



GRMW PROPOSAL APPLICATION - DRAFT

Project/Application Title: Bear Creek Restoration Project

Submitted By: Nicholas Smith

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GRMW Request Amount: 2179932.00

Total Cost Share: 236768.00

Total Project Cost: 2416700.00

Invoice Information (If GRMW is the fiscal agent)

Mary Estes GRMW Fiscal Manager

1114 J Avenue

La Grande, OR 97850

541-663-0570

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This proposal is for a RESTORATION type project!

Location/Abstract

General Location	Downstream Extent	Upstream Extent
Latitude: 45.5079698 Longitude: 117.5563881	Latitude: 45.5298095 Longitude: 117.5520924	Latitude: 45.4929342 Longitude: 117.5595103

Opportunity Map

Due to a limitation of the framework tool used to create PDFs, we are unable to display the opportunity map within this document. However, you may still view the opportunity map using the following link:
[Opportunity Map Link](#)

Abstract

The Wa'wáanma Bear Creek Restoration Project intends to address anthropogenic affects and provide uplift to native salmonids in this reach of Bear Creek. This proposal is to request funding to implement a fully comprehensive floodplain restoration project to address all limiting factors in this reach for all life stages of ESA listed salmonids. This will occur from RM 3.1 and 5.2 of Bear Creek, as well as 2 miles of Little Bear Creek upstream from the confluence of Bear Creek. Bear Creek is a tributary of the Wallowa River identified as WLL2 in the Wallowa Atlas Prioritization Document. This opportunity has been ranked as a Tier 1 or one of the highest priority subwatersheds to restore in the basin.

This reach of Bear Creek is a dynamic system experiencing a large floodpulse each year of water and sediment. Due to anthropogenic effects such as building the road, constructing two bridges, and infrastructure bank protection, Bear Creek is currently at bedrock in several places, straightened and confined thus producing a shotgun of water and sediment. The project reach lacks pools and large wood capable of slowing down the water and trapping sediment suitable for spawning. Wood additions would also increase fish habitat for juvenile rearing, and adult holding. There are many opportunities for floodplain reactivation, which would especially benefit juvenile growth and survival. Downstream from this reach, several irrigation withdrawals tend to produce incredibly low flows in Bear Creek during the summer months, so by reactivating the floodplain and restoring and protecting springs on this property, it is possible to see a significant increase in flow especially during base flow conditions. Riparian vegetation has been suppressed by overgrazing but will most likely thrive once protected.

Besides ODFW, the GRMW, landowners/managers, and the Atlas Implementation Team partners are helping to guide the restoration work being proposed in this project to be successful in restoring process and function to Bear Creek.

Stepwise & Atlas

Prospectus submitted and review by Atlas Implementation Team: N/A

Associated Subwatershed: WLL2

Associated Opportunity: WLL2 - USA, RY Timber, Curtis, McDaniel, Nelson

Problem Statement & Opp Score

The problem statement described the critical/limiting life stages and limiting habitat factors identified in the Atlas for the subwatershed in which this project is located and explain which of these species, life stages and limiting factors will be addressed in this project (how the problems will be addressed should be discussed in the 'Proposed Solution' section). This includes past land use history with respect to the project reach and larger watershed—especially any land use that has led to the current impaired condition.

There is approximately 3 miles of Bear Creek on the Sauvage property, including adjacent floodplain as well as another 2 miles of Little Bear Creek. The focus area for this project proposal is located on the mainstem of Bear Creek. Pre-European conditions for this reach were most likely incredibly dynamic and acted as a true wilderness river. For the last 50 years this property has been owned by a timber company that also leased it for grazing cattle during the summer months. The property has recently changed ownership, with the new landowner desiring to restore the landscape and allow public use year-round.

