

# The Montana Drought Adaptation and Response Plan

## Updating Montana's Drought Response Plan

### **Montana Department of Natural Resources and Conservation**

**Valerie Kurth, Project Manager**

**P.O. Box 201601**

**Helena, MT 59620-1601**

**[vkurth@mt.gov](mailto:vkurth@mt.gov)**

**406-444-6628**

**Jan Langel, Administrator**

**Water Resources Division**

**[jlangel@mt.gov](mailto:jlangel@mt.gov)**

**406-444-0559**



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# Technical Proposal and Evaluation Criteria

## Executive Summary

This application was submitted on February 4, 2020 by the Montana Department of Natural Resources and Conservation (DNRC) in Helena, Lewis and Clark County, Montana.

This project will update Montana's Drought Response Plan, which was approved in 1995 and is in urgent need of revision, expansion, and improvement. This application requests \$200,000 from Reclamation to update the State's plan through a comprehensive, stakeholder-driven, science-based planning process. DNRC will provide \$100,000 in direct funding and \$100,000 of in-kind match. Funds will be used for contracted meeting facilitation and technical services, travel, and other expenses, such as printing. DNRC will work with a contracted facilitator to convene advisory committee meetings associated with major water use sectors. Committee input will provide the framework for the vulnerability assessment and mitigation recommendations. A contractor will assist in the evaluation of drought metrics and development of response actions. DNRC will work closely with Reclamation throughout the planning process to ensure that program objectives, including the six required elements of a drought contingency plan, are achieved, and the project is adhering to the two-year time frame. This project will accomplish Reclamation's goal of building long-term drought resilience by developing realistic and proactive mitigation activities that increase water supply reliability. Moreover, this project supports several Department of Interior priorities, including creating a legacy of conservation stewardship, sustainably developing our energy and natural resources, and restoring trust in local communities.

We estimate this project will require two years to complete. The planning area for this project is the state of Montana. Reclamation operates 15 projects, three powerplants, and 25 dams within the state.

## Background Data

The planning area for the proposed update to Montana's Drought Response Plan (to be titled the Montana Drought Adaptation and Response Plan) is the entire state of Montana. At 147,039 square miles, Montana is the fourth largest state in the country, but its population is relatively low, at just over one million residents. Its expansive and diverse topography, climate, and ecosystems, which span temperature forest, semi-arid grassland, and alpine tundra, make natural resource planning at the state level a complex and challenging effort.

Montana is considered a headwaters state because over 80% of its water originates within the state, most of it falling as rain or snow. The western third of the state (25,000 square miles or 17%) straddles the Continental Divide, where most of the precipitation falls in winter as snow. The central and eastern parts of the state (122,000 square miles or 83%) receive most of their precipitation as spring and summer rain. Rivers of national importance originate from both sides of the divide: the Clark Fork of the Columbia on the west and the Missouri on the east

(Figure 1). Additionally, two other major rivers, the Kootenai and Yellowstone, do not originate in Montana, but travel significant distances through the state.

West of the divide, the Clark Fork and Kootenai Rivers are both part of the Columbia River Basin, and, although they drain a smaller area, their collective water yield is substantially higher than that of other major rivers in the state. Most of this water originates from heavy winter snowpack, and much of the region is characterized by a Pacific Northwest climate, meaning it is wetter and more temperate than the rest of the state. However, some valleys west of the divide receive less than one foot of moisture annually, which highlights the stark climatic diversity.

East of the divide, Montana is generally drier, windier, and experiences more extreme seasonal fluctuations in temperature. Summers are hot and dry, and winters are cold. Valleys and prairies are characterized as arid or semi-arid, and some regions receive less than 10 inches of moisture annually.

Montana relies heavily on its rivers for water supply, but its aquifers are also an important resource. The physical availability of groundwater depends on the geology, recharge, and interactions with surface water. The most common sources of groundwater are shallow sand and gravel aquifers (surficial aquifers) along the floodplains of major streams and rivers. These alluvial aquifers are by far the most common sources of water for irrigation, municipal, industrial, household, and livestock purposes. Deeper sources of groundwater are found in bedrock aquifers, which are limited to areas where steep mountains meet valley floors (mainly in the western part of the state) or areas with large subsurface limestone or sandstone formations (mainly east of the divide). Bedrock aquifers in the east are important for domestic and stock uses and, occasionally, larger municipal or industrial uses.

**Water rights** – DNRC administers and regulates water rights through the Montana Water Use Act of 1973, which confirmed the principles of prior appropriation. New appropriations of water are limited by physical availability and legal demands. Many basins in the western third of the state are closed to new surface water appropriations, and, in basins that are not closed, competing demands, such as irrigation, hydropower, and instream flows, limit the legal availability of water.

**Current water use and demand** - Montana's major consumptive and non-consumptive water uses are broadly reflected in the following categories: hydropower, reservoir evaporation, agricultural irrigation, livestock watering, public supply, domestic self-supply, industrial, and instream flow for fish and recreation. The total amount of water used annually is 84 million acre-feet, of which 72 million acre-feet (86%) is non-consumptively used for hydroelectric power generation. Of the remaining 12 million acre-feet, 3.6 million acre-feet are consumed, and reservoir evaporation accounts for 1 million acre-feet of that consumed amount. Approximately 10.4 million acre-feet is diverted for agricultural irrigation, and, of that, about 2.4 million acre-feet is consumed (68% of the total water consumed in Montana). The remainder, approximately 200,000 acre-feet, is consumed by all other uses, including municipal, industrial, domestic, and livestock watering.

**Water users served** - Montana has over 1,030,000 residents, and approximately 75% of Montanans rely on one of the state's 2,000-plus public water systems for drinking water. The remaining 25% use domestic wells. The seven largest cities, including Billings and Bozeman, serve approximately 35% of Montanans with drinking water.

**Projected demand** – Projecting future water demand is difficult because of the many complex, interacting factors, but DNRC considered this question during its development of the State Water Plan.<sup>1</sup> A simple projection based on existing water reservations in the Missouri and Yellowstone Basins predicts a 40-80% increase in irrigation consumption, depending on the amount of irrigation expansion near those rivers. No appreciable expansion of irrigated acreage is expected west of the divide. Other water use sectors will likely increase with anticipated population growth, especially municipal and domestic self-supplies. Land use change, such as the conversion of agricultural acreage to residential development, will shift the water demands, but potentially complicated the hydrology by reducing return flows and aquifer recharge.

DNRC used empirical models to predict future water supply as part of its State Water Plan. Hydrologists followed the general procedures described in the Bureau of Reclamation West-Wide Climate Risk Assessments<sup>2</sup> to develop a range of probable future climate scenarios. Virtually all model simulations project warmer temperatures and most project modest precipitation increases. Although annual stream flow volumes are expected to stay the same or increase, Montanans are likely to see a shift in the timing of runoff due to earlier snowmelt and an increase in rain as a percentage of precipitation during late winter and early spring. The Montana Climate Assessment also predicts changes in snowpack and runoff timing that will reduce late-summer surface water availability and increase pressure on groundwater resources.<sup>3</sup>

**Irrigated acres/major crops/acres served** - Agricultural irrigation is the largest consumptive use of water in Montana. Approximately 10.4 million acre-feet is diverted for agricultural irrigation on approximately 2.5 million acres of land each year. Montana's irrigated crops include alfalfa, barley, cherries, corn, grass, oats, potatoes, sugar beets, and wheat. Agricultural water use varies across the state and is affected by climate, geology, soils, and proximity to water.

**Past working relationships with Reclamation** – Reclamation has a long history of collaborating with DNRC and has provided project support, in the form of funding, technical assistance, or both. We will focus on the most recent and most relevant collaborations.

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<sup>1</sup> Montana Department of Natural Resources and Conservation. 2015. *Montana State Water Plan: A Watershed Approach to the 2015 Montana State Water Plan*. 84 p.  
[http://dnrc.mt.gov/divisions/water/management/docs/state-water-plan/2015\\_mt\\_water\\_plan.pdf](http://dnrc.mt.gov/divisions/water/management/docs/state-water-plan/2015_mt_water_plan.pdf)

<sup>2</sup> U.S. Bureau Reclamation, 2011. 'West-Wide Climate Risk Assessments: Bias-Corrected and Spatially Downscaled Surface Water Projections', Technical Memorandum No. 86-68210-2011-01, prepared by the U.S. Department of the Interior, Bureau of Reclamation, Technical Services Center, Denver, Colorado. 138 p.

<sup>3</sup> Cross, W., et al. 2017. Water and Climate Change in Montana. In: Whitlock C, Cross W, Maxwell B, Silverman N, Wade AA. 2017 Montana Climate Assessment. Bozeman and Missoula MT: Montana State University and University of Montana, Montana Institute on Ecosystems. 318 p. doi:10.15788/m2ww8w.

## Studies and Projects

- **St. Mary River and Milk River Basins Study Update** (2016-present). Updated modeling effort to evaluate management and infrastructure, including future climate change and paleo-drought conditions using RiverWare software.
- **Missouri Headwaters Basin Study: Modeling future water supplies, demands, and operations of the basin upstream of Fort Peck Reservoir** (2014-2020). Evaluation of water supplies and management issues in the Missouri River Headwaters.
- **Upper Missouri Headwaters Regional Drought Contingency Plan** (2016-2019). Included development of drought planning efforts in eight tributary watersheds.
- **Facility Review: Flathead Indian Irrigation Project Pumping Plants** (2014). Engineering review to facilitate negotiations for the Confederated Salish and Kootenai Tribes (CSKT) Water Compact.
- **Flathead Basin Tribal Depletions Study** (2012). Report of modeling potential to use stored water from Hungry Horse Reservoir to meet supplemental water requirements from CSKT Water Compact.
- **St. Mary River and Milk River Basins Study** (2009-2012). Modeling effort to evaluate impacts to water users and infrastructure.
- **North Fork Blackfoot Study** (1997-2001). Hydrologic assessment of impacts to surface and groundwater interactions to better understand instream flows.
- **Flint Creek Return Flow Study** (1994-1997). Examined irrigation return flows and developed a water-use model for future changes for Flint Creek.
- **Effects of Future Irrigation Development on Hydroelectric Generation in the Basin** (1988). Examined hydroelectric power generation at Noxon Rapids Dam in relation to upstream irrigation development in the Lower Clark Fork.
- **Earlier efforts:** Construction of river system models to assess current conditions and evaluate proposed changes to management and infrastructure at several locations: Milk River Water Supply Study (1990), Missouri River Model (1993), and Mussellshell River Basin Water Management Study (1998).

