

Montana Drought Management Plan

Building Resilience

Public Comment Summary and Response

November 2023

SUMMARY

Public comments on the draft Montana Drought Management Plan (