General Information

Project Name Hound Creek Realignment and Floodplain Connection

Applicant Name High Plains Conservation District

Is your organization registered with the Montana Secretary of State? Y

Explanation: **Each applicant must be registered with the Montana Secretary of State to do business in the state of Montana. Registration with the Secretary of State may be completed via the following website: https://sosmt.gov/business/**

Is your organization registered with the federal System for Award Management (SAM)? Y

Explanation: **Each applicant is required to register with SAM. To register or check your organization's status, go to https://sam.gov/content/home. If you get an "Unsupported Browser" error, copy, and paste the link into a Google Chrome browser window.**

Primary Contact Jacob Atkinson **Title** Resource Technician

Address 3615 28th St SW **City** Great Falls **State** MT **Zip Code** 59404

Phone Number 406-403-2644 **Email** hpcdtech@cascadecd.com

Signature Jacob Atkinson Digitally signed by Jacob Atkinson Date: 2026.02.05 10:50:16 -07'00'

Explanation: **This is the person who DEQ would routinely contact to discuss project progress, billing, etc.**

Signatory Elliot Merja **Title** Chairman of the Board

Address 3615 28th St SW **City** Great Falls **State** MT **Zip Code** 59404

Phone Number 406-799-5957 **Email** emerja@3rivers.net

Signature Elliot Merja Digitally signed by Elliot Merja Date: 2026.02.11 13:14:23 -07'00'

Explanation: **This is the person who can legally sign contracts and other binding documents on behalf of the applicant (e.g., a board chair)**
Note: **The primary contact, signatory and landowner must sign the application. Signatures must be either signed electronically, or wet-signed, scanned and sent electronically.**

Landowner Name McKamey Ranch Co. - Ken McKamey

Landowner Signature Ken McKamey

Landowner Name

Landowner Signature

Landowner Name

Landowner Signature

Explanation: **Landowner signatures are required. Signing the application does not obligate the landowner to implement a project. Instead, it is an indication that the landowner has read the application and agrees, in principle, with the project concept and goals.**

2026 On-the-Ground Project Application Form

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Your organization's Unique Entity Identifier number (UEI #) | Z1WDMG7TJSG5

Explanation: Each applicant is required to have a current UEI number. The UEI number replaces the old DUNS number. If your organization had a DUNS number, you should have received a notification from the federal government indicating that your DUNS number has been changed to a UEI number. If you did not receive this notification, or if you never had a DUNS number, you will need to go to the federal government's System for Award Management (SAM - https://sam.gov/content/home) to obtain your UEI number. DEQ recommends starting this process early as it is very time-consuming, requires providing documentation-sometimes with follow-up requests for additional information, and can take up to 2 months to complete. If you need assistance, you may contact the federal help desk at 866-606-8220 Monday-Friday 8:00 a.m. through 8:00 p.m. EST.

Does your organization have adequate liability insurance for the risks associated with your project? | Y

Explanation: Each applicant must have or obtain liability insurance coverage meeting the requirements stated in the Draft Sample Contract and/or requirements negotiated based on the appropriate level of risk associated with the project.

Describe the technical and administrative skills your organization will use to effectively and efficiently complete your proposed project(s).

High Plains Conservation District (HPCD) is fortunate to have staff with diverse backgrounds and experiences that enable them them to complete the Hound Creek Realignment and Floodplain Reconnection Project. The executive director of HPCD has worked in conservation districts for over a decade, managing many programs, individuals, and restoration projects. The HPCD district administrator has worked for various conservation districts for over 25 years as an administrator, and possesses the knowledge and experience to effectively execute contract and grant administration, handle billing and invoices, etc. HPCD recently hired a Resource Technician who is a trained stream ecologist and specializes in stream restoration. The Resource Technician will be the primary contact for this project and work with project partners to implement the project, carry out education and outreach efforts, and conduct post-project monitoring. In addition to staff, HPCD also has an engaged board made up of 7 members, all of which coming from diverse backgrounds and experiences, including ranchers, conservation professionals, attorneys, etc. Project partners including MT FWP, Montana Trout Unlimited, GEUM Consulting, Upper Missouri Watershed Association & Smith River Habitat Project, American Rivers, and Missouri River Fly Fishers will all bring additional technical and administrative skills to the project.

Budget Form

Please fill out the On-the-Ground Project Budget Template (Excel file). Cells highlighted in yellow may be edited to fit the needs of your particular project. DEQ uses a template to construct nonpoint source grant contracts. The Budget Template contains tasks and typical deliverables that match up with the grant contract template. Please see the Example Contract and Scope of Work Template for a more detailed look at typical task requirements and deliverables.

Project Form

A separate Project Form (including providing separate attachments) must be submitted for each project included in your application. ¦ăŜ ǔKŜ Ŧ2ƭƭ2ǿƛɣƎ ŜÈŀ·ƳǕŀƭŜă ǔ2 KŜƭǕ ŘŜǔŜǚƳ˄ƛɣŜ ǿKŜƴ ǔ2 lump and when to split projects.

Splitting Examples (fill out multiple Project Forms)

- Stream restoration work occurring on two separate streams..
- Two projects with significantly different sets of project partners.
- Two projects that address substantially different pollution sources (e.g., one project move a corral off of a streambank, and another removes mine tailings, with both projects being on the same property).

Lumping Examples

- Contiguous stream restoration work spanning multiple land parcels.
- Three projects that address similar sources of pollution on a single land parcel (e.g., moving a corral off a stream, implementing a grazing management plan, and relocating a manure storage facility out of the floodplain, all on the same ranch)

Project Form

A separate Project Form (including providing separate attachments) must be submitted for each project included in your application

Project Name: Hound Creek Realignment and Floodplain Reconnection

Required Attachments in Addition to This Form

- [x] Letter of support from the organization that created or sponsored the creation of the DEQ-accepted Watershed Restoration Plan or the Tribe that created the EPA-approved Tribal Nonpoint Source Management Plan (*if applicable)*.
- [x] Letter of support from EACH landowner associated with the proposed project area (*if applicable)*.
- [x] Budget Table (see Microsoft Excel Template).
- [x] **Detailed Project site map(s)** Attach a map or set of maps showing the location and size of proposed activity if a site has been predetermined. The map scale must be between 1:1,000 and 1:12,500. The map(s) must have an aerial photo background (e.g., USDA NAIP photography, Google Earth imagery, etc.). The map(s) must show the latitude, longitude, site name, and landowner for the activity site. The map(s) should also identify waterbodies affected by the pollution that the activity is designed to address. (*This is in addition to adding points of the project location to the website on page 4*).

Optional Attachments

Attach additional items and information that could help reviewers better understand your project. Information could describe public health risks, opportunities to leverage other funding sources, etc. However, application reviewers may have limited time available, and excessively long, optional attachments might not get reviewed. Do not attach copies of TMDL documents, TMDL implementation evaluations, Watershed Restoration Plans, Tribal Nonpoint Source Plans, or large comprehensive studies. The following attachments may be included. Please no more than 20 pages.

- [x] Project Design Plans/Drawings
- [x] Preliminary Engineering Reports / Site Evaluations
- [ ] Landowner Agreements / Construction Permits / Floodplain Permits
- [x] Site photos
- [x] Additional Letters of Support
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Project Area

Please provide as detailed a description of the project area as possible.

List the counties in which the project will be located.

Cascade County

List the 12-digit Hydrologic Unit Codes (HUCs), sometimes referred to as Sixth Code HUCS, in which the project will take place. Use the following link to help assist you in determining the HUCs: https://apps.nationalmap.gov/viewer/

100301031008

Project Location Map

In addition to providing your own project site map, please go to the following website and follow the instructions to add your project location to the map.

https://gis.mtdeq.us/portal/apps/storymaps/stories/42f4a668285c4ef6aa94b1623f10df57

Connection to a Previous or Ongoing Project

Is this project tied to a previous or ongoing project? If so, please describe the connection.

The Hound Creek Realignment and Floodplain Connection Project is tied to a previous Smith River basin-wide assessment and restoration feasibility analysis. In 2024 a basin-wide assessment of the Smith River watershed was completed by GEUM Consulting to identify watershed health issues and restoration possibilities within the watershed. Following this, at the request of the McKamey Ranch Landowner, GEUM Consulting visited the property to investigate the landowners concerns with stream erosion on a 2 mile stretch of Lower Hound Creek. It was determined that a more comprehensive review of the site was required to find a feasible restoration solution. Montana Trout Unlimited provided GEUM with funding to conduct drone flights and complete a comprehensive restoration feasibility analysis of the site, which includes proposed restoration design plans for the Hound Creek Realignment and Floodplain Connection Project.

There is no previous on the ground work in this area that the project is tied to. However, the project builds on the WRP and restoration feasibility analysis. Similar projects that are tied to the WRP have taken place on the North Fork of the Smith River, and the Hound Creek Realignment and Floodplain Reconnection project is the next major project being completed in HPCD's and regional partner's efforts in addressing restoration target areas identified in the Smith River WRP. Three restoration phases were identified in the restoration feasibility analysis, with the Hound Creek Realignment and Floodplain Connection Project being designated as Phase 1. Following implementation of this project, there are two remaining phases that the project will be tied to. The two future projects are Phase 2: Smith River Floodplain Connection and Phase 3: Aquatic Habitat and Floodplain Enhancement.

Phase 1: Hound Creek Realignment and Floodplain Reconnection was selected as the highest priority of the three potential project phases identified during the feasibility assessment because of the amount of fine sediment being contributed to Hound Creek, the potential to create a larger area of connected floodplain and diverse stream habitat to support both Hound Creek and Smith River trout populations, and the area being the primary landowner concern.

Project Purpose

Select the watershed restoration plan or tribal nonpoint source plan that your project will help implement (please type in if missing from list) (*Not required for HAB reduction projects)*

SmithRiver

Y — Letter of support from author, or if the author was contracted, the author sponsor, attached? *(If no, explain why below.)*

IMPAIRMENT LISTINGS: Projects that address water quality impairments on Montana's 2020 List of Impaired Waters are preferred though not a requirement. Funding may be used for projects that protect waterbodies that are demonstrated to be healthy.

Waterbody name from the 2020 List of Impaired Waters	Hound Creek
Probable causes of impairment to be addressed	Alteration in stream-side or littoral vegetative covers, chlorophyll-a, excess algal growth, total nitrogen
Waterbody name from the 2020 List of Impaired Waters	Smith River
Probable causes of impairment to be addressed	Alteration in stream-side or littoral vegetative covers, iron, temperature, pH, phosphorous, physical substrate habitat alterations, other anthropogenic substrate alterations.

HEALTHY WATERSHEDS: While project funding is prioritized to addressing known impairments, funding can be used to protect healthy waters from becoming impaired.

Name of healthy waterbody to be protected	
Description of identified threat	
Name of healthy waterbody to be protected	
Description of identified threat	

Project Partners

Identify each of the project partners and describe their contribution to the project. Include landowners, land managers, project designers, funders, and your own organization. Indicate whether each partner, other than your organization, has provided a letter of support. (*Note: each landowner must provide a letter of support if project site(s) have been predetermined.*)

Landowner	Contributions to Project	Letter of Support Attached?
Mckamey Ranch	Implement grazing BMP's and electric fence in accordance with landowner agreement/grazing management plan. Participate in hosting volunteer events, tours, or other education and outreach events at the property.	☑
		☐
		☐
		☐

Project Partner	Contributions to Project	Letter of Support Attached?
GEUM Consulting	GEUM Consulting helped develop the Smith River WRP, completed the restoration feasibility analysis, completed restoration design for Phase 1: Hound Creek Realignment and Floodplain Connection, contributed to the effectiveness monitoring plan, and will work with contractor on restoration implementation	☑
Montana Fish, Wildlife, & Parks (FWP)	FWP staff visited the McKamey Ranch to conduct the site review with MTU, GEUM, and UMOWA. FWP provides expertise on aquatic habitat considerations for the duration of the project. At the field review FWP contributed to restoration design ideas. FWP contributed $65,000 in non-federal match.	☑
Montana Trout Unlimited (MTU)	MTU contracted with GEUM to complete the restoration feasibility analysis and establish the framework for this project. MTU funded $10,000 of the design/planning phase and $25,000 in non-federal funds to Phase 1, showing their high level of investment. MTU will participate in education/outreach efforts.	☑
Missouri River Flyfishers (MRF)	MRF pursued an American Fisheries Society Resource Action Fund Grant to secure $10,000 in non-federal match for the project. MRF plans to continue to support future phases as needed. MRF will also help reach volunteers, and contribute to education and outreach efforts for the project.	☑
High Plains Conservation District (HPCD)	HPCD will complete administrative/contracting tasks, effectiveness monitoring, and education and outreach tasks. HPCD will also work to continue leveraging partner/stakeholder investment to continue with additional phases. HPCD will work with partners to complete restoration effectiveness monitoring.	☐

Project Coordination and Planning Task

This task would include completion of all applicable planning tasks from the list below, as well as coordination and oversight of the efforts of all project partners.

Identify the status of the following project planning tasks, where applicable.

	Completed?	Copy Attached?	To Be Completed Pre-Contract (Oct 2026)?	To Be Completed as Contract Deliverable?
*Draft Project Designs	✔	✔	☐	☐
*Final Project Designs	☐	☐	✔	☐
Consultation With Potential Regulators	☐	☐	✔	☐
Necessary Permits	☐	☐	✔	☐
Cultural Resources Inventory *(if relevant)*	☐	☐	✔	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐

***See Call for Applications Section 5.1 for minimum design standards.*

Describe any additional project planning that *will have been completed prior* to execution of a contract (October 2026).

Scheduling and coordination of volunteer events to plant willows in the project area that will take place post implementation in October once willows have gone dormant. Partners will work to identifying local wood sources for root wads and logs prior to project implementation. Preparation of construction bid package documents and a landowner agreement will take place prior to execution of a contract.

Describe any additional project planning and coordination that will need to be completed after the execution of a contract (October 2026).

Coordination of partners to schedule and execute effectiveness monitoring and reporting will take place after the contract. Continue planning for additional volunteer events to plant more willows annually and conduct project demonstration tours will take place after the execution of a contract.

Additional planning for phases 2 and 3 will take place after execution of a contract and project implementation.

Landowner Agreement Task

DEQ includes the following language in every nonpoint source contract involving on-the-ground activities:

Contractor shall submit signed landowner agreement(s) verifying that Contractor and DEQ staff may access the project site, at reasonable times and with prior notification, for the purposes of project planning, implementation, and post-implementation monitoring. The agreement(s) must ensure appropriate operation and maintenance of all structures, vegetation, and management measures for the life of the project (typically 10 years). If grazing will be allowed within the project area, the agreement(s) must include a sustainable management plan for livestock grazing, designed to protect and enhance riparian function. If a signed landowner agreement does not meet the above-stated minimum requirements, Contractor shall negotiate an amended agreement with the landowner that ensures appropriate operation and maintenance of all structures, vegetation, management measures, and includes a sustainable management plan for any livestock grazing for the life of the project (typically 10 years).