## Other collaborations

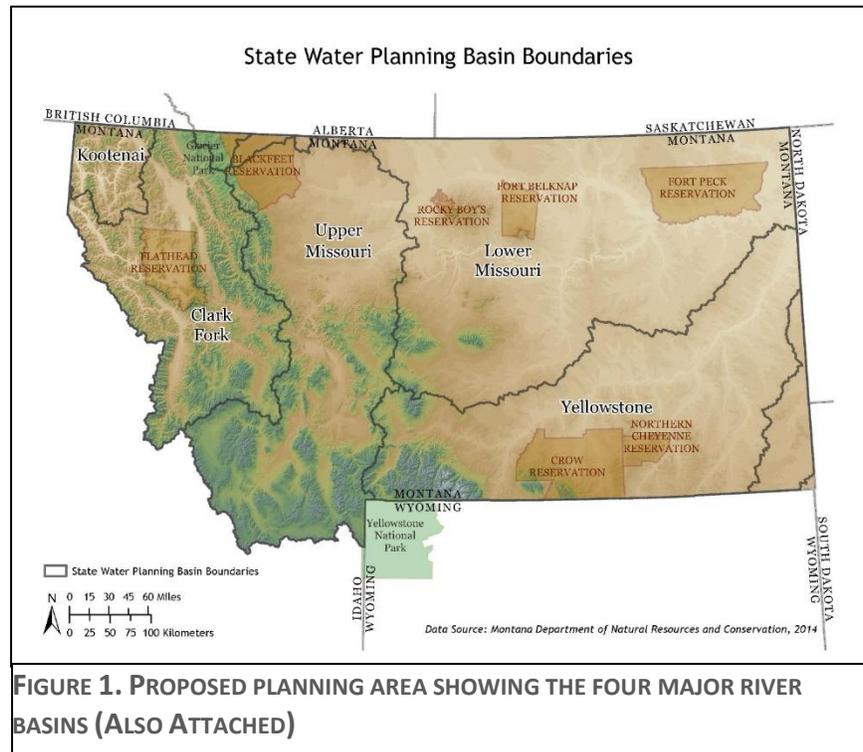
- Reclamation funded the equipment and installation of four AgriMet weather stations on the Flathead Reservation (2019). The stations are part of improvements to Flathead Indian Irrigation Project under the CSKT Water Compact.
- Stephanie Micek, Reclamation staff from the Montana Office of Reservoir and River Operations, participates in the Montana Governor's Drought and Water Supply Advisory Committee (DWSAC).
- DNRC is serving in an advisory capacity for a model that Reclamation is developing for the Bighorn River Basin.

## Project location

The proposed planning area is the state of Montana. The four major river basins in Montana are the Clark Fork/Kootenai, Upper Missouri, Lower Missouri, and Yellowstone (Figure 1 and attached).

## Project description

DNRC will guide the planning process, including the coordination of stakeholders and development of the plan, in accordance with the phases and elements specified by Reclamation. In recent years, the State of Montana,



**FIGURE 1. PROPOSED PLANNING AREA SHOWING THE FOUR MAJOR RIVER BASINS (ALSO ATTACHED)**

led by DNRC, has greatly expanded its drought monitoring and assessment network, using a collaborative approach that includes local, state, tribal, and federal partners. The plan update will formalize this network and approach while also including a comprehensive vulnerability assessment. Mitigation actions and activities will be significantly expanded by incorporating drought adaptation. The planning process will include input and guidance from a diverse array of stakeholders who represent various levels of government and water use sectors. Although this effort is considered an update to an existing drought contingency plan (Task B), it will actually constitute a significant and comprehensive overhaul of Montana’s drought monitoring, mitigation, and response framework.

## Phase I

Phase I will begin with the development of a Drought Planning Task Force (Task Force) to oversee the planning process. The Task Force will be comprised of leadership from the Governor’s office and state agencies that are involved in drought monitoring and response, including DNRC; Department of Fish, Wildlife & Parks (FWP); Department of Environmental Quality (DEQ); Montana Disaster and Emergency Services (DES); Department of Livestock (Livestock); Department of Agriculture (Agriculture); and Department of Commerce (Commerce). The Task Force will oversee the planning process, and staff from DNRC’s Water Management Bureau (four regional water planners and one education coordinator) will guide the group and assist with the process.

DNRC will also develop a detailed work plan during Phase I. The plan will provide a comprehensive overview of tasks and subtasks, as well as a schedule for implementation within

the allotted two-year time frame. It will identify roles and responsibilities of Reclamation, the DNRC planning lead, the Task Force, contractors, and other key stakeholders. The work plan will also include a Communications and Outreach Plan to ensure stakeholder and public participation during the planning process.

## Phase II

In Phase II, the schedule and plans developed in Phase I will be carried out as the drought planning process. Members of the advisory committees (a technical committee and one advisory committee for each water use sector) will be identified. A contractor will be secured who can facilitate meetings and provide technical services. DNRC will work with the technical committee, Montana Climate Office, National Weather Service (NWS), and other partners to develop a Montana-specific seasonal protocol for drought monitoring and assessment. The vulnerability assessment will be conducted using facilitated meetings of each water use advisory committee, and the contractor will analyze and aggregate the data. Advisory committees will also develop recommendations for mitigation actions, activities, and adaptations. The Task Force will identify, evaluate, and prioritize response actions to be implemented during a drought. The Task Force will also identify who is responsible for the actions and activities in the plan under the operational and administrative framework. The plan development process will be outlined in the plan, and a plan update process will be established for monitoring, evaluating, and updating the plan.

## Evaluation Criteria

### Evaluation Criterion A - Need for a Drought Contingency Plan

Although the State of Montana has developed progressive approaches for drought monitoring, communications, and outreach, it has not updated its Drought Management Plan since 1995. The lack of a formal and modern framework for monitoring and responding to drought was particularly evident during the flash drought of 2017, which affected the entire state. Montana responded to the disaster by expanding the size and scope of its drought monitoring activities. Nonetheless, the flash drought, coupled with the fact that at least some portion of Montana has experienced drought in 19 of the last 20 years,<sup>4</sup> underscore the urgent need for Montana to formalize and update its drought planning, communication network, and response actions.

While Montana's 1995 Drought Management Plan contains some components of the six elements considered essential to drought planning, all sections require a significant amount of retooling and updating. Some elements are lacking altogether, including a vulnerability assessment to identify and prioritize risks, and a process to develop and update the plan. Other elements, such as mitigation strategies, are too vague, brief, and difficult to implement. The monitoring section is relatively detailed, but severely out-of-date. Notably, the updated plan will build a robust, science-based monitoring framework to prioritize activities that will help Montana adapt to changes in the environment.

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<sup>4</sup> U.S. Drought Monitor, National Integrated Drought Information System, [drought.gov](http://drought.gov)

**Severity of the risks to water supplies that will be addressed in the Drought Contingency Plan**  
**Public health and social concerns** – Although nearly 90% of Montana’s public water systems rely on groundwater wells, most of Montana’s population – including residents of five of the state’s seven largest cities – rely almost exclusively on surface water to supply their drinking water needs. Under drought conditions, low surface flows could undermine water supplies to these cities, especially in late summer. Wildfires could also threaten municipal supplies, and, although most cities have alternative sources, they may be plagued by other drought-related problems, such as harmful algal blooms. Montana’s cities typically have more resources available to address their water supply vulnerabilities, but smaller communities also struggle to meet their residents’ needs; for example, residents of Box Elder, on the Rocky Boy’s Reservation, faced water restrictions in 2017 because of severe heat and the failure of a major water storage tank.<sup>5</sup>

The risk of wildfire is amplified under drought conditions, and the impacts go beyond municipal water supplies. Smoke from wildfires poses a significant risk to public health and limits recreational activities. The State has started to track public health impacts more in recent years, and health officials documented a significant increase in the number of respiratory-related emergency rooms visits for residents of Missoula and Powell Counties during a particularly smoky summer (2017) compared to normal.<sup>6</sup> Drought generally increases the risk and severity of wildfire by lowering fuel moisture contents and stressing trees, which can lead to landscape-scale tree mortality because of a higher susceptibility to insects and pathogens.

**Environmental concerns** – Montana is home to four endangered species, including two fish, the Pallid Sturgeon and White Sturgeon. Twelve species are listed as threatened, including bull trout and two species of stonefly. Sixteen additional fish species have been identified as species of concern, including Montana’s state fish, the cutthroat trout (Westslope and Yellowstone), and the last remaining native population of Arctic Grayling in the contiguous U.S.

Populations of bull trout and Westslope cutthroat trout are primarily located in the western third of the state, in the Clark Fork and Kootenai River basins. Both species require cold water, which makes them particularly vulnerable to the warmer water temperatures and low flows that accompany drought. Many tributaries to the Clark Fork River are already chronically dewatered in late summer, and this creates a migration barrier to spawning habitat.

**Local economic losses** – Drought and its impacts have the capacity to permeate numerous sectors of local economies in Montana. The flash drought of 2017 was particularly severe. Agricultural losses that year totaled \$2.6 billion for the northern Great Plains Region,<sup>7</sup> and the USDA’s Livestock Forage Disaster Program compensated Montana farmers \$72.6 million for

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<sup>5</sup> Accessed online: <https://www.greatfallstribune.com/story/news/2017/07/12/water-shortage-box-elder-critical-3-000-residents-left-one-weeks-supply/473483001/>

<sup>6</sup> Accessed online: <https://www.mtpr.org/post/summer-smokes-lingering-health-impacts-seeley-lake>

<sup>7</sup> Accessed online: <https://www.drought.gov/drought/news/flash-drought-new-reports-examine-2017-northern-plains-drought>

grazing losses<sup>8</sup> due to drought and wildfire. In addition, the Lodgepole Complex fire in eastern Montana burned over 270,000 acres, destroying over 30 homes and other structures, displacing livestock, and threatening the livelihoods of many ranchers.

Recreational closures or restrictions also lead to local economic losses. In 2017, several stretches of Montana’s famous fishing rivers, including the Big Hole, Beaverhead, Madison, Gallatin, Jefferson, and Smith, were placed under “hoot owl” restrictions. These restrictions limit fishing to the cooler morning hours to reduce stress on fish when water temperatures are high. Hoot owl restrictions occur with some regularity in Montana, and they have direct impacts on the incomes of fishing guides.

In 2016, FWP closed 183 miles of the Yellowstone River to all forms of water-based recreation due to the die-off of thousands of mountain whitefish.<sup>9</sup> The main cause of fish mortality was a parasite leading to proliferative kidney disease, but low flow and warm water temperatures were major contributing factors. The unprecedented closure of the river was detrimental to Park County’s economy, where tourism generates one-third of jobs. For anglers, the iconic Yellowstone River is an especially big draw, and it is the most-fished river in Montana by residents and nonresidents, alike.

Wildfires can elicit similar economic losses. Fires in Glacier National Park in 2017 and 2018 forced the closure of campgrounds, backcountry travel, and the popular Lake McDonald Lodge.

