Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: **2188 Operations and Personnel**
Date: **October 2022**

Explain how this Project addresses a specific Project 2188 License Article(s): **Funding is for the wages and operations of FWP 2188 project personnel that identify, develop, assesses, monitor, and implement projects that meet the FERC 2188 license conditions.**

Provide justification for Priority 1, 2 or 3 (above) that you selected: **Montana FWP 2188 Project Personnel will be involved in all three priority levels.**

Project Sponsor (submitted by): **-Montana FWP**

Location of Proposed Project: **Ennis, Madison River drainage**

Narrative: **The Ennis Field Office was established to identify, develop, assess, and implement fisheries monitoring and enhancement projects as described in the 6/29/2018 MOA between NorthWestern Energy and FWP and in the FERC 2188 license. This proposal will fund staff time and operations required to comply with 2188 Articles 404, 408, 409, 412, 413, and 412. FWP 2188 project personnel Travis Lohrenz and Jenna Dukovcic will conduct monitoring and enhancement activities under the direction of FWP R3 Hydropower Program Supervisor Matt Jaeger.**

Geocode (in decimal degrees ex 46.89743) Lat; _____ Long: _____

Total Project Cost: **$195,991**

TAC Funds (Cost-Share) Requested for Project: $196,385

I. Introduction; brief statement of project to be completed with pertinent background information.
This proposal will fund staff time and operations required to comply with 2188 Articles 404, 408, 409, 412, 413, and 412 as described in the 6/29/2018 MOA between NorthWestern Energy and FWP.

II. Objectives; explicit statement(s) of what is intended to be accomplished.
This proposal will fund staff time and operations required to comply with 2188 Articles 404, 408, 409, 412, 413, and 412 as described in the 6/29/2018 MOA between NorthWestern Energy and FWP.

III. Methods; description of how Project objectives will be accomplished.
FWP 2188 project personnel Travis Lohrenz and Jenna Dukovcic will conduct monitoring and enhancement activities required to comply with Articles 404, 408, 409, 412, 413, and 412 under the direction of Matt Jaeger FWP R3 Hydropower Program Supervisor.

IV. Schedule; when the Project work will begin and end.
Jan 1, 2023 - June 30, 2024

V. Personnel; who will do the work? Identify Project leader or principal investigator.
FWP 2188 project personnel Travis Lohrenz and Jenna Dukovcic will conduct the monitoring and enhancement activities specified in the 6/29/2018 MOA between NorthWestern Energy and FWP under the direction of Matt Jaeger FWP R3 Hydropower Program Supervisor.

VI. Project budget must include amounts for the following:
- Direct Labor
- Travel and Living
- Materials
- Other Direct Expenses
- Direct Overhead*
- All cost-share sources and amounts, including estimation of "in-kind" contributions

Staff	Item	FTE	Hours	Pay rate including benefits	Amount	Amount
Monitoring & Enhancement Activities						
TL - 37331	**F&W Tech**	**1.00**	**2080**	**36.68**		**76,294**
JD - 37322	**F&W Tech**	**1.00**	**2080**	**30.35**		**63,128**
	Travel				**3,000**	
	Operations				**15,000**	
	Subtotal				**18,000**	**139,422**
	Indirect (11.50%)					**16,033**
	Subtotal	**2**	**4,160**		**18,000**	**155,455**
Native Species Management & Hydropower						
MJ	**Program Supervisor**	**0.17**	**356**	**52.73**		**18,772**
	Travel				**2,000**	
	Indirect (11.50%)					**2,158**
	Subtotal	**0.17**	**356**		**2,000**	**20,930**
	Subtotal of	**2.17**	**4,516**		**20,000**	**$176,385**
	Total					**$196,385**

***NorthWestern Energy TAC funds will not be used for agency overhead on projects that do not fund personnel. Applications for materials and equipment should not contain overhead.**

VII. Deliverables: describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated? **Preparation and submittal of an annual report to NWE describing the work of the previous year's activities as described in the 6/29/2018 MOA between NorthWestern Energy and FWP and how they meet FERC article requirements.**

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:

NA

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March 2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines:

NA

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@NorthWestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to:

Andy Welch
Manager, Hydro License Compliance
Andrew.Welch@NorthWestern.com
O 406-444-8115
C 406-565-7549
208 N. Montana Ave
Suite 205
Helena, MT 59601

Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: **Ennis Office Rent**

Date: **October 17,2022**

Explain how this Project addresses a specific Project 2188 License Article(s):
Provides office, shop and storage for the FWP 2188 Madison Fisheries program

Provide justification for Priority 1, 2 or 3 (above) that you selected:
Provides office, shop, and storage for 2188 operations, which addresses all three priority levels.

Project Sponsor (submitted by): **MFWP**
Location of Proposed Project: : **Ennis**

Narrative: **The office will provide a local base of operations for MFWP 2188 fisheries personnel in the Madison Drainage.**

Geocode (in decimal degrees ex 46.89743) Lat; _____ Long: _____

Total Project Cost: **$7,200**

TAC Funds (Cost-Share) Requested for Project: **$7,200**

I. Introduction; brief statement of project to be completed with pertinent background information.
One year office and shop space for MFWP Madison 2188 fisheries personnel

II. Objectives; explicit statement(s) of what is intended to be accomplished. **Provide a local base of operations for 2188**

III. Methods; description of how Project objectives will be accomplished.
Normal billing and payment

IV. Schedule; when the Project work will begin and end.
2023 billing cycle

V. Personnel; who will do the work? Identify Project leader or principal investigator.
FWP 2188 project personnel

VI. Project budget must include amounts for the following:

- Direct Labor
- Travel and Living
- Materials
- Other Direct Expenses
- Direct Overhead*
- All cost-share sources and amounts, including estimation of "in-kind" contributions

***NorthWestern Energy TAC funds will not be used for agency overhead on projects that do not fund personnel. Applications for materials and equipment should not contain overhead.**

VII. Deliverables; describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated?

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March 2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines:

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@NorthWestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to:

Andy Welch
Manager, Hydro License Compliance

Andrew.Welch@NorthWestern.com
O 406-444-8115
C 406-565-7549
208 N. Montana Ave
Suite 205
Helena, MT 59601

Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: 2023 Custer Gallatin NF's seasonal technician funding

Date: 11/10/2022

Explain how this Project addresses a specific Project 2188 License Article(s):

This project would partially fund two Custer Gallatin National Forest Fish Technicians to assist NWE, MFWP, and USFS biologists with multiple projects including monitoring and surveys during the 2023 field season. General duties that address the following articles include: population & habitat monitoring for species of special concern (population estimates, presence/absence surveys, nonnative removals, collection of genetic material, temperature monitoring, riparian & stream channel monitoring, etc.); assisting with stream and lake enhancement projects; and, fish barrier site identification, reconnaissance, and maintenance.

ARTICLE 408
7) Monitor fish species of special concern (i.e., Arctic grayling and westslope cutthroat trout).

ARTICLE 409
3) Fish habitat enhancement both in main stem and tributary streams, including enhancement for all life stages of fishes.
6) Inclusion or exclusion of fish barriers.

ARTICLE 412
4) Protect and aid the recovery of threatened and endangered fish species and other aquatic species of special concern, including Arctic grayling, in Madison Reservoir and the lower Madison River.

Provide justification for Priority 1, 2 or 3 (above) that you selected:

Priority 2: The USFS technicians would assist with projects which meet License Article requirements and PM&E for fisheries populations and their habitats in primary tributaries and provide PM&E for Madison River resources, as directed by USFS, MFWP and NWE fisheries personnel.

Project Sponsor (submitted by): Allison Stringer, Custer Gallatin National Forest, Bozeman and Hebgen Lake Ranger District's

Location of Proposed Project: Upper Madison River and tributaries

Total Project Cost:

GS-6 Technician TAC $181 x 20 days	**$ 3,620**
GS-5 Technician TAC $164 x 20 days	**$ 3,280**
GS-6 Technician In-Kind Contribution $181 x 40 days	**$ 7,240**
GS-5 Technician In-Kind Contribution $164 x 40 days	**$ 6,560**

Overhead (1.0%) $ **69**

Total = **$20,769**

TAC Funds (Cost-Share) Requested for Project:
$3,320 + $3,020 + $63 (1% overhead) = $6,403

I. Introduction; brief statement of project to be completed with pertinent background information.

This funding request is for cost sharing USFS Fisheries Technician salaries. The USFS Region 1 Fisheries Program has undergone considerable reductions. Limited resources are available to local FS biologists to obtain the seasonal work force required to assist NWE and MFWP in implementing the Fisheries, Wildlife, and Water Quality Protection, Mitigation and Enhancement Plan in the Madison River drainage as part of FERC licensing requirements for Project 2188.

II. Objectives; explicit statement(s) of what is intended to be accomplished.

The FS technicians would aid State, Federal, and NWE biologist during the summer field season with the following:

- Instream flow reservations
- Riparian vegetation and stream channel monitoring
- WCT population monitoring
- Thermograph deployment and retrieval
- WCT genetics collection
- Amphibian surveys and monitoring
- Aquatic Invasive Species (AIS) inventory and monitoring in the Madison River drainage – high risk waters.
- Assist MFWP and NWE staff with their annual program of work on Madison River, Hebgen and Ennis Reservoir as needed.

III. Methods; description of how Project objectives will be accomplished.

Forest Service seasonal technicians would work cooperatively with NWE and MFWP crews throughout the summer field season to accomplish the fisheries objectives outlined above within the Madison River drainage.

IV. Schedule; when the Project work will begin and end.

May 2023 – October 2023

V. Personnel; who will do the work ? Identify Project leader or principal investigator.

One GS-6 and one GS-5 Fisheries Technician. Project lead is Allison Stringer, CGNF West Zone Fisheries Biologist

VI. Project budget must include amounts for the following:

Direct Labor = **$6,900**
Travel and Living
Materials
Other Direct Expenses
Direct Overhead = **$69**
All cost-share sources and amounts, including estimation of "in-kind" contributions

VII. Deliverables; describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated?

The success of this project will be demonstrated by reporting the field work days spent and annual accomplishments related to Articles 408, 409 and 412 in the Madison River drainage, reservoirs, and tributaries.

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information

or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:

N/A

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9March2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines:

N/A

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@Northwestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to: Andy Welch, Leader Hydro License Compliance, NorthWestern Energy, 1315 N Last Chance Gulch, Helena, MT 59601; 406-444-8115 (office); 406-565-7549 (cell); Andrew.Welch@northwestern.com.

Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: 2023 Beaverhead-Deerlodge NF Seasonal Technician Funding Request

Date: 11/20/22

Explain how this Project addresses a specific Project 2188 License Article(s):
This project addresses Article 408 (4), (6), & (7) and Article 412 (4) & (6). This proposal would partially fund USFS Fisheries Technicians to assist USFS and MFWP biologists on multiple projects and monitoring efforts in the 2023 field season. General duties that address the following articles include: population monitoring for species of special concern (population estimates, presence/absence surveys, nonnative removals, collection of genetic material); assisting with tributary stream habitat enhancement projects; fish barrier site identification, reconnaissance, and barrier maintenance; and assist NWE & MFWP fisheries personnel with their 2023 program of work (monitoring and project) as needed in the upper Madison River drainage.

Provide justification for Priority 1, 2 or 3 (above) that you selected:
Priority 2: The USFS technicians would assist with projects which meet License Article requirements and PM&E for fisheries populations and their habitats in primary tributaries and provide PM&E for Madison River resources, as directed by USFS, MFWP and NWE fisheries personnel.