Identify the status of the following landowner agreement tasks, where applicable.

	Completed?	Copy Attached?	To Be Completed Pre-Contract (Oct 2026)?	To Be Completed as Contract Deliverable?
Draft Landowner Agreement(s)	☐	☐	☐	☑
Final Landowner Agreement(s)	☐	☐	☐	☑
Grazing Management Plan	☐	☐	☐	☑
Other:	☐	☐	☐	☐
Other:	☐	☐	☐	☐

Project Effectiveness Monitoring Task

If you will be conducting any on-the-ground implementation work, you will be required to complete the monitoring activities described in the task language below, as applicable. Describe below how you plan to determine the effectiveness of your project. Project effectiveness success criteria should be time-bound and assess each project objective quantitatively. Success criteria should clearly define adaptive management thresholds. Examples may include: a minimum 25% decrease in sediment/nitrogen/phosphorus load within 2 years; a 70% survival rate of containerized plantings after one year.

If you are applying for nonpoint source grant funding for project design only, and not for project implementation, you may either skip this task, or describe below which parts of this task you intend to complete:

Through a collaborative effort, following guidance provided by the DEQ Project Manager, project partners shall develop a reasonable set of methods for evaluating and reporting on the effectiveness of the Phase 1: Hound Creek Restoration and Floodplain Reconnection Project. Methods will be established to properly gauge the projects effectiveness in addressing water quality issues. The High Plains Conservation District shall complete a monitoring plan to guide field data collection and reporting. The following monitoring activities shall be completed by project partners:

• Bank Erosion Hazard Index (BEHI) assessments will be completed at select highly erodible banks throughout the project area to assess effectiveness of the restoration activities at mitigating erosion risk.

• Photo Point Monitoring shall be conducted at select sites throughout the restoration reach pre and post project implementation to document changes to stream form, riparian health, and stream/terrestrial habitat as a result of project implementation.

• Riparian vegetation surveys shall be conducted annually to measure project effectiveness at addressing the alteration in stream side vegetation impairment.

Success criteria outlined on the following page in "Additional Monitoring".

Example Task Language

Contractor shall, in consultation with the DEQ Project Manager, develop a reasonable method or set of methods for evaluating and reporting on the effectiveness of the project in addressing water quality issues. Contractor shall complete a monitoring plan to guide monitoring activities. Contractor shall complete the following monitoring activities:

- *Estimate the sediment load reductions (tons/year) achieved through implementation of the proposed restoration activities and management practices.*
- *Estimate the nitrogen load reductions (pounds/year) achieved through implementation of the proposed restoration activities and management practices.*
- *Estimate the phosphorus load reductions (pounds/year) achieved through implementation of the proposed restoration activities and management practices.*
- *For projects designed to address pollution from pollutants other than nitrogen, phosphorus and sediment, evaluate and report on the effectiveness of the project in addressing water quality issues.*
- *Contractor shall collect data, as directed by the DEQ Project Manager, to be used in estimating sediment, nitrogen, and phosphorus load reductions (and for harmful algal bloom reduction projects, carbon sequestration/emissions reductions) achieved through implementation of restoration activities and management practices designed to address these pollutants.*
- *Use the following measures to evaluate the sustainability of restoration activities and management practices:*
    - *[Vegetation mortality rate.]*
    - *Pre- and post-construction photo point monitoring consistent with the "Oregon Watershed Enhancement Board Guide to Photo Monitoring" methodologies, or a similar published photo point monitoring method accepted by DEQ. The U.S. Forest Service provides additional photo point monitoring guidance in the "United Stated Forest Service Photo Point Monitoring Handbook".*
    - *[Riparian survey.]*
    - *[Other.]*

Please describe any additional monitoring you intend to do as part of the project.

Pre- and post-construction photo point monitoring will be consistent with the "Oregon Watershed Enhancement Board Guide to Photo Monitoring" methodologies. Success criteria includes visible changes in stream and riparian health such as establishment of divers aquatic habitat features, reduced erosion at high banks, and vegetation recruitment in riparian areas/floodplains.

BEHI surveys will be completed pre project and post implementation annually for length of contract. BEHI will be completed following the methods established by Rosgen, 2001 and adopted by MT DEQ. Success criteria includes observing a decrease in BEHI rankings at select problematic banks. Specific BEHI rankings will be established after pre project BEHI surveys have taken place.

Vegetation surveys will follow BLM's Greenline methods to measure overall vegetation cover at the site. Current site conditions are <5% vegetation coverage in riparian areas (1200 ft of bank, 600 feet of stream). Success criteria for vegetation surveys is 80% coverage or higher at the end of the contract.

Project Implementation Task

Provide a d**etailed description of the solution you are proposing** to implement to address a nonpoint source pollution problem.

- Describe the practices you intend to design and/or implement to solve the problem (what, where, when, how much or how many).
- Describe the anticipated maintenance needs (what, where, who, how long).
- Refer to the minimum design standards in the Call for Applications.
    - *Please fill out this section to the best of your ability, even if you are only seeking funding for project design.*

The Hound Creek Realignment and Floodplain Connection project includes realigning Hound Creek away from an actively eroding vertical bank, increasing floodplain connectivity, improving aquatic habitat diversity, significantly expanding the woody riparian buffer along the channel, and creating off-channel wetland area. The stream bank is approximately 6 to 8 feet tall and is dominated by introduced pasture grasses such as smooth brome. The stream bank has eroded approximately 70 feet since 2005, delivering approximately 9,000 cubic yards of fine sediment to Hound Creek and the Smith River. As erosion and lateral migration have occurred, a new floodplain has formed on the inside bench where willows and cottonwoods have colonized. The creation of a new inside meander floodplain surface from channel migration makes realigning the channel away from the bank a feasible option rather than treating the bank in place. Treating the bank in place keeps the channel pinned against a high terrace and retains the risk of future lateral erosion and reversion to a vertical streambank. Relocating the channel away from the bank allows us to build a much larger floodplain to dissipate high flow energy, restore a woody riparian vegetation corridor, and create clean rivers and pools with overhanging cover. Further, channel relocation is a cheaper option compared to treating the bank in place because it will require less material excavation, less woody material, and would not require import of rock material to construct a stable toe.

Impairment of the site was caused by a combination of vegetation clearing to create hayfields, reduced vegetation cover from livestock grazing, historical beaver removal, and channel straightening at Millegan Road in the 1950s (approximately 1 mile upstream of the project site). The channel has adjusted over time in response to these historical alterations through vertical incision and lateral migration, especially where woody riparian vegetation has been removed.

Restoration goals for Phase 1 include: reduce accelerated lateral erosion at incised bank and reduce fine sediment inputs to Hound Creek; increase floodplain connectivity and connected floodplain area; restore woody riparian vegetation; and increase aquatic habitat quality and diversity. See attached Restoration Feasibility Analysis pages 16-17 for more details and alternatives.

Restoration treatments to achieve Phase 1 restoration goals include:

Realign Hound Creek away from a 650-foot long vertical, actively eroding stream bank to reduce sediment input into Hound Creek/Smith River and increase overall connected floodplain area; Construct 910 linear feet of new channel that supports pools and riffles and promotes spawning gravel sorting; Construct approximately 2 new acres of connected floodplain surfaces that will support natural colonization of cottonwood while preserving existing areas of woody vegetation and diverse floodplain; Install 8 large wood habitat structures, including root wads in pool locations and 775 linear feet of streambank treatments consisting of woody debris and 5,000 willow cuttings to increase geomorphic resiliency, increase aquatic habitat diversity, and restore woody riparian vegetation; Create a connected floodplain surface between the new channel and existing eroding bank that gently slopes up to the existing bank and will be revegetated with rhizomatous grasses for long-term erosion control. The connected floodplain bench will be revegetated with willow cuttings and willow transplants to increase the riparian buffer width and provide energy relief for high flows; Install an electric fence to exclude cattle from project area, reducing nutrient input into the system and, allowing woody riparian vegetation to establish; Annually monitor and reseed/revegetate riparian areas as needed using native seed mix and willow plantings.
Maintenance to be done will be landowner electric fence maintenance and annual riparian reseed/revegetation work.

Education, Outreach and Training Task

To get good projects on the ground, trained staff and board members and educated, enthusiastic landowners are required. To promote the development of future projects, DEQ encourages project sponsors to use up to $5,000 per project of funding to support training and conduct education and outreach. Example training topics might include: project management, public procurement, technical writing, GIS, water quality monitoring, web design, public speaking, human resource management, photo journalism, UAV (drone) piloting, financial management, and restoration techniques. Education and outreach activities might include targeted landowner outreach, conducting project site tours for local landowners, tabling at community events, holding a watershed festival, providing stipends and travel reimbursements for speakers and participants to attend a nonpoint source pollution prevention workshop, or generating articles for social media. The primary requirement for training and outreach is clearly explaining how the activity generates behavior change to address nonpoint source pollution. Funding may not be used to pay for food and beverages, or for honorariums and gifts.

Describe the education and outreach activities or training you will complete to promote behaviors or facilitate future efforts to reduce nonpoint source pollution. Additionally, identify the goals of the training/education and outreach activities.

Throughout project planning, implementation, and post project monitoring, High Plains Conservation District (HPCD) will engage project sponsors, partners, landowners, and interested public. Project progress will be communicated to these parties through HPCD website postings, e-newsletters, reports, paper outreach materials, and social media postings. Additionally, project partners will make similar efforts to publish outreach materials through similar channels of their own organizations. As part of HPCD's River Campaign Program, the project site will be utilized as part of HPCD's monthly pasture walk demonstration initiative for the duration of the contract. HPCD staff will work with project partners to bring additional landowners to the site and communicate the benefits of the project to them through a pasture walk demonstration tour. Tours will take place post implementation (2027-2029) annually, and additional phases shall be included in the future. Landowners will have the chance to see stream best management practices in action and interact with both the project manager and the landowner. Pasture walks are meant to inform landowners and improve land management in the region. HPCD also intends to host volunteer events throughout Cascade County for stream restoration. There will be 2 volunteer events annually at Hound creek to harvest and plant willows for the duration of the contract. Additionally, in conjunction with other volunteer initiatives, HPCD plans to host an annual volunteer thank you event for participants to learn about projects like Hound Creek and become aware of conservation benefits of such projects.

Identify the specific target audience and method of delivery. Additionally, describe how the proposed training and/or education and outreach will increase local capacity and interest for addressing/promoting behavior change to reduce nonpoint source pollution.

The specific target audience for education and outreach efforts for the Hound Creek Realignment and Floodplain Reconnection project is landowners with streams/rivers on their property. Showcasing the project to other landowners that may have similar sites on their own properties could inspire behavior change and encourage landowners to implement best management practices that promote healthier streams/rivers, increased habitat, increased geomorphic resiliency, and reduced non point source pollution.

We are also targeting the general public to increase local capacity and interest in water quality. We plan to deliver our outreach strategies to the public via website postings, newsletters (paper & email), social media, and reports. Also, in partnership with FWP on this project, we plan to post information about the project and volunteer or pasture walk opportunities on the Smith River fishing access site informational boards. Engaging the public with outreach materials and opportunities for them to volunteer and have a part in restoring the stream will inspire behavior changes and higher interest that could lead to nonpoint source pollution prevention, higher levels of water quality, and public participation and investment in stream management.

Describe how you will evaluate the effectiveness of the proposed activities.

Education and outreach effectiveness will be evaluated by collecting data on volunteering and site tour attendance throughout the life of the project. This effort can be extended to other phases in the future. Volunteers/attendees will be given surveys asking questions that tie into target behavior changes.

Additionally, website visits, social media metrics, etc. will be monitored to measure how many individuals we are able to reach to evaluate effectiveness at generating additional project interest and awareness.

Project Administration Task

Please use the task description below as a guide when calculating your budget for project administration. DEQ typically includes these requirements in every nonpoint source grant contract, with only minor variation. Funding applied to the Project Administration Task on each project must not exceed 10% of the total amount of funding requested, or $12,000, whichever is lower.

Example Task Language

Contractor shall oversee and be accountable for the completion of all tasks. Contractor shall maintain regular contact with the DEQ project manager. Contractor shall prepare and submit Status Reports, Final Reports and Attachment B Billing Statements according to the format and schedule described below.

Report Format

- *Contractor shall submit each Attachment B Billing Statement, Status Report and Final Report using the most current reporting guidance and templates provided by the DEQ project manager.*
- *Contractor shall ensure each Status Report and Final Report contains adequate documentation to justify accompanying reimbursement requests and match reporting, to the satisfaction of the DEQ project manager.*
- *Contractor shall ensure that the Final Report is a standalone document describing all contract activities and containing copies of all contract deliverables (even if the deliverables were previously submitted).*

Reporting Schedule

- *Status Reports: Due June 15th and December 15th of each year the Contract is in effect, and each time an Attachment B Billing Statement is submitted.*
- *Draft Final Report: Contractor shall submit a complete draft Final Report for DEQ review and comment at least 15 days prior to the contract expiration date.*
- *Final Report: Contractor shall submit a Final Report, addressing DEQ comments on the draft Final Report, on or before the Contract expiration date.*
- *Attachment B Billing Statements: Contractor shall submit an Attachment B Billing Statement with each Status Report, or Final Report submitted to DEQ while the Contract is in effect. To maintain cash flow, Contractor may submit interim Attachment B Billing Statements as frequently as monthly during the term of the Contract. However, each interim Attachment B Billing Statement must be accompanied by an Interim Report.*

Project Timeline

	4Q 2026	1Q 2027	2Q 2027	3Q 2027	4Q 2027	1Q 2028	2Q 2028	3Q 2028	4Q 2028	1Q 2029	2Q 2029	3Q 2029
Project Coordination and Planning Task	✔											
Landowner Agreement Task	✔	✔										
Project Effectiveness Monitoring Task			✔	✔	✔		✔	✔	✔		✔	✔
Project Implementation Task	✔			✔	✔			✔	✔			✔
Education, Outreach and Training Task	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Project Administration Task	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Co-Benefit Considerations

DEQ is committed to carrying out nonpoint source pollution reduction projects within engaged communities where the impact stretches beyond improving water quality. DEQ will award additional points in the scoring form where co-benefits extend beyond the project. Below are a few examples of how projects might exemplify co-benefits.

- Project will reduce economic hardship such as from livestock mortalities, cost and energy needs to treat municipal drinking and wastewater treatment, or loss of income from recreation
- Project will benefit underserved markets
- Project will improve or create equitable access to a clean and healthy environment
- Project planning included consultation with Tribal Nations
- Project will improve flood and drought resilience of the landscape
- Project impacts will benefit a downstream community and other natural systems (e.g., drinking water sources, human health, wildlife habitat, etc)

Please use this section to highlight co-benefits your project may have.

