACKFILLING ONE TO THREE KEY WOOD MEMBERS AND INSTALLING ONE TO THREE PINS AT EACH STRUCTURE.

MATERIAL SCHDEDULE

ITEM	QUANTITY	DBH (IN.)	LENGTH (FT.)	ROOTWAD (5' dia.)
LARGE LOG	2	>20+	50	Yes
MEDIUM TREES	4	14 to 20	50	Yes
SMALL TREES & LOGS	6	10 to 14	30 to 50	No
WHOLE TREES	2	>14	50	Yes
SLASH	5-10 YARDS	<3	<5	No

PROJECT QUANTITIES

ITEM	QUANTITY	DBH (IN.)	LENGTH (FT.)	ROOTWAD (5' dia.)
LARGE LOGS	136	>20+	50	Yes
MEDIUM TREES	290	14 to 20	50	Yes
SMALL TREES & LOGS	542	10 to 14	30 to 50	No
WHOLE TREES	132	>14	50	Yes
SLASH	~528 yds	<3	<5	No
TOTALS	1100			

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LARGE CHANNEL SPANNING WOOD STRUCTURE

Sheet 9 of 9

Upper Fly Creek

- 2022 Construction
- 2.0 stream miles
- UGR 15 Tier 1 Node
- Equipment accessible
- Trees and racking material partially onsite & partially hauled in
- Last Instream Project was 2006 (“L wood”)

- **Objectives:**

  Engage floodplain

  Habitat complexity

  Activate side channels

  Pool quality/quantity

Stream Survey Data

- Stream Gradient – 1%
- Dominant Substrate – Gravel
- Bankfull width to depth: 31.6
- Average wetted width: 13.59
- Pools per mile: 34.09
- Large Woody Debris per mile: 53
- Rogen Stream class: C

Prelimin. Design: Upper Fly Creek (1.75 miles)

- 68 sites: Full channel jam construction
- 14 large pieces of wood per site
- Would like to dig 2-3 key wood pieces & pin 3-5 pieces per site
- 5: 10 yard loads of racking material per site

Up. Fly Cr. Vegetation Recovery (Planted 2010)

BUDGET

ALTERNATIVE 2: UPPER FLY CREEK RESTORATION PROJECT

Totals automatically round to the nearest dollar

A	B	C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Unit Number**	**Unit Cost**	**Unit Type**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of days)	(e.g., daily rate)					(add columns D, E, F)
SALARIES, WAGES AND BENEFITS. List position titles, include only costs of employees charged to this grant.							
SUBTOTAL (1)			0	0	0	0	85,130
CONTRACTED SERVICES. Labor, supplies, and materials to be provided by *non-staff* for project implementation.							
Biological Technician (Joe Platz)	90	$360	8 hr day		32,400		32,400
Biological Technician	45	$250	8 hr day		11,250		11,250
Allen Childs (Design)	20	$404	8 hr day		8,080		8,080
NEPA/Support Staff	100	$334	8 hr day		33,400		33,400
Tree removal, racking material and stage contract	1	$165,000	contract	165,000			165,000
Log loader to construct structures	130	$220	hr	28,600			28,600
Excavators to construct structures/rehab.	390	$175	hr	68,250			68,250
SUBTOTAL (2)			0	261,850	85,130	0	346,980
TRAVEL. Mileage, per diem, lodging, etc. Must use current State of Oregon rates.							
USFS vehicle	35	$4.30	day		151		151
Truck mileage	1650	$0.55	mile		908		908
SUBTOTAL (3)			0	0	1,058	0	1,058
MATERIALS/SUPPLIES. Refers to items that are "used up" in the course of the project. Costs to OWEB must be directly related to the implementation of this grant.							
Deciduous seedlings for replanting	2500	$2.00	seedling			5,000	5,000
Rebar	1450	$3	foot			4,531	4,531
Trees (FS$)	1215	$150	tree			182,250	182,250
Cuttings	20000	$1	cutting			20,000	20,000
Native Seed	350	$10	pound			3,500	3,500
Mulch	80	$6	bale			480	0
SUBTOTAL (4)			0	0	0	215,761	215,281
EQUIPMENT/SOFTWARE. List portable equipment costing **$300** or more per unit. Must remain property of a governmental entity, tribe, watershed council, SWCD, institution of higher learning or school district.							
							0
							0
SUBTOTAL (5)			0	0	0	0	0
OTHER. Costs must be necessary and reasonable for successful completion of this grant.							
							0
							0
SUBTOTAL (6)			0	0	0	0	0
[Add subtotals above] MODIFIED TOTAL DIRECT COSTS (7)			0	261,850	86,188	215,761	648,449

GRANT ADMIN. Select one of the methods below. Fill in the requested rate. Compute by multiplying MTDC (7) line by this rate.							
Federally Negotiated Indirect Cost Rate							
Federally Accepted 10% *de minimis*	☐						0
OWEB Negotiated Indirect Cost Rate	☐						0
SUBTOTAL (8)			0	0	0	0	0
POST-GRANT. Pre-paid costs ($3,500 or less) that are associated with either post implementation status reporting or effectiveness monitoring or plant							
Post-Implementation Status Reporting ($3,500 or	/yr						0

A	B	C	D	E	F	G	H
Itemize projected costs under each of the following categories:	**Unit Number**	**Unit Cost**	**Unit Type**	**BPA Funds**	**Cash Match**	**In-Kind Match**	**Total Costs**
	(e.g., # of days)	(e.g., daily rate)					(add columns D, E, F)
Effectiveness Monitoring ($3,500 or less)	/yr						0
Plant Establishment ($3,500 or less)	/yr						0
SUBTOTAL (9)			0	0	0	0	0

GRANT BUDGET TOTAL ***Totals automatically round to the nearest dollar**

GRANT BUDGET TOTAL [Add Totals (10), (11), and (12) as applicable]	0	261,850	86,188	215,761	648,449