The creek in the lower portion of the property has been pushed against the road prism, is at bedrock in many areas, and is disconnected from its floodplain. Most of the potential floodplain restoration actions would occur on the lower 2 miles of the Sauvage property. Upstream it becomes more confined and steeper as it leaves the Sauvage property and moves onto the United States Forest Service (USFS) land that continues well past the wilderness boundary. There is one small withholding property in the middle of this 3 mile reach that has some small infrastructure in the floodplain. The Sauvages are currently working towards purchasing this parcel and would follow through upon the project receiving implementation funding. In this location there is a county owned bridge. In its assessment, it was determined to be undersized and at risk in a large flow event. In addition, there is another bridge crossing Bear Creek at the most downstream end of the project that is even more undersized. These may have forced the river to be more confined than probable historic conditions. Little Bear Creek's confluence with Bear Creek is located on the Sauvage property above the focus reach. This perennial tributary is steep with little floodplain, however there is overstocked understory in the riparian that could be utilized to benefit the system in areas that are less confined. There is evidence of heavy cattle grazing in the riparian zone and around the multiple springs on the property.

The creek is a very dynamic system that experiences a large flood pulse each spring as snow melts off the surrounding Wallowa Mountains, thus causing the creek to shift and take new paths across its floodplain. There are two areas that the creek has naturally created a stage 0/8 condition and we intend to implement features that will produce more of these conditions.

There are several areas of Bear Creek that are disconnected from its floodplain. LiDAR has revealed evidence of multiple old channels and flow paths throughout the property. Bear Creek is currently at bedrock in several places, especially the confined section that has been pushed against the road. Four large pools were found as defined by ($>20 \text{ m}^2$ area and $> 0.80\text{m}$ max depth) in the project reach. Historic frequencies may have been closer to 16 per km (McIntosh et al. 2000). Riparian vegetation has been suppressed by overgrazing but will most likely thrive once protected. There are several native species in the riparian zone including, cottonwood, alder, willow, river birch, and spruce. Conifers such as pine, lodgepole, Douglas fir, and others have inhabited areas that are currently disconnected from the floodplain and are taking advantage of dryer conditions. There is relatively low recruitment of cottonwood and river birch, with only the mature age class remaining for the most part. Juniper trees are encroaching in some of the meadow and spring areas. Downstream from this reach there are several irrigation withdrawals which tend to produce incredibly low flows in Bear Creek during the summer months.

Little restoration work has been implemented on Bear Creek despite it being ranked a Tier 1 subbasin or of the highest priority for restoration according to the Wallowa Atlas Restoration Prioritization Process (Atlas) developed by BPA.

The prioritization method of Atlas has been implemented in several basins within the Columbia Basin acting as a well-organized and science-based way of prioritizing restoration with the goal of increasing population abundance of Endangered Species Act (ESA) listed salmonids found in these watersheds. This is a technical and collaborative tool that used local and regional knowledge to combine essential information such as limiting habitat factors, fish utilization by species and life stage, channel geomorphology, and other factors, to strategically identify and prioritize targeted restoration actions and locations to improve aquatic habitat for Snake River spring/summer Chinook Salmon, Snake River summer steelhead, Pacific Lamprey, and Bull Trout. This project compliments other projects within the Wallowa Valley that have occurred on the Wallowa and Lostine Rivers by focusing on habitat for focal species.

There are several Limiting Habitat Factors in Bear Creek according to The ESA Recovery Plan for Northeast Oregon Snake River Spring and Summer Chinook Salmon and Snake River Basin Steelhead Populations (NOAA 2017). 1) Reduced stream complexity and channel structure, 2) Elevated summer water temperatures, 3) Diminished streamflow during critical periods, 4) Reduced floodplain connectivity and function, and 5) Degraded riparian conditions. Considering these limiting factors, it was determined through Atlas that several restoration actions could benefit the system including; Channel Reconstruction, Pool Development, Riffle Construction, Levee Modification, Restoration of Floodplain Topography and Vegetation, Perennial and Secondary Side Channel Creation/Reactivation, Floodplain Wetland Enhancement, Riparian Planting, Riparian Fencing, Improve Thermal Refugia, LWD Placement, Road/Culvert Drainage Improvements. These actions will improve adult migration, spawning, incubation/emergence, and summer and winter rearing for Chinook salmon, steelhead, Bull Trout, and Pacific Lamprey within the project reach. It is anticipated that recently reintroduced Coho salmon will also benefit from these restoration actions.

Final Opportunity Score (Atlas opportunity score)

46.8

Permits

All permits associated with the project are listed below along with a date of acquisition and date of expiration.