• Project will benefit heavy use Smith River Recreation Corridor by improving equitable access to a clean and healthy environment.
• Project will improve flood and drought resilience.
• Riparian areas will have better wildlife habitat, and the site may see increased wildlife use.
• Project will reduce sediment, which may lead to reduction of sediment mitigation costs at downstream hydroelectric dams.
• Project will increase water quality in the Smith and Missouri watersheds before water reaches the City of Great Falls, which uses the Missouri for drinking water.
• The restoration on Lower Hound Creek is the first major project in the area and has potential to inspire landowner change and education in the community.
• Partners involved in the project see this project as an important opportunity to build momentum and begin focusing on addressing issues highlighted in the Smith River WRP in the future.

BUDGET

2026 Nonpoint Source Pollution Reduction Application - On-the-Ground Project Budget Template

Project Title:	**Hound Creek Realignment and Floodplain Reconnection**							
Instructions	**Tasks and Potential Deliverables**	**Funding Request***	**Non-Federal Match****	**Other Funding*****	**Match Source**	**Match Secured? (Y/N)**	**Total Project Cost**	**Additional Information********
This task includes completion of all planning tasks and coordination and oversight of the efforts of all project partners. Provide a detailed budget and add a row if needed.	**Project Planning**							
	Collect restoration Design Data			$ 7,000.00			$ 7,000.00	Completed, private funds
	Conduct Wetland Delineation and Prepare Permit Package			$ 10,000.00			$ 10,000.00	Completed, private funds
	Prepare Construction Bid Documents			$ 5,000.00			$ 5,000.00	In progress, private funds
	Final Project Designs			$ 8,000.00			$ 8,000.00	In progress, private funds
	Total	$ -	$ -	$ 30,000.00			$ 30,000.00	
This task includes costs for developing and managing landowner agreements and developing grazing management plans as applicable. Provide a detailed budget and add a row if needed.	**Landowner Agreements**							
	Draft Landowner Agreement	$ 250.00	$ 60.00		McKamey Ranch	Y	$ 310.00	hours worked on LOA HPCD, hours worked for landowner review (landowner review time counts as match)
	Final Landowner Agreement	$ 250.00	$ 60.00		McKamey Ranch	Y	$ 310.00	hours worked on LOA HPCD, hours worked for landowner review (landowner review time counts as match)
	Grazing Management Plan	$ 300.00	$ 60.00		McKamey Ranch	Y	$ 360.00	hours worked on GMP HPCD, hours worked for landowner review (landowner review time counts as match)
	Total	$ 800.00	$ 180.00	$ -			$ 980.00	
This task includes costs for developing and implementing a monitoring plan to evaluate effectiveness to reduce nonpoint source pollution. See example contract template or application instructions for required monitoring activities. Provide a detailed budget and add a row if needed.	**Effectiveness Monitoring**							
	Draft Monitoring Plan	$ 1,500.00					$ 1,500.00	HPCD hours used (30 hours)
	Final Monitoring Plan	$ 1,500.00					$ 1,500.00	HPCD hours used (30 hours)
	Field data collection	$ 2,000.00					$ 2,000.00	HPCD hours used (40 hours)
	Written Summary of all Monitoring Activities	$ 1,000.00					$ 1,000.00	HPCD hours used (20 hours)
	HPCD Mileage	$ 500.00					$ 500.00	
	Total	$ 6,500.00	$ -	$ -			$ 6,500.00	
This tasks includes all costs for implementation of the plans developed in the Project Planning task. If you are requesting funding for design only, leave this task blank. Provide a detailed budget and add a row if needed.	**Project Implementation - Costs from most recent version of restoration feasibility analysis and have been confirmed for accuracy with Geum for this application**							
	Mobilization, Bonding, Insurance	$ 7,000.00	$ 3,000.00		Missouri River Flyfishers (MRF)	Y	$ 10,000.00	American Fisheries Society Resource Action Fund Grant awarded to MRF
	Water Management, Construction BMP's		$ 3,000.00		Missouri River Flyfishers (MRF)	Y	$ 3,000.00	American Fisheries Society Resource Action Fund Grant awarded to MRF
	New Channel Construction	$ 2,500.00	$ 65,000.00		Montana Fish, Wildlife, & Parks (FWP)	Y	$ 67,500.00	Northwesterny Energy Grant awarded to FWP
	Wood and Willow Streambank Treatment	$ 9,500.00	$ 25,000.00		Montana Trout Unlimited cash	Y	$ 34,500.00	
	Large Wood and Habitat Structures	$ **12,000.00**					$ 12,000.00	
	Floodplain Grading and Restoration		$ 4,000.00		Missouri River Flyfishers (MRF)	Y	$ 4,000.00	American Fisheries Society Resource Action Fund Grant awarded to MRF
	Collect and deliver willow cuttings	$ **5,000.00**					$ 5,000.00	
	Acquire and Deliver Wood	$ 10,000.00					$ 10,000.00	
	Electric Fence	$ 7,500.00	$ 1,000.00		Landowner in kind	Y	$ 8,500.00	
	Construction Administration and Oversight	$ 20,000.00					$ 20,000.00	
	Total	$ 73,500.00	$ 101,000.00	$ -			$ 174,500.00	
This task includes costs to develop and improve organizational capacity and to incorporate education and outreach into each on-the ground projects. Provide a detailed budget and add a row if needed.	**Education and Outreach**							
	Volunteer Coordination	$ 1,000.00	$ 550.00		in kind - Missouri River Flyfishers time	Y	$ 1,550.00	HPCD time used to coordinate volunteer sign ups and volunteer communication. **Estimate 20 hours over 3 years**
	Event/Tour Planning	$ 1,000.00	$ 250.00		in kind - speaker time/travel	Y	$ 1,250.00	HPCD staff time x total hours (1 pasture walk per summer per LOTB Pasture Walks, 2 volunteer events per season= **hours used to plan 3 events per year for 3 years)** Presenter/speaker time/travel count as in kind **(3 hours travel/ 2 hours speaking time estimate per event)**
	Outreach/Publication materials	$ 2,500.00	$ 500.00		partner outreach material costs	Y	$ 3,000.00	cost of print materials (Hound Creek highlighted in paper newsletters/river campaign brochures) , cost of email blasts with volunteer/event info & project updates
	volunteer willow harvest and planting		$ 4,453.00		in kind - volunteer time	Y	$ 4,453.00	**8 volunteers x 8 hours x 2 events**
	mileage for volunteers		$ 435.00		in kind - volunteer mileage	Y	$ 435.00	5 vehicles (carpool) x 2 events x 60 miles x rate(.725)
	HPCD mileage	$ 500.00					$ 500.00	
	Total	$ 5,000.00	$ 6,188.00	$ -			$ 11,188.00	
Funding applied to Project Administration task must not exceed 10% of the total amount of funding requested per project, or $12,000, whichever is lower. Project admin includes normal business expenses and reporting requirements.	**Administration**							
	Mid/Annual/Interim Reports and Billing Statements	$ 4,000.00	$ 1,000.00		HPCD board time in kind	Y	$ 5,000.00	HPCD time
	Draft/Final Report and Billing Statement	$ 5,000.00	$ 1,000.00		HPCD board time in kind	Y	$ 6,000.00	HPCD time
	Communication with DEQ	$ 500.00					$ 500.00	HPCD time
							$ -	
							$ -	
	Total	$ 9,500.00	$ 2,000.00	$ -			$ 11,500.00	
		Funding Request*	**Non-Federal Match****	**Other Funding*****			**Total Project Cost**	
	Grand Totals	$ 95,300.00	$ 109,368.00	$ 30,000.00			**$ 234,668.00**	

*Funding Request - Must not exceed $300,000 and must be at least $125,000 for harmful algal bloom reduction projects

**Non-Federal Match - Can include in-kind materials.

***Other Funding - Include federal match here, or, for example, other funding that is supporting the project but cannot be reported as match on this grant because it is matching another funding source.

****Additional Information - Use to specify non-federal match and other funding sources, or use to justify cost if needed (e.g., hourly rates, rental costs, etc.)

LETTERS OF SUPPORT

January 20, 2026

MT Department of Environmental Quality
319 Nonpoint Source Program 2401
Colonial Dr.
Helena, MT 59601

RE: Phase 1 – HPCD Hound Creek Realignment and Floodplain Reconnection

Dear Members of the DEQ Nonpoint Source Funding Review Committee:

I am writing in support of Phase 1 of the High Plains Conservation District (HPCD) Hound Creek Realignment and Floodplain Reconnection project.

As a landowner within the Lower Hound Creek drainage, including the property where Hound Creek enters the Smith River, I have observed firsthand the impacts of channel erosion, loss of topsoil, and associated water quality concerns. These issues affect not only my property, but also downstream aquatic habitat and the broader Smith River watershed.

This Phase 1 feasibility analysis is an important step toward identifying restoration opportunities that could restore channel stability, slow erosion, reconnect floodplains, and improve water quality and aquatic habitat. The collaborative effort between HPCD, the Smith River Habitat Project, federal and state agencies, recreational interests, and local landowners demonstrates a thoughtful, basin-wide approach to addressing these challenges.

I believe funding the HPCD Hound Creek Realignment and Floodplain Reconnection project represents a sound use of resource funds and will provide long-term benefits to the Hound Creek and Smith River basins for years to come.

Thank you.

Sincerely,

Ken McKamey
McKamey Ranch Co.

2400
MT Department of Environmental Quality
319 Nonpoint Source Program
2401 Colonial Drive
Helena, MT 59601

Jason Rhoten
Region 4 Supervisor
Montana Fish, Wildlife & Parks
(406) 454-5846

SUBJECT: High Plains Conservation District 319 Grant Application – Lower Hound Creek

DATE: February 4, 2026

Dear members of the DEQ Nonpoint Source Funding Review Panel,

Montana Fish, Wildlife & Parks (FWP) supports the High Plains Conservation District (HPCD) Phase 1: Hound Creek Realignment and Floodplain Reconnection project. The Smith River is a major recreational corridor known for its angling and floating opportunities. Hound Creek is a tributary to the Smith River originating in the northern Big Belt Mountains in Cascade County; it provides significant flow to the Smith River and is an important spawning tributary for fish in the Smith River. Hound Creek is on the impaired stream list for alteration in stream-side vegetation, chlorophyl-a, excess algal growth, and total nitrogen. Clean Water Act 319 funding would be used to implement Phase 1 of restoration on Hound Creek, realigning the stream away from high eroding banks and reconnecting the stream with the floodplain.

FWP has been closely involved in the identification, design, and coordination of the project since its inception. Hound Creek is listed as a target area for restoration in the Smith River Basinwide Assessment and Watershed Restoration Plan (SWRP); this project would help to reach the objectives of the SWRP by reducing sediment input to the stream channel, reconnecting the floodplain, restoring the bank with native vegetation, improving riparian conditions, and improving access to fish spawning habitat.

As part of a collaborative effort, FWP has a working knowledge of the project basin and HPCD and is confident this funding will contribute to a larger overall collaboration to restore a valuable resource. Overall, as the organization responsible for the creation of the SWRP, we feel funding the *HPCD – Phase1: Hound Creek Realignment and Floodplain Reconnection* is a good use of funds and addresses resource issues using restoration practices identified in the SWRP.

Thank you for your consideration,

Sincerely,
Jason Rhoten
Region 4 Supervisor

Big Sky Country
MONTANA HOUSE OF REPRESENTATIVES

2/9/26

MT Department of Environmental Quality
319 Non-point Source Program
2401 Colonial Drive
Helena, MT 59601

RE: Phase 1: Hound Creek Realignment and Floodplain Reconnection

Dear Members of the DEQ Non-point Source Funding Review Panel,

We are writing to express our support for the *High Plains Conservation District (HPCD) Phase 1: Hound Creek Realignment and Floodplain Reconnection project.* This project is a key component of the Smith River Watershed Restoration Plan and is identified as a target restoration area.

The Smith River is a major recreational corridor and supports historic and ongoing ranching operations that are vital to Montana's economy and heritage. Hound Creek, a tributary of the Smith River, originates in the northern Big Belt Mountains in Cascade County and is an important contributor to Smith River flows.

Clean Water Act Section 319 funding will be used to implement Phase 1 restoration activities on Hound Creek, including realigning the stream away from highly eroding banks and reconnecting the channel to its floodplain. These actions will restore channel function, slow erosion, improve floodplain connectivity, and enhance aquatic habitat. Hound Creek is currently listed as impaired due to alteration of streamside vegetation, chlorophyll-a, excess algal growth, and elevated total nitrogen, making this restoration both timely and necessary.

As a main tributary, the water quality in the Smith River directly impacts the Missouri River, which is the drinking water source for the community of Great Falls. The Hound Creek project will help improve downstream water quality.

As legislators from different parts of the state with differing interests in the Smith River, we share a strong commitment to collaborative, locally driven conservation efforts that balance water quality improvement with agricultural production and recreation. Restoration of Hound Creek is important to maintaining watershed function, reducing sediment and nutrient loading, and protecting the long-term ecological and economic health of the Smith River.

This project reflects a strong partnership among local landowners, HPCD, and other stakeholders with deep knowledge of the project area. We are confident that this funding will contribute to a broader, effective collaboration to restore and protect a resource that is valued for food production as well as recreational opportunities for all Montanans.

Big Sky Country

MONTANA HOUSE OF REPRESENTATIVES

Overall, we believe that funding the HPCD Phase 1: Hound Creek Realignment and Floodplain Reconnection project is a sound and responsible use of public resources. Please do not hesitate to reach out if you have any questions.

Thank you for your consideration.

Sincerely,

Representative Josh Seckinger, House District 62

Representative Jane Weber, House District 19

Montana State Legislature
MONTANA HOUSE OF REPRESENTATIVES
Representative Russ Miner
Agriculture Vice Chair
House District 26

DURING THE SESSION
State Capitol Building
PO Box 200400
Helena MT 59620-0400
Phone: (406) 444-4800
Web: legmt.gov

COMMITTEES
Taxation
Natural Resources
Agriculture

HOME ADDRESS
1350 5th Ave South
Great Falls MT 59405
(406) 899-4514
Russel.Miner@legmt.gov

February 12, 2026

MT Department of Environmental Quality
319 Non-point Source Program
2401 Colonial Drive
Helena, MT 59601

RE: Phase 1: Hound Creek Realignment and Floodplain Reconnection

Dear members of the DEQ Non-point Source Funding Review Panel:

I am writing to support the High Plains Conservation District (HPCD) Phase 1: Hound Creek Realignment and Floodplain Reconnection project. This is part of Smith River watershed restoration plan and is highlighted as a target restoration area. The Smith River is a major recreational corridor and home to historic ranch operations. Hound Creek is a Smith River tributary originating in the northern Big Belt Mountains in Cascade County. Clean Water Act 319 funding will be used to implement Phase 1 of restoration on Hound Creek, realigning the stream away from high eroding banks and reconnecting the stream with the floodplain. This project will restore the channel, slow erosion, reconnect floodplains and improve aquatic habitat. Hound Creek is an important flow contributor to the Smith River and is on the impaired stream list for alteration in stream-side vegetation, chlorophyl-a, excess algal growth, and total nitrogen.