Project Sponsor (submitted by): Monica Berreman, USFS Madison/Jefferson Ranger District Fisheries Biologist

Location of Proposed Project: Upper Madison River and associated tributaries
Narrative

Geocode (in decimal degrees ex 46.89743) Lat; _____ Long: _____

Total Project Cost: $31,818

TAC B-D GS/7 Technician $180.25/day x 20 days =$3,605
B-D GS/7 Tech USFS Contribution $180.25/day x 100 days =$18,025

TAC B-D GS/5 Technician $145.54/day x 20 days =$2,911
B-D GS/5 Tech USFS Contribution $145.54/day x 50 days =$7,277

TAC Funds (Cost-Share) Requested for Project: =$6,516

I. Introduction; brief statement of project to be completed with pertinent background information.
This funding request is for cost sharing USFS Fisheries Technician salaries in 2023. The USFS Region 1 has undergone considerable budget reductions. Limited resources are available to local FS biologists to obtain the seasonal work force required to assist NWE and MFWP in implementing the Fisheries, Wildlife, and Water Quality Protection, Mitigation and Enhancement Plan in the Madison River drainage as part of FERC licensing requirements for Project 2188. The requested funding would augment internal dollars and enable hiring of one GS/5 and one GS/7 Fisheries Technician out of the Madison Ranger District.

II. Objectives; explicit statement(s) of what is intended to be accomplished.
Upper WF Madison Stream Habitat Enhancement
Lower WF Madison Stream Habitat Enhancement
Bear Creek Days Fish Dissections
Wigwam and Teepee Creek Habitat Monitoring
Standard, Soap, and Horse Creeks Barrier Survey
Saint Joe and Jourdain Creek Habitat Survey and Sampling
Inventory and Monitoring of Arctic Grayling and Westslope Cutthroat Trout in the Madison River drainage
WCT Genetics Collection and Population Monitoring
Sensitive Amphibian Surveys and Monitoring
Aquatic Invasive Species (AIS) Inventory and Monitoring in the Madison River drainage High Risk Waters
Assist MFWP and Custer-Gallatin NF with 2022 field work in the Madison River drainage
Assist MFWP with Madison drainage high mountain lakes inventory work

III. Methods; description of how Project objectives will be accomplished.
Forest Service seasonal technicians would work cooperatively with NWE and MFWP crews throughout the FY23 field season to accomplish the fisheries program of work and associated PM&E projects in the Madison River drainage.

IV. Schedule; when the Project work will begin and end.
May 2023 – November 2023

V. Personnel; who will do the work? Identify Project leader or principal investigator.
Two Fisheries Technicians (GS/5 and GS/7), project leads Monica Berreman, East Zone Fisheries Biologist and Patrick Luckenbill, Butte Fish Biologist.

VI. Project budget must include amounts for the following:

- Direct Labor $6,516
- Travel and Living
- Materials
- Other Direct Expenses
- Direct Overhead*
- All cost-share sources and amounts, including estimation of “in-kind” contributions

***NorthWestern Energy TAC funds will not be used for agency overhead on projects that do not fund personnel. Applications for materials and equipment should not contain overhead.**

VII. Deliverables; describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated?
The success of this project will be demonstrated by reporting the field workdays spent and annual accomplishments related to Articles 408, 409 and 412 in the Madison River drainage, reservoirs, and tributaries.

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:
Not Applicable - cultural resource management is not required as part of this proposal.

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March 2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines: N/A

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@NorthWestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to:

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2023 Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: Emergency/contingency fund

Date: 11/11/2022

Explain how this Project addresses a specific Project 2188 License Article(s): Priority 1: This fund will be used for, but not be limited to, emergency purchasing of equipment, scoping potential stream rehab proposals, and support of 2023 approved proposals.

Provide justification for Priority 1, 2 or 3 (above) that you selected: During ongoing operations and proposal work there are times when this approved proposal would allow for immediate funding of equipment, stream restoration assessments or other conditions that may require immediate attention. This proposal will eliminate (within the $10,000 limit) the need for TAC approval of a new proposal for spending of TAC funds.

Project Sponsor (submitted by): Jon Hanson

Location of Proposed Project: Within TAC approved proposals.

Total Project Cost: $10,000

TAC Funds (Cost-Share) Requested for Project: $10,000

I. Introduction; Contingency funding to be used in emergency situations

II. Objectives; To have TAC approved funding for emergency situations as noted above.

III. Methods; Funding will used for situations as noted above.

IV. Schedule; Used when needed during 2023

V. Personnel; NWE will determine and report usage of funding.

VI. Project budget must include amounts for the following:

Direct Labor
Travel and Living
Materials…yes
Other Direct Expenses…yes
Direct Overhead
All cost-share sources and amounts, including estimation of "in-kind" contributions

VII. Deliverables; describe work product (reports, habitat restoration, etc.) which will result from this Project. Spending will be reported at annual meeting.

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted. Generally NA but maybe used for this if needed

Summarize here how you will complete requirements for Cultural Resource Management: NA

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March2016. NA

Summarize here how you will comply with Montana water rights laws, policies and guidelines:
NA

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@Northwestern.com
- Jon.Hanson@northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to: Andy Welch, Leader Hydro License Compliance, NorthWestern Energy, 1315 N Last Chance Gulch, Helena, MT 59601; 406-444-8115 (office); 406-565-7549 (cell); Andrew.Welch@northwestern.com.

Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: *Madison Westslope Cutthroat trout conservation; Migration Barrier Construction on the West Fork Madison River*

Date:*10/17/2022*

Explain how this Project addresses a specific Project 2188 License Article(s): *This project addresses specifically article 408 7) Monitor fish species of special concern (i.e., Arctic Grayling and Westslope Cutthroat Trout) and article 409 6) Inclusion or exclusion of fish barriers.*

Provide justification for Priority 1, 2 or 3 (above) that you selected: *The proposed project is a Priority 2 proposal: The proposed scope of work is to modify the drop below a USFS road culvert to act as a fish migration barrier. The modification will protect approximately 7 miles of habitat occupied by WCT of >95% genetic purity.*

Project Sponsor (submitted by): - *United States Forest Service Beaverhead-Deerlodge National Forest and Northwestern Energy*

Location of Proposed Project: *West Fork Madison River headwaters*

Narrative: *Westslope Cutthroat Trout (WCT) is native to the cold-water streams of the Upper Missouri River Basin. An analysis by Shepard et al. (1997) indicated most remaining populations in the Missouri River drainage face a high to very high risk of local extinction over the next 100 years due to threats such as habitat fragmentation and competition from or hybridization with non-native trout. To ensure the long-term persistence of WCT in the Upper Missouri River Basin, a goal to restore WCT to 20% of their historic distribution in each of the Missouri Headwaters sub-basins was established with the development of a Memorandum of Understanding and Conservation Agreement (MOU) for Westslope Cutthroat Trout in Montana between federal and state resource agencies (including BLM, Montana Fish, Wildlife & Parks [FWP], USFS, and Yellowstone National Park), non-governmental conservation*

and industry organizations, tribes, resource users, and private landowners (FWP 1999, FWP 2007). Populations of WCT of conservation value are fish that are <10% hybridized and are considered secure when they are isolated from non-native fishes, typically by a physical barrier to fish passage, have a population size of at least 2,500 fish, and occupy enough habitat (>5 miles) to ensure long-term persistence (FWP 2007, FWP 2019). WCT conservation efforts have restored and secured WCT populations of conservation value to 17% of their historic distribution in the Madison sub-basin. It is anticipated that with continued support and cooperation among agencies and other partners, the 20% conservation goal for WCT in the Madison sub-basin can be obtained in the next 10 years. This proposal is for funding to modify the drop of a USFS road culvert to act as an upstream migration barrier. Modifications would secure approximately 7 miles of habitat for WCT population of >95% purity

Geocode (in decimal degrees ex 46.89743*) Pine Butte Lat; 44.793285 Long: -111.930060*

Total Project Cost: *$10,184.00*

TAC Funds (Cost-Share) Requested for Project: *$10,184.00*

I. Introduction: brief statement of project to be completed with pertinent background information.

The proposed barrier would include West Fork Madison WCT that are >95% purity and Fox Creek WCT that are 94% genetic purity. To eliminate further hybridization and or competition with nonnative trout, FWP in partnership with Northwestern Energy, and the USFS would modify the drop below the USFS road culvert to ensure upstream fish migration is thwarted. Successful implementation of the proposed project would likely ensure the long-term persistence of the WCT populations above the proposed site.

II. Objectives: explicit statement(s) of what is intended to be accomplished.

Protecting ≈ 7 miles of habitat occupied by WCT of conservation value from competition and or hybridization with non-native trout through the construction of a fish barrier.

III. Methods.

Pre-project survey work and construction of the barrier will be completed by a contractor. All funds will go to a construction contract. To obtain the six foot drop from road culvert to toe of hill, instream excavation may occur an approximate length of 100 feet with approximately 30 feet of stream restored to its original channel. Removed material will be used as fill. Four pre-fabricated concrete blocks and a pre-fabricated splash pad will be installed below the Road 290 culvert, using an excavator. Any sod mats and willows disturbed during construction will be replanted along restored channel. Approximately 100 feet of temporary riparian fencing on both sides of the West Fork Madison River will be built upon completion of project to keep cattle out of project area during recovery period.
No construction will occur upstream of culvert. Road 290 and its culvert will not be modified.

IV. Schedule, when the Project work will begin and end.

July 15 – September 15, 2023

V. Personnel: who will do the work? Identify Project leader or principal investigator.

Beaverhead-Deerlodge NF specialists will analyzed the proposed project through the Forest Service sNEPA process.

Project contract will be administered by Jon Hanson Northwestern Energy 2188 Fisheries Biologist.

FWP 2188 project personnel Travis Lohrenz and Jenna Dukovcic will conduct the monitoring activities under the direction of Matt Jaeger MFWP R3 Hydropower Program Supervisor, and Jon Hanson Northwestern Energy Fisheries Biologist.

VI. Project budget must include amounts for the following: *See Attached:*

- Direct Labor
- Travel and Living
- Materials
- Other Direct Expenses
- Direct Overhead*
- All cost-share sources and amounts, including estimation of "in-kind" contributions

***NorthWestern Energy TAC funds will not be used for agency overhead on projects that do not fund personnel. Applications for materials and equipment should not contain overhead.**

VII. Deliverables: describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated?

MFWP will conduct periodic collection of genetic tissue samples from fish above the barrier to monitor genetic purity and each year, the barrier will be visually inspected for damage following high water and cleaned of debris that could inhibit barrier function. The results of the findings will be conveyed to Northwestern Energy in an annual report submitted by FWP.

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:

A detailed plan and map will be submitted to the Beaverhead-Deerlodge Cultural Specialist who will be included in the Forest Service sNEPA process which includes a field visit. Additionally, all permitting, and assessments will be done in compliance with the State of Montana and Federal law.

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March 2016.

Summarize here how you will comply with Montana water rights laws, policies and guidelines:

DNRC and water rights holders will be consulted during the permitting process. However, the construction of the barrier structure would not limit or deny water users of their water rights. Prior to project implementation, the proposed project will be required to be analyzed through the Beaverhead- Deerlodge NF sNEPA process.