Permit Name	Date Acquired	Expiration Date
Oregon DSL - Removal/Fill	Jan. 31, 2026	Jan. 31, 2027
ACOE - 404 Permit	Feb. 1, 2026	Feb. 1, 2029
Federal, State & Tribal - Section 106	Feb. 1, 2026	Feb. 1, 2029
NMFS/USFWS - Section 7 ESA	Feb. 1, 2026	Feb. 1, 2029
Oregon DEQ - 401 Certification	Feb. 1, 2026	Feb. 1, 2029

Restoration Actions

Below is a list of all restoration actions applicable to this project.

Restoration Action	Justification
1. Protect Land and Water (Easement, Acquisition)	
2. Channel Reconstruction	
3. Pool Development	
4. Riffle Construction	
5. Meander (Oxbow) Re-connect - Reconstruction	
7. Levee Modification: Removal, Setback, Breach	
8. Remove - Relocate Floodplain Infrastructure	
9. Restoration of Floodplain Topography and Vegetation	
10. Floodplain Construction	
11. Perennial Side Channel	
12. Secondary (non-perennial) Channel	
13. Floodplain Pond - Wetland	
14. Alcove	
15. Hyporheic Off-Channel Habitat (Groundwater)	
16. Beaver Restoration Management	
17. Riparian Fencing	
18. Riparian Buffer Strip, Planting	
19. Thinning or removal of understory	Little Bear Creek has a high density of understory which can be utilized to provide instream fish habitat.
20. Remove non-native plants	
22. Barrier or culvert replacement/removal	
26. Boulder Placement	
27. LWD Placement	
31. Improve Thermal Refugia (spring reconnect, other)	
34. Upland Vegetation Treatment - Management	
36. Road Grading - Drainage Improvements	

Proposed Solution

The proposed solution states the project goals and articulates the expected outcomes of the project. It explains how the restorations actions selected will address the problems stated in the problem statement.

This project is focused on improving the limiting habitat factors that are critical to multiple life stages of ESA listed spring Chinook salmon, summer steelhead, and bull trout as well as redband trout, lamprey, and other native fish species. The primary goal is to enhance aquatic habitat diversity through the restoration of natural river function and processes, including floodplain connectivity, to create and maintain a complex riverine corridor.

Some of the project goals to achieve restoring process and function to Bear Creek are listed and described as follows:

- 1) Increase the quantity and complexity of high-quality habitat by utilizing the placement of instream wood to improve hydraulic diversity, increase pool quantity and quality, improve sediment sorting, and increase cover.

- 2) Distribute stream flow and energy through a range of hydrologic conditions by increasing water surface elevations to reconnect or create seasonally active secondary channels.
- 3) Increase seasonal floodplain connection and function to dissipate flood energy and improve flood water storage, hyporheic exchange, sediment storage, and in-channel sediment sorting.
- 4) Where possible, maintain and enhance existing spring channels and create habitat features that can be utilized by beaver to expand their habitat and influence within the riverine corridor.
- 5) Protect, establish, and maintain a robust native riparian plant community along channel banks and floodplain, thus increasing shade and improving bank structure and habitat.
- 6) Protect and/or modify existing infrastructure to maximize fish habitat uplift throughout the project area. This will include removing the furthest downstream bridge and constructing a new bridge where the county road crosses Bear Creek.

Objectives

The table below quantifies the appropriate indicators this project will include. Each indicator has a measured current condition, an action taken, a restored condition (post-restoration), a set target condition, and justification/citation explaining why the action will work. Each indicator also includes whether or not the objective will be monitored.

Indicator	Current Condition	Action Taken	Restored Condition	Target Condition	Citation	Monitored?
Large wood frequency bankfull (Pieces/100m)	15.0	40.0	55.0	20 Pieces/100m	Moore et al. 2017	Yes
Large pool frequency/km (Pools/km)	4.0	30.0	30.0	>= 10/km	Mcintosh et al 2000.	Yes
Connected floodplain area (% Increase)	41.6	68.8	65.0	20% Increase	Beechie et al. 2017	Yes
Side channel length (Meters)	1609.34	1770.28	3379.62	N/A	Beechie et al. 2017	Yes

Reporting Requirements: In addition to the objectives outlined above, sponsors who receive funding through GRMW understand they will be required to resubmit the indicators/objectives table and budget after implementation to verify that work was completed as proposed and on budget. If there were any deviations from the proposed actions or budget they will be asked to explain those deviations at that time. If they plan to submit a completion report to BPA or a similar organization, they may include this table as a part of the completion report to meet this requirement. Please note that if they wish to recreate this table in their own document that it must include "proposed" and "actual" columns to accurately reflect the work completed.