HPCD has a working knowledge of the project basin and is confident this funding will contribute to a larger overall collaboration to restore and repair a resource that is valued for food production as well as recreational opportunities to all Montanans.

Thank you,

Russ Miner

January 26, 2026

MT Department of Environmental Quality
319 Non-point Source Program
2401 Colonial Drive
Helena, MT 59601

RE: Phase 1: Hound Creek Realignment and Floodplain Reconnection

Dear members of the DEQ Non-point Source Funding Review Panel:

Montana Trout Unlimited (MTU) is writing to support the High Plains Conservation District (HPCD) Phase 1: Hound Creek Realignment and Floodplain Reconnection project. This is part of Smith River watershed restoration plan (WRP) and is highlighted as a target restoration area. The Smith River is a major recreational corridor and home to historic ranch operations. Hound Creek is a Smith River tributary originating in the northern Big Belt Mountains in Cascade County. Clean Water Act 319 funding will be used to implement Phase 1 of restoration on Hound Creek, realigning the stream away from high eroding banks and reconnecting the stream with the floodplain. This project will restore the channel, slow erosion, reconnect floodplains and improve aquatic habitat. Hound Creek is an important flow contributor to the Smith River and is on the impaired stream list for alteration in stream-side vegetation, chlorophyl-a, excess algal growth, and total nitrogen.

MTU offers our support of this effort and 319 funding on behalf of our more than 5,000 supporters in Montana, especially the Missouri River Flyfishers and Pat Barnes chapters of Trout Unlimited. The goal of improving water and habitat in the Smith is one of our organization's top priorities and the Hound Creek effort being proposed for funding via the High Plains CD fits squarely in the priority, as well as aligning with our mission to conserve, protect and restore coldwater fisheries and their habitats in Montana, a mission we have pursued for more than 60 years via our staff and 13 volunteer chapters across the state. We have collectively invested decades and untold funding in maintaining or improving the health of the Smith River watershed. Most recently that has included fully supporting the development and approval of the Smith River WRP, the first two projects implemented under that Plan, and

the initial development of the Hound Creek project.

Last July (2025), I (David Brooks) toured the lower reaches of Hound Creek as part of an initial assessment of project viability that identified the reach of stream being targeted in this 319 proposal as the highest priority for improving the ecosystem elements herein identified, as well as protecting the landowner's property from further erosion. MTU funded that initial site assessment and has committed funds to the project design. As part of a collaborative effort, MTU has working knowledge of the project basin and HPCD, and is confident this funding will contribute to a larger overall collaboration to restore and repair a resource that is valued for food production as well as recreational opportunities to all Montanans. Our organization (MTU, along with MRF and PBTU chapters) stand ready to provide non-governmental match funding for the 319 grant, should it be awarded.

If you have any further questions don't hesitate to reach out.

Thank you,

David Brooks
Executive Director
Montana Trout Unlimited
david@montanatu.org

Tracy Wendt
President
Missouri River Flyfishers Chapter TU
mrftu406@gmail.com

Kiel Midtlyng
President
Pat Barnes Chapter TU
KMidtlyng@valleybankglacier.com

SMITH RIVER habitat PROJECT

January 20, 2026

MT Department of Environmental Quality
319 Non-point Source Program
2401 Colonial Dr.
Helena, MT 59601

RE: Phase 1: Hound Creek Realignment and Floodplain Connection Project

Dear Members of the DEQ Non point Source Funding Review:

Smith River Habitat Project (SRHP) is writing to support Phase 1 of the Hound Creek Realignment and Floodplain Connection Project. This is part of Smith River basin wide assessment efforts. The Smith River is a tributary of the Missouri River. It rises in southern Meagher County in the Castle Mountains and flows northwest in the valley between the Big Belt and Little Belt mountains, past Smith River State Park in Cascade County. It is a major recreational corridor and home to historic ranch operations. Hound Creek is a Smith River tributary originating in the northern Big Belt Mountains in Cascade County. This funding will be used to complete conceptual restoration projects that would restore the channel, slow erosion, reconnect floodplains and improve aquatic habitat. Hound Creek is on the impaired stream list.

SRHP, a nonprofit organization represented by local landowners, outfitters, and community members, has worked with local, state and federal agencies for the benefit of the Smith River corridor's natural resources for over twenty years.

As part of a collaborative effort, SRHP has working knowledge of the project basin and HPCD, formerly Cascade Conservation District, and is confident this funding will contribute to a larger overall collaboration to restore and repair a resource that is valued for food production as well as recreational opportunities to all Montanans. Overall, we feel funding the *HPCD – Lower Hound Creek Preliminary Restoration Feasibility Analysis* is a sound use of resource funds. If you have any further questions don't hesitate to reach out.

Thank you.

Sherry K Meador, Director
Smith River Habitat Project
(406)431-7638

P. O. Box 5021, 59403-5021

City Manager's Office

February 10, 2026

Montana Department of Environmental Quality
319 Nonpoint Source Program
2401 Colonial Drive
Helena, MT 59601

RE: Phase 1 – Hound Creek Realignment and Floodplain Reconnection Project

Dear Members of the DEQ Nonpoint Source Funding Review Panel:

The City of Great Falls is pleased to submit this letter in support of the High Plains Conservation District's (HPCD) application for Clean Water Act Section 319 funding for Phase 1: Hound Creek Realignment and Floodplain Reconnection.

Hound Creek is a primary tributary to the Smith River, which ultimately flows into the Missouri River upstream of the City of Great Falls' municipal water intake. The City has a direct operational interest in upstream watershed health, as elevated sediment loads and nutrient-driven algae growth increase treatment complexity, chemical usage, and long-term infrastructure strain at the City's water treatment facilities.

Several years ago, City water treatment staff and consulting engineers identified increasing sediment and algae impacts associated with upstream conditions in the Smith River watershed. Restoration efforts that address these sources at their origin provide long-term operational and environmental benefits to downstream communities.

The Phase 1 project proposed by HPCD directly targets known sources of non-point source pollution by reducing accelerated bank erosion, reconnecting floodplains, restoring riparian vegetation, and improving channel stability. These actions are well aligned with the Smith River Watershed Restoration Plan and Montana's water quality goals, and they represent a cost-effective approach to reducing sediment and nutrient loading before it reaches larger river systems and municipal infrastructure.

Beyond water quality improvements, this project reflects a strong collaborative model involving HPCD, Montana Fish, Wildlife & Parks, Trout Unlimited, the Upper Missouri River Watershed Alliance, American Rivers, Missouri River Flyfishers, and private landowners. The City of Great Falls values and supports this type of partnership-driven, science-based restoration work that

delivers measurable public benefits while respecting agricultural operations and recreational resources. Please do not hesitate to contact me if additional information is required.

Sincerely,

Gregory T. Doyon
City Manager
City of Great Falls

MAPS/ DESIGNS

LOWER HOUND CREEK RESTORATION PROJECT - PHASE 1

CASCADE COUNTY, MONTANA

PRELIMINARY - NOT FOR CONSTRUCTION

PROJECT SPONSORS:

HIGH PLAINS CONSERVATION DISTRICT
3515 29TH STREET SW
GREAT FALLS, MONTANA 59404

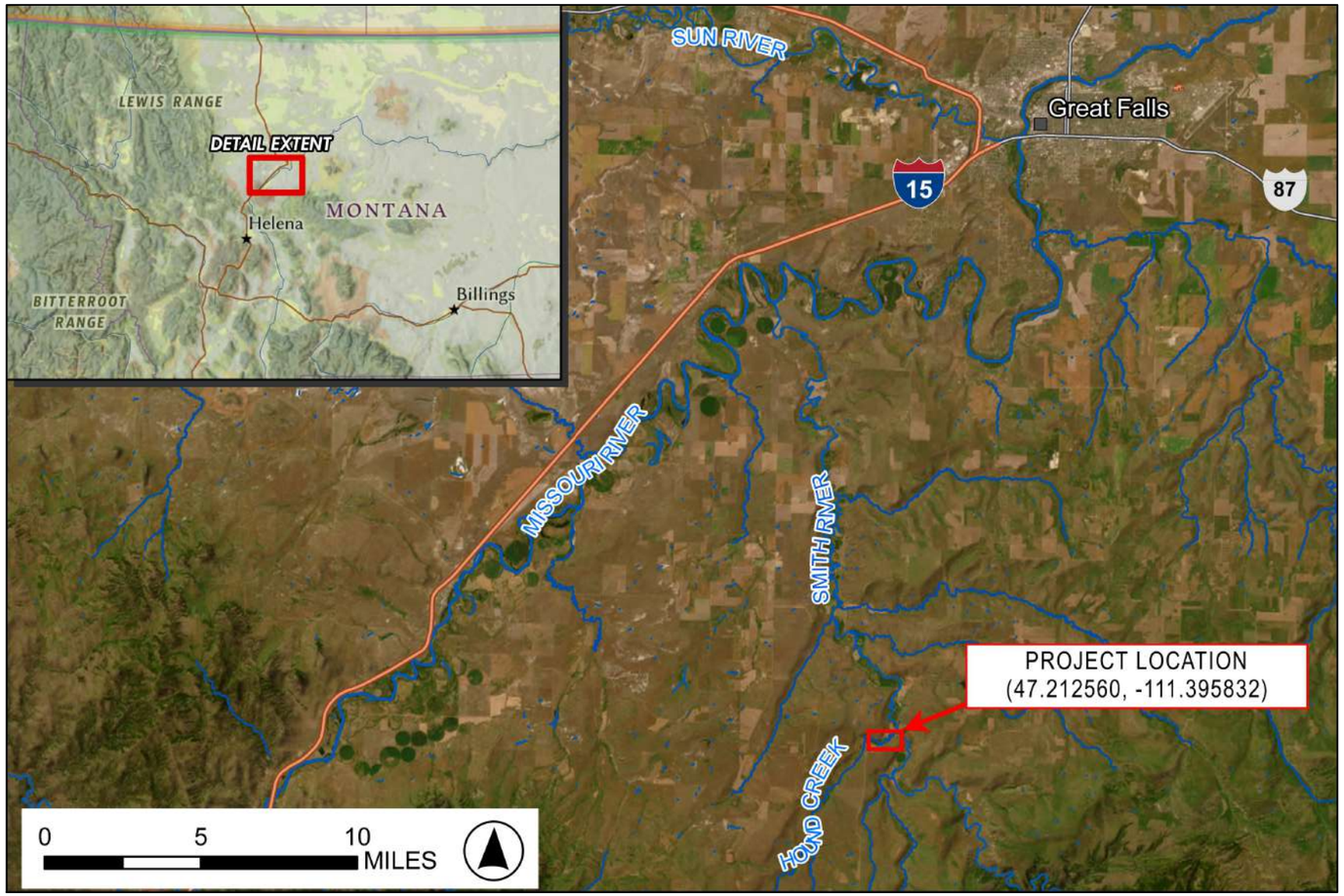
MONTANA TROUT UNLIMITED
312 N HIGGINS, SUITE 200
PO BOX 7186
MISSOULA, MONTANA 59802

MONTANA FISH, WILDLIFE & PARKS
3201 SPURGIN ROAD
MISSOULA, MONTANA 59804

UPPER MISSOURI WATERSHED ALLIANCE
PO BOX 377
HELENA, MONTANA 59624

PREPARED BY:

GEUM ENVIRONMENTAL CONSULTING INC.
307 STATE ST
PO BOX 1956
HAMILTON, MONTANA 59840



PROJECT VICINITY MAP

SHEET INDEX	
SHEET NO.	TITLE
1.0	COVER SHEET
2.0	RESTORATION OVERVIEW
3.0	CROSS SECTIONS - PLAN VIEW
3.1	CROSS SECTIONS - PROFILE VIEWS
D.1	LARGE WOOD HABITAT STRUCTURE DETAIL
D.2	WOOD AND WILLOW STREAMBANK TREATMENT

PROJECT DESCRIPTION

HOUND CREEK IS LISTED AS "NOT FULLY SUPPORTING" MULTIPLE BENEFICIAL USES ON THE 2022/2024 CLEAN WATER ACT 303d LIST. THE CAUSES OF IMPAIRMENT INCLUDE CHLOROPHYLL-A AND TOTAL NITROGEN POLLUTANTS AND ALTERATION IN STREAM-SIDE VEGETATION COVER WITH GRAZING IN RIPARIAN AREAS LISTED AS THE SOURCE OF IMPAIRMENTS. HOUND CREEK IS IMPORTANT IN A FISHERIES CONTEXT BECAUSE IT PROVIDES SPAWNING AND REARING HABITAT FOR THE SMITH RIVER TROUT FISHERY.

SEVERAL PARTNERS INCLUDING THE HIGH PLAINS CONSERVATION DISTRICT, UPPER MISSOURI WATERSHED ALLIANCE, MONTANA TROUT UNLIMITED, AND MONTANA DEPARTMENT OF FISH, WILDLIFE & PARKS ARE WORKING TOGETHER TO PURSUE OPPORTUNITIES TO IMPROVE WATER QUALITY AND INSTREAM HABITAT ON LOWER HOUND CREEK. THE PROJECT SITE IS LOCATED ON PRIVATE LAND JUST UPSTREAM OF THE CONFLUENCE OF HOUND CREEK AND THE SMITH RIVER.