Glacier is a major tourist draw for northwest Montana, but poor air quality and park closures hinder visitation and has associated impacts in other sectors (e.g., lodging and dining outside of the park). A University of Montana study found that 39% of out-of-state visitors cancelled their trips

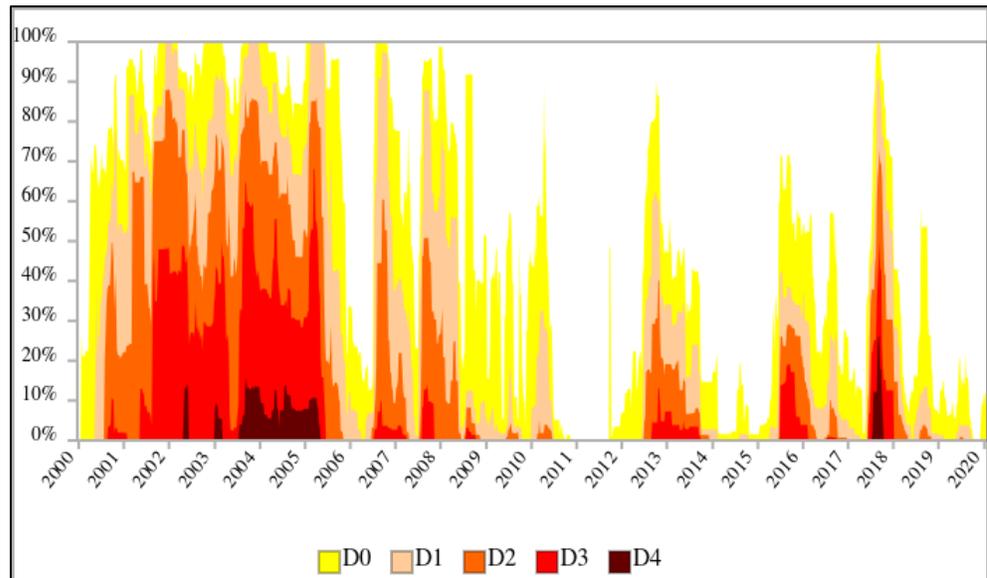


FIGURE 2. PERCENT AREA OF MONTANA AFFECTED BY DROUGHT FROM 2000-2020. COLORS AND D-VALUES CORRESPOND TO SEVERITY LEVELS ON DROUGHT MONITOR (RANGE: D0–ABNORMALLY DRY TO D4–EXCEPTIONAL DROUGHT). FROM [HTTPS://WWW.DROUGHT.GOV/DROUGHT/STATES/MONTANA](https://www.drought.gov/drought/states/montana)

<sup>8</sup> Jencso, K., et al. 2019. Flash Drought: Lessons Learned from the 2017 Drought Across the U.S. Northern Plains and Canadian Prairies. NOAA National Integrated Drought Information System.

<sup>9</sup> Accessed online: [http://fwp.mt.gov/news/newsReleases/headlines/nr\\_4278.html](http://fwp.mt.gov/news/newsReleases/headlines/nr_4278.html)

altogether in 2017 because of the wildfires.<sup>10</sup>

Overall, clean water, air, and healthy ecosystems are critical components of Montana's outdoor recreation economy, which generates \$7.1 billion annually in consumer spending and provides over 70,000 jobs. In the absence of thoughtful planning and actions, drought will continue to impact Montana's tourism, outdoor recreation and agricultural economies into the future.

**Conflict over shared water use** – Water conflict is a common theme across Montana, like many western states, and there are numerous examples of conflict and contention. On the Big Hole River in southwest Montana, a community of irrigators came together to proactively address concerns over Arctic Grayling – a native fish of special concern. They established a local, voluntary drought response plan that prompts release of irrigation water back into the river during times of low flow. Some irrigators contend they are doing more than the outfitting community to help maintain grayling populations, while many people continue to fish – even during low flows. This user group conflict is echoed in other basins across the state: the Yellowstone, Bitterroot, and Clark Fork Rivers all have similar tensions between irrigators and outfitters, though each user group likely shares the same goal of healthy, productive rivers.

**Existing or potential drought conditions to be addressed in drought contingency plan**

**Current or recent drought in the planning area** – Water scarcity and drought are common in Montana (Figure 2). According to the U.S. Drought Monitor, some portion of the state has experienced D3 (extreme) drought in 14 of the last 20 years. Droughts in Montana are typically hydrologic, terrestrial, ecologic, and socio-economic and affect multiple water use sectors. The length of most droughts varies from months to years.

**Projected increases to the frequency, severity, or duration** – According to the Montana Climate Assessment,<sup>11</sup> multi-year and decadal-scale droughts have always been a natural feature of Montana's climate. In the future, droughts will continue to occur, and, although there is not a consensus about changes in drought frequency, there is widespread agreement that increasing temperatures will exacerbate drought conditions when and where it occurs. In addition, the frequency and duration of drought in late summer are expected to increase due to reductions in snowpack and earlier spring runoff.

**Status of existing planning efforts**

Recent drought planning efforts in Montana have focused on local and regional water supply planning, but there are only a handful of formal plans in the state. A Reclamation-funded effort to develop a Regional Drought Contingency Plan for the Upper Missouri Basin, which included planning efforts in eight tributary watersheds, was recently completed. In the Clark Fork Basin, a local nonprofit, the Blackfoot Challenge, developed and administers an effective drought

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<sup>10</sup> Sage, Jeremy L. and Nickerson, Norma P., "The Montana Expression 2017: 2017's Costly Fire Season" (2017). Institute for Tourism and Recreation Research Publications. 363.  
[https://scholarworks.umt.edu/itrr\\_pubs/363](https://scholarworks.umt.edu/itrr_pubs/363)

<sup>11</sup> Cross, W. et al. 2017. Water and Climate Change in Montana. In: Whitlock C, Cross W, Maxwell B, Silverman N, Wade AA. 2017 Montana Climate Assessment. Bozeman and Missoula MT: Montana State University and University of Montana, Montana Institute on Ecosystems. 318 p. doi:10.15788/m2ww8w.

management plan for the Blackfoot River that focuses on voluntary irrigation reductions during low flows. The City of Bozeman approved a drought plan in 2017 that relies on a data-driven, site-specific index. Index values are linked to drought stages, some of which generate mandatory, enforceable restrictions on outdoor water, hotel laundering, street cleaning, and certain construction projects.

The State's updated plan will complement the existing efforts and promote the development of more regional and local plans. Many communities are interested in developing their own drought contingency plans, but they lack the resources or capacity to do so. This project will provide a framework and tools to assist communities in developing their own plans. Its large planning area and broad themes will ensure that it not duplicating local efforts.

## Evaluation Criterion B – Inclusion of Stakeholders

### Stakeholder involvement in the planning process

The DNRC enjoys broad support from a wide range of agencies, nonprofit organizations, and scientists for this project, as evidenced by the numerous letters of support which accompany this application (see Table 1 and attached letters). All stakeholders who submitted letters are enthusiastic and supportive of updating the plan, and four have already committed to helping with the process (Table 1). Specific roles will be identified in Phase I (Task Force) or Phase II (Advisory Committees).

DNRC will involve diverse stakeholders throughout the planning development in a process analogous to the one used to update the State Water Plan. The success of the State Water Plan was primarily due to DNRC's reliance on local stakeholder and public input. The state's four major river basins formed the geographic boundaries for four Basin Advisory Councils (BACs). The BACs guided the planning process in each basin and were effective because of the broad range of water users represented in each.

We will pivot from the success of the BACs in our update of Montana's Drought Adaptation and Response Plan by forming advisory committees from various water-use sectors (e.g., municipal and industrial; agriculture and livestock; tourism and recreation; fisheries and wildlife; and hydropower). DNRC personnel are connected to water users in their basins through watershed groups, conservation districts, and other local governments, and they will ensure that the committee memberships are diverse in geography and expertise. Committees may include representatives from local, tribal, and state governments, as well as local leaders who can speak to the needs of that sector. The committees will be an important part of the vulnerability assessment and adaption/mitigation strategies.

The use of advisory committees will benefit Montana's plan because local stakeholders have an intimate understanding of water supply vulnerabilities; moreover, they are uniquely positioned to provide realistic and meaningful mitigation actions and activities. Furthermore, this inclusive strategy also supports the Department of Interior's priority of restoring trust with local communities by developing and strengthening relationships.

**Table 1. Summary of confirmed support for drought planning process (letters of support)**

Agency or Group	Unit/level	Interest they represent and participation in plan (if known)
City of Bozeman	City	Municipal residents
Desert Research Institute	University	Drought monitoring and metrics
Missoula Valley Water Quality District*	County	Municipal/county water – will help with vulnerability and mitigation
Montana Department of Environmental Quality*	State	Water quality – will provide general support
Montana Department of Livestock	State	Ranching and rangeland
Montana Department of Military Affairs, Disaster and Emergency Services Division	State	Drought response
Montana Office of the Governor	State	Drought and water supply
Montana Water Center	University	Water research and education
Montana Watershed Coordination Council	Nonprofit	Watershed groups in Montana
Montana State Library	State	Drought monitoring
Mussellshell Watershed Coalition	Local	Agricultural producers and citizens of central Montana
National Drought Mitigation Center	National	National drought planning efforts
National Integrated Drought Information System	National	Drought science and preparedness
National Weather Service*	State	Weather and climate science – will help with monitoring/metrics
North Central Climate Adaptation Center*	Regional	Drought research and planning – will help with monitoring, metrics, and mitigation
Park County Planning Department	County	Land use planning
Watershed Restoration Coalition	Local	Landowners and agricultural producers – Upper Clark Fork River
University of Montana Spatial Analysis Lab	University	Drought metrics
Upper Yellowstone Watershed Group	County	Local water users
Yellowstone River Conservation District Council	County	Conservation districts

\*Has committed to helping with the planning process.

### Evaluation Criterion C - Project Implementation

Approach for addressing the six required elements of a Drought Contingency Plan within the two-year timeframe

Montana’s Drought Adaptation and Response Plan will include all six required elements for a drought contingency plan, and it is achievable under the two-year timeframe (Table 2).

**Phase I (Approximately 3 months)**

Phase I will begin immediately after the agreement with Reclamation is complete and will have two main components: establishment of the Task Force and development of work plan. The Task Force will be comprised of leadership from the Governor’s office and state agencies involved in drought monitoring or response, including DNRC, FWP, DEQ, DES, Livestock, Agriculture, and Commerce. The Task Force will oversee the planning process with assistance from DNRC.

DNRC will develop the detailed work plan during Phase I. The plan will provide a complete overview of tasks and subtasks, as well as a schedule for how they will be implemented within the time frame. It will identify roles and responsibilities of Reclamation, the planning lead, the Task Force, contractors, and key stakeholders. The work plan will also include a Communications and Outreach Plan to ensure stakeholder and public participation during the planning process. At the conclusion of Phase I, we will hold a kick-off meeting with the Task Force to mark the shift into Phase II.

**Table 2. Project implementation schedule.**

Tasks	Year 1				Year 2			
Phase I								
Develop Task Force								
Detailed Work Plan								
Communications and Outreach Plan								
Phase II								
Identify Advisory Committee members								
Monitoring								
Vulnerability Assessment								
Mitigation Actions								
Response Actions								
Operational and Admin. Framework								
Plan Development and Update Process								
Draft plan due, plan review, and wrap-up								

**Phase II (Approximately 21 months)**

Phase II will begin after the work plan is accepted by Reclamation, and it will take the duration of the two-year time frame to complete. Table 2 outlines an approximate work schedule for completion of the major tasks.