Objectives Narrative

Objective Narrative: This block explains why the objectives selected are relevant to this project and why/how the actions selected in the Restoration Actions section should result in the restored condition proposed.

The restoration plan for the project area integrates elements of limiting unnecessary disturbance, adding wood from the adjacent hillslopes and strategic channel fill to restore river-floodplain processes, adding beaver dam analogues (BDAs) to spring channels to increase floodplain saturation, opening up the floodplain at the existing county bridge to dissipate flood energy laterally, and pulling Bear Creek away from Bear Creek Road at the downstream end. Applying this strategy is intended to improve habitat quality and quantity while restoring a sinuous and multi-threaded channel that activates the adjacent floodplain and seasonal secondary channels during spring runoff flows. The following restoration concepts should be considered specific actions developed for the project area.

Increasing large wood frequency. Sourcing large wood from the adjacent hillslopes on the Sauvage property and constructing persistent, large-scale log jams in the main channel. Constructed jams will be built out of relatively large key members and ballasted with alluvium where equipment access is available to counteract powerful seasonal peak flows. This design element is intended to:

- o Obstruct and roughen the primary channel, increasing upstream WSE, driving seasonal secondary channel activation and floodplain connectivity.
- o Encourage the scour and deposition of sediment to create pools and sort sediment to create fresh deposits of spawning gravels.

The size of key members used in the wood structures are appropriately sized compared to the hydraulics of the channel based on a study conducted by Abbe and Montgomery (2003). As evidenced by the twodimensional (2D) hydraulic model results, the steep nature and annual peak flows of Bear Creek have the ability to produce powerful hydraulic forces capable of mobilizing large woody debris. There was ample evidence of this observed during the October 2024 site visit by way of naturally formed log jams. The most notable feature of the existing log jams was the presence of an exceptionally large tree that initiated the jam and began to rack material. the project plans to source as large of wood as possible to emulate this process, but in areas where equipment access is attainable jams will be ballasted with alluvium to mitigate the risks of mobilization and to initiate the formation of a jam. The goal for large wood loading is 20 pieces per 100 meters. Little Bear Creek has 33 pieces per 100 meters proposed within identified treatment areas, while Bear Creek has 55 pieces per 100 meters proposed when considering the entire project area.

Increasing floodplain connection by addition of channel fills and excavating pilot channels in areas to connect old channel scars. This design element is intended to:

- o Reroute Bear Creek to occupy relict meander scars on a more sinuous path.
- o Increase water surface elevations to drive seasonal secondary channel activation and floodplain activation.

Construction of BDAs on spring channels. This design element is intended to:

- o Increase saturation of floodplains.
- o Provide off-channel habitat for salmonids.
- o Provide off-channel habitat for beaver.

Addition of a new bridge to increase the capacity of the floodplain through the existing bridge crossing. This design element is intended to:

- o Decrease risks to the existing bridge.
- o Decrease stream energy by spreading flood flows laterally.

Pulling Bear Creek away from Bear Creek Road in the downstream end of project area and re-occupying relict meander scars. This design element is intended to:

- o Increase the opportunity for dynamic response through this reach, leading to: large wood recruitment, erosion and deposition of gravels, and complex habitat.
- o Increase floodplain and seasonal side channel activation.
- o Decrease risk to Bear Creek Road.

Channel reconstruction that will lead to an increase sinuosity, reduce slope, promote seasonal side channel activation, narrow over-widened areas, and add instream structure to diversify instream hydraulics, improve fish habitat, and increase floodplain connectivity. The floodplain will be activated at a more frequent (1.25-year) interval.

Riparian and wetland vegetation planting and protection. The planting plan utilizes locally derived intensive live willow cutting installation in existing wetland areas that have been overgrazed and denuded of woody vegetation. Native species seeding is proposed in all disturbance areas above the ordinary mean highwater mark (OMHW). The objective of the planting plan is to generate 80% land cover within the grading area above OMHW within four years after construction. In addition, there are cottonwood trees and willows in and around the project area, including seed sources that will lead to natural recruitment. All plantings and natural recruitment should flourish since grazing of cattle will be eliminated in the project area with an easement agreement.