PROJECT GOALS :

- REDUCE ACCELERATED LATERAL EROSION INTO HAYFIELD AND FINE SEDIMENT INPUTS TO HOUND CREEK
- INCREASE FLOODPLAIN CONNECTIVITY
- RESTORE WOODY RIPARIAN VEGETATION
- EXPAND AND IMPROVE FISH SPAWNING AND REARING HABITAT
- RESTORE AQUATIC HABITAT DIVERSITY AND COMPLEXITY

geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
NAT GEO BASEMAP, ESRI IMAGERY, NHD, MSDI TRANSPORTATION

PRELIMINARY - NOT FOR CONSTRUCTION

COVER SHEET

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88

PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)

DRAWN BY: NPLATT

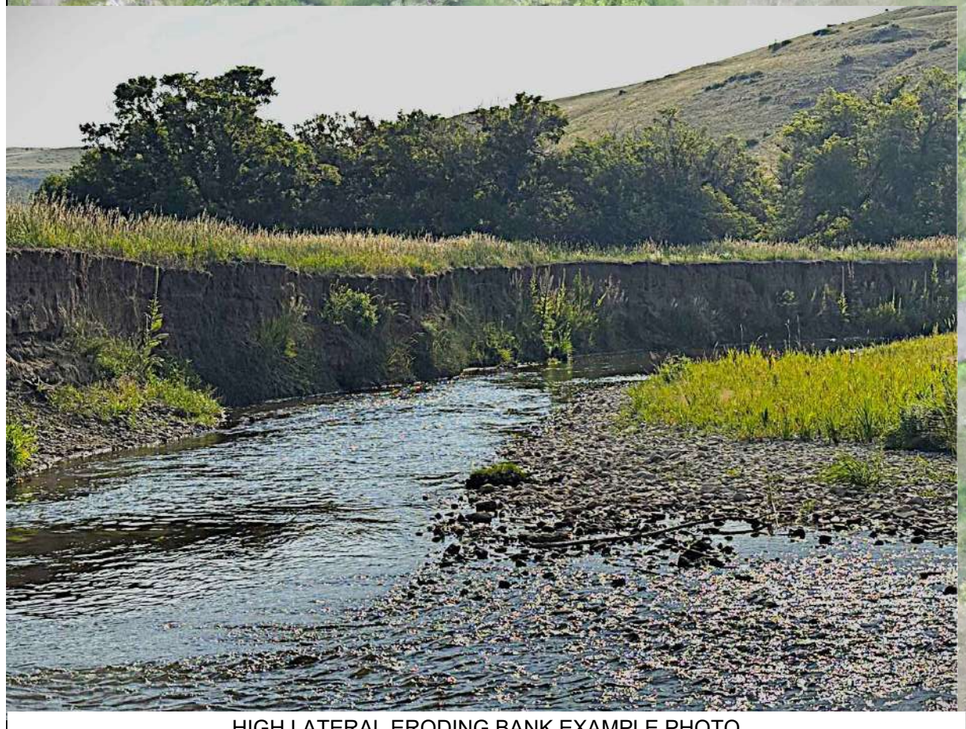
DESIGNED BY: ASACRY

DATE: 3/5/2026

SHEET
1.0

- LARGE WOOD HABITAT STRUCTURE
- LAYBACK ERODING BANK
- WOOD & WILLOW STREAMBANK TREATMENT
- ELECTRIC FENCE
- FILL ABANDONED CHANNEL SEGMENT
- FLOODPLAIN GRADING TO RESTORE CONNECTIVITY
- NEW CHANNEL CONSTRUCTION

0 100 200 400 FEET



HIGH LATERAL ERODING BANK EXAMPLE PHOTO

PHOTO TAKEN ON 8/22/2025 SHOWING THE LATERALLY ERODING BANK IN HOUND CREEK PHASE 1 PROJECT AREA. THIS BANK WOULD BE LAYED BACK AND THE EXISTING CHANNEL SEGMENT WOULD BE ABANDONED AND FILLED TO CREATE CONNECTED FLOODPLAIN.

Geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
GEUM UAV ORTHO PHOTO

PRELIMINARY - NOT FOR CONSTRUCTION

RESTORATION OVERVIEW

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88

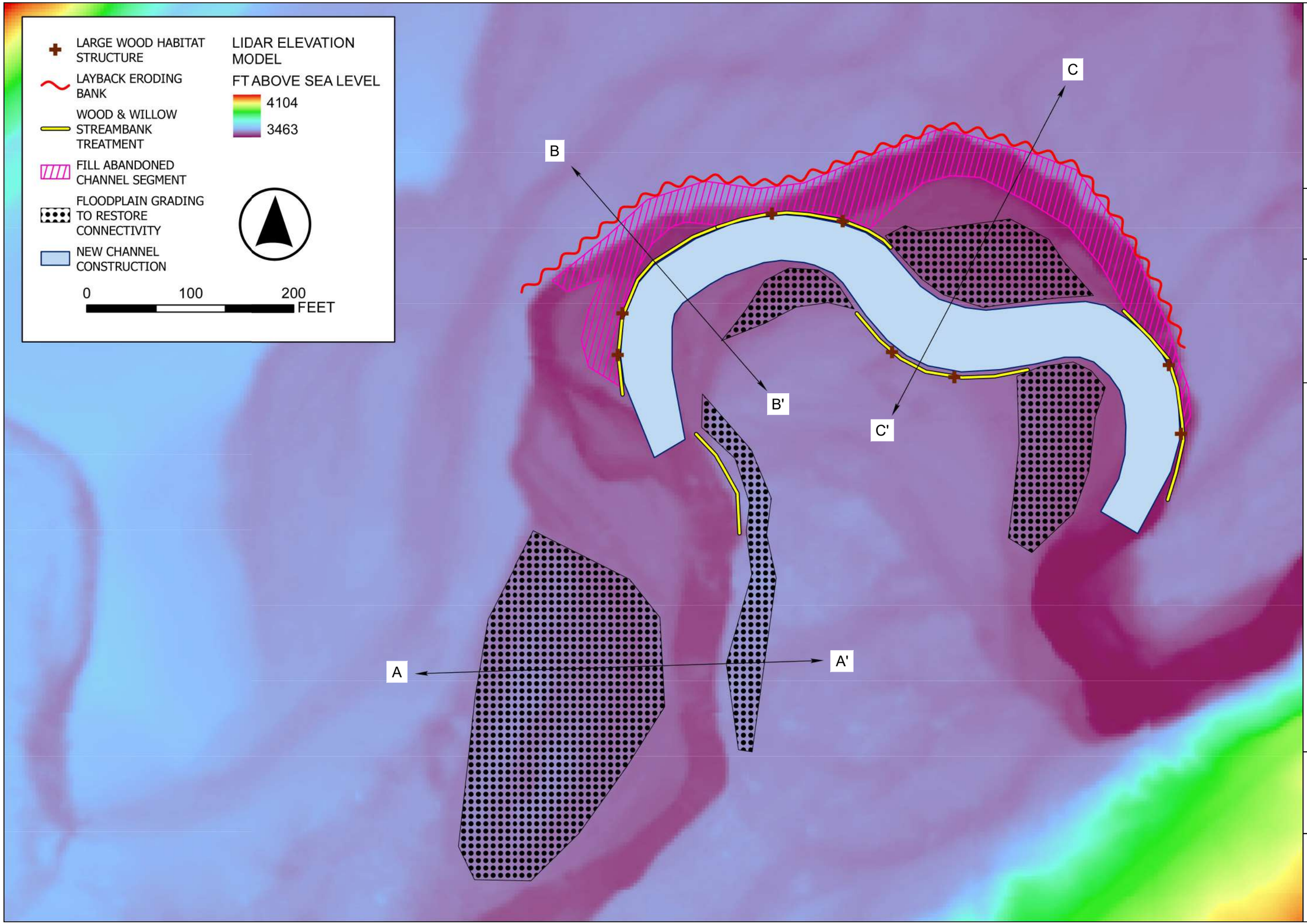
PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)

DRAWN BY: NPLATT

DESIGNED BY: ASACRY

DATE: 3/5/2026

SHEET
2.0



Geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
USGS 3DEP LIDAR

PRELIMINARY - NOT FOR CONSTRUCTION

CROSS SECTIONS - PLAN VIEW

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88

PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)

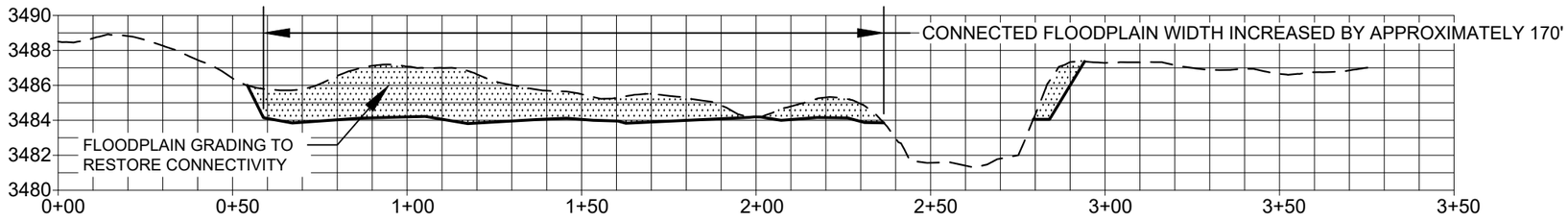
DRAWN BY: NPLATT

DESIGNED BY: ASACRY

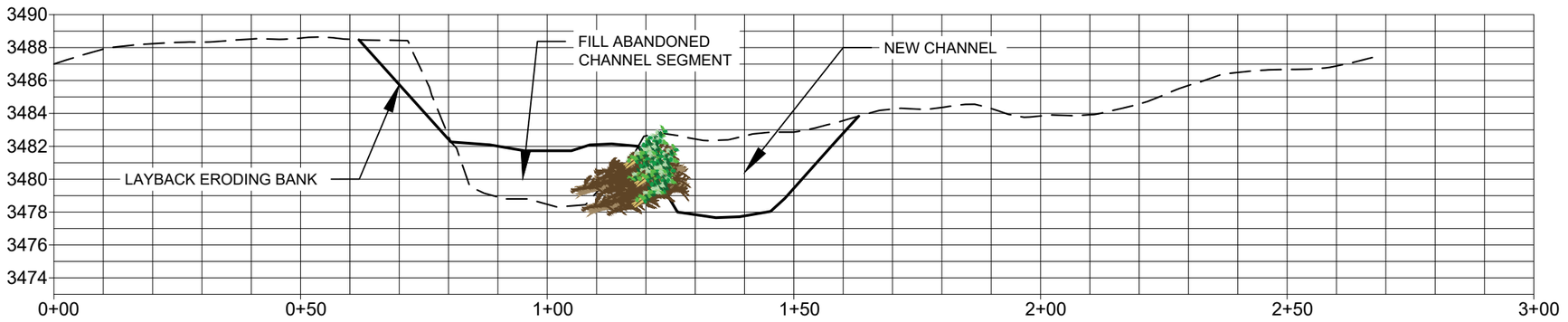
DATE: 3/5/2026

SHEET
3.0

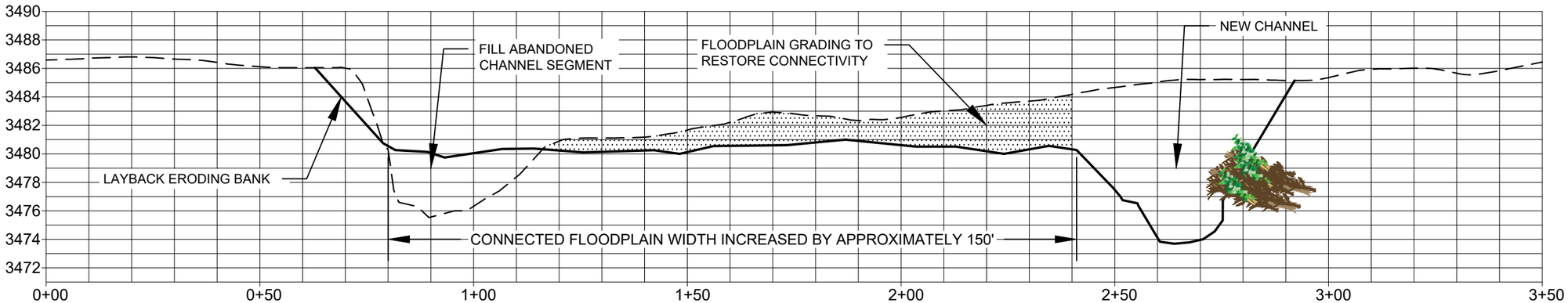
A - A'
PROFILE VIEW



B - B'
PROFILE VIEW

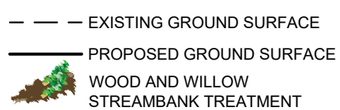


C - C'
PROFILE VIEW



PROFILE NOTES

1. SEE SHEET 3.0 FOR PLAN VIEW OF CROSS SECTIONS A - A', B - B' AND C - C'.
2. NEW CHANNEL DIMENSIONS SHOWN IN PROFILE VIEWS ARE APPROXIMATE. NEW CHANNEL CROSS SECTION GEOMETRY WILL BE DESIGNED TO PROMOTE CLEAN RIFFLES AND DEEP POOLS.
3. FLOODPLAIN GRADING ELEVATIONS AND EXTENTS ARE APPROXIMATE. PROPOSED FLOODPLAIN GRADES AND EXTENTS WILL BE DESIGNED TO MAXIMIZE FLOODPLAIN CONNECTIVITY AND PROMOTE NATIVE RIPARIAN VEGETATION RECRUITMENT.



Geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
USGS 3DEP LIDAR

PRELIMINARY - NOT FOR CONSTRUCTION

CROSS SECTIONS - PROFILE VIEWS

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88
PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)
DRAWN BY: NPLATT
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DATE: 3/5/2026

SHEET
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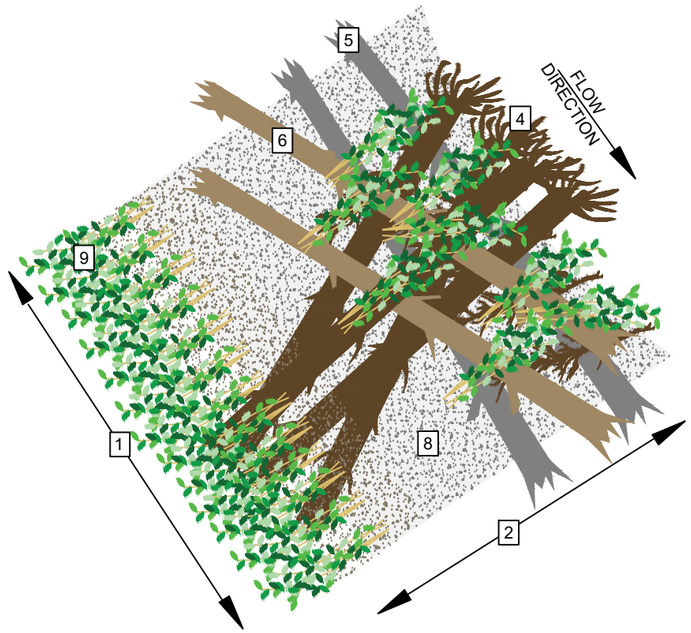
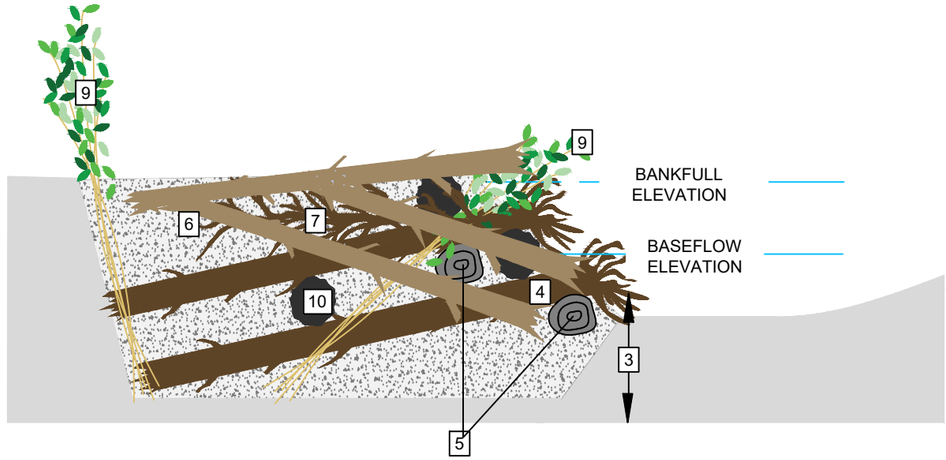