**Advisory Committees Identification** – To accomplish the wide range of tasks and activities within the planning process and to ensure a diverse range of input, we will identify several

advisory committees to support the planning process. A technical committee, comprised of meteorologists and scientists, will review technical information and provide planning recommendations. The other advisory committees will be divided by water use sectors and will be comprised of stakeholder representatives from locations around the state. Sectors may include: municipal and industrial; agriculture and livestock; tourism and recreation; fisheries and wildlife; and hydropower.

***Drought Monitoring*** – DNRC, in coordination with the Montana Climate Office, NWS and other partners, will work to develop a Montana-specific seasonal protocol for drought monitoring and assessment. With many new drought indices available, there is some confusion over the appropriate metric and time scale for the application of available drought monitoring indices. Working with Climate Office, Natural Resource Conservation Service (NRCS), and the Desert Research Institute, we also plan to explore development of a Standardized Snow Water Equivalent Index similar to the Standardized Precipitation Index as a tool for evaluating and displaying data collected at Sno-Tel sites across the Intermountain West. The drought plan update will also provide an opportunity to evaluate, document and clarify the current drought monitoring and assessment process.

***Vulnerability Assessment*** – The vulnerability assessment will be conducted qualitatively and quantitatively, and it will rely heavily on input from the advisory committees. The committees will hold facilitated meetings to identify potential risks and impacts within their sector. A contracted consultant will facilitate the committee meetings and be responsible for analyzing and aggregating the data.

***Mitigation and Adaptations*** – In conjunction with the vulnerability assessment, the advisory committees will assist in the development of recommendations to build long-term drought resilience. This approach will allow us to develop both general and specific actions that can be applied on local or regional scales throughout the state. We know from conversations with water users across the state that almost everyone who relies on water for their livelihood has already devoted significant thought to water supply uncertainty, so we will collect and aggregate this input in a useful way. The advisory committees and the Task Force will evaluate and prioritize these actions and activities for the plan. We anticipate that this aspect of our plan will be most relevant and useful for local and regional groups who wish to implement drought resiliency activities at smaller scales. Furthermore, by garnering input and support from diverse water users and stakeholders, we will build better relationships and trust with local communities.

***Response Actions*** – The Task Force will review the existing documentation (1995 Drought Plan and related materials) and work with the technical committee to identify relevant and useful actions that can be implemented during a drought to mitigate impacts. All actions and activities will be evaluated and prioritized by the Task Force. This section will be developed such that drought status and information is communicated efficiently and rapidly, and is inclusive of all state, federal, tribal, and local agencies, as well as the public.

**Operational and Administrative Framework** – Concurrent to the development of response actions, the Task Force will identify who is responsible for undertaking the actions identified in the plan, including public outreach about the plan.

**Plan Development and Update Process** – The plan will include a detailed description of the planning process, including stakeholder engagement and how input was evaluated and used. The plan will also include a schedule for monitoring, evaluating, and updating the plan. The DNRC will lead this section with guidance from the Task Force.

**Draft Plan Due, Plan Review, and Wrap-Up** – The draft plan will be due at the beginning of this phase (half-way through year 2). It will be reviewed by stakeholders and finalized. DNRC will ensure that it is publicly-accessible and distributed to stakeholders, agencies, and water user groups throughout the state. DNRC will also conduct public outreach about the planning process and outcomes through existing water user groups (e.g., conservation district meetings, meetings with municipal leaders, and/or irrigation districts), websites updates, and social media.

**Availability and quality of existing data and models** - DNRC currently relies upon a variety of data sources for drought monitoring and assessment. Drought monitoring is currently done by a committee that evaluates drought conditions across the state weekly using the Standardized Precipitation Index (SPI), Standardized Precipitation Evapotranspiration Index (SPEI), Evaporative Drought Demand Index (EDDI), weather data from the High Plains Regional Climate Center, NRCS Sno-Tel program, and other information. In addition, we have access to various studies and models produced by Reclamation, DNRC, university scientists, and the U.S. Geological Survey that will provide important background information and data regarding current and projected water use and water availability.

**Overview of DNRC Planning Section Staff and Other Personnel Resources** - The DNRC Planning Section is comprised of four Regional Water Planners and a Water Education Coordinator. Each planner works in one of the four major river basins and collaborates with local agencies and organizations. Collectively, the staff has the professional experience, technical expertise, and talent required to guide and complete this project:

- **Michael Downey, Section Supervisor and Planner for Lower Missouri River Basin** – led the development of State Water Plan (2015); Drought Monitoring Coordinator for Montana.
- **Ann Schwend, Regional Water Planner, Upper Missouri River Basin** – Basin drought planning; led Upper Missouri Basin Plan development for State Water Plan.
- **Sara Meloy, Regional Water Planner, Yellowstone River Basin** – Basin drought planning; municipal water planning; project development.
- **Valerie Kurth, Regional Water Planner, Clark Fork and Kootenai River Basins** – Project and grant management, academic research, local government.
- **Nikki Sandve, Water Education Coordinator** – Develops written and video outreach materials and creates social media content.

DNRC's Planning Section staff are confident that our involvement is key to developing a useful and relevant plan. However, we plan to contract certain components of the plan, such as meeting facilitation and some technical services (e.g., assistance with drought metrics

evaluation) because this professional assistance will greatly increase our capacity to complete a comprehensive planning process within a reasonable span of time.

### Evaluation Criterion D – Nexus to Reclamation

The proposed planning area is the state of Montana. Within the state, Reclamation operates fifteen projects, three powerplants, and 25 dams across all four of Montana’s major river basins; therefore, there is a substantial nexus between the proposed project and Reclamation’s existing projects and activities. The proposed project will improve Montana’s response to drought and increase its resilience, all of which will benefit Reclamations projects and activities in Montana.

### Evaluation Criterion E – Department of the Interior Priorities

#### Creating a conservation stewardship legacy second only to Teddy Roosevelt

Updating Montana’s Drought Adaptation and Response plan supports this priority by utilizing science to inform water resource management and adaptation. Specifically, the drought monitoring section of this plan will involve collaboration with professional scientists (from the two state universities, NRCS, and NWS) to evaluate existing drought indices and develop a Standardized Snow Water Equivalent Index similar to the Standardized Precipitation Index. The response actions and mitigation activities will also be evaluated based on actual data and models.

#### Utilizing our natural resources

The proposed plan update supports this Interior priority because it helps ensure that American energy (namely, hydropower) is available to meet our security and economic needs. Managing our water resources to maintain predictable flows for hydroelectric facility operation is critical for Montana’s energy consumption, as well as residents in surrounding states. Montana has 22 hydroelectric dams, but its major river basins (Clark Fork, Missouri, and Yellowstone) also contribute to downstream facilities. The Clark Fork River is a major tributary to the Columbia River, and the Columbia River Basin contributes almost half of all the hydroelectric generation in the U.S. The Missouri River is also a significant source of hydropower in the country, and its headwaters and a major tributary (Yellowstone) are found in Montana. By planning for and implementing activities to mitigate drought in Montana, we will ensure hydropower as a secure source of renewable energy in the U.S.

#### Restoring trust with local communities

Updating Montana’s Drought Adaptation and Response Plan will involve a significant amount of stakeholder input. As described under Criterion C, we will form advisory committees representing various water use sectors throughout the state. These committees will intentionally involve local governments (e.g., municipalities, conservation districts, and irrigation districts) and other stakeholders (e.g., watershed groups) from across the state to gain diverse perspectives and ideas. This strategy will facilitate local engagement with the planning process, and, as a result, promote dialogue and relationships with community leaders. Furthermore, by soliciting stakeholder involvement and input throughout the planning process, we will be expanding the lines of communication with the state executive branch and natural resource offices, as well as local water authorities, tribes, and local communities.

## Project Budget

### Funding Plan

Montana DNRC has \$100,000 of non-federal match to contribute to this project. Half of this contribution (\$50,000) needs to be obligated by June 30, 2020, and the remainder needs to be obligated by June 30, 2021. There are no constraints on how this funding is used beyond developing a drought plan for the state. The remaining non-federal match (\$100,000) for this project will be supplied through in-kind match from DNRC. We also anticipate securing in-kind match from our partner agencies, but this match is not needed to fulfill our cost-share with Reclamation.

### Budget Proposal

**Table 3. Total Project Costs (includes Phase I and Phase II).**

SOURCE	AMOUNT
Costs to be reimbursed with the requested Federal funding	\$200,000
Costs to be paid by Montana DNRC	\$200,000
Value of third-party contributions	\$0
<b>TOTAL PROJECT COST</b>	<b>\$400,000</b>

**Table 4. Summary of Non-Federal and Federal Funding Sources (Phase I and Phase II).**

FUNDING SOURCES	AMOUNT
<b>Non-Federal Entities</b>	
1. Montana DNRC contribution	\$100,000
2. Montana DNRC in-kind match	\$100,000
<b>Non-Federal Subtotal</b>	<b>\$200,000</b>
<b>REQUESTED RECLAMATION FUNDING</b>	<b>\$200,000</b>

**Table 5. Budget Proposal for Phase I.**

BUDGET ITEM DESCRIPTION	COMPUTATION		Quantity Type	TOTAL COST
	\$/Unit	Quantity		
<b>Salaries and Wages</b>				
Valerie Kurth, Regional Water Planner and Project Manager	\$31.06	200	hours	\$6,212.00
Regional Water Planner	\$31.06	160	hours	\$4,969.60
Regional Water Planner	\$32.15	160	hours	\$5,143.54
Water Education Coordinator	\$28.48	80	hours	\$2,278.00
Planning Section Supervisor/Water Planner	\$32.05	160	hours	\$5,127.34
<b>Salaries and Wages Total</b>				<b>\$23,730.48</b>
<b>Fringe Benefits</b>				
Valerie Kurth, Regional Water Planner and Project Manager	\$11.93	200	hours	\$2,385.80

Regional Water Planner	\$13.13	160	hours	\$2,101.32
Regional Water Planner	\$12.36	160	hours	\$1,978.36
Water Education Coordinator	\$11.53	80	hours	\$922.65
Planning Section Supervisor/Water Planner	\$11.97	160	hours	\$1,915.20
<b>Fringe Benefits Total</b>				<b>\$9,303.33</b>
<b>Supplies and Materials</b>				
Printing	\$50	3	months	\$150.00
<b>Supplies and Materials Total</b>				<b>\$150.00</b>
<b>Other</b>				
ITSD Email, Network, Phone	\$100	3	months	\$300
<b>Other Total</b>				<b>\$300</b>
<b>TOTAL DIRECT COSTS</b>				<b>\$33,483.81</b>
<b>Indirect Costs</b>				
Type of rate	11.73%			\$3,927.65
<b>TOTAL ESTIMATED PROJECT COSTS</b>				<b>\$37,411.46</b>

### Budget Narrative

The total project costs are estimated to be \$400,000. We are requesting \$200,000 from Reclamation, and DNRC will provide the remaining \$200,000 through direct contributions and in-kind match (Tables 3 and 4). Phase I is estimated to cost \$37,411.46 (Table 5). The following narrative explains the Phase I budget components and corresponds to Table 5.