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@NorthWestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to:

Andy Welch
Manager, Hydro License Compliance
Andrew.Welch@NorthWestern.com
O 406-444-8115
C 406-565-7549
208 N. Montana Ave
Suite 205
Helena, MT 59601

R. E. MILLER & SONS
Excavating Contractors
15 Ramshorn, Dillon, MT 59725
406-683-2175

July 17, 2022

Cost estimate for West Fork Culvert Drop

Materials

- 4- 2'X2'X6' Concrete blocks
- 14'x12'x6" Concrete splash pad **$3,680**

Equipment/Labor

- CAT 316 Excavator
- Labor for installing splash pad **$4,024**

Mob/Travel

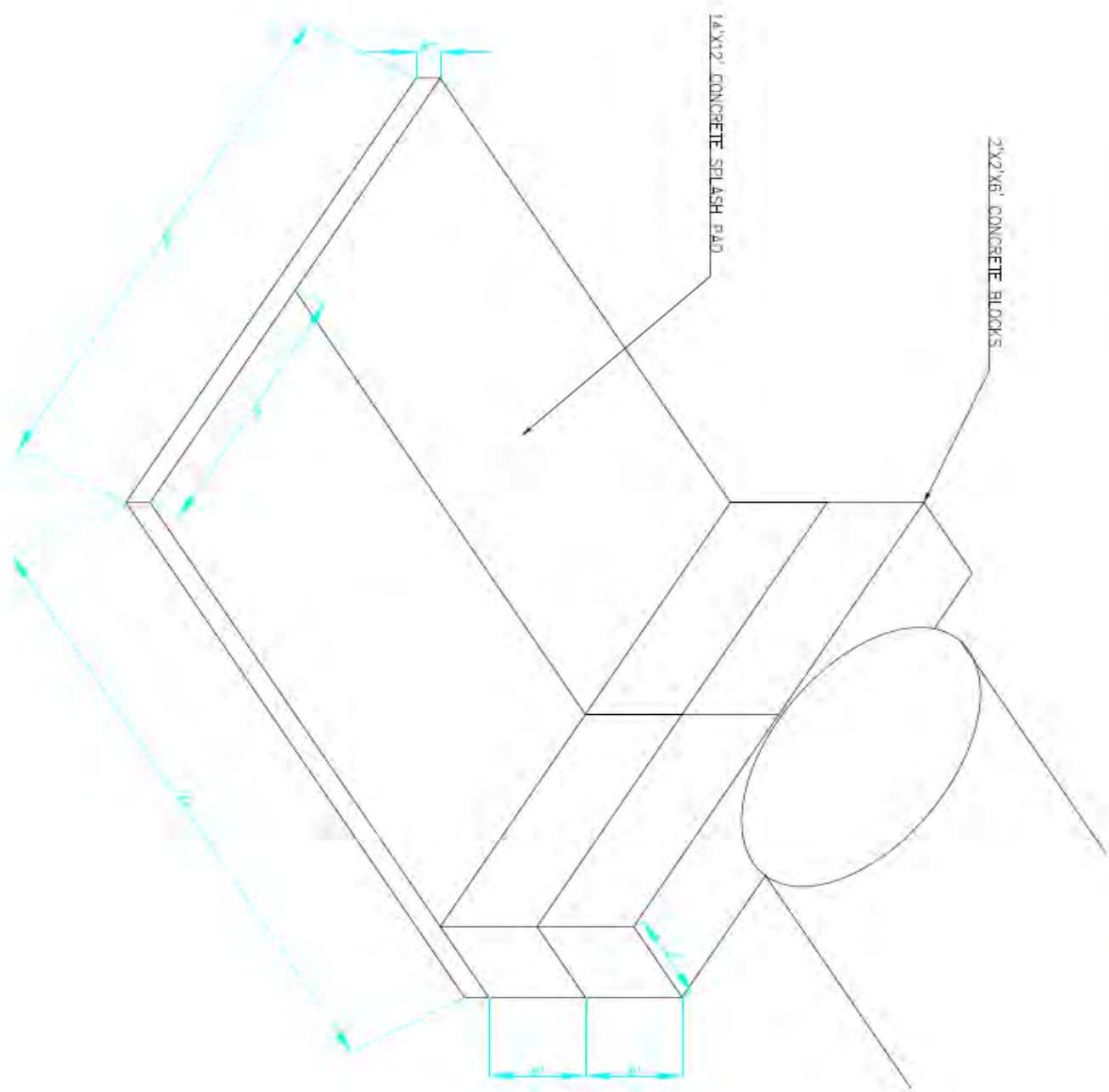
- Transport of equipment to job site
- Transport of material to job site
- Travel time to job **$2,480**

Total Cost- $10,184

Thanks,

Nate Helle

R.E. Miller and Sons
nhelle24@gmail.com
Mobile (406)660-0119
Office (406)683-2175



DROP STRUCTURE

WEST FORK – MADISON
MFWP

BEAVERHEAD COUNTY MONTANA

RE MILLER & SONS CONTRACTING – DILLON, MONTANA 59725

RE MILLER & SONS
15 RAMS HORN
DILLON, MT. 59725
1-406-683-2175

MEMORANDUM

TO: Jonathan Hanson, Northwestern Energy

CC: MadTac

FROM: Jonathan Malovich, Madison River Foundation

DATE: November 7, 2022

RE: Swale/Channel Upstream of Ruby Creek - Restoration Project Approach

This memo outlines restoration design concepts for construction of a floodplain side channel upstream of Ruby Creek on the left bank of the Madison River within Bureau of Land Management (BLM) Reach 632/633 (Project Area). The purpose of this memo is to provide information to support funding requests, permitting and internal scoping by project partners. Restoration concepts presented here are preliminary and were developed based on site visits, aerial imagery interpretation and analysis of LiDAR data. The project is located at latitude 45.050311, longitude -111.676435.

The Project Area can be accessed from Ennis, MT by travelling south on Highway 287 for approximately 18 miles, then turn right onto McAtee bridge. After crossing the bridge, turn left onto Ruby Creek Road and travel 3.6 miles to a pull out on a rocky bluff. The Project Area is located below the bluff.

Existing Conditions and Project Goals

The Project Area is located on the left bank of the Madison River upstream of Ruby Creek on land managed by the BLM. Within this reach a low floodplain swale exists that is dominated by sedges and cattails with surface water present at the bottom of the swale. The floodplain swale extends parallel to the river and water seeps out of the swale into the main river channel at the downstream end. This topographic feature is uncommon along the Madison River and historically could have functioned as a side channel that would receive surface flow for certain portions of the year, providing off channel habitat and aquatic habitat complexity. Due to the altered flow regime as a result of Hebgen Dam, this feature is no longer hydrologically connected to the Madison River surface flows. Additionally, evidence of livestock and wildlife browse can be seen on young woody riparian vegetation within this reach. Trailing and trampling signs are also present within the swale and along the streambank and are contributing to reduced function of the wetland and riparian area.

Figure 1. Left photo -- middle of swale looking upstream; right photo -- downstream end of swale looking upstream.

Goals of restoration within the Project Area include:

- Create spawning and rearing habitat connected to the Madison River;
- Increase aquatic habitat complexity;
- Provide cool water refugia and thermal cover;
- Increase riparian corridor width and woody vegetation cover;
- Promote primary production and food web support; and
- Increase biodiversity and habitat complexity to support long-term ecosystem resilience.

Restoration Strategies

Restoration strategies include treatments designed to improve ecological function and set the site on a trajectory to achieve project goals. Restoration treatments are displayed on Figure 2 through Figure 4 and are described below.

Side Channel Construction. To create a perennial side channel suitable for spawning and rearing habitat, a channel will be excavated along the existing floodplain swale. Material will be excavated to create an approximately 20 foot wide and 540-foot-long side channel at an elevation that will support perennial flow. The channel bed will consist of imported substrate with a size gradation suitable for spawning and able to withstand hydraulic forces without being flushed into the Madison River. The final side channel dimensions, habitat features, and substrate gradation will be refined with input from biologists, a fluvial geomorphologist, and a hydraulic engineer. Woody brush banks with willow cuttings will line both banks of the side channel to provide aquatic habitat complexity, support revegetation and provide overhanging cover. The newly constructed side channel will connect to the Madison River at the upstream and downstream end. Excess material removed to create the side channel will be placed in an upland repository on the hillslope. This treatment works with the altered flow regime of the Madison River to create a perennial side channel, a natural feature that would have been present and hydrologically connected prior to Hebgen Dam.

Livestock Fence. A livestock fence will be installed to protect approximately 1.75 acres of floodplain including the proposed side channel and adjacent river bank where browse and trampling have limited establishment of woody riparian vegetation. Livestock fence will be 'let down' to allow for wildlife movement across the fence line when cattle are not grazing the area. At the upstream and downstream end of the fence, a fence extension will be installed that hangs over the river, so cattle do not walk around the edge of the fence. The exact type of wildlife friendly livestock fence will be determined by project partners based on cost, feasibility, and maintenance considerations.

Monitoring and Maintenance

Working with partners including BLM and Montana Fish, Wildlife and Parks (MFWP), the newly constructed side channel and surrounding floodplain within the livestock fence will be monitored prior to implementation and periodically after construction to evaluate factors such as spawning and rearing use, sediment dynamics, aquatic habitat complexity and overhanging cover, percent cover of woody riparian vegetation, density of natural vegetation recruitment, and browse from wildlife versus livestock. Specific monitoring metrics and protocols will be developed in coordination with biologists from Montana Fish, Wildlife and Parks; Bureau of Land Management; and Northwest Energy. Monitoring would also include evaluation of maintenance needs.