LARGE WOOD HABITAT STRUCTURE - PLAN VIEW
NTS

DIMENSIONS AND MATERIALS	
1	AVERAGE STRUCTURE LENGTH: 10-15'
2	AVERAGE STRUCTURE WIDTH: 10'
3	MAXIMUM SCOUR DEPTH: 3'
4	ROOTWAD LOG
5	FOOTER LOG
6	DEFLECTOR LOG
7	BRUSH AND SMALL WOOD
8	STREAMBANK FILL
9	WILLOW CUTTINGS
10	ANCHORING BOULDERS
11	AVERAGE STRUCTURE HEIGHT: 2'



LARGE WOOD HABITAT STRUCTURE - SECTION VIEW
NTS

LARGE WOOD HABITAT STRUCTURE MATERIAL SCHEDULE		
ITEM	DIMENSIONS	QUANTITY/STRUCTURE
ROOTWAD LOG	3' MIN. ROOTWAD D, 12" MIN. D, 15' L	4
FOOTER LOG	8-12" D, 15' L	2
DEFLECTOR LOG	6-10" D, 10-15' L	2
BRUSH AND SMALL WOOD	3-8" D, 8-12' L	8
WILLOW CUTTINGS*	0.5-1" D, 6-8' L	100
STREAMBANK FILL	NATIVE	5 CY
SUBGRADE EXCAVATION	10 CY	10 CY
ANCHORING BOULDER	24" ANGULAR	7

LARGE WOOD HABITAT STRUCTURE EXAMPLE PHOTOS

WORK DESCRIPTION
THIS WORK INCLUDES INSTALLATION OF LARGE WOOD HABITAT STRUCTURES AT THE LOCATIONS SHOWN ON SHEET 2.0. THE INTENT OF THIS STRUCTURE IS TO PROVIDE TEMPORARY BANK STABILIZATION BY DIRECTING THE FLOW AWAY FROM THE STREAMBANK AND TO CREATE HYDRAULIC CONDITIONS THAT MAINTAIN A POOL. THIS STRUCTURE ALSO PROVIDES A LOW STRESS AREA FOR BANK VEGETATION TO ESTABLISH. THE STRUCTURE PROVIDES MULTIPLE LAYERS OF WOOD AND BRUSH TO INCREASE CHANNEL ROUGHNESS ALONG THE BANK AND INCREASE AQUATIC HABITAT DIVERSITY.

1 / D.1 LARGE WOOD HABITAT STRUCTURE DETAIL
NTS

Geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
GEUM PHOTOS

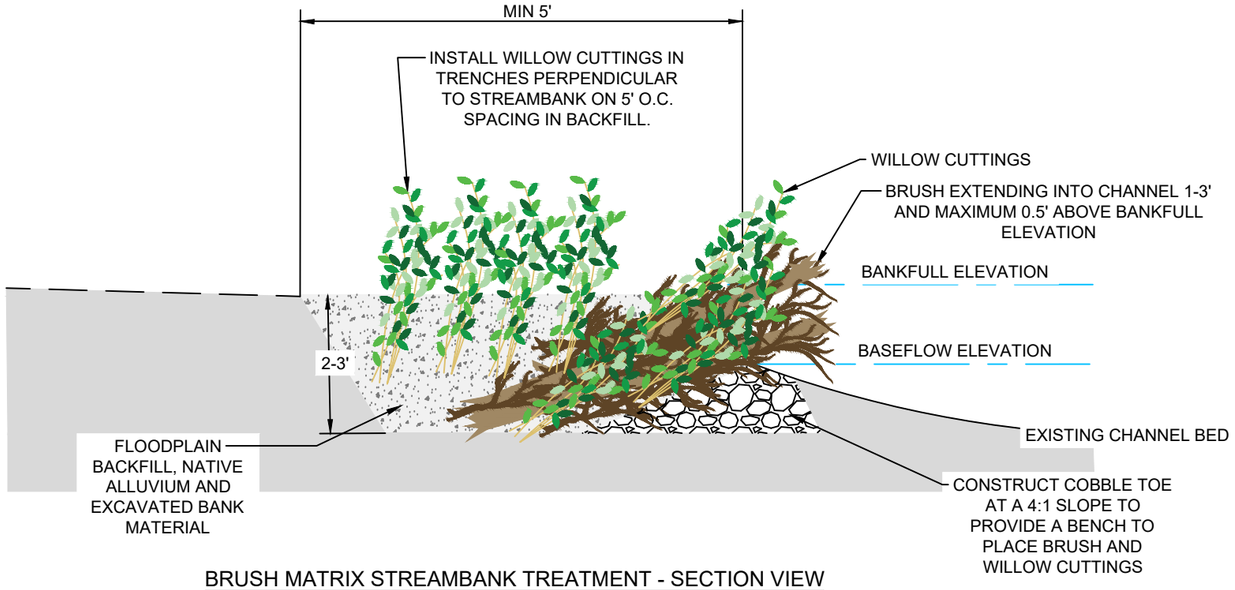
PRELIMINARY - NOT FOR CONSTRUCTION

LARGE WOOD HABITAT STRUCTURE DETAIL

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88
PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)
DRAWN BY: NPLATT
DESIGNED BY: ASACRY
DATE: 3/5/2026

SHEET
D.1



BRUSH MATRIX STREAMBANK TREATMENT - SECTION VIEW
NTS

WORK DESCRIPTION

THIS WORK INCLUDES INSTALLATION OF BRUSH MATRIX STREAMBANK TREATMENTS AT THE LOCATIONS SHOWN ON SHEET 2.0. THE INTENT OF THESE STRUCTURES IS TO PROVIDE TEMPORARY BANK STABILIZATION AND CREATE A COMPLEX, VEGETATED BANK MARGIN THAT CREATES AQUATIC HABITAT AND SUPPORTS VEGETATION ESTABLISHMENT.

BRUSH MATRIX STREAMBANK TREATMENT MATERIAL SCHEDULE		
ITEM	DIMENSIONS	QUANTITY/LINEAR FOOT
BRUSH	2"-8" D, 6'-8' L	3 PIECES
WILLOW CUTTINGS	0.5"-1" D, 6'-8' L	5 PIECES
TOE COBBLE MIX	3" MINUS	0.3 CUBIC YARD
FLOODPLAIN BACKFILL	NATIVE	1 CUBIC YARD

BRUSH MATRIX STREAMBANK TREATMENT EXAMPLE PHOTOS

1
D.2
BRUSH MATRIX STREAMBANK TREATMENT DETAIL
NTS

Geum Environmental Consulting
307 STATE ST.
HAMILTON, MT 59840
406.363.2353
geumconsulting.com

DATA SOURCES:
GEUM PHOTOS

PRELIMINARY - NOT FOR CONSTRUCTION

WOOD AND WILLOW STREAMBANK TREATMENT

LOWER HOUND CREEK RESTORAITON PROJECT - PHASE 1
CASCADE COUNTY, MONTANA

DATUM: NAD83/NAVD88

PROJECTION: MT STATE PLANE, INTL FT (FIPS2500)

DRAWN BY: NPLATT

DESIGNED BY: ASACRY

DATE: 3/5/2026

SHEET
D.2

OTHER ATTACHMENTS

307 State Street
P.O. Box 1956
Hamilton, Montana 59840
Phone: 406-363-2353
http://www.geumconsulting.com

TO: Tenlee Atchison, High Plains Conservation District
Ken McKamey, McKamey Ranch Company
David Brooks, Montana Trout Unlimited
Sherry Meador, Upper Missouri River Watershed Association
Adam Geik, Montana Fish, Wildlife and Parks

FROM: Amy Sacry, Senior Restoration Ecologist and Jessica Erben, Restoration Specialist

DATE: March 11th, 2026

RE: Lower Hound Creek Restoration Feasibility Assessment (319 application version)

Introduction

Geum Environmental Consulting (Geum) was contracted by Montana Trout Unlimited to complete a restoration feasibility analysis for approximately 3,000 feet of lower Hound Creek on the McKamey Ranch, located in Cascade County, Montana in Section 19, Township 17N, Range 03E (Figure 1). Hound Creek originates in the northern Big Belt mountains and flows 30.8 miles before joining the Smith River. Hound Creek is the main tributary flow contributor to the lower Smith River, which enters the Missouri River just south of Great Falls, Montana.

In September, 2024, as part of the Smith River basin wide assessment, and at the request of the McKamey Ranch landowner, Amy Sacry with Geum visited the property to look at concerns regarding stream erosion along both the Smith River and Hound Creek and erosion concerns at the Hound Creek confluence with the Smith River. Sherry Meador with the Upper Missouri River Watershed Association (UMOWA) and Adam Geik, fisheries biologist with Montana, Fish, Wildlife and Parks (FWP) also attended this site review. At this site review, it was decided that addressing streambank erosion along the Smith River would be prohibitively expensive. A more comprehensive review of the site was deemed necessary to determine a feasible solution for erosion concerns along Hound Creek. David Brooks with Montana Trout Unlimited (MTU) provided funding for Geum to collect drone imagery of the site and conduct a more thorough site review to determine feasibility of addressing erosion concerns and overall restoration potential of Hound Creek on the property.

In August, 2025, Geum conducted a site review with the landowner, MTU, UMOWA, and FWP. The field review identified three conceptual restoration projects that could be completed on Hound Creek on the McKamey Ranch that would address landowner concerns and provide natural resource benefits. This memo describes the results of the field review and provides descriptions and approximate costs for each restoration project.

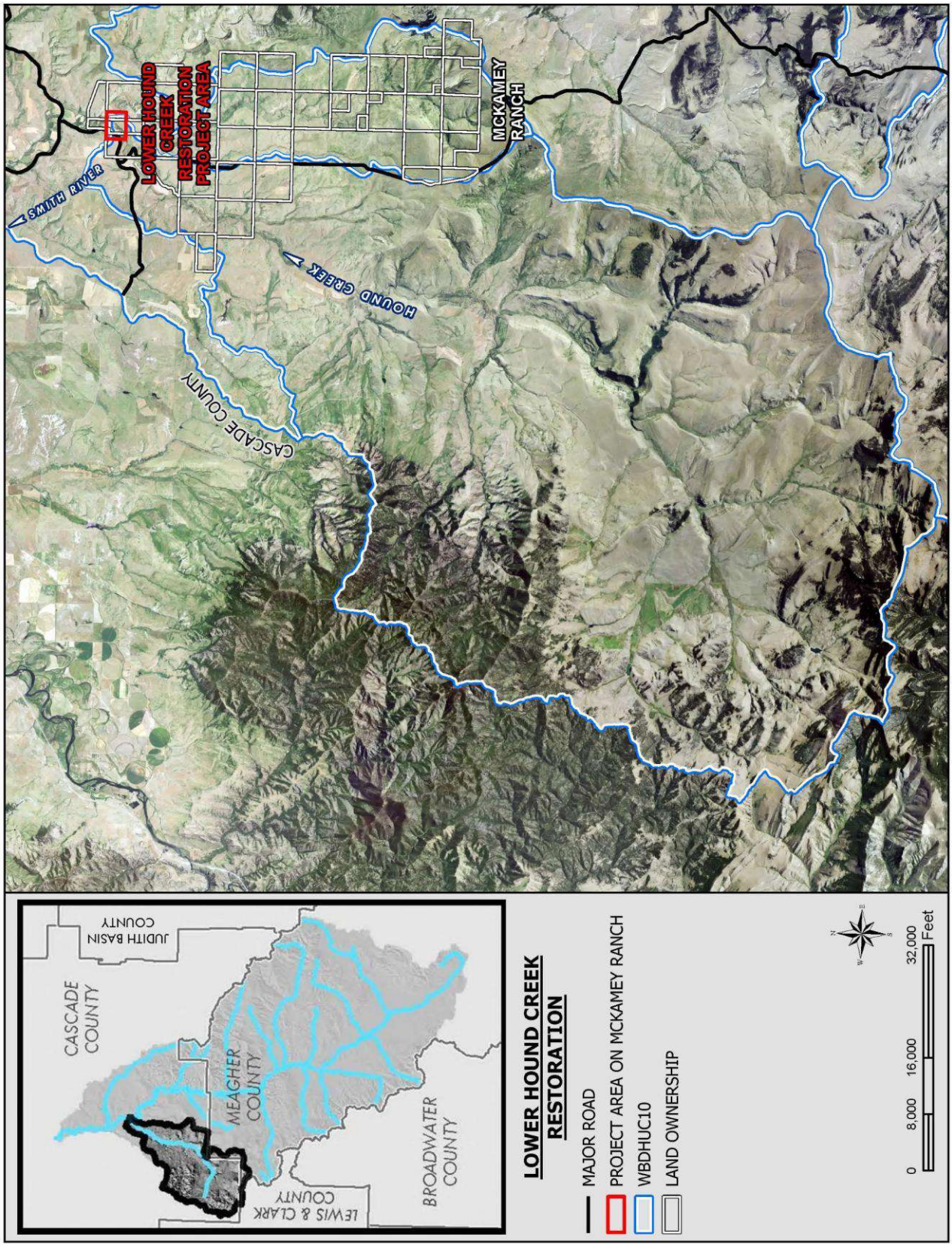


Figure 1. Vicinity map showing Hound Creek watershed, location of McKamey Ranch on Hound Creek, and approximate location of the Lower Hound Creek Restoration Project.

Project Background

A basinwide assessment and Watershed Restoration Plan for the Smith River (Smith River Assessment) was finalized in December, 2024 and identified primary issues in the watershed along with actions that could be taken to address those issues (Geum and Slough Creek, 2024). The primary issues identified for Hound Creek in the Smith River Assessment include:

- agricultural encroachment;
- woody riparian vegetation loss;
- channelization, channel incision, and loss of floodplain connectivity from floodplain conversion and agriculture;
- erosion and sedimentation from removal of woody riparian vegetation, channelization, and agriculture;
- irrigation withdrawals and floodplain dewatering causing reduced late season streamflow;
- grazing, including concentrated livestock use and winter feeding areas along the stream;
- elevated nutrients and E. coli from livestock grazing and agriculture;
- elevated turbidity from streambank erosion, irrigation return flows, and erosion from loss of vegetation during the 2021 Harris Mountain Fire;
- elevated water temperature from woody vegetation removal;
- nutrient levels and stream temperatures high enough to support nuisance algae growth; and
- abandoned coal mines with unknown effects on water quality.

Hound Creek is on Montana's List of Impaired Waters. The causes of impairment include chlorophyll-a and total nitrogen pollutants and alteration in stream-side vegetation cover with grazing in riparian areas listed as the source of impairments.