### Salaries and Wages

Valerie Kurth, Regional Water Planner for DNRC, will serve as the Project Manager. Other personnel involved are two additional Regional Water Planners, one Section Supervisor/Regional Water Planner, and one Water Education Coordinator. Phase I, developing the Task Force and detailed work plan, will require about three months to complete. Each planner will spend approximately one-third of their time working on Phase I (one month or 160 hours). Kurth will spend approximately one additional week (40 hours) to fulfill duties related to communication and reporting to Reclamation (200 hours total). The Water Education Coordinator will spend approximately two weeks (80 hours) working on the project.

Kurth's salary and wages for 200 hours at her hourly rate of \$31.06 will be \$6,212.00. The other planners will be compensated according to their respective rates for 160 hours: \$31.06/hr x 160 = \$4,969.60; \$32.15 x 160 = \$5,143.54; and \$32.05 x 160 = \$5,127.34. Similarly, the Water Education Coordinator's compensation for 80 hrs at \$28.48/hr will be \$2,278.00. The total cost of salary and wages for Phase I will be \$23,730.48.

### Fringe

Fringe rates vary for each employee and are computed hourly: \$11.93 (Kurth), \$13.13, \$12.36, \$11.97 (other planners), and \$11.97 (Water Education Coordinator). Fringe benefits include health insurance and retirement. Amounts and percentages are determined by the State of

Montana Legislature and are codified in statute. The total amount of fringe benefits for Phase I is \$9,303.33.

#### Travel

No travel is anticipated for Phase I.

#### Equipment

No equipment will be purchased for Phase I.

#### Materials and Supplies

Printing costs are expected to be \$50 per month. Phase I is expected to last three months, so total printing costs will be \$150.

#### Contractual

Contractors or consultants will not be used during Phase I.

#### Third-Party In-Kind Contributions

No third-party in-kind contributions are included in this proposal. We anticipate in-kind contributions from partner agencies and other stakeholders, but they are not needed to fulfill the match requirement. If permitted, third-party in-kind contributions will be included in the detailed work plan and budget developed during Phase I.

#### Other Expenses

Costs associated with information technology (e.g., email, networks, and phone) are \$100 per month. Total cost for Phase I (3 months) will be \$300.

#### Indirect costs

The State of Montana's indirect cost rate is 11.73% (federal negotiated agreement is attached). The total direct costs for Phase I, \$33,483.81, was multiplied by 11.73% to compute the indirect costs, \$3,927.65.

## Required Permits or Approvals

No permits or approvals are required to complete this project.

## Existing Drought Contingency Plan

Montana's 1995 Drought Response Plan is attached.

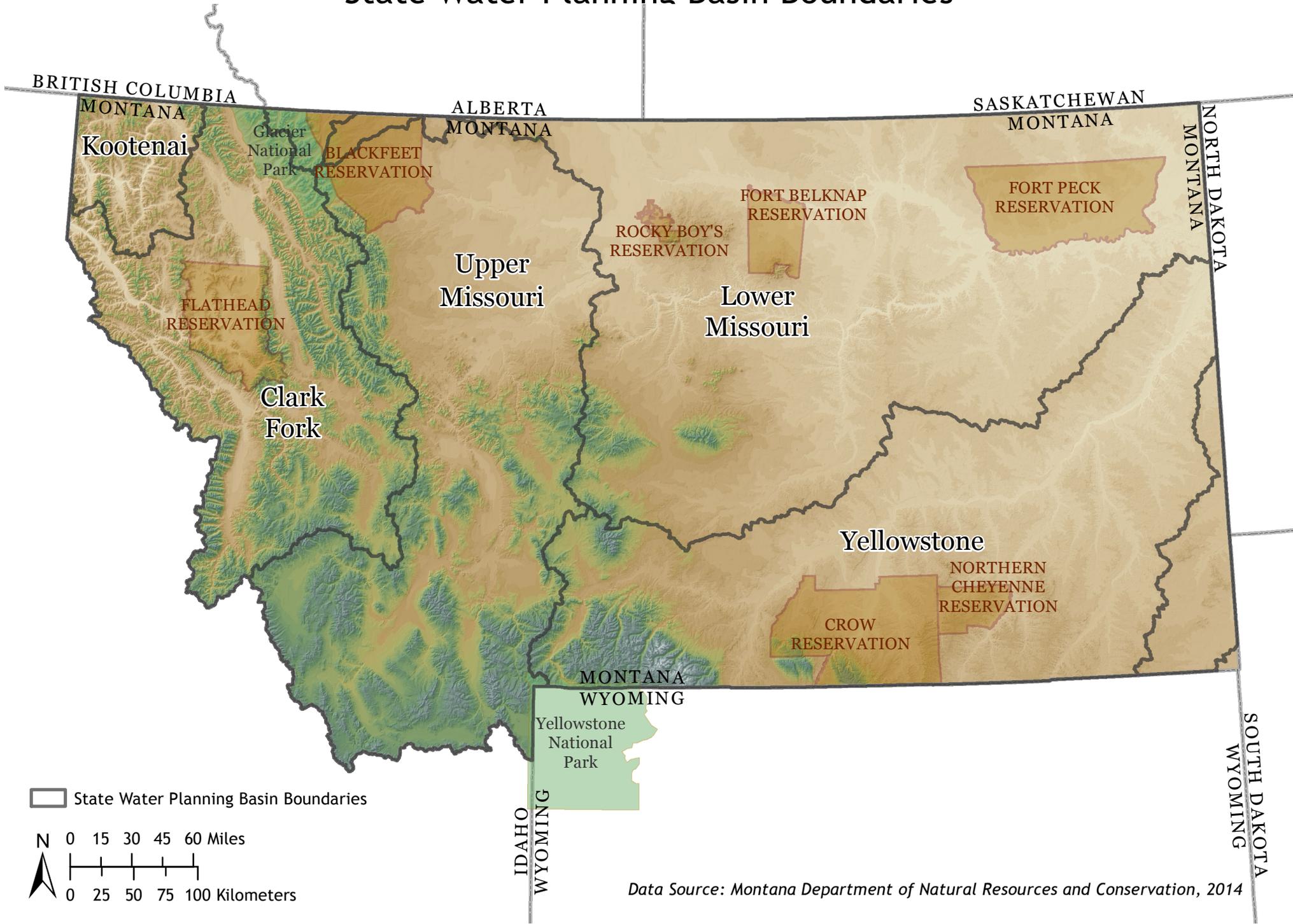
## Letters of Support

Nineteen letters of support are attached.

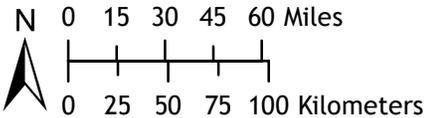
## Official Resolution

Official Resolution is attached.

# State Water Planning Basin Boundaries



State Water Planning Basin Boundaries



Data Source: Montana Department of Natural Resources and Conservation, 2014

January 28, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

Please accept this letter of support for the Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. This project will identify appropriate drought metrics, climatological and hydrologic indices for ongoing monitoring, and assessment and identification of drought conditions across Montana. It will also include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought events.

As a fast-growing community with limited water supplies, the City of Bozeman adopted its first drought management plan in 2017. This plan includes a vulnerability assessment, climatological and hydrologic indices for ongoing drought monitoring, a communication campaign, and response measures pursuant to four drought stages. The adoption of this comprehensive plan provides the City of Bozeman with the framework needed to proactively monitor its water supplies and reduce demand during times of shortage.

The City of Bozeman recognizes the importance of developing a robust drought adaptation and response plan at the state level to provide a framework for proactive drought monitoring and assessment to benefit the many diverse water users across the state. This project will directly support the City of Bozeman's drought planning efforts by providing local drought adaptation information and an updated communication process between the City and State during times of drought. This project will also support recommendations from the 2015 Montana State Water Plan, which calls for better drought preparedness across the state and improved data driven decision-making.

Montanans have and will continue to face the impacts of drought events. This project will support locally driven drought adaptation and allow for improved data driven decision-making as it relates to drought declaration and pursuant response and mitigation measures affecting various partners and water users across the state.

I urge you to fund this important effort to update and retool Montana's drought adaptation and response plan.

Sincerely,



Mitchell S. Reister, PE  
City of Bozeman  
Director of Public Works



January 23, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the **Desert Research Institute and Western Regional Climate Center** in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read 'Vic Etyemezian', is written over a horizontal line.

Vic Etyemezian  
Division Director, Atmospheric Sciences



Missoula City-County Health Department

**WATER QUALITY DISTRICT**

301 W Alder | Missoula MT 59802-4123

[www.missoulacounty.us/wqd](http://www.missoulacounty.us/wqd)

Phone | 406.258.4890

Fax | 406.258.4781

January 27, 2020,

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

The Missoula Valley Water Quality District is a local government agency whose mission is to protect and improve surface and groundwater quality within the Missoula Valley. The District is supportive of the Montana Department of Natural Resources and Conservation (DNRC) grant proposal for the Montana Drought Adaptation and Response Plan.

Water rights in the Clark Fork River and many other streams in the watershed surpass the amount of available water. Three perennial streams within the District are dewatered to the point that they seasonally go dry (Grant Creek, Miller Creek, Lolo Creek). The pending resolution of the Confederated Salish and Kootenai Tribal water rights establishes minimum instream water rights for the Clark Fork River above Missoula which makes this proposal very timely. This project will update and streamline the multi-tiered process of drought declaration and communication to improve drought response at the federal, state, tribal and local levels and include vulnerability assessment and the development of adaptation measures to increase drought resiliency. Ultimately, it is a valuable effort towards resolving and mitigating local conflict over water.

The Missoula Valley Water Quality District is committed to working with the DNRC and other partners to evaluate vulnerability and develop resiliency options for the Clark Fork River and its tributaries.

Thank you for the opportunity to demonstrate our support for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis Ross".

Travis Ross

Missoula Valley Water Quality District



January 24, 2020

Attn: Ms. Irene Hoiby  
Bureau of Reclamation  
Financial Assistance Support Section  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana Department of Natural Resources and Conservation (DNRC) – *Montana Drought  
Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing to express Montana Department of Environmental Quality's (DEQ) support for DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant.

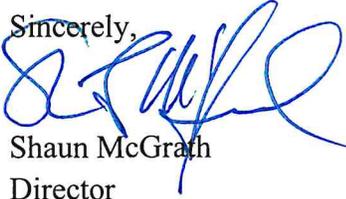
Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will institutionalize the lessons learned and implemented since Montana's drought emergency in 2017.

DNRC's proposal is to update and expand Montana's Drought Adaptation and Response Plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and improve communication related to drought response and mitigation measures.

DNRC authored the 1995 Drought Response Plan which coordinates Montana's drought monitoring effort. DNRC also staffs the Governor's Drought and Water Supply Advisory Council. DNRC will take the lead on coordinating and completing Montana's update of the Drought Adaptation and Response Plan. DEQ will support DNRC during the update of the plan.

I urge you to fund this important effort to update and retool Montana's Drought Adaptation and Response Plan.