Explain Target Condition: This block explains why any of the restored conditions of any objectives selected do not meet the target condition. If all restored conditions meet the corresponding target condition, then this field will appear blank.

Additional Objectives: This block includes any additional objectives not captured in the objectives table. Objectives should be specific, measurable, achievable, relevant, and time-bound.

Climate Change Concerns: This block explains considerations made regarding how this proposed work may address climate change concerns.

The ESA Recovery Plan for Northeast Oregon Snake River Spring and Summer Chinook Salmon and Snake River Basin Steelhead Populations (NOAA 2017) cites a number of climate change related factors as having potential effects on Snake River spring/summer Chinook salmon and steelhead in freshwater (Section 5.2.7, pg. 168). The following changes are particularly relevant to the ESA listed species found in Bear Creek:

Winter flooding in transient and rainfall-dominated watersheds may scour redds, reducing egg survival. Warmer water temperatures during incubation may accelerate the rate of egg development and result in earlier fry emergence and dispersal, which could be either beneficial or detrimental, depending on location and prey availability. Reduced summer and fall flows may reduce the quality and quantity of juvenile rearing habitat, strand fish, or make fish more susceptible to predation and disease. Reduced flows and higher temperatures in late summer and fall may decrease parr-to smolt survival. Overwintering survival may be reduced if increased flooding reduces suitable habitat. Higher temperatures while adults are holding in tributaries and migrating to spawning grounds may lead to increased prespawning mortality or reduced spawning success as a result of delay or increased susceptibility to disease and pathogens.

Of the 11 climate risks listed by The Oregon Conservation Strategy, the following eight are applicable to Bear Creek:

Increase in average annual air temperatures, and likelihood of extreme heat events; Changes in hydrology and water supply; Reduced snowpack and water availability in some basins; Changes in water quality and timing of water availability; Increase in wildfire frequency and intensity; Increased incidence of drought; Changes in the abundance and geographical distributions of plant species and habitats for aquatic and terrestrial wildlife; Increase in diseases, invasive species, and insect, animal, and plant pests; Loss of wetland ecosystems and services; Increased frequency of extreme precipitation events and incidence and magnitude of damaging floods.

These climatic concerns have been considered in the design and development of this project. The current objectives and restoration actions will help to address and provide relief for some of these concerns. Floodplain connection, instream complexity, and off channel habitat will help to ensure there is interconnection with hyporheic flow to provide more cold water to Bear Creek. By restoring the riparian zone of the stream and springs more flow and cold water will most likely be available to sensitive fish species. Raising the water table and slowing down the water will hopefully have beneficial effects for all life stages of ESA listed fish species as well as reducing the impacts of major flooding events.

Previous Work: This block describes any previous work implemented in this reach and how this project connects to or builds upon those previous efforts.

Other Species: If there any other sensitive or listed species, aquatic or terrestrial, impacted by this project, this block lists them and explains how they might be impacted by this project.

Snake River Spring Chinook Salmon and Summer Steelhead, both species listed under the Endangered Species Act (ESA). The project area is also used by important native fish species, including ESA-listed bull trout, Oregon Sensitive Species redband trout, and lamprey. Reintroduced coho salmon may use this reach as well.

Is this a phased project?

Yes

If this is a phased project, can this phase be a standalone project?

Yes

Monitoring

This table shows all objectives specified for monitoring. It explains who will be performing this monitoring, how it will be implemented, how long it will take place for, whether or not it will be shared or available to Atlas partners, and how that data will be shared/made available.

Monitoring Indicator	Monitor	Protocol	Time Monitored (yrs)	Availability/Sharing
Riparian Vegetation	ODFW	Photo point monitoring	5 years (minimum)	Yes
Surface Water Connectivity	GRMW/ODFW	Drone Imagery/Site Visits	5 years (minimum)	Yes
Redds/Mile	ODFW/NPT	Chinook Spawning Ground Surveys	5 years (minimum)	Yes

Landowner Engagement

The following table is applicable to projects which take place on private property. It lists the relevant landowners involved in the project, the landowner agreement, whether or not neighboring landowners have been contacted, and whether or not there were any issues identified (resolved or unresolved) concerning the landowner.