Restoration actions identified for Hound Creek in the Smith River Assessment include:

- grazing management, including development of off-site water and alternatives to concentrated livestock use along the stream;
- create riparian buffers and increase woody riparian vegetation cover;
- floodplain reconnection and passive water storage projects;
- nutrient management through reducing streambank erosion, increasing floodplain connectivity and floodplain wetland area, and reducing livestock overwintering on the stream and concentrated livestock use areas;
- irrigation efficiency projects;
- streambank restoration to reduce accelerated erosion and increase woody riparian vegetation cover;
- channel restoration to improve habitat for Smith River spawning brown trout population; and
- protect conservation populations of westslope cutthroat trout in Tyrell Creek and Hound Creek Reservoir.

Existing Conditions

The lower Hound Creek restoration feasibility review included evaluating existing imagery and LiDAR data, collecting and reviewing high resolution drone imagery, and walking Hound Creek from approximately 2,000 channel-feet upstream of the McKamey Ranch to the confluence with the Smith River. Photographs and locations of existing site conditions and resource concerns were recorded during the site review. Several years of

Montana National Agriculture Imagery Program (NAIP) imagery is available for lower Hound Creek (2005, 2009, 2019, 2021, 2023). Imagery from 1953 is also available for Lower Hound Creek. July, 2025 drone imagery is provided in Attachment A. Historical imagery is provided in Attachment B.

LiDAR data and historical imagery show multiple old channel scrolls and low swale features that indicate extensive changes in the Hound Creek channel location over time (Figure 2 and Figure 3). The LiDAR data also shows that the channel is entrenched throughout the project reach with limited floodplain connectivity. Hound Creek alternates between long, low gradient, entrenched glide features where the channel abuts natural confining high terraces (Figure 3) with variable substrate and high amounts of fine sediment deposition (Figure 4); short riffles, many of which are embedded with fine sediments (Figure 5); and shallow over-widened sections (Figure 6). Riffles with clean, well-sorted cobble and gravel are only present in split-flow locations where slopes are locally steeper (Figure 7). In-channel cover is sparse and comprised of large boulders where the stream abuts adjacent hillslopes and occasionally large woody debris (Figure 8).

Woody riparian vegetation along the channel is sparse and virtually absent downstream of the access road bridge (Figure 9). Remnant box elder forests occur in the historical floodplain upstream of the access bridge (Figure 10). Along remnant channel scrolls and where Hound Creek joins the Smith River, black cottonwood (*Populus balsamifera*) stands are present (Figure 11). Sandbar/coyote willow (*Salix exigua*) occurs occasionally on low elevation benches and bars in the project reach. Other woody riparian vegetation includes red-osier dogwood (*Cornus sericea*), chokecherry (*Prunus virginiana*), and currants and gooseberries (*Ribes* spp.). Development of new floodplain surfaces and initiation of riparian vegetation succession is lacking throughout the project reach due to entrenchment, lack of floodplain connectivity, and a dominance of introduced pasture grasses in the floodplain. Only two areas of floodplain development were observed – across from a large eroding streambank near the upstream end of the reach where a large point bar has formed (Figure 12) and at the confluence with the Smith River. Most riparian vegetation is herbaceous and consists of a mix of native and introduced grass and forb species with sedges (*Carex* spp) present in lower elevation, wetter areas..

Immediately upstream of the McKamey Ranch is a short reach with extensive floodplain connection, natural recruitment of willow and cottonwood on depositional surfaces, and diverse aquatic habitat (Figure 19). These conditions are largely a result of beaver activity in this reach. This ecological reference area supports more diverse aquatic habitat, deeper water, more pools, more cover, cleaner riffles, areas with extensive natural recruitment of cottonwoods, large willow stands actively used by beaver for forage, and beaver dam, cache, and hut building (Figure 13, Figure 14, Figure 15, Figure 16, Figure 17, and Figure 18).

Based on the field review, the primary issues identified for lower Hound Creek include:

- channel entrenchment and loss of connection with the floodplain; • channel over-widening;
- accelerated lateral erosion;
- reduced availability of clean spawning gravels for brown trout; and
- reduced aquatic habitat and streambank diversity.

These issues are the result of the loss of woody vegetation from land conversion, removal of beaver, livestock grazing, and extensive historical channel straightening upstream of the project area where Millegan Road crosses Hound Creek. The channel downstream of this road crossing has been adjusting vertically and laterally since this straightening occurred in the early 1950s.

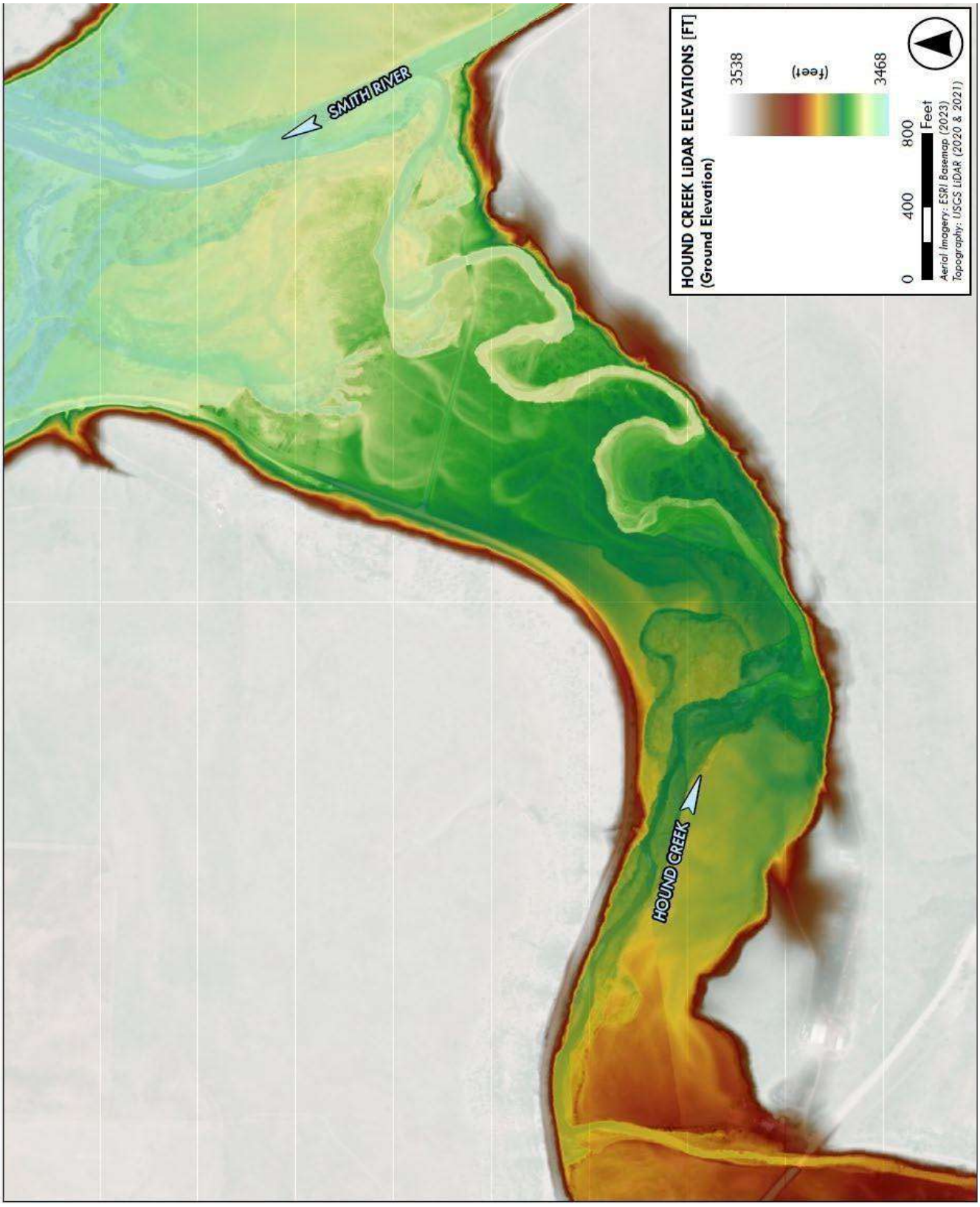


Figure 2. USGS 2020 & 2021 LiDAR data for lower Hound Creek.

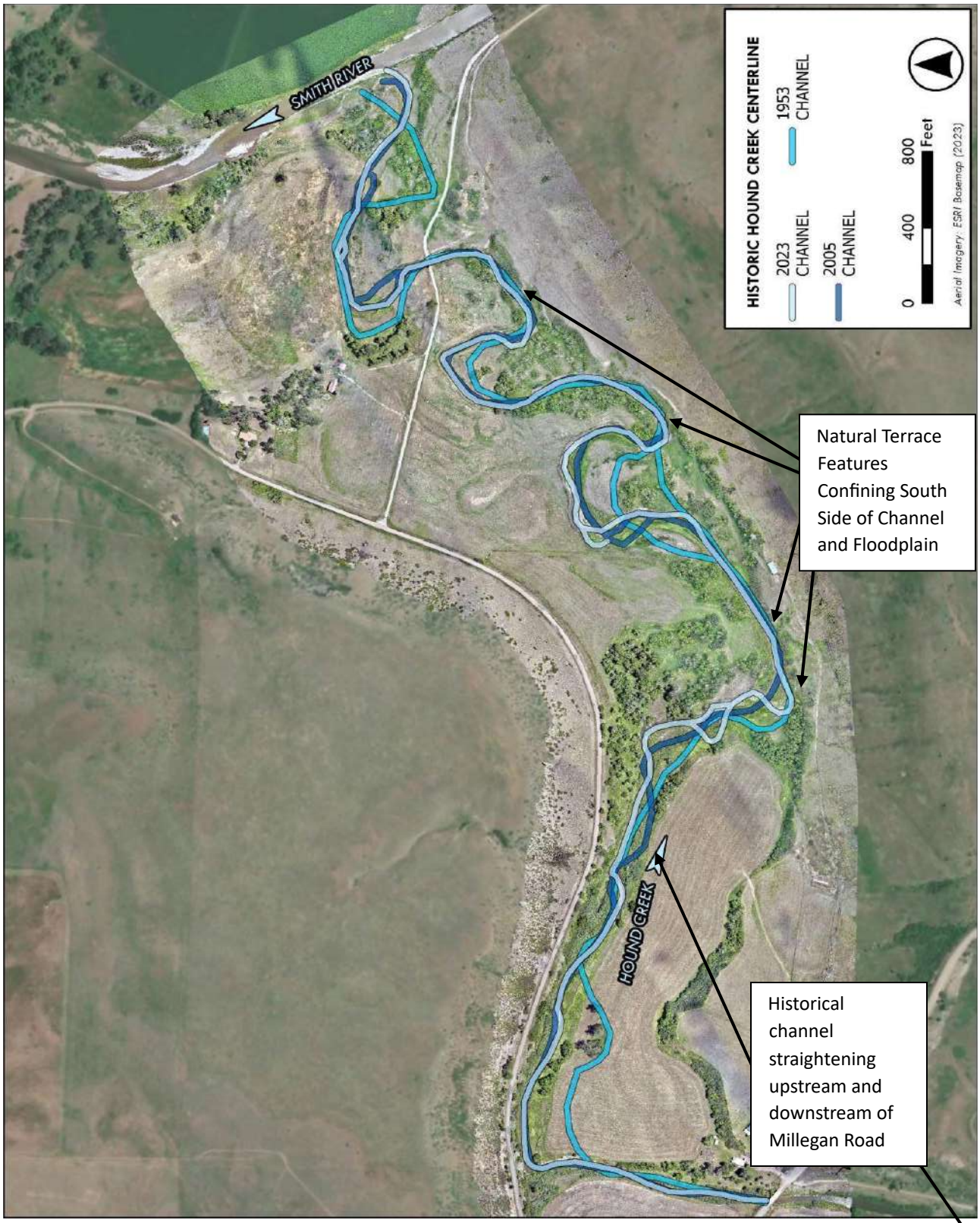


Figure 3. Lower Hound Creek approximate channel locations over time.

Figure 4. Entrenched conditions along Hound Creek on the McKamey Ranch.

Figure 5. Fine sediment deposition on riffle.

Figure 6. Over-widened condition at upstream boundary of the McKamey Ranch.

Figure 7. Riffles in areas with split flows tend to have less fine sediment deposition and more small gravel.

Figure 8. In-channel cover is sparse in the project reach, but occasional large woody debris cover elements are present.

Figure 9. Below the private road access bridge, no woody riparian vegetation is present along the channel.

Figure 10. Box elder stands on historical floodplain surfaces along Hound Creek and typical herbaceous riparian vegetation consisting of introduced pasture grasses, sedges, and a mix of native and invasive forb species.

Figure 11. Black cottonwood stands along historical channel near upstream end of project reach (photo left) and black cottonwood near Smith River with beaver cut at base.

Figure 12. Point bar and floodplain development adjacent to long vertical eroding bank near upstream end of the McKamey Ranch. This is one of the few areas where natural recruitment of willow and cottonwood were observed.

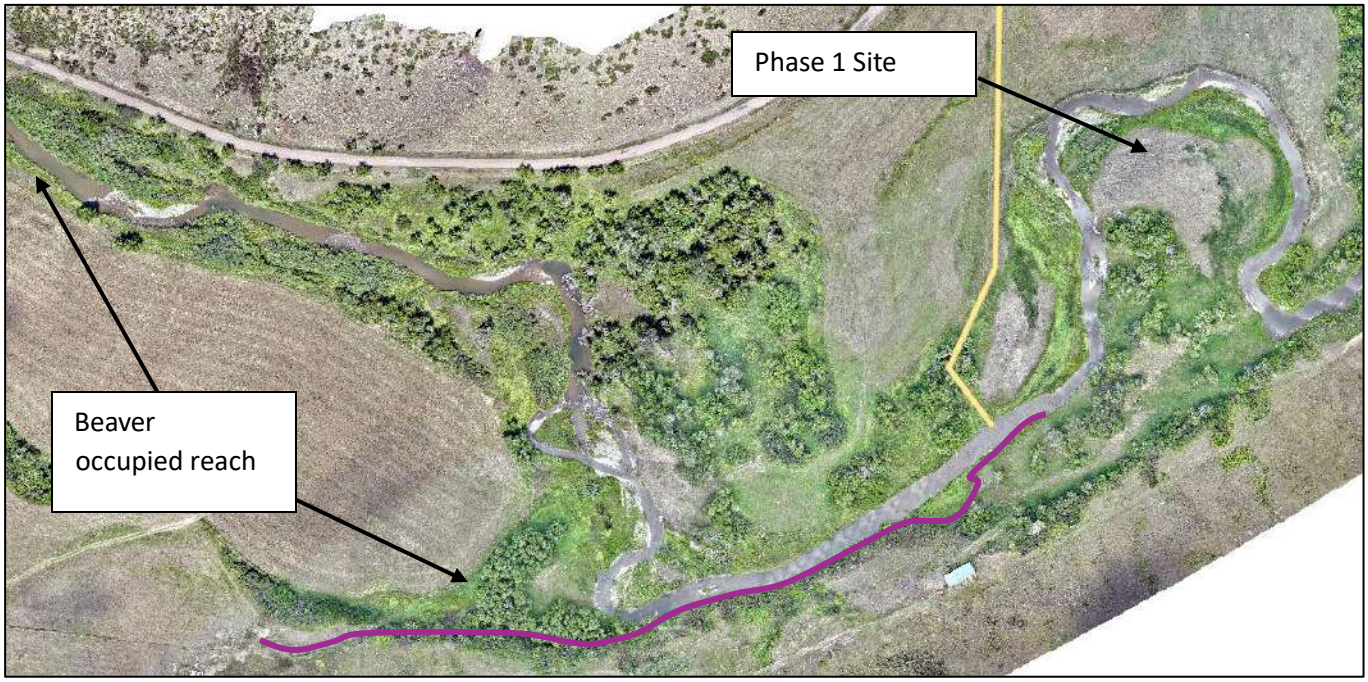


Figure 13. Location of beaver occupied reach with diverse habitat on adjacent landowner's property upstream the review reach. Purple line is along a natural terrace feature that confines the channel and floodplain upstream of the property. The channel along this terrace is a low gradient glide feature.