Sincerely,



Shaun McGrath  
Director

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# STATE OF MONTANA

STEVE BULLOCK, GOVERNOR

---

DEPARTMENT OF LIVESTOCK  
PO BOX 202001  
HELENA, MONTANA 59620-2001  
(406) 444-7323  
FAX (406) 444-1929



ANIMAL HEALTH DIVISION (406) 444-2043  
BRANDS ENFORCEMENT DIVISION (406) 444-2045  
CENTRALIZED SERVICES DIVISION (406) 444-4994  
EXECUTIVE OFFICE/BOARD OF LIVESTOCK (406) 444-9321

January 30, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana Department of Livestock in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will be critical to the efforts of those agencies that sit on our Governor's Drought and Water Supply Advisory Committee, such as mine, so that we can offer the best advice and response possible for emergency declarations and response to water related issues. Montana DNRC authored the 1995 plan, and much has occurred in the collective learning that needs to be formalized into an updated modern plan.

Montana DNRC in collaboration with its partners is a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded in a quick and efficient manner to provide assistance and relief where needed because of the diligent work done through our water plan and collaborative process. However, that event taught us many new lessons and highlighted deficiencies of the 1995 plan that now need to be institutionalized and updated. This work is critically important for proper stewardship of the state's water resources as our communities continue to grow and to foster continued success of our livestock, general agriculture, outdoor recreation, and energy sectors.

Sincerely,

Michael S. Honeycutt

Executive Officer

Montana Department of Livestock

OFFICE OF THE GOVERNOR  
STATE OF MONTANA

STEVE BULLOCK  
GOVERNOR



MIKE COONEY  
LT. GOVERNOR

January 28, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby:

I am writing in support of the Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant. The goal is to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment, and identification of drought conditions across Montana.

This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council, and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring, and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and managers across Montana.

Montana's Drought Response Plan is grossly out of date and must be revised. These efforts will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink that reads "Mike Cooney". The signature is fluid and cursive, with a long horizontal stroke at the end.

MIKE COONEY  
Lieutenant Governor



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

23 Jan 2020

**Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant**

Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana University System Water Center in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels.

Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the recent flash drought of 2017, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency

Montana Water Center  
23 Faculty Court  
Montana State University  
Bozeman, MT 59717  
[www.montanawatercenter.org](http://www.montanawatercenter.org)

Tel: 406-994-6690  
Fax: 406-994-1774

*turning science. . .  
.. into solutions*



in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Wyatt F. Cross".

Wyatt F. Cross  
Associate Professor of Ecology  
Director, Montana Water Center  
[montanawatercenter.org](http://montanawatercenter.org)  
Montana State University  
Bozeman, MT 59717

**Montana Water Center**  
23 Faculty Court  
Montana State University  
Bozeman, MT 59717  
[www.montanawatercenter.org](http://www.montanawatercenter.org)

Tel: 406-994-6690  
Fax: 406-994-1774

*turning science. . .  
.. into solutions*



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 27, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana Watershed Coordination Council in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Because of the strong partnerships between state and federal agencies and community watershed organizations, Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan, and better prepare communities across the state for future drought preparation and mitigation efforts. On behalf of watershed organizations and communities across the state, we urge you to fund this important effort to update Montana's drought preparation, adaptation and response plan.

Sincerely,

Ethan Kunard  
Executive Director  
Montana Watershed Coordination Council



PO Box 201800 1515 East 6<sup>th</sup> Avenue Helena, MT 59620 (406) 444-3115

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 29, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana State Library in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy R. Blandford". The signature is fluid and cursive, with a long horizontal stroke at the end.

Troy R. Blandford  
Water Information System Manager  
Montana State Library



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Date: January 27, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the National Drought Mitigation Center in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

Mark D. Svoboda, Ph.D.  
Director, Research Associate Professor  
National Drought Mitigation Center  
University of Nebraska-Lincoln



National Drought Mitigation Center, School of Natural Resources  
3310 Holdrege St., 818 Hardin Hall | Lincoln, NE 68583-0988 | 402-472-6707 | ndmc@unl.edu  
drought.unl.edu



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
Office of Oceanic and Atmospheric Research  
Earth System Research Laboratory  
325 Broadway – David Skaggs Research Center  
Boulder, Colorado 80305-3337

January 31, 2020

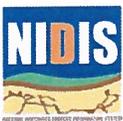
Ms. Irene Hoiby  
Financial Assistance Support Section  
Bureau of Reclamation  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

**Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant Montana DNRC – *Montana Drought Adaptation and Response Plan***

Dear Ms. Hoiby:

I am writing on behalf of NOAA's National Integrated Drought Information (NIDIS) in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan.

The objective of this effort is to identify the most appropriate drought metrics for Montana, as well as the climatological and hydrologic indices, necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, tribal, state, and local levels. Montana DNRC authored the 1995 plan, which coordinates Montana's drought monitoring effort. The DNRC staffs the Governor's Drought and Water Supply Advisory Council, and is in the best position to coordinate and complete Montana's state drought plan update.



Montana is recognized across the west as a leader in drought planning, monitoring and coordination. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is out of date, and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. NOAA's NIDIS has a strong partnership with the State, and has collaborated with the Montana to build drought early warning capacity in the region. NIDIS fully supports this critical next step to update drought preparation, adaptation and response plan, in building long term drought resilience in the State.

Sincerely,



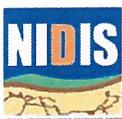
Veva Deheza

Executive Director

National Integrated Drought Information System (NIDIS)

NOAA

Boulder, CO





Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 28, 2020

Re: Support for Montana DNRC Drought Contingency Planning Grant proposal

Dear Ms. Hoiby,

The USGS North Central Climate Adaptation Science Center (CASC) strongly supports Montana DNRC's proposal to the BOR's WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The CASC network is working nationally to assist states and tribes in proactive planning for and effective adaptation to drought, particularly ecological drought, which has numerous impacts on terrestrial and aquatic systems and services. Ecological drought is often overlooked in standard drought metrics, yet it is a critical threat to Montana's economy and culture. We are keenly interested in helping DNRC identify the most appropriate drought metrics for Montana, including the consideration and testing of specific metrics for ecological drought, in addition to refining metrics related to hydrological and meteorological drought. The DNRC planning effort will also improve communication and drought response and mitigation measures among the many partners at the federal, state, tribal and local levels – important steps for improved and coordinated adaptation actions.

Montana has a history of excellence in drought planning and collaboration, but the current state Drought Response Plan is outdated. The NC CASC looks forward to providing support where possible in the Montana Drought Response Plan update, with a particular emphasis in helping to shape a plan that is resilient and robust under changing climatic conditions and in the face of extreme events. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan. Your support will be amplified and leveraged with additional capacity through the USGS and the NC CASC.

Sincerely,

A handwritten signature in black ink, appearing to read "Alisa Wade".

Alisa Wade, PhD  
Research Coordinator  
USGS North Central Climate Adaptation Science Center



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Date: January 23, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Park County Planning Department in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

Park County has experienced its share of drought related issues—the Yellowstone River fish kill in 2016 and increased use of the existing water resources by various special interest and land owners as development increases in our area is reason enough for increased education and awareness around this issue. The pending Drought Response Program and Planning Grant will help with our local efforts as we continue to look for better information and guidance in this area. In addition to the direct impacts of drought and water use, the Park County Growth Policy specifically identifies the need to address water quality and quantity issues in Park County. The Policy specifically calls for the creation of a drought management plan, which illustrates the community's passion and shared goal of addressing this issue.

Please consider funding this important project as it has significant implications for the work and efforts by local communities, such as those underway in Park County. Maintaining and updating these types of plans help incorporate new technologies, best available data and best practices, all of which will be useful as we here in Park County continue to address the challenges drought and water management bring to our community. Thank you for your consideration.

Sincerely,



WM. MICHAEL INMAN *CFM, Director*

PARK COUNTY PLANNING DEPARTMENT

o: 406.222.4102 c: 406.579.1869

e: [wminman@parkcounty.org](mailto:wminman@parkcounty.org)

[www.parkcounty.org](http://www.parkcounty.org)

# DEPARTMENT OF MILITARY AFFAIRS STATE OF MONTANA



Disaster & Emergency Services Division  
ARMED FORCES RESERVE CENTER  
1956 MT MAJO STREET - PO BOX 4789  
FORT HARRISON, MONTANA 59636-4789  
406.324.4777



THE HONORABLE STEVE BULLOCK  
GOVERNOR

MAJOR GENERAL MATTHEW T. QUINN  
ADJUTANT GENERAL

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 24, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of Montana Disaster and Emergency Services in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. Through our state Multi-Hazard Mitigation Plan, we have identified drought as one of our top hazards and it emphasizes the importance of Montana's drought adaptation and response plan. We support DNRC's effort to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency

in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "Delila Bruno". The signature is fluid and cursive, with the first name "Delila" and the last name "Bruno" clearly distinguishable.

Delila Bruno  
Administrator  
Disaster and Emergency Services

1002 Hollenback Road, Suite C  
Deer Lodge, MT 59722  
406-846-1703 X 111  
www.mt-wrc.org



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 24, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Watershed Restoration Coalition of the Upper Clark Fork (WRC). The WRC is a, landowner-led organization with big-picture goals and a science-based approach. We work with agricultural producers, landowners, community members, and diverse partners to protect our rural heritage and natural resources for present and future generations. We provide technical and financial support, and strategically develop and implement conservation and restoration projects that benefit landowners along with the valley's water, land, fish and wildlife. We believe it is our responsibility as landowners and community members to ensure that we preserve our way of life in this valley and leave it a better place than we found it.

The WRC is in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan.

The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. On behalf of the WRC I urge you to fund this important effort to

update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink that reads "Ted Dodge" followed by a stylized flourish.

Ted Dodge  
Executive Director  
WRC



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 28<sup>th</sup>, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Spatial Analysis Lab at the University of Montana in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. Support for an updated Montana Drought Response Plan will improve disaster mitigation and response by formalizing contingency planning steps, including expanded size and scope of drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017 and will accelerate the continued development of decision-making platforms that relate a growing network of weather stations to new combinations of drought metrics customized for detection of early onset drought indicators in Montana. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

Jessica Mitchell  
Director, Spatial Analysis Lab  
Montana Natural Heritage Program  
University of Montana  
Missoula, Montana 59812

January 23, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

On behalf of the Upper Yellowstone Watershed Group (UYWG), I am pleased to offer this letter in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. Having a up to date state-wide communication and response plan will be a critical tool for communities and watersheds like ours in creating and implementing local drought planning efforts.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the recent flash drought of 2017, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017.

The UYWG supports Montana DNRC's effort to update Montana's drought preparation, adaptation and response plan and we urge your consideration to fund their request. If I can provide more information or answer any questions please feel free to contact me.

Sincerely,



Ashley Lowrey  
Watershed Coordinator  
Upper Yellowstone Watershed Group

January 28, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

Please accept this letter of support for the Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. This project will identify appropriate drought metrics, climatological and hydrologic indices for ongoing monitoring, and assessment and identification of drought conditions across Montana. It will also include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought events.