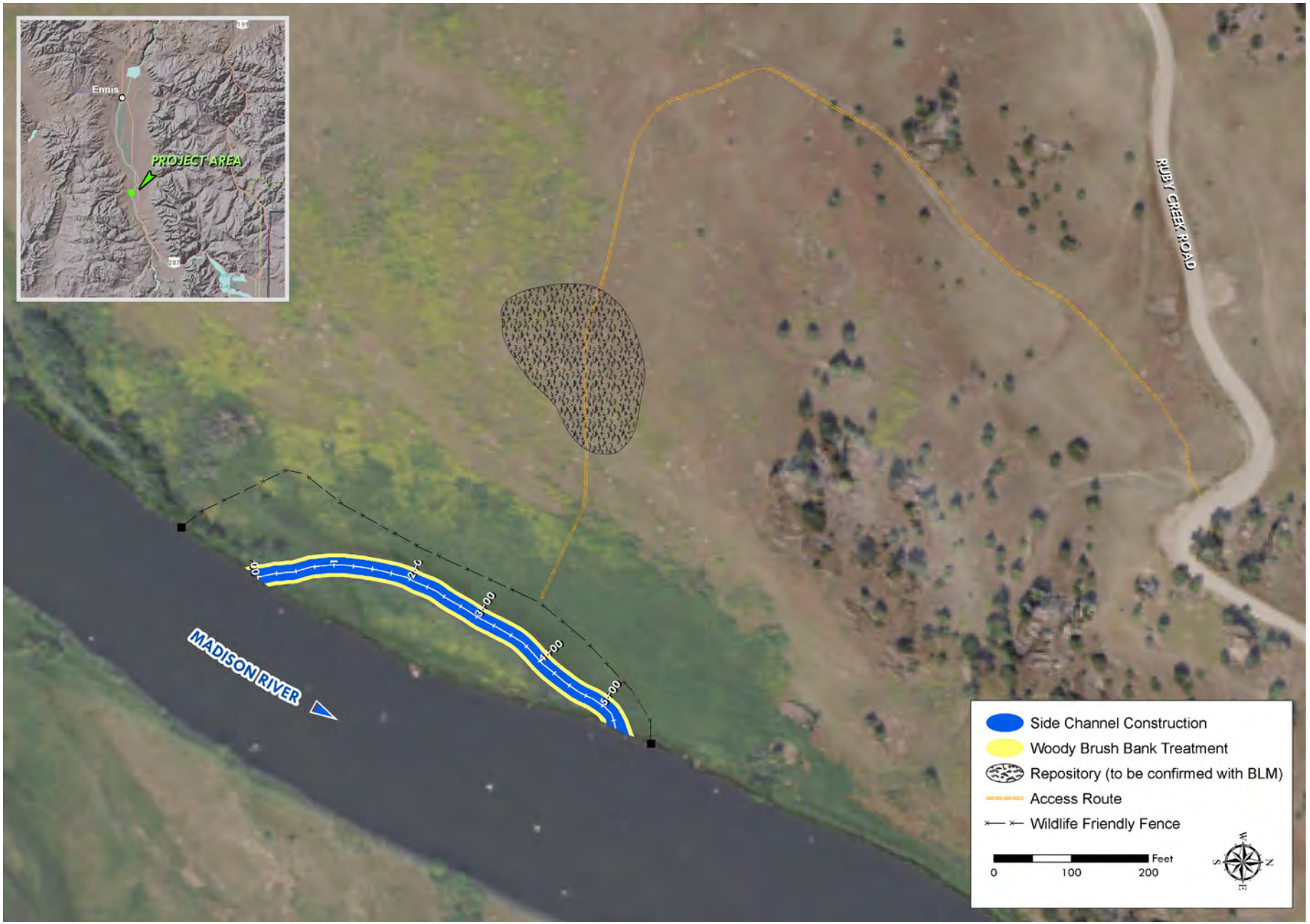
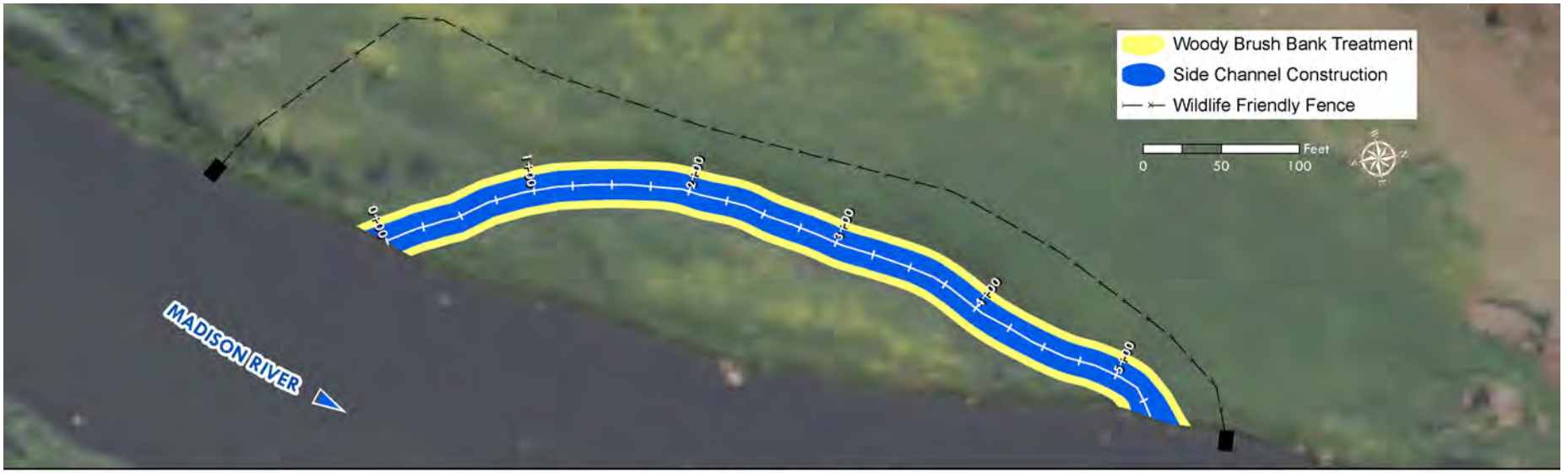
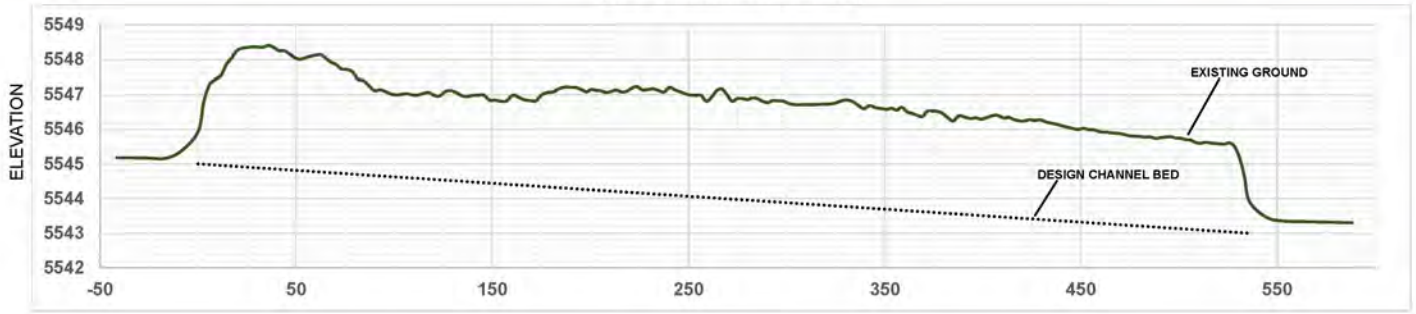


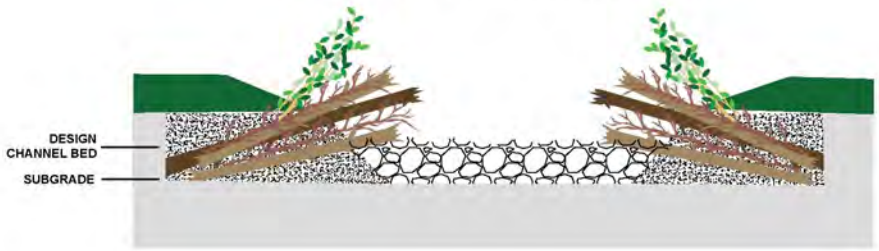
Figure 2. Overview of Project Area and restoration treatment locations.



SIDE CHANNEL PROFILE



SIDE CHANNEL TYPICAL CROSS SECTION



TREATMENT DESCRIPTION

A SIDE CHANNEL WILL BE EXCAVATED TO CREATE SPAWNING AND REARING HABITAT ALONG THE MADISON RIVER. WOODY BRUSH BANKS WITH WILLOW CUTTINGS WILL BE CONSTRUCTED TO PROVIDE AQUATIC HABITAT COMPLEXITY AND SUPPORT REVEGETATION. THE CHANNEL WILL BE EXCAVATED TO SUBGRADE ELEVATIONS THEN FILLED WITH AN APPROPRIATE GRADATION OF GRAVEL/COBBLE MATERIAL TO PROVIDE SUITABLE SPAWNING SUBSTRATE. THIS TREATMENT IS DESIGNED TO WORK WITH THE FLOW REGIME AT HEBGEN DAM TO CREATE SIDE CHANNEL HABITAT THAT HAS PERENNIAL FLOW.

ESTIMATED MATERIAL QUANTITY

EXCAVATION: APPROX. 1,700 CY
GRAVEL/COBBLE CHANNEL BED: APPROX. 600 CY
WOODY BRUSH BANK: APPROX. 1,100 LF
WILDLIFE FRIENDLY FENCE: APPROX. 770 LF
FENCE EXTENSIONS: 2 EA

Figure 3. Side channel treatment description.

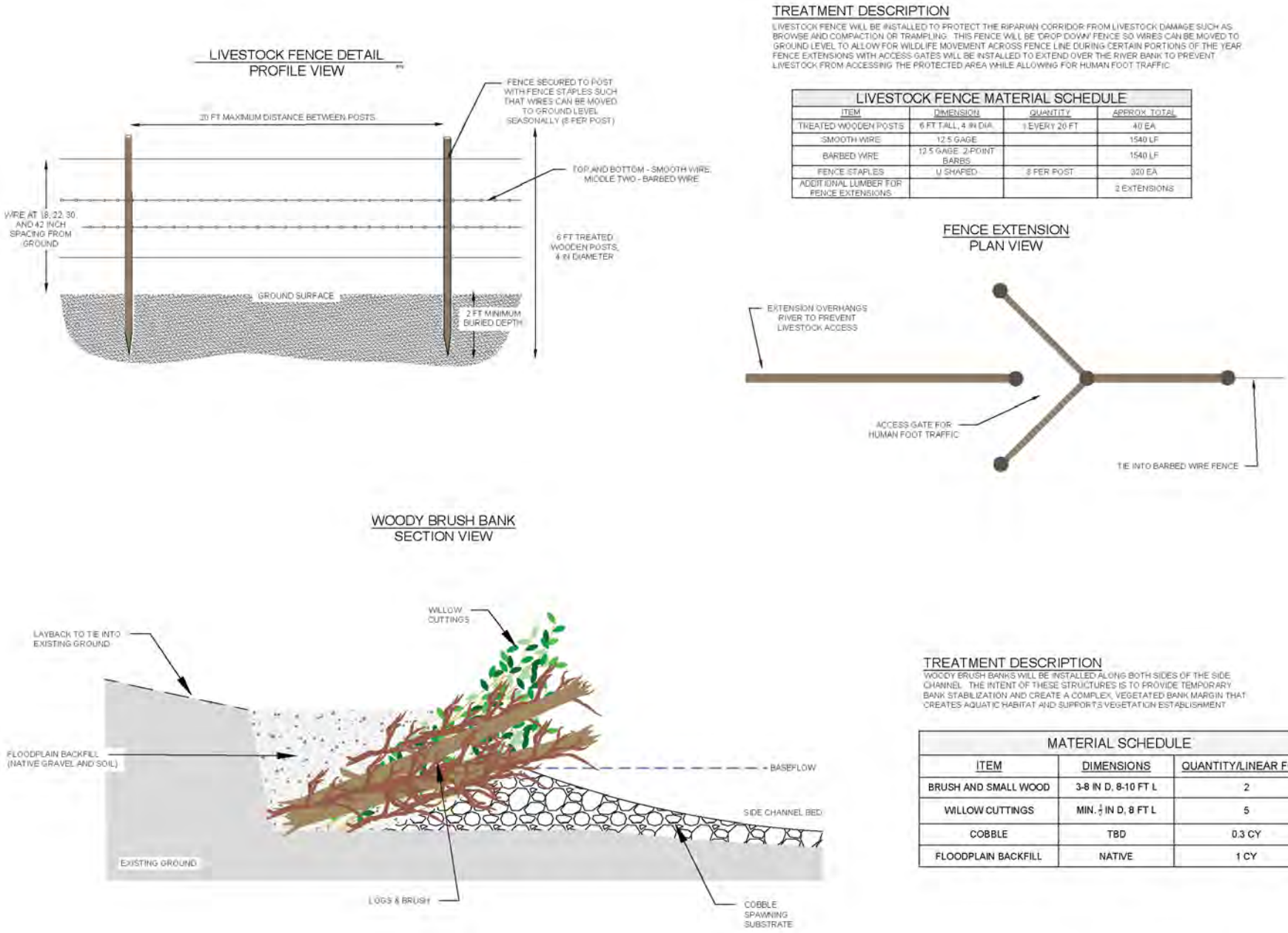


Figure 4. Wildlife friendly livestock fence and woody brush bank treatment details.

Key Personnel

Project Manager: Jon Malovich, Madison River Foundation

Project Design Consultants: Tom Parker and Alyssa Gulley, Geum Environmental Consulting; Karin Boyd, Applied Geomorphology; Chris Nelson, River Design Group

Land Managers: Tucker Porter and Helen Sladek, Bureau of Land Management

Project Partners: Matt Jaeger and Mike Duncan, Montana Fish, Wildlife and Parks; Jon Hanson, Northwest Energy

Project Timeline

The proposed project timeline is described below and includes final project design, pre-construction field work and implementation.

Winter 2022-2023:

- Gather and analyze additional data for final design including hydrology and hydraulics, swale cross section data, existing sediment size gradation, and potential material sources.
- Coordinate with project partners, including BLM and MFWP, to develop detailed design criteria. This may include spawning habitat criteria, desired flow regimes and aquatic habitat components.
- Verify cultural resources and NEPA (BLM).

Spring 2023:

- Develop final design planset describing how treatments will be constructed, to be used to support permit application and to procure bids for construction.
- Host pre-application meeting with permitting agencies.
- Develop and submit Joint Permit Application including floodplain permit supporting information.
- Confirm onsite sources of materials such as substrate, woody debris and cuttings.
- Conduct pre-project weed control as needed.

Deliverables: Design Planset and Joint Permit Application

Summer-Fall 2023:

- Gather pre-implementation monitoring data.
- Construct side channel and livestock fence.
- Gather as-built construction data.
- Develop project completion report and document monitoring data.

Deliverable: Project Completion Report

Subsequent Years:

- Annual maintenance and weed control evaluation.
- Annual monitoring data collection and reporting.
- Adaptive management based on maintenance and monitoring data.