Figure 14. Diverse aquatic and riparian habitat upstream of McKamey Ranch where beaver are present and increasing water elevations and floodplain connectivity. This area has more woody debris and denser, more divers woody riparian vegetation including large stands of sandbar willow. The dense vegetation and multiple channels appear to limit livestock use of the area.

Figure 15. Extensive colonization of cottonwood on depositional surfaces in beaver occupied reach where floodplain connectivity is greater and livestock grazing appears to be limited (left photo) and deep water with woody debris providing in channel cover (right photo).

Figure 16. Clean riffle in split flow reference area

Figure 17. Beaver dams at upstream location above McKamey Ranch.

Figure 18. Beaver hut and fresh cuttings.

Restoration Concepts

Based on conditions observed during the August 21 site review, three potential restoration project phases were identified on Lower Hound Creek on the McKamey Ranch that would address landowner concerns and/or meet restoration goals described in the Smith River Assessment:

- **Phase 1**: Hound Creek Realignment and Floodplain Reconnection
- **Phase 2**: Hound Creek Smith River Floodplain Reconnection
- **Phase 3**: Hound Creek Aquatic Habitat and Floodplain Enhancement

The location of each potential project phase is shown in Figure 19. The original Hound Creek Restoration Feasibility memo has been revised for the 319 grant application to focus on Phase 1, which funding is being requested for. A brief description of future potential phases 2 and 3 are provided below. The rest of this section focuses on Phase 1.

Phase 2 of the Lower Hound Creek Restoration Project includes relocating the outlet of Hound Creek to reduce bank erosion, increase connectivity with the Smith River floodplain, and restore natural floodplain processes and increase woody riparian vegetation cover along both Hound Creek and the Smith River. The Phase 2 area is already fenced from livestock so some woody riparian vegetation is present.

Restoration objectives for Phase 2 include:

- reduce erosion at the mouth of Hound Creek;
- increase Smith River and Hound Creek floodplain connectivity;
- restore mosaic of willow stands and cottonwood gallery forest in dry floodplain area currently dominated by smooth brome;
- increase passive water storage at the confluence Hound Creek and Smith River; and
- reduce erosion on right bank of Smith River downstream of current Hound Creek confluence where McKamey Ranch pump site is located.

Restoration treatments to achieve Phase 2 restoration objectives are as follows:

- relocate Hound Creek into historical Smith River split flow channel or historical 1950s channel location to increase floodplain connection between Hound Creek and the Smith River, increase passive water storage, and reduce flow/energy at pump location on Smith River streambank on the opposite side of the river;
- construct large wood and alluvium structures (beaver habitat structures) in Hound Creek to promote passive water storage and floodplain connectivity;
- construct floodplain depressions (swales) and small connector channels in Smith River floodplain to increase connected floodplain surfaces, increase passive water storage, and promote conditions for willow and cottonwood establishment; and
- construct a wood, willow, and cottonwood streambank treatment along the Smith River adjacent to the floodplain treatment area to further promote cottonwood and willow establishment and provide erosion control for high flows routing across the interconnected Hound Creek/Smith River floodplain.

Phase 3 of the Lower Hound Creek Restoration Project includes enhancing aquatic habitat and floodplain diversity. This phase also includes treatment of a high priority section of a second actively eroding streambank approaching the private access road on the property. Phase 3 work sites would be dispersed throughout lower Hound Creek in areas within existing split flows or other larger areas of developed floodplain. Livestock grazing is not limiting aquatic habitat and floodplain connectivity in these areas so fencing them pre-project would not increase recovery of either woody vegetation or habitat in these areas.

Restoration objectives for Phase 3 include:

- increase floodplain connectivity;
- restore woody riparian vegetation;
- restore aquatic habitat diversity; and
- reduce streambank erosion towards access road.

Restoration treatments to achieve Phase 3 restoration objectives are as follows:

- place large woody debris in channel and floodplain;
- construct bed aggradation structures at the head of existing split flows; and
- construct wood and willow streambank treatment along high priority section of eroding streambank and lower adjacent inside meander bend and fence this area to allow streambank vegetation to establish.

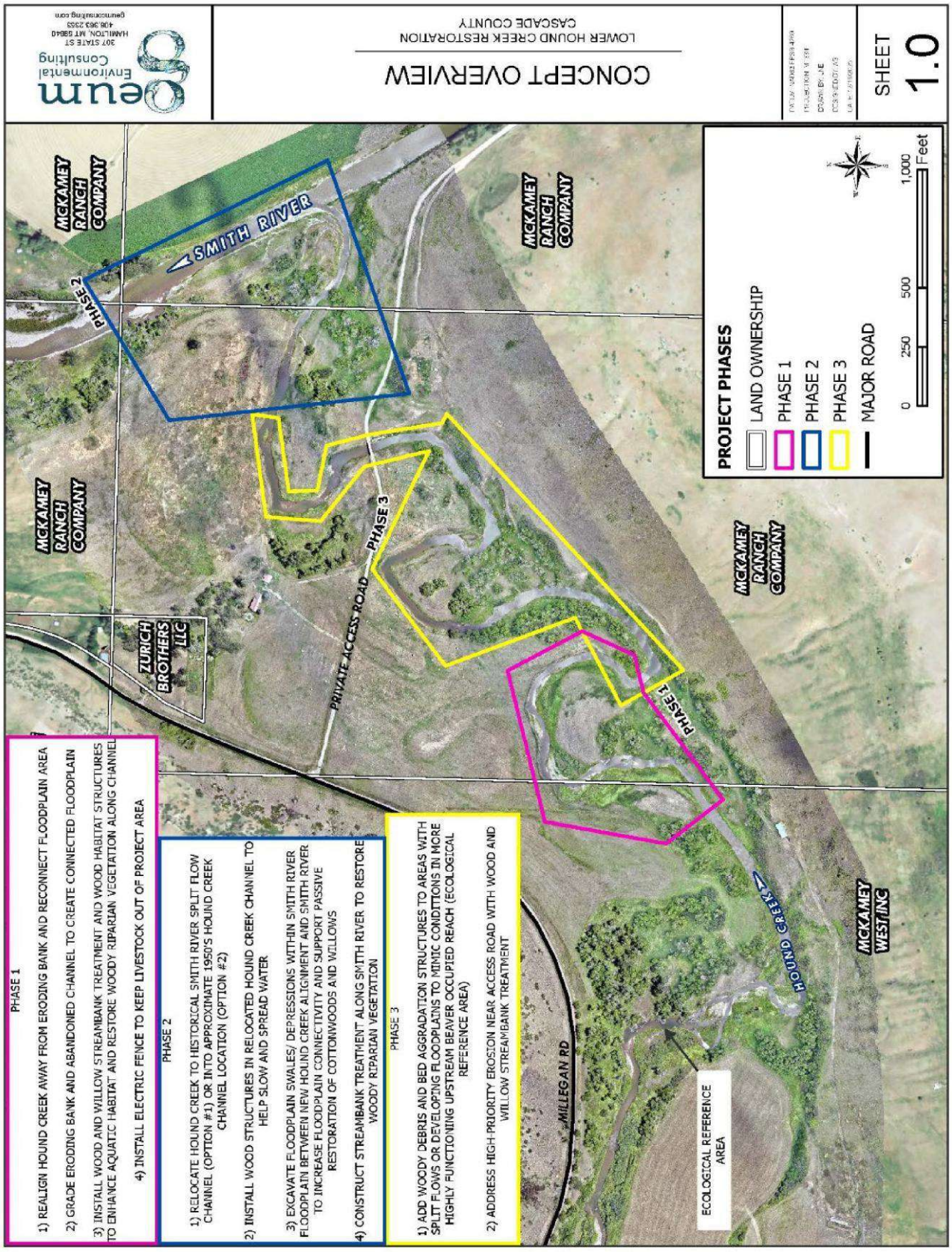


Figure 19. Lower Hound Creek Restoration Project phase location and treatment overview.

PHASE 1: Hound Creek Realignment and Floodplain Reconnection

Phase 1 of the Lower Hound Creek Restoration Project includes realigning Hound Creek away from an actively eroding bank, increasing floodplain connectivity, improving aquatic habitat diversity, and expanding woody riparian and wetland vegetation. Drawings showing the preliminary design for Phase 1 are provided in the MAPS/DESIGNS attachment. This work was selected as the highest priority of the three potential projects identified during the feasibility assessment because of the amount of fine sediment being contributed to Hound Creek, the potential to create a larger area of connected floodplain and diverse stream habitat to support both Hound Creek and Smith River trout populations, and the area being the primary landowner concern.

The streambank is approximately 6 to 8 feet in height (Figure 20) and is dominated by introduced pasture grasses such as smooth brome. The streambank has eroded approximately 70 feet since 2005 at this location, resulting in approximately 9,000 cubic yards of fine sediment to Hound Creek and the Smith River and resulting in loss of pasture area for the landowner. As lateral erosion has occurred, new floodplain surfaces have deposited, creating surfaces for willows and cottonwoods to colonize (Figure 21). The low elevation of these floodplain surfaces creates an area where a new channel can be constructed with a much larger connected floodplain area, gravel available to mobilize and support spawning habitat development, and more diverse aquatic habitat. The channel planform upstream of the Phase 1 project site is a straight, low-gradient section of channel where fine sediment has deposited. This section of channel is confined along a natural high terrace feature. Changing the channel morphology immediately upstream of the Phase 1 site is not desirable or feasible. There is sufficient connected floodplain capacity where this naturally confined reach transitions into the project site to disperse high flow energy (i.e. the confined section is not the cause of accelerated lateral erosion at the project site). The project aims to further increase connected floodplain area at the project site and the transition area between the confined section of channel and the site.

Restoration objectives for Phase 1 include:

- reduce accelerated lateral erosion into hayfield and fine sediment inputs to Hound Creek;
- increase floodplain connectivity;
- restore woody riparian vegetation;
- increase spawning habitat; and
- restore aquatic habitat diversity.

Restoration treatments to achieve Phase 1 restoration objectives are as follows:

- relocate Hound Creek away from a long, actively eroding streambank that removes hayfield area each year;
- construct new channel that is deeper and narrower than upstream and downstream reaches to enhance aquatic habitat and promote spawning gravel sorting;
- construct connected floodplain along relocated channel with low surfaces to support natural colonization of cottonwood and willow while preserving areas of existing colonizing woody vegetation;
- install streambank structures, including large wood habitat structures with rootwads and wood, and wood and willow streambank treatments to increase woody riparian vegetation cover, provide overhanging cover, and increase overall channel resiliency; and

- lay back vertical eroding bank and place material in abandoned channel to create connected floodplain that can support riparian and wetland vegetation and provide energy relief for high flows.

Estimated design costs for Phase 1 are provided in Table 1.
Estimated implementation costs for Phase 1 are provided in Table 2.

Other alternatives considered for the Phase 1 site are described below:

No Action: If no action is taken the bank will continue to erode during high flows due to the lack of stabilizing vegetation. The streambank would remain vertical and is unlikely to naturally recover stabilizing woody riparian vegetation due to the bank angle and active erosion. The adjacent floodplain would continue to build over time but channel dimensions are likely to remain unchanged with limited pool and riffle habitat or cover needed to support trout populations.

Fence Only: Fencing the area off from livestock was also considered; however, while vegetation clearing and livestock grazing contributed to initial channel incision and erosion, livestock are not currently increasing erosion at the site. The site will be fenced from livestock for 10 years after restoration is complete to allow streambank and vegetation recovery, which will provide overall erosion control long-term.

Treat the Bank in Place: Treating the bank in place was also considered; however, this alternative is not preferred for the following reasons:

- Treating the bank in place would not create the desired minimum 35-feet of riparian buffer needed to provide a functional riparian corridor to effectively resist accelerated lateral erosion.
- Treating the bank in place would require a minimum of 15 additional feet of excavation into the existing hayfield than the selected action. This would result in an infeasible amount of excavated material that would need to be hauled away from the site. The selected action allows us to balance excavation and fill volumes.
- Treating the bank in place would not increase overall floodplain connectivity through the reach. The channel would remain pinned against a high terrace, ultimately increasing the risk of accelerated lateral erosion and return to a vertical bank state.
- Treating the bank in place would not allow us to create the desired diverse aquatic habitat with a series of pools and riffles and diverse streambank margins with dense woody vegetation cover.

Figure 20. Eroding streambank in Phase 1 project area.

Figure 21. New floodplain surface developing across from Phase 1 eroding bank. This low surface increases feasibility of moving the channel away from its current location and into and area with larger connected floodplain surfaces.

Table 1. Estimated design costs for Hound Creek Phase 1.

Task	Estimated Cost
Collect Restoration Design Data	$7,000
Prepare Final Design	$8,000
Conduct Wetland Delineation and Prepare Permit Package	$10,000
Prepare Construction and Bid Documents	$5,000
ESTIMATED TOTAL COST PHASE 1 DESIGN	**$30,000**

Table 2. Estimated implementation costs for Hound Creek Phase 1.

Task	Unit	Approximate Quantity	Estimated Unit Cost	Estimated Cost
Mobilization, Bonding, Insurance	Lump Sum	1	$10,000	$10,000
Water Management, Construction Best Management Practices (BMPs)	Lump Sum	1	$3,000	$3,000
New Channel Construction	Linear Feet	1,350	$50.00	$67,500
Wood and Willow Streambank Treatment	Linear Feet	1,150	$30.00	$34,500
Large Wood Habitat Structures	Each	8	$1,500	$12,000
Floodplain Grading and Restoration	Acres	2	$2,000	$4,000
Collect and Deliver Willow Cuttings	Each	5,000	$1.00	$5,000
Acquire and Deliver Wood	Lump Sum	1	$10,000	$10,000
Temporary Electric Fence	Linear Feet	2,500	$3.00	$7,500
Construction Administration and Oversight	Lump Sum	1	$20,000	$20,000
ESTIMATED TOTAL COST PHASE 1 IMPLEMENTATION				**$173,500**