As a fast-growing community with limited water supplies, the City of Bozeman adopted its first drought management plan in 2017. This plan includes a vulnerability assessment, climatological and hydrologic indices for ongoing drought monitoring, a communication campaign, and response measures pursuant to four drought stages. The adoption of this comprehensive plan provides the City of Bozeman with the framework needed to proactively monitor its water supplies and reduce demand during times of shortage.

The City of Bozeman recognizes the importance of developing a robust drought adaptation and response plan at the state level to provide a framework for proactive drought monitoring and assessment to benefit the many diverse water users across the state. This project will directly support the City of Bozeman's drought planning efforts by providing local drought adaptation information and an updated communication process between the City and State during times of drought. This project will also support recommendations from the 2015 Montana State Water Plan, which calls for better drought preparedness across the state and improved data driven decision-making.

Montanans have and will continue to face the impacts of drought events. This project will support locally driven drought adaptation and allow for improved data driven decision-making as it relates to drought declaration and pursuant response and mitigation measures affecting various partners and water users across the state.

I urge you to fund this important effort to update and retool Montana's drought adaptation and response plan.

Sincerely,



Mitchell S. Reister, PE  
City of Bozeman  
Director of Public Works



January 23, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the **Desert Research Institute and Western Regional Climate Center** in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read 'Vic Etyemezian', is written over a horizontal line.

Vic Etyemezian  
Division Director, Atmospheric Sciences



Missoula City-County Health Department

**WATER QUALITY DISTRICT**

301 W Alder | Missoula MT 59802-4123

[www.missoulacounty.us/wqd](http://www.missoulacounty.us/wqd)

Phone | 406.258.4890

Fax | 406.258.4781

January 27, 2020,

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

The Missoula Valley Water Quality District is a local government agency whose mission is to protect and improve surface and groundwater quality within the Missoula Valley. The District is supportive of the Montana Department of Natural Resources and Conservation (DNRC) grant proposal for the Montana Drought Adaptation and Response Plan.

Water rights in the Clark Fork River and many other streams in the watershed surpass the amount of available water. Three perennial streams within the District are dewatered to the point that they seasonally go dry (Grant Creek, Miller Creek, Lolo Creek). The pending resolution of the Confederated Salish and Kootenai Tribal water rights establishes minimum instream water rights for the Clark Fork River above Missoula which makes this proposal very timely. This project will update and streamline the multi-tiered process of drought declaration and communication to improve drought response at the federal, state, tribal and local levels and include vulnerability assessment and the development of adaptation measures to increase drought resiliency. Ultimately, it is a valuable effort towards resolving and mitigating local conflict over water.

The Missoula Valley Water Quality District is committed to working with the DNRC and other partners to evaluate vulnerability and develop resiliency options for the Clark Fork River and its tributaries.

Thank you for the opportunity to demonstrate our support for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Travis Ross".

Travis Ross

Missoula Valley Water Quality District



January 24, 2020

Attn: Ms. Irene Hoiby  
Bureau of Reclamation  
Financial Assistance Support Section  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana Department of Natural Resources and Conservation (DNRC) – *Montana Drought  
Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing to express Montana Department of Environmental Quality's (DEQ) support for DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant.

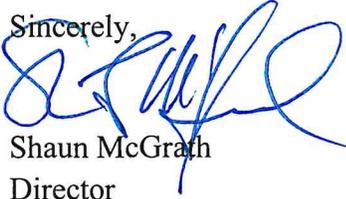
Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will institutionalize the lessons learned and implemented since Montana's drought emergency in 2017.

DNRC's proposal is to update and expand Montana's Drought Adaptation and Response Plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and improve communication related to drought response and mitigation measures.

DNRC authored the 1995 Drought Response Plan which coordinates Montana's drought monitoring effort. DNRC also staffs the Governor's Drought and Water Supply Advisory Council. DNRC will take the lead on coordinating and completing Montana's update of the Drought Adaptation and Response Plan. DEQ will support DNRC during the update of the plan.

I urge you to fund this important effort to update and retool Montana's Drought Adaptation and Response Plan.

Sincerely,



Shaun McGrath  
Director

---

# STATE OF MONTANA

STEVE BULLOCK, GOVERNOR

---

DEPARTMENT OF LIVESTOCK  
PO BOX 202001  
HELENA, MONTANA 59620-2001  
(406) 444-7323  
FAX (406) 444-1929



ANIMAL HEALTH DIVISION (406) 444-2043  
BRANDS ENFORCEMENT DIVISION (406) 444-2045  
CENTRALIZED SERVICES DIVISION (406) 444-4994  
EXECUTIVE OFFICE/BOARD OF LIVESTOCK (406) 444-9321

January 30, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana Department of Livestock in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will be critical to the efforts of those agencies that sit on our Governor's Drought and Water Supply Advisory Committee, such as mine, so that we can offer the best advice and response possible for emergency declarations and response to water related issues. Montana DNRC authored the 1995 plan, and much has occurred in the collective learning that needs to be formalized into an updated modern plan.

Montana DNRC in collaboration with its partners is a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded in a quick and efficient manner to provide assistance and relief where needed because of the diligent work done through our water plan and collaborative process. However, that event taught us many new lessons and highlighted deficiencies of the 1995 plan that now need to be institutionalized and updated. This work is critically important for proper stewardship of the state's water resources as our communities continue to grow and to foster continued success of our livestock, general agriculture, outdoor recreation, and energy sectors.

Sincerely,

Michael S. Honeycutt

Executive Officer

Montana Department of Livestock

OFFICE OF THE GOVERNOR  
STATE OF MONTANA

STEVE BULLOCK  
GOVERNOR



MIKE COONEY  
LT. GOVERNOR

January 28, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby:

I am writing in support of the Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant. The goal is to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment, and identification of drought conditions across Montana.

This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council, and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring, and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and managers across Montana.

Montana's Drought Response Plan is grossly out of date and must be revised. These efforts will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink that reads "Mike Cooney". The signature is fluid and cursive, with a long horizontal stroke at the end.

MIKE COONEY  
Lieutenant Governor



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

23 Jan 2020

**Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant**

Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana University System Water Center in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels.

Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the recent flash drought of 2017, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency

Montana Water Center  
23 Faculty Court  
Montana State University  
Bozeman, MT 59717  
[www.montanawatercenter.org](http://www.montanawatercenter.org)

Tel: 406-994-6690  
Fax: 406-994-1774

*turning science. . .  
.. into solutions*



in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Wyatt F. Cross".

Wyatt F. Cross  
Associate Professor of Ecology  
Director, Montana Water Center  
*montanawatercenter.org*  
Montana State University  
Bozeman, MT 59717

**Montana Water Center**  
23 Faculty Court  
Montana State University  
Bozeman, MT 59717  
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*turning science. . .  
.. into solutions*



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 27, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana Watershed Coordination Council in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Because of the strong partnerships between state and federal agencies and community watershed organizations, Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan, and better prepare communities across the state for future drought preparation and mitigation efforts. On behalf of watershed organizations and communities across the state, we urge you to fund this important effort to update Montana's drought preparation, adaptation and response plan.

Sincerely,

Ethan Kunard  
Executive Director  
Montana Watershed Coordination Council



PO Box 201800 1515 East 6<sup>th</sup> Avenue Helena, MT 59620 (406) 444-3115

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 29, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Montana State Library in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in black ink, appearing to read "Troy R. Blandford". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Troy R. Blandford  
Water Information System Manager  
Montana State Library



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Date: January 27, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the National Drought Mitigation Center in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

Mark D. Svoboda, Ph.D.  
Director, Research Associate Professor  
National Drought Mitigation Center  
University of Nebraska-Lincoln



National Drought Mitigation Center, School of Natural Resources  
3310 Holdrege St., 818 Hardin Hall | Lincoln, NE 68583-0988 | 402-472-6707 | ndmc@unl.edu  
drought.unl.edu



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
Office of Oceanic and Atmospheric Research  
Earth System Research Laboratory  
325 Broadway – David Skaggs Research Center  
Boulder, Colorado 80305-3337

January 31, 2020

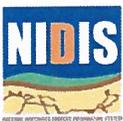
Ms. Irene Hoiby  
Financial Assistance Support Section  
Bureau of Reclamation  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

**Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant Montana DNRC – *Montana Drought Adaptation and Response Plan***

Dear Ms. Hoiby:

I am writing on behalf of NOAA's National Integrated Drought Information (NIDIS) in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan.

The objective of this effort is to identify the most appropriate drought metrics for Montana, as well as the climatological and hydrologic indices, necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, tribal, state, and local levels. Montana DNRC authored the 1995 plan, which coordinates Montana's drought monitoring effort. The DNRC staffs the Governor's Drought and Water Supply Advisory Council, and is in the best position to coordinate and complete Montana's state drought plan update.



Montana is recognized across the west as a leader in drought planning, monitoring and coordination. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is out of date, and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. NOAA's NIDIS has a strong partnership with the State, and has collaborated with the Montana to build drought early warning capacity in the region. NIDIS fully supports this critical next step to update drought preparation, adaptation and response plan, in building long term drought resilience in the State.

Sincerely,



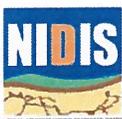
Veva Deheza

Executive Director

National Integrated Drought Information System (NIDIS)

NOAA

Boulder, CO





# North Central Climate Adaptation Science Center

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 28, 2020

Re: Support for Montana DNRC Drought Contingency Planning Grant proposal

Dear Ms. Hoiby,

The USGS North Central Climate Adaptation Science Center (CASC) strongly supports Montana DNRC's proposal to the BOR's WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The CASC network is working nationally to assist states and tribes in proactive planning for and effective adaptation to drought, particularly ecological drought, which has numerous impacts on terrestrial and aquatic systems and services. Ecological drought is often overlooked in standard drought metrics, yet it is a critical threat to Montana's economy and culture. We are keenly interested in helping DNRC identify the most appropriate drought metrics for Montana, including the consideration and testing of specific metrics for ecological drought, in addition to refining metrics related to hydrological and meteorological drought. The DNRC planning effort will also improve communication and drought response and mitigation measures among the many partners at the federal, state, tribal and local levels – important steps for improved and coordinated adaptation actions.

Montana has a history of excellence in drought planning and collaboration, but the current state Drought Response Plan is outdated. The NC CASC looks forward to providing support where possible in the Montana Drought Response Plan update, with a particular emphasis in helping to shape a plan that is resilient and robust under changing climatic conditions and in the face of extreme events. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan. Your support will be amplified and leveraged with additional capacity through the USGS and the NC CASC.

Sincerely,

Alisa Wade, PhD  
Research Coordinator  
USGS North Central Climate Adaptation Science Center



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Date: January 23, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Park County Planning Department in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

Park County has experienced its share of drought related issues—the Yellowstone River fish kill in 2016 and increased use of the existing water resources by various special interest and land owners as development increases in our area is reason enough for increased education and awareness around this issue. The pending Drought Response Program and Planning Grant will help with our local efforts as we continue to look for better information and guidance in this area. In addition to the direct impacts of drought and water use, the Park County Growth Policy specifically identifies the need to address water quality and quantity issues in Park County. The Policy specifically calls for the creation of a drought management plan, which illustrates the community's passion and shared goal of addressing this issue.