Annual Deliverable (frequency may vary after year 3): Monitoring and Maintenance Memo

Cost Estimate

Estimated treatment quantities are displayed in Table 1 and estimated design and construction costs are outlined in Table 2. Unit costs fall within ranges seen on 2022 bid tabulations from similar stream restoration projects in Montana.

Table 1. Estimated treatment quantities.

TREATMENT	ESTIMATED QUANTITY	UNIT
Livestock Fence	770	Linear Feet
Side Channel Construction	540	Linear Feet

Table 2. Estimated design and construction costs.

	Quantity	Units	Unit Cost	Cost	Personnel
LIVESTOCK FENCING*					
6' Wooden Posts	52	Each	$6.00	$312.00	Contractor
Barbed Wire	1,540	Linear Feet	$0.06	$92.40	Contractor
Smooth Wire	1,540	Each	$0.06	$92.40	Contractor
Fence Staples	624	Each	$0.06	$37.44	Contractor
Install Fence	770	Linear Feet	$4.00	$3,080.00	Contractor
Install Fence Extension, Supply Materials	2	Each	$1,250.00	$2,500.00	Contractor
SUB TOTAL				**$6,114.24**	
**Type of fence to be determined during final design, 'let-down' livestock fence is used here for estimate*					
SIDE CHANNEL CONSTRUCTION					
Provide Gravel/ Cobble	600	Cubic Yards	$40.00	$24,000.00	Contractor
Harvest and Supply Cuttings	5,500	Each	$1.00	$5,500.00	Contractor
Provide Woody Brush	2,200	Each	$0.50	$1,100.00	Contractor
Construct Channel Bed	540	Linear Feet	$20.00	$10,800.00	Contractor
Construct Brush Banks	1,100	Linear Feet	$15.00	$16,500.00	Contractor
Haul and Place Excess Material in Repository	1,700	Cubic Yards	$8.00	$13,600.00	Contractor
Purchase Seed and Seed Repository	1	Acres	$350.00	$350.00	Contractor
SUB TOTAL				**$71,850.00**	
OTHER COSTS					
Construction Support (bid tour, staking, oversight, general logistical support, travel, lodging, per diem, as-built survey)				$10,000.00	Geum
Construction Completion Documentation				$2,000.00	Geum
Monitoring and Maintenance -- 3 years				$5,500.00	Geum/MRF
Mobilization and Demobilization (10% of estimated construction cost)				$8,000.00	Contractor
Sediment Control BMPs				$1,000.00	Contractor
Contingency (20% of estimated construction cost)				$15,500.00	
SUB TOTAL				**$42,000.00**	
Total Project 2188 TAC Funding Request				**$119,964.24**	
Madison River Foundation Matching Funding—Project Design				**$25,946.50**	
Total Project Cost				**$145,910.74**	

Project Title: ***MADISON RIVER-NORRIS REACH ISLAND ENHANCEMENT MASTER PLAN AND DEMONSTRATION PROJECT FINAL DESIGN***

Date: November 7, 2022

Applicability to Project 2188 License Article(s)

The Madison River-Norris Reach Island Enhancement Master Plan Project will offset impacts to river resources associated with Project 2188 (Madison-Missouri River). The project meets the purpose and intent of License Articles 408, 409 and 412, which require: 1) developing plans to restore and protect important riparian areas; 2) enhancing fish habitat both in main stem and tributary streams to the Madison River, for all life stages of fish; 3) restoring riparian habitat; and 4) protecting and aiding in the recovery of threatened and endangered fish species.

Justification for Priority 2 Classification

This project classifies as a Priority 2 2188 license project. The project is located on the mainstem Madison River between Warm Springs Creek and Black's Ford, approximately 11 miles downstream from Madison Dam (Figure 1). This project expands upon the results of the Madison River Sediment Mobility Assessment (Pioneer Technical Services, 2022) and will address limiting factors related to spawning and rearing habitat and overall channel complexity in the Norris Reach of the Madison River. For this proposal, RDG has teamed with Applied Geomorphology to ensure the knowledge gained from the sediment mobility study informs the restoration prioritization master plan.

Project Sponsors: NorthWestern Energy, Inc.
Montana Fish, Wildlife & Parks
River Design Group, Inc.
Applied Geomorphology (Karin Boyd)

Location of Proposed Project

The project is located in Madison County approximately 18 miles northeast of the town of Ennis, Montana. The project is located on the Madison River 11 downstream of Madison Dam. The legal description of the project area is Section 10, Section 11, and Section 2 in Township 3South, Range 1 East, and Sections 25, 35 and 36 in Township 2 South, Range 1 East, and Sections 19 and 30 in Township 2 South, Range 2 East. Please refer to Figure 1.

Geocodes: 25-0791-36-2-02-01-0000

Latitude: 45.622; **Longitude:** -111.553

Total Project Cost: $73,920

MadTAC Funds (Cost-Share) Requested for Project: $73,920

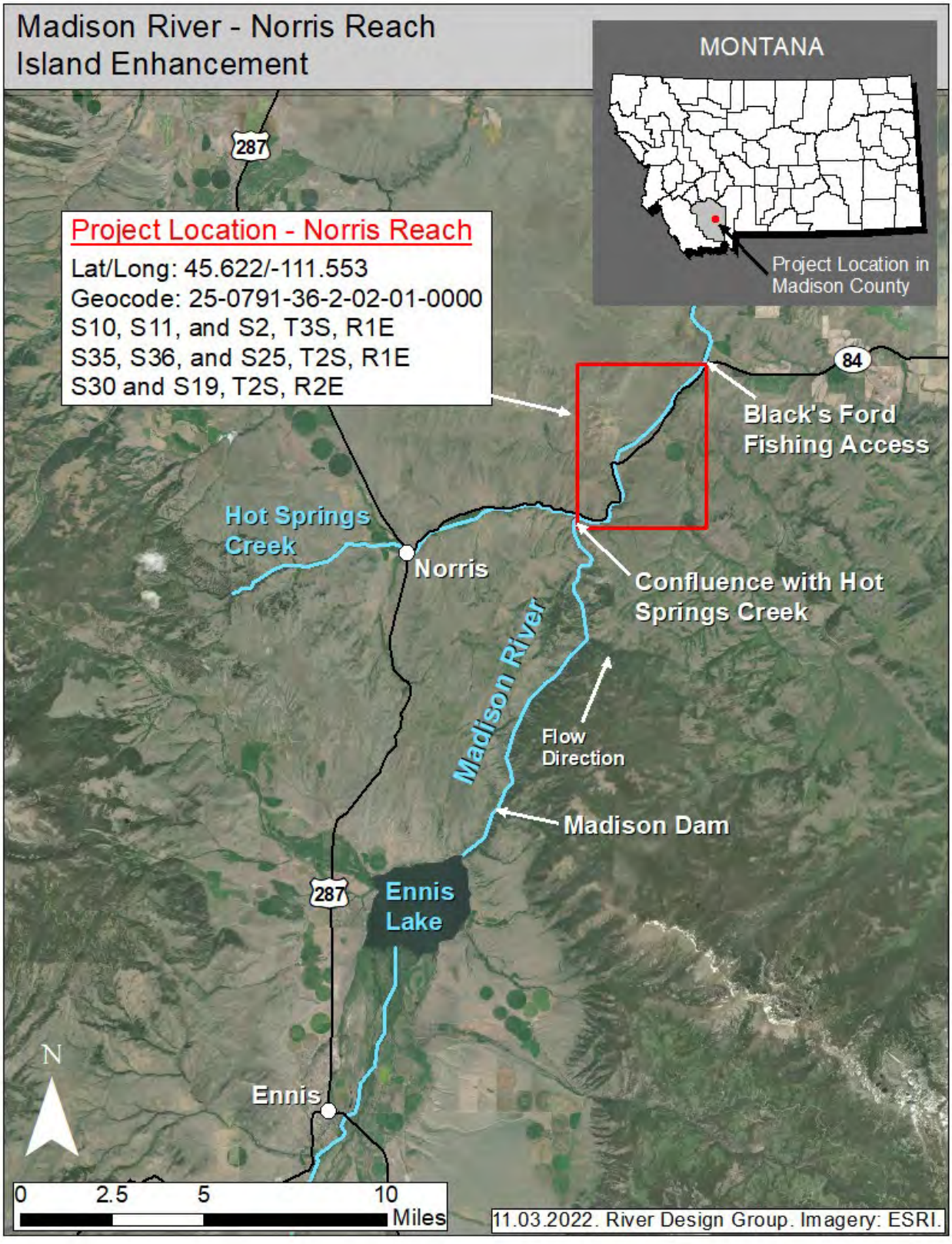


Figure 1. Madison River-Norris Reach Island Enhancement Master Plan project vicinity map.

I. INTRODUCTION

NorthWestern Energy and Montana Fish, Wildlife & Parks are interested in pursuing instream aquatic habitat enhancement project on the Madison River. The purpose of these projects would be to enhance mainstem spawning and rearing habitats through the creation and/or enhancement of islands and installation of streambank treatments to reduce current rates of bank erosion and channel enlargement. In 2022, NorthWestern Energy contracted with Pioneer Technical Services, Applied Geomorphology, and DTM Consulting to assess sediment mobility and flushing flows and develop alternatives to improve wild fish spawning habitat in the Madison River from Earthquake Lake to Greycliff near Three Forks, Montana. The investigation was partitioned into four, non-contiguous study reaches including Pine Butte, Varney, Norris, and Greycliff.

The investigation concluded that the Norris Reach, located downstream of Ennis Lake, has become progressively depleted of islands over time, compromising spawning and rearing habitats in this section of the Madison River. The Norris Reach supports dense redds in the spring and fall, and the redds are concentrated in a relatively wide section of river, in a moderately low energy area. Streambank erosion is occurring on both island margins and streambanks (Pioneer et al. 2022). The study also concluded that shallow islands areas that host dense redds in the Norris Reach may be older point bars or floodplain areas that are being progressively "dissected and stripped of sediment, creating ample spawning beds in the process." The reach experiences very little deposition but has been subject to long-term erosion and winnowing of islands and channel banks over time. The primary cause for the net export of sediment is likely due to a limited supply of sediment below Madison Dam.

To address these issues and limiting factors, the 2022 sediment mobility report recommended management actions, in particular constructing islands to improve hydraulic diversity and provide areas for riparian expansion in confined reaches including the Norris Reach. Further, the study recommended studying existing islands to provide design reference conditions.

This project proposal was developed as part of a comprehensive effort to improve conditions in the Norris Reach of the Madison River. To enhance mainstem spawning and rearing habitat, and to create hydraulic conditions that will recruit gravel, a range of restoration strategies will be evaluated with this project, including:

1) constructing new islands;

2) enlarging or supplementing existing islands;

3) treating eroding streambanks and island margins with vegetated wood matrix structures; and

4) evaluating opportunities to connect riparian wetlands and side channels to the main river.

II. Objectives

The following project objectives have been developed by project partners:

1. Conduct a more detailed geomorphic investigation of the Norris Reach with a focus on mapping and characterizing existing islands, bank migration trends and rates over time, and streambank erodibility conditions;
2. Identify and map all existing islands, and identify reference islands (i.e. analogs) that can assist in the development of detailed design criteria for new island development or for enhancing and enlarging existing islands;
3. Develop a Master Restoration Prioritization Plan to serve as a road map for implementing aquatic habitat enhancement projects through a phased, multi-year adaptive management approach; and
4. Prepare drawings and specifications for a *pilot or demonstration project*. The level of detail will be equivalent to a 75% design and meet all state, federal and local regulatory permitting requirements.

III. Methods

Table 2 includes the project scope and tasks that would be executed with this project. A brief description of the tasks and methods to be used are summarized below.

Task 1. Geomorphic Investigation

- Review 2022 sediment mobility study and refine data collection plan in consultation with Applied Geomorphology.
- Collect high resolution UAS imagery of select sub-reaches, with a focus on priority areas for existing island enhancement, new island construction, riparian and streambank restoration.
- Complete river surveys to support pilot project design drawings, including channel cross-sections, profiles, and Wolman pebble counts.
- Study reference “islands” to characterize reference conditions.
- Complete at-a-section hydraulic and sediment transport (incipient motion) modeling.

