



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: Rockfish Remote System Communication Upgrades

Date: 11/25/2025

Explain how this Project addresses a specific Project 2188 License Article(s): This is a priority 1 proposal because it meets 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)

Provide justification for Priority 1, 2 or 3 (above) that you selected: The project is located on the mainstem Missouri river, so it is a priority 1 project.

Project Sponsor (submitted by): NorthWestern Energy

Location of Proposed Project: Middle Missouri river from Morony Dam to headwaters of Fort Peck Reservoir
Narrative –

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

Total Project Cost: \$25,000

TAC Funds (Cost-Share) Requested for Project: \$25,000

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

Rockfish systems provide real-time or near-real-time data transmission for passive integrated transponder (PIT) and radiotelemetry data from monitoring receivers deployed in remote field locations. Given the logistical challenges of

working in Recovery Priority Management Area (RPMA) 1, this system significantly improves efficiency of recapture efforts, habitat use assessment, and reproductive monitoring, thereby optimizing time and resources of personnel charged with monitoring several tagged fish species.

Ritter Design proposes to refine, enhance, and maintain the Iridium satellite-based remote monitoring platform by performing system upgrades that meet the changing software upgrades from Lotek Wireless and Oregon RFID systems. New hardware upgrades will be integrated as necessary.

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

1. Design and implement a streamlined data architecture for automated telemetry data delivery.
2. Develop an automated email alert system to distribute detection data to biologists and technicians.
3. Conduct updates and maintenance on Rockfish devices and systems.

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

- Task 1: Design and finalize a cloud-based architecture for automated data collection, formatting, and delivery, utilizing an auto-populating spreadsheet (e.g., Google Sheets or Microsoft Sharepoint).
- Task 2: Create and implement an automated email messaging system by writing Python, Bash, or R code, or a combination thereof. Work with biologists and technicians to determine most useful data and format.
- Task 3: Perform field maintenance and technology upgrades on Rockfish units, including code when necessary. Field maintenance can be accomplished by coordinating with biologists and technicians or by Ritter Designs personnel when possible.
- Task 4: Deliver quarterly updates and a final technical report to NorthWestern Energy and MoTAC

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

Work will span up 3 years starting in 2026 with major tasks initiated in year 1 and maintenance and refinements continued in years 2–3. The project is expected to be tested and completed by no later than December 31 2028.

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

T. David Ritter, fisheries biologist, Ritter Designs
Christopher Ritter, engineer, Ritter Designs

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

See above.

***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?

- Functioning Rockfish systems for RPMA 1 with integrated telemetry data and automated email alerts.

- Updated and maintained Rockfish hardware and software.
- Final project report with system documentation.

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:

No CRM resources would be impacted by the proposed action.

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:

No water rights would be affected by this project.

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

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📞 406-565-7549

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