Please consider funding this important project as it has significant implications for the work and efforts by local communities, such as those underway in Park County. Maintaining and updating these types of plans help incorporate new technologies, best available data and best practices, all of which will be useful as we here in Park County continue to address the challenges drought and water management bring to our community. Thank you for your consideration.

Sincerely,



WM. MICHAEL INMAN *CFM, Director*

PARK COUNTY PLANNING DEPARTMENT

o: 406.222.4102 c: 406.579.1869

e: [wminman@parkcounty.org](mailto:wminman@parkcounty.org)

[www.parkcounty.org](http://www.parkcounty.org)

# DEPARTMENT OF MILITARY AFFAIRS STATE OF MONTANA



Disaster & Emergency Services Division  
ARMED FORCES RESERVE CENTER  
1956 MT MAJO STREET - PO BOX 4789  
FORT HARRISON, MONTANA 59636-4789  
406.324.4777



THE HONORABLE STEVE BULLOCK  
GOVERNOR

MAJOR GENERAL MATTHEW T. QUINN  
ADJUTANT GENERAL

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 24, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of Montana Disaster and Emergency Services in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. Through our state Multi-Hazard Mitigation Plan, we have identified drought as one of our top hazards and it emphasizes the importance of Montana's drought adaptation and response plan. We support DNRC's effort to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency

in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink, appearing to read "Delila Bruno". The signature is fluid and cursive, with the first name "Delila" and the last name "Bruno" clearly distinguishable.

Delila Bruno  
Administrator  
Disaster and Emergency Services

1002 Hollenback Road, Suite C  
Deer Lodge, MT 59722  
406-846-1703 X 111  
www.mt-wrc.org



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 24, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Watershed Restoration Coalition of the Upper Clark Fork (WRC). The WRC is a, landowner-led organization with big-picture goals and a science-based approach. We work with agricultural producers, landowners, community members, and diverse partners to protect our rural heritage and natural resources for present and future generations. We provide technical and financial support, and strategically develop and implement conservation and restoration projects that benefit landowners along with the valley's water, land, fish and wildlife. We believe it is our responsibility as landowners and community members to ensure that we preserve our way of life in this valley and leave it a better place than we found it.

The WRC is in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan.

The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Finally, this project will include a state-wide drought vulnerability assessment and the development of adaptation measures to increase resilience to short- and long-term risks resulting from drought and climate change.

This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. On behalf of the WRC I urge you to fund this important effort to

update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

A handwritten signature in blue ink that reads "Ted Dodge" followed by a stylized flourish.

Ted Dodge  
Executive Director  
WRC



Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 28<sup>th</sup>, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Spatial Analysis Lab at the University of Montana in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. Support for an updated Montana Drought Response Plan will improve disaster mitigation and response by formalizing contingency planning steps, including expanded size and scope of drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017 and will accelerate the continued development of decision-making platforms that relate a growing network of weather stations to new combinations of drought metrics customized for detection of early onset drought indicators in Montana. I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

Jessica Mitchell  
Director, Spatial Analysis Lab  
Montana Natural Heritage Program  
University of Montana  
Missoula, Montana 59812

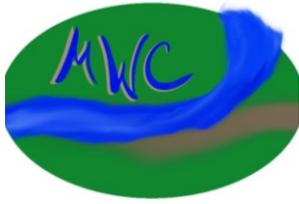
## Musselshell Watershed Coalition

Board members: President Shirley Parrott, Vice-President Bill Bergin, Jr., Diane Ahlgren, Shane Moe,  
Lynn Rettig, Leon Hammond, Craig Dalgarno

Coordinator: Laura Nowlin

P.O. Box 118

Winnett, MT 59087



<http://musselshellwc.wix.com/musselshellwc>

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

January 27, 2020

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

I am writing on behalf of the Musselshell Watershed Coalition in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. This project will also update and streamline the multi-tiered, multi-agency process of drought declaration and communication to improve drought response and mitigation measures among the many partners at the federal, state, tribal and local levels. Montana DNRC authored the 1995 plan, coordinates Montana's drought monitoring effort, staffs the Governor's Drought and Water Supply Advisory Council and is in the best position to coordinate and complete Montana's state drought plan update.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the 2017 flash drought, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017. Again, I urge you to fund this important effort to update and retool Montana's drought preparation, adaptation and response plan.

Sincerely,

Laura Nowlin, Coordinator  
Musselshell Watershed Coalition

January 23, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – *Montana Drought Adaptation and Response Plan*

Dear Ms. Hoiby,

On behalf of the Upper Yellowstone Watershed Group (UYWG), I am pleased to offer this letter in support of Montana DNRC's proposal to the Bureau of Reclamation WaterSMART Drought Response Program for a Drought Contingency Planning grant to update and expand Montana's drought adaptation and response plan. The objective of this effort is to identify the most appropriate drought metrics for Montana as well as the climatological and hydrologic indices necessary for the ongoing monitoring, assessment and identification of drought conditions across Montana. Having a up to date state-wide communication and response plan will be a critical tool for communities and watersheds like ours in creating and implementing local drought planning efforts.

Montana is recognized across the west as a leader in drought planning, monitoring and collaboration. During the recent flash drought of 2017, Montana responded to the disaster by expanding the size and scope of its ongoing drought monitoring and assessment efforts through improved communication with the U.S. Drought Monitor, the Montana Governor's office, agency leaders, and most importantly water users and water managers across Montana. This project will update Montana's Drought Response Plan that is grossly out of date and will institutionalize the lessons learned and implemented since Montana's last drought emergency in 2017.

The UYWG supports Montana DNRC's effort to update Montana's drought preparation, adaptation and response plan and we urge your consideration to fund their request. If I can provide more information or answer any questions please feel free to contact me.

Sincerely,



Ashley Lowrey  
Watershed Coordinator  
Upper Yellowstone Watershed Group

FEB 04 2020

D.N.R.C



**YELLOWSTONE RIVER  
CONSERVATION DISTRICT COUNCIL**

3120 Valley Drive East  
Miles City, MT 59301  
Phone: 406-247-4412

◆  
Dan Rostad  
Coordinator  
406-930-0594

◆  
Aaron Kolb  
Conservation Associate  
406-247-4412

**CONSERVATION DISTRICT  
COUNCIL MEMBERS**

◆  
Don Youngbauer, Chairman  
ROSEBUD COUNTY/MACD  
Phone: 406-346-2935

◆  
John Moorhouse Vice-Chairman  
AT-LARGE

◆  
CUSTER COUNTY, FISCAL AGENT  
Walter Rolf

◆  
DAWSON COUNTY  
Kenny Nemitz

◆  
PARK COUNTY  
Daryl Stutterheim

◆  
PRAIRIE COUNTY  
Rick Herman

◆  
RICHLAND COUNTY  
Shawn Conradson

◆  
STILLWATER COUNTY  
Steven Story

◆  
SWEET GRASS COUNTY  
Steve Story

◆  
TREASURE COUNTY  
Phil Fox

◆  
Yellowstone County  
Leroy Gable

◆  
McKENZIE COUNTY, ND

◆  
MEMBERS AT-LARGE  
John Moorhouse  
Craig Wagner

◆  
[yellowstonerivercouncil.org](http://yellowstonerivercouncil.org)

January 28, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

Re: WaterSMART Drought Response Program – Drought Contingency  
Planning Grant  
Montana DNRC – Montana Drought Adaptation and Response Plan

Dear Irene,

I am writing on behalf of the Yellowstone River Conservation District Council in support of Montana Department of Natural Resources & Conservation request for funds to update their drought response plan.

The Yellowstone River Conservation District Council (YR CDC) is a grassroots, locally-led organization composed of eleven Conservation Districts bordering the Yellowstone River corridor. Working in a co-equal partnership with the US Army Corps of Engineers, the Council completed a comprehensive cumulative effects assessment scientific study and developed a set of voluntary management recommendations for the river and its riparian area.

The YR CDC has remained committed to providing leadership, assistance and guidance for the wise use and conservation of the Yellowstone River resources and strongly supports the scientific studies on which these recommended practices are based. The Council has established a working group to assist with the implementation of the Irrigation Water Management recommended practice and is already working to improve water use efficiency of irrigation systems in the river corridor.

The Council also developed a position statement encouraging irrigation water users to improve irrigation water use efficiencies and we have sponsored educational outreach forums to water users in the river corridor for this purpose.

YRDC representatives participated in updating the State's Water Plan through the Yellowstone River Basin Advisory Committee process, of which several recommendations were adopted including drought planning and education outreach to water users.

We are proud of our partnerships that include Montana DNRC Water Resources Division and share their vision for wise and efficient use of water resources in our state. We fully support their efforts to update their drought contingency planning and response plan and encourage you to fully fund their request.

Sincerely,

A handwritten signature in black ink that reads "Don Younbauer, Chairman". The signature is written in a cursive style with a large initial "D".

Don Younbauer, Chairman

[www.yellowstonerivercouncil.org](http://www.yellowstonerivercouncil.org)

DEPARTMENT OF NATURAL RESOURCES  
AND CONSERVATION  
Water Resources Division



STEVE BULLOCK, GOVERNOR

1424 NINTH AVENUE

STATE OF MONTANA

PHONE: (406) 444-6601  
FAX: (406) 444-0533

P.O. BOX 201601  
HELENA, MONTANA 59620

January 30, 2020

Bureau of Reclamation  
Financial Assistance Support Section  
Attn: Ms. Irene Hoiby  
Mail Code: 84-27814  
P.O. Box 25007  
Denver, CO 80225

RE: WaterSMART Drought Response Program – Drought Contingency Planning Grant  
Montana DNRC – Montana Drought Adaptation and Response Plan – OFFICIAL RESOLUTION

Dear Ms. Hoiby,

The Montana Department of Natural Resources and Conservation (DNRC) is pleased to submit a proposal for a Drought Contingency Planning Grant program. Staff from DNRC's Planning Section (within the Water Resources Division, WRD) will be leading the effort to update Montana's Drought Adaptation and Response Plan over the next two years.

As the WRD Administrator, I have the legal authority to enter into a cooperative financial assistance agreement with the Bureau of Reclamation. WRD has the capability to provide the funding and in-kind contributions specified in the funding plan. The Planning Section will work with Reclamation to meet established deadlines for entering into a cooperative financial assistance agreement.

DNRC has reviewed this application and supports this project because it will directly address Montana's urgent need to update and expand its existing Drought Response Plan, which was approved in 1995. This project will improve Montana's systems for evaluating and predicting drought, and it will update our communication and drought response actions. Moreover, it will increase Montana's long-term drought resiliency by assessing existing vulnerabilities and addressing them with mitigation actions and activities. Thank you for your thoughtful consideration of this project.

Sincerely,



Jan Langel, Administrator  
Water Resources Division