Task 2. Master Plan Development

- Prepare master plan and restoration prioritization report and drawings.
- Develop project phasing plan.
- Meet with project stakeholders to review master plan and solicit feedback prior to finalization.

Task 3. Pilot Project Design Drawings

- Prepare design drawings and technical specifications for pilot project.
- Develop project specifications, materials quantities, dewatering plans, detail drawings.
- Meet with project stakeholders to review design drawings and solicit feedback prior to finalization.

IV. Schedule

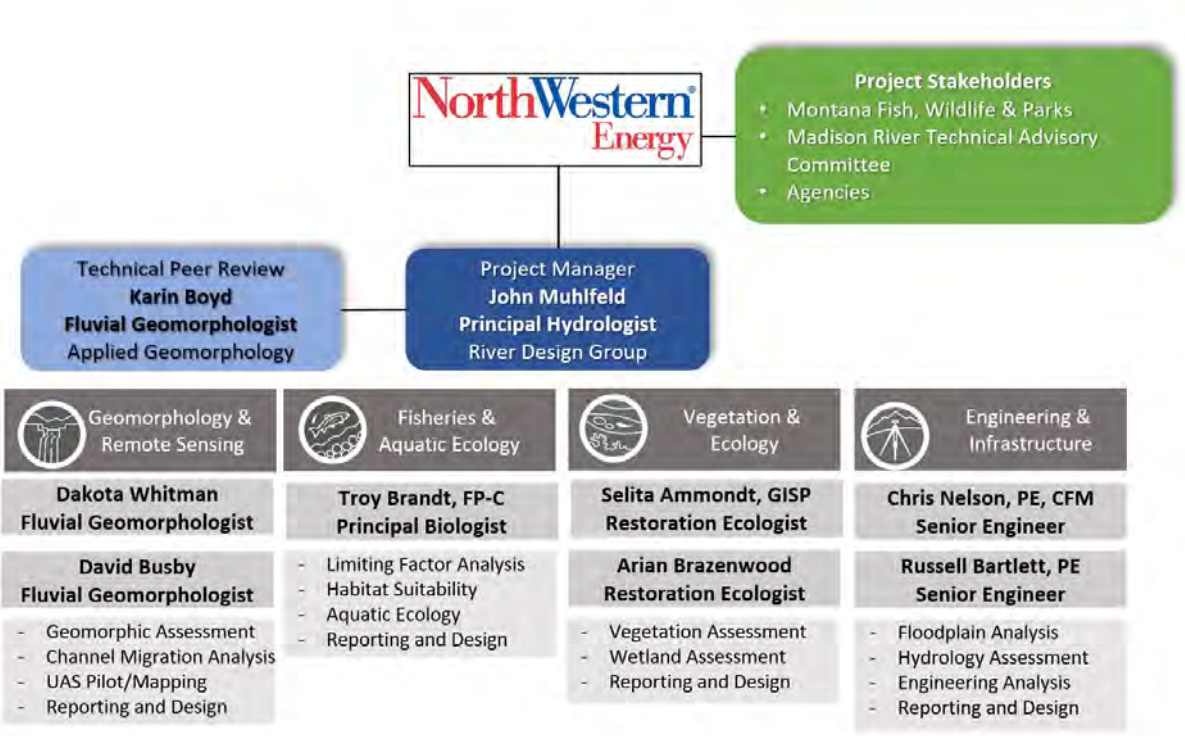
Table 1 includes the proposed project schedule. Following contract award, RDG and project partners will review existing data and reports and initiate a component of the remote sensing assessment which will include a historical channel bend migration analysis utilizing historical and current photography. Table 1 includes a proposed project schedule.

Table 1. 2023 project schedule.

Task	March - April	May - June	July	August - September	September -October	November
Task 1. Geomorphic Investigation and Field Work						
Task 2. Master Plan Development						
Task 3. Pilot Project Design Drawings						

V. Personnel

RDG is an approved consultant on NorthWestern Energy's Qualified Vendor's List for river, aquatic habitat, and wetland restoration services. RDG has an 18-year track record of designing and implementing large scale restoration projects on behalf of the NorthWestern Energy Technical Advisory Committee and agency partners. John Muhlfeld will serve as the project manager and technical lead on behalf of the design team. Karin Boyd with Applied Geomorphology will translate the knowledge gained from the sediment mobility study to this project and will provide technical input into the assessment and design tasks. Chris Nelson and Russel Bartlett will serve as the engineers of record. To comply with NorthWestern Energy's Cultural Resource Management Plan, a cultural resources investigation will be conducted for the river segment where the pilot project is scheduled to be constructed.



VI. Budget

Table 2 includes a not-to-exceed cost estimate to perform the Scope of Work (SOW). The cost estimate is based on the level of effort anticipated for each major task and sub tasks and applies 2023 rates for team members. The estimated cost to complete the SOW is $73,920.

VII. Deliverables

- UAS orthophotos of the Norris Reach with an emphasis on existing islands and proposed treatment areas;
- Restoration Prioritization Plan (Master Plan) for Norris Reach including results of the geomorphic, hydraulic and sediment transport investigations, concept drawings, treatment locations, and typical treatment drawings;
- 75% design drawings (11”x17” plan set) for pilot project including wetland delineation mapping

VIII. Cultural Resources

NorthWestern Energy will coordinate the necessary cultural resources investigations. Task 3 of this project includes development of a design plan set for a demonstration or pilot project on the Madison River. Cultural resources will be coordinated during the permitting phase of this project, which is anticipated in the fall of 2023 or 2024.

Table 2. Project Budget Madison River-Norris Reach Island Enhancement Master Plan	Direct Expense (Lodging, Per Diem, Mileage, Equipment)	John Muhlfeld Project Manager & Hydrologist	Karin Boyd Fluvial Geomorphologist	Troy Brandt, FP-C Fisheries Biologist	Chris Nelson, PE Russel Bartlett, PE Senior Project Engineers	Dakota Whitman David Busby Fluvial Geomorphologists	Selita Ammondt Arian Brazenwood Restoration Ecologists	Hours Subtotal
Task 1 - Geomorphic Investigations								
1.1 Project Management		24	4					28
1.2 Remote Sensing Assessment	$ 300					40		40
1.3 Field Data Collection & Detailed River Surveys	$ 3,650	30	10		4	80	20	144
1.4 Hydraulic and Sediment Transport Modeling					24			24
Subtotal Task 1	$ 3,950	$ 8,100	$ 2,100	$ -	$ 4,060	$ 12,600	$ 2,600	$ 33,410
Task 2 - Master Plan Development								
2.1 Review Existing Data and Reports		4			4	4		12
2.2 GIS Mapping and Exhibits							24	24
2.3 Restoration Prioritization Plan	$ 980	30	8		8	10	20	76
2.4 Reporting		20		8			20	48
2.5 Presentation to Stakeholders	$ 380	4						4
Subtotal Task 2	$ 1,360	$ 8,700	$ 1,200	$ 1,200	$ 1,740	$ 1,470	$ 8,320	$ 23,990
Task 3 - Pilot Project Design Drawings								
3.1 Plan Set Drawings		20	6		4	20	60	110
3.2 Specifications and Materials					8			8
3.3 Design Presentation	$ 380	4						4
Subtotal Task 3	$ 380	$ 3,600	$ 900	$ -	$ 1,740	$ 2,100	$ 7,800	$ 16,520
TOTAL	$ 5,690	$ 20,400	$ 4,200	$ 1,200	$ 7,540	$ 16,170	$ 18,720	$ 73,920

IX. Water Rights

Appropriate analysis will be performed to demonstrate that the project complies with the intent of Montana DNRC's "*Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities*", issued by the Water Resources Division on March 9, 2016. The guidelines are likely not applicable considering they specifically address wetland projects to ensure restored wetlands should function entirely in the absence of artificial controls and diversions of water that intentionally appropriate water for wetland use. This project will not result in the artificial control or diversion of water, therefore the guidance is likely not applicable. Regardless, RDG will coordinate restoration plans with DNRC to ensure compliance with adopted guidelines.

Project Title: ***O'DELL CREEK PHASE 19 STREAM AND WETLAND RESTORATION PROJECT DESIGN-ENGINEERING PROPOSAL***

Date: November 2, 2023

Applicability to Project 2188 License Article(s)

Phase 19 will offset impacts to river resources associated with Project 2188 (Madison-Missouri River). The project meets the purpose and intent of License Article 408, 409 and 412, which require: 1) developing plans to restore and protect important riparian areas; 2) enhancing fish habitat both in main stem and tributary streams to the Madison River, for all life stages of fish; 3) restoring riparian habitat; and 4) protecting and aiding in the recovery of threatened and endangered fish species including Arctic grayling. NorthWestern Energy continues to monitor prior phases of work to assess the effectiveness of previously implemented projects, including the benefits to stream temperature, streamflow quantity, fish densities, avian species richness and numbers, sensitive plants, and acres of restored/enhanced wetlands.

Justification for Priority 2 Classification

The O'Dell Creek Phase 19 Stream and Wetland Restoration Project classifies as a Priority 2 2188 license project. The project is located on O'Dell Creek, a major cold-water spring creek tributary to the Madison River, within 0.3 miles of the Madison River, and will address limiting factors related to degraded wildlife, wetland and aquatic resources.

Project Sponsor(s): NorthWestern Energy, Inc.
Granger Ranches, L.P.
Madison River Foundation
River Design Group, Inc.

Location of Proposed Project

The project is in Madison County approximately three miles south of the town of Ennis, Montana. The project is located on Granger Ranches, a working cattle ranch. The legal description of the project area is Sections 16 and 17, Township 6 South, Range 1 West. Please refer to Figure 1.