Landowner	File (Click to Download)	Neighbors Contacted?	issues
Lionel Sauvage (Sauvage LLC)	Open File in Web Browser	Yes	ODFW is in the process of reviewing the easement before it will be signed on our end.

Timeline

Will this project be completed within 2 years if awarded funding? Projects that will be completed in the first year of the contract in-water work window will be given funding priority over out-year projects (applies to restoration projects only).

Yes

Project Elements

The table below identifies the major work elements of this project, when the work for each element is proposed to begin, and when that work is expected to end.

Project Element	Proposed Start Date	Proposed End Date
Large wood harvest and stage	June 15, 2026	July 14, 2026
In-stream construction	July 15, 2026	Aug. 15, 2026
Seeding/Planting	Aug. 1, 2026	Nov. 1, 2026
Sawyer work	July 15, 2026	Aug. 15, 2026
Earthwork	May 1, 2026	Aug. 31, 2026
Helicopter in-stream work	July 15, 2026	July 20, 2026
	None	None

Designs

Level of Current Designs:

80%

Alternatives Analysis:

The first option would be to do nothing. Our second option was to use only ground based equipment to do the entire project, however this was determined to be not ideal as some areas would be very difficult to access or require lots of destruction of vegetation. We decided on the third option to use a ground based and helicopter approach to perform all the work proposed in the project. This will leave the least amount of disturbance and allow for work to be completed in the entire reach. We will also be able to use whole trees locally sourced via the helicopter instead of hauling in logs offsite. Furthermore, the landowners desire to have a project with very few, if any, limitations of the restoration efforts and understand and agree with the projects objectives and would like to maximize benefits for native salmonids.

Additional Comments:

Designs File:

Download Designs File: [Open File in Web Browser](#)

Feedback

The section below indicates feedback for this online proposal process. Comments are greatly valued and will be read and internalized by staff upon submission. Comments will be used to guide the refinement of this format to something simple, clean, intuitive, and useful. We (GRMW) express special thanks to our partners for taking the time to fill out this section.

The formatting when entering in words from another source such as Word is always somewhat of a challenge to get it to appear as desired in the generated proposal document. Not sure if there's any potential way to fix this, otherwise I'll just keep monkeying with stuff until it looks halfway decent.

It's somewhat frustrating how the design upload tab is capped at 15mb. It seems like most designs these days are much larger, not sure the fix for this, perhaps just allow more than one file to be uploaded so the design files can be within this tab instead of the additional files tab.

Budget

Download Budget File: [Open File in Web Browser](#)

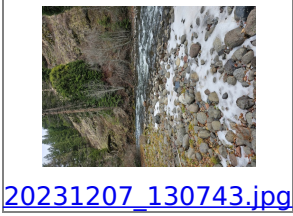
Cost Share

The table below outlines all cost share included for this project including: the organization/source of the cost share, the amount of the cost share (in dollars), whether or not the funds have been secured, whether the funding is cash or in kind, and the reference or contract number if available.

Organization/Cost Share Source	Amount (\$)	Secured?	Cash/In Kind?	Reference/Contract # (If Available)
ODFW	\$86,768	No	In Kind	CR380463
Savage LLC	\$150,000	No	In Kind	

Uploaded Photos

By providing pictures the following photos to GRMW the applicant agrees to have their pictures displayed on the GRMW website (grmw.org) and social media accounts.



Additional Files

File Name (Click to Download)	Description
Open File in Web Browser	HIP Review 30% comments
Open File in Web Browser	HIP Review 15% comments
Open File in Web Browser	80% pg 12-17
Open File in Web Browser	80% pg 18-24
Open File in Web Browser	80% pg 25-35
Open File in Web Browser	80% pg 36-45
Open File in Web Browser	80% pg 46-51
Open File in Web Browser	80% pg 52-57

Signature

Signature	Accepted Terms	Draft Signed	Final Signed	Date Signed
Nicholas Smith	Yes	Yes	No	Oct. 15, 2025

The signature below affirms everything the applicant has entered into this document is true and accurate to the best of their knowledge and that they agree to stipulations previously outlined in this application such as the sharing of media and reporting requirements should the project be approved by the GRMW Board of Directors.

Nicholas Smith
Applicant Digital Signature

Oct. 15, 2025
Date Signed (Most Recent)