Geocodes: 25-0423-16-1-01-01-0000
Latitude: 45.316; **Longitude:** -111.741

Total Project Cost: **$**32,950

MadTAC Funds (Cost-Share) Requested for Project: $10,000

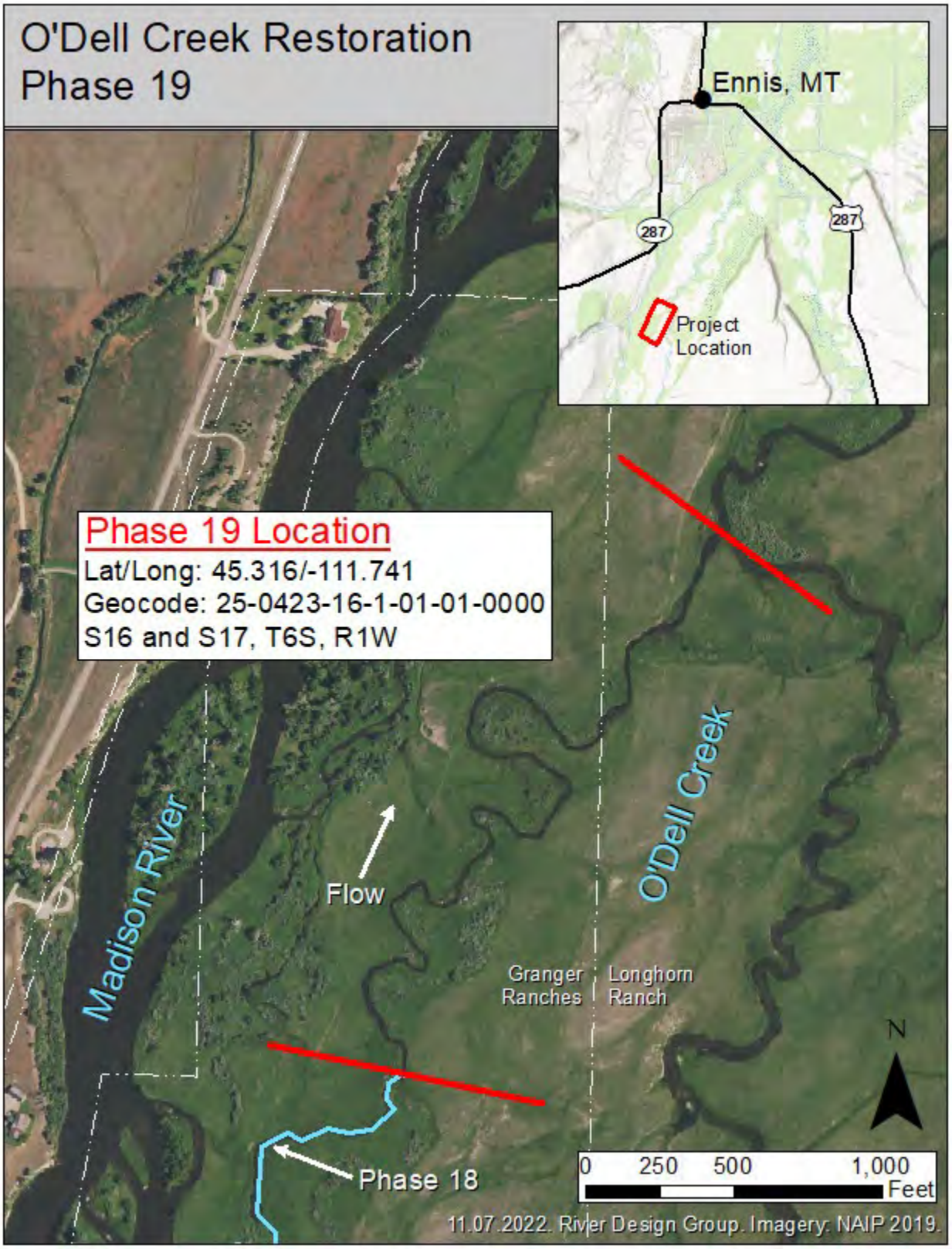


Figure 1. O'Dell Creek Phase 19 project vicinity map.

I. INTRODUCTION

O'Dell Spring Creek and floodplain wetlands are important ecological resources to the Madison River. Over the past 17 years, 16 phases of restoration work have culminated in the restoration of 15.5 miles of spring creek, and close to 900 acres of improved wetland functions. Restoration suitability, willing landowners, and private-public partnerships are the reasons for the success of this large-scale, comprehensive restoration project. In 2018, NorthWestern Energy, Granger Ranches, Longhorn Ranch, and the US Fish and Wildlife Service received the ***Society for Ecological Restoration Northwest Restoration Project of the Year Award*.** The award recognizes the important wildlife habitat gains resulting from permanently protecting and restoring wetland habitats. Accomplishments include:

- Restoring complex riffle and pool sequences throughout the 16-mile project area, including the mainstem O'Dell Creek and East and West Branch of O'Dell Creek.
- Increasing the distribution and availability of adult holding, spawning and juvenile rearing habitat (e.g. deep pools, complex undercut banks) on over 15.5 miles of stream channel, with an estimated ten-fold increase compared to pre-restoration conditions.
- Reduction in stream water temperatures due to improvement to channel morphology and hyporheic exchange between surface water and groundwater.
- Approximately 900 acres of restored wetlands, with over 265 wetland plant taxa detected on restored floodplain surfaces, representing 20% of Montana's wetland flora including 5 rare species. A range of wetland types and wetland plant communities including fens, saline meadows, open water and emergent complex.

This project proposal furthers restoration and conservation efforts on the Granger Ranch, a working cattle ranch owned by the Laszlo family. The legal description of the project area is noted above (Figure 1).
In 2018, the NorthWestern WildTAC funded a master plan to identify and prioritize restoration opportunities on O'Dell Creek from Fever Point (end of Phase 16 project) to Highway 287 near Ennis, Montana (see Figure 1). The west branch O'Dell Creek was identified as a high priority segment for restoration actions. In 2020 and 2021, the upper 1.5 miles of the west branch were restored. This proposal for Phase 19 will complete design and engineering for the remainder of the west branch, or approximately 0.5 miles of spring creek and floodplain riparian area. Completing restoration work on the west branch O'Dell Creek will be a significant accomplishment and milestone, as articulated in the master plan.

The purpose of this project is to improve aquatic habitat conditions of O'Dell Creek and associated stream and floodplain functions. This will be accomplished by restoring the proper channel and floodplain dimensions and creating off-channel, disconnected wetlands. Specifically, the goals of this project include: 1) improving aquatic habitat conditions for focal fish species including rainbow trout and brown trout; 2) establishing complex riffle and pool habitat units; 3) lowering channel width to depth ratios to decrese stream temperature; 4) restoring streambank conditions that support complex habitat conditions including undercut banks and deep lateral scour pools; 5) increasing channel sinuosity by reactivating abandoned meander oxbows characterized by wetland in over-widened channel sections as well as isolating wetlands from the channel to lower stream temperature.

II. Objectives

The following objectives have been developed for the Phase 19 project area in conjunction with the project partners and landowners:

1. Produce clean water consistent with supporting aquatic life and beneficial uses in the O'Dell Creek watershed and downstream receiving waterbody, the Madison River;

2. Create complex aquatic habitat components such as depth, velocity, substrate, cover, and pools that support populations of wild trout and other aquatic organisms;
3. Construct a stream channel that is connected to and interacts with the floodplain in terms of hyporheic flow and nutrient exchange; and
4. Create a more complex matrix of wetlands in over-widened channel sections by creating backwater areas, open water wetlands, and new floodplain surfaces that support emergent and scrub-shrub wetland communities.

III. Methods

RDG will prepare preliminary and final design plan set in coordination with NorthWestern Energy and Granger Ranches. The field assessment and survey effort will utilize RTK GPS complemented with terrestrial Light Detection and Ranging Data (LiDAR). Longitudinal profiles will be collected at upstream (end of Phase 18 project) and downstream (confluence with mainstem O'Dell Creek) to support the channel tie-in analysis. Project designs will be completed in AutoCAD Civil 3d. and ArcGIS. To complement future permitting, RDG's will complete a routine wetland delineation as required for the Nationwide 27 Section 404 submittal to the US Army Corps of Engineers.

IV. Schedule

The following project schedule has been developed. The field assessment, survey and wetland delineation will be completed in August and September 2023. Engineering and design tasks including wetland reporting will be completed in October and November in advance of the 2024 NorthWestern Energy Technical Advisory Committee meetings. Following contract award, RDG and project partners will complete project design and regulatory permitting. Table 1 includes a proposed project schedule.

Table 1. Proposed project schedule.

Task	August	September	October	November
Task 1. Field Assessment and Survey				
Task 2. Engineering, Design, Wetland Reporting				

V. Personnel

Similar to past phases of restoration on O'Dell Creek, the project will be designed and implemented under the auspices of a diverse group of stakeholders including NorthWestern Energy, Madison River Foundation, and Granger Ranches, LP. As a team, we have established a track record of successful collaboration on 16 projects on O'Dell Creek. Our continued collaboration and history working on this project underscores the importance we place on offering a team that will continue to be compatible with the community and stakeholders.

RDG is an approved consultant on NorthWestern Energy's Qualified Vendor's List for stream and wetland restoration services. RDG has prepared and implemented all previous phases of restoration on O'Dell Creek with the exception of Phases 1 and 2. John Muhlfeld will serve as the project manager and technical lead on behalf of the design team. Nate Wyatt, P.E., with RDG, will serve as the project engineer.

VI. Budget

Table 2 includes a not-to-exceed cost estimate to perform the Scope of Work (SOW). The total cost to perform the SOW is $32,950. Because benefits to both fisheries and wildlife habitats are anticipated, this application assumes a $17,950 match from WildTAC (55%), and $5,000 from Granger Ranches and Madison River Foundation (15%). Funds requested from MadTAC total $10,000, or 30% of the total project cost.

Table 2. O'Dell Creek Phase 19 Assessment and Design Cost Proposal	**Direct Expense**		**Selita Ammondt, GISP** Restoration Ecologist	**John Muhlfeld** Principal Hydrologist and Project Manager	**Nate Wyatt, PE** Water Resources Engineer	**David Busy** Fluvial Geomorphologist	**Hours Subtotal**
	Mileage, Lodging & Per Diem	**Equipment**					
Task 1. Field Assessment and Survey							
1.1 Office Preparation							
1.1.1. LiDAR and Remote Sensing Mapping			4	4			8
1.2 GPS Survey and Data Collection	$ 2,200	$ 300					
1.2.1. Reference Cross-Sections				16		16	32
1.2.2. Wetland Delineation			36				36
1.2.3. Channel Bathymmetry - Tie-In Analysis				16		16	32
1.3 Data Processing							0
1.3.1. GPS Data					4		4
1.3.2. Wetland and Geomorphic Data			8	2		10	20
	$ 2,200	**$ 300**	**$ 6,240**	**$ 5,700**	**$ 460**	**$ 4,200**	**$ 19,100**
Task 2. Engineering, Design & Wetland Reporting							
2.1 Draft and Final Plan Sets and Drawings							
2.1.1. Preliminary Planset Production				24	40		64
2.1.2. Final Plan Set Production				4	10		14
2.1.3. Wetland Reporting			30				30
	$ -	**$ -**	**$ 3,900**	**$ 4,200**	**$ 5,750**	**$ -**	**$ 13,850**
	$ 2,200	**$ 300**	**$ 10,140**	**$ 9,900**	**$ 6,210**	**$ 4,200**	**$ 32,950**
Cash Cost Share Match from Granger Ranches & Madison River Foundation							**$ 5,000**
Cost Share Match from WildTAC							**$17,950**
Total 2023 MadTAC Request							**$10,000**

VII. Deliverables

Project deliverables will include the following:

- Preliminary and final design plan sets;
- Wetland delineation report including GIS mapping exhibits and field forms;
- Construction cost estimate (engineer's estimate).

VIII. Cultural Resources

NorthWestern Energy will procure the necessary cultural resources investigations prior to project implementation.

IX. Water Rights

Appropriate analysis will be performed to demonstrate that the project complies with the intent of Montana DNRC's "*Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities*", issued by the Water Resources Division on March 9, 2016. DNRC guidelines state that "any wetland project (restoration) whose final design approximates the natural characteristics of adjacent natural wetlands or approximates something smaller in magnitude does not require a water right". The guidelines also state that restored wetlands should have characteristics similar to other natural wetlands in the area and should function entirely in the absence of artificial controls and diversions of water that intentionally appropriate water for wetland use.

This Phase 19 will restore wetland habitat by enhancing existing wetlands through grading and revegetation. The restored wetlands will have identical hydrologic and vegetative characteristics to existing wetlands in the immediate area. Riverine wetland habitat will be converted to shallow open water and emergent wetlands by narrowing of the current over-widened stream channel. Wetlands will be located within the floodplain and will be very similar in size and habitat characteristics to pre-settlement open water wetlands in the area. The small open water wetlands will not involve the construction of any berms, dams, or dikes; will not involve any diversion of water; will partially offset the loss of riverine wetland habitat; and will not increase water consumption.

Cost-Share Proposal Form for NorthWestern Energy (NWE) Project 2188 TAC Funds

Project 2188 (Madison-Missouri River) License Protection, Mitigation and Enhancement (PM&E) projects are required to offset impacts to river resources from the continued operation of one or more of NWE's nine hydro developments (Hebgen, Madison, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan and Morony Dams). PM&E projects need to be prioritized toward in-river or on-the-ground measures that directly benefit fisheries and/or wildlife populations and their habitats:

Priority 1: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats within the main stem Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir)

Priority 2: 2188 License projects which meet License Article requirements and PM&E for fisheries or wildlife populations or their habitats in primary tributaries or on adjacent lands and, in doing so, provide PM&E for Madison River (Hebgen Reservoir to Three Forks) or Missouri River (Hauser Reservoir to Fort Peck Reservoir) resources.

Priority 3: 2188 License PM&E projects which meet License Article requirements by providing scientific or other tangible PM&E benefits to Madison-Missouri River fisheries or wildlife populations or their habitats. These projects must be located in the greater Missouri River drainage upstream from Fort Peck Reservoir, but not necessarily located on the main stem Madison River or Missouri River or their adjacent lands or primary tributaries.

All TAC project proposals must include the following information:

Project Title: Fox Creek Off Channel Cattle Watering Troughs

Date: November 10, 2022

Explain how this Project addresses a specific Project 2188 License Article(s):
This project addresses specifically Article 408 7) Monitor fish species of special concern (i.e., Arctic Grayling and Westslope Cutthroat Trout) and develop projects to secure, recover, and expand their populations in the upper Madison River.

Provide justification for Priority 1, 2 or 3 (above) that you selected:
The proposed project is a Priority 2 proposal. The proposed scope of work is to install two off channel watering troughs which will decrease grazing impacts on approximately 1.3 miles of habitat for a conservation population of Westslope cutthroat trout in middle Fox Creek, a tributary to the West Fork Madison River.

Project Sponsor (submitted by): Monica Berreman, USFS Fisheries, Beaverhead-Deerlodge NF, Madison Ranger District

Location of Proposed Project: Fox Creek, a tributary to the Upper West Fork Madison River

Narrative:

Westslope cutthroat trout (WCT) are native to the cold-water streams of the Upper Missouri River Basin. Although still widespread, WCT distribution and abundance in Montana has declined significantly in the past 100 years due to a variety of causes including introductions of nonnative fish, habitat degradation, and over-exploitation (Hanzel 1959, Liknes 1984, McIntyre and Rieman 1995, Shepard et al. 1997, Shepard et al. 2003). The restoration goal for WCT in the Missouri Headwaters is to restore protected conservation populations to 20% of their historic distribution within each sub-basin (FWP 2019). Over the short-term (1 to 25 years), many remaining WCT populations face a moderate to high risk of local extinction because of nonnative trout, poor habitat conditions, isolation, reduced distribution and population size, and the random effects of natural disturbances (Shepard et al. 2005). Reduced WCT abundance and

distribution can be associated with historic and current land management activities, including livestock grazing, that may result in chronic stream de-watering, sedimentation, channel alteration, riparian vegetation removal or modification, and temperature increases.

Within the Madison River sub-basin, there are 20 Conservation populations (7 unaltered; 0 mixed; 13 altered) with 58% of populations at risk (12 of 20). Livestock grazing is a significant risk to 7 of those populations. Fox Creek, a tributary to the Upper West Fork Madison River, has an at-risk genetically altered WCT of 92% (as of 2016/resampled 2022 by FWP). The actions required to maintain conservation populations in the Madison River sub-basin, as stated in the Westslope Cutthroat Trout Conservation Strategy for the Missouri River Headwaters of Southwest Montana (January 7th, 2022), include 1) the need to assess barrier potential to protect population and 2) the need to assess grazing impacts to determine fencing needs. Action 1 is currently being considered under the Upper West Fork Madison River Barrier Proposal which would also protect the Fox Creek population. This proposal will address Action 2 by installing two off channel watering troughs for cattle.

Geocode (in decimal degrees ex 46.89743) Lat; _____photo but didn't pin_____ Long: _____
Two exact locations to be determined during Spring 2023 site visit.

Total Project Cost: $10,000

2 1200-gallon water troughs (TAC Request) ($4,000 each) = $8,000

Water collection system/water delivery pipe (TAC Request) =$2,000

B-D Fisheries & Ranger personnel (USFS) =$1,935
(4 employees x 3 days x $215 average/employee/day)

Total = $11,935

TAC Funds (Cost-Share) Requested for Project: $10,000

I. Introduction: brief statement of project to be completed with pertinent background information.
Currently, approximately 500 cow/calf pair in the Bufford Pasture of the Bufiox Grazing Allotment drink directly from Fox Creek. During a WCT population estimate survey by FWP and BDNF fish biologists in July 2022, past and present grazing impacts (eroding banks, increased sedimentation) on the channel of middle Fox Creek were observed. It was determined that off site watering would encourage cattle to stay out of the stream.

II. **Objectives; explicit statement(s) of what is intended to be accomplished**.
The proposal objective is to decrease instream grazing impacts on the Fox Creek WCT conservation population in the Bufford Pasture of the Bufiox (Bufford/Fish/Fox) Grazing Allotment by installing two 1200- gallon watering troughs away from the stream channel, along with the associated water collection devices and delivery pipe. The area surrounding the water connection devices will be fenced to avoid possible damage by cattle.

III. Methods; description of how Project objectives will be accomplished.

1. Determine best locations for troughs whether 1) in stream water collection device with sufficient elevation drop or 2) at a spring, using a spring box or Y collection system. One field day required.
2. Install water collection devices by hand. A J-hook with a truck or tractor will be used to install the water delivery pipe. A truck will be used to deliver the two 1200-gallon troughs to their off-channel locations. 1-2 days required.
3. Build fencing around each of the two water collections sites. 1 day required.

IV. Schedule; when the Project work will begin and end.
July 15-September 15, 2023

V. Personnel; who will do the work? Identify Project leader or principal investigator.

Jake Stewart – Madison Ranger District (MRD) Range Specialist; Monica Berreman – MRD fish biologist; Kevin Weiner – Forest hydrologist; MRD fish and range technicians.

VI. <u>Project budget must include amounts for the following:</u>

- Direct Labor
- Travel and Living
- Materials*: $10,000*
- Other Direct Expenses
- Direct Overhead*
- All cost-share sources and amounts, including estimation of "in-kind" contributions

***NorthWestern Energy TAC funds will not be used for agency overhead on projects that do not fund personnel. Applications for materials and equipment should not contain overhead.**

VII. Deliverables; describe work product (reports, habitat restoration, etc.) which will result from this Project. How will "success" for this project be monitored or demonstrated?

MFWP and FS will periodically monitor cattle use patterns. The water troughs and collection/delivery systems will be included in the Term Grazing Permit and maintained by the permittee. The success of this project would be documented in a completion report that includes photographs of pre and post construction and conveyed to Northwestern Energy in an annual report submitted by the MRD fish biologist.

VIII. Cultural Resources. Cultural Resource Management (CRM) requirements for any activity related to this Project must be completed and documented to NWE as a condition of any TAC grant. TAC funds may not be used for any land-disturbing activity, or the modification, renovation, or removal of any buildings or structures until the CRM consultation process has been completed. Agency applicants must submit a copy of the proposed project to a designated Cultural Resource Specialist for their agency. Private parties or non-governmental organizations are encouraged to submit a copy of their proposed project to a CRM consultant they may have employed. Private parties and non-governmental organizations may also contact the NWE representative for further information or assistance. Applications submitted without this section completed, will be held by the TAC, without any action, until the information has been submitted.

Summarize here how you will complete requirements for Cultural Resource Management:
A detailed plan and map will be submitted to the Beaverhead-Deerlodge NF Cultural Specialist who will be included in the Forest Service sNEPA process and to assist in determination of troughs and water delivery systems.

IX. Water Rights. For projects that involve development, restoration or enhancement of wetlands, please describe how the project will comply with the Montana DNRC's "Guidance for Landowners and Practitioners Engaged in Stream and Wetland Restoration Activities", issued by the Water Resources Division on 9 March 2016.

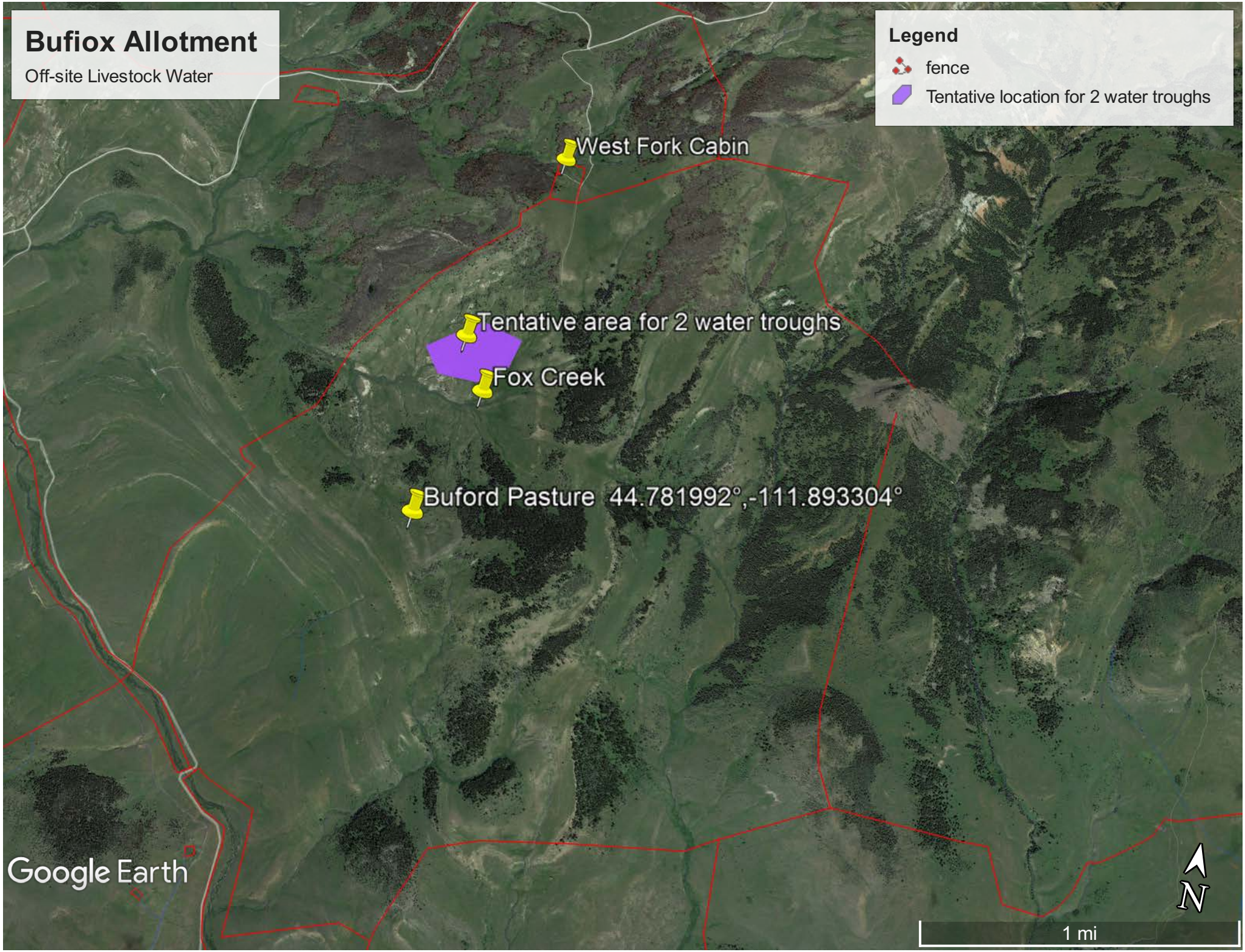
Summarize here how you will comply with Montana water rights laws, policies and guidelines: Prior to project implementation, the proposed project will be required to be analyzed through the Beaverhead- Deerlodge NF sNEPA process. DNRC and any water right holders will be consulted during the permitting process. A 124 permit will be obtained from FWP.

All TAC Project proposals should be 7 pages or less and emailed (as a WORD file) to each of:

- Andrew.Welch@NorthWestern.com
- Jon.Hanson@Northwestern.com
- Grant.Grisak@Northwestern.com

Further questions about TAC proposals or Project 2188 license requirements or related issues may be addressed to:

Andy Welch
Manager, Hydro License Compliance
Andrew.Welch@NorthWestern.com
O 406-444-8115
C 406-565-7549
208 N. Montana Ave
Suite 205
Helena, MT 59601


Bufiox Allotment
Off-site Livestock Water
Legend
fence
Tentative location for 2 water troughs
West Fork Cabin
Tentative area for 2 water troughs
Fox Creek
Buford Pasture 44.781992°,-111.893304°
Google Earth
N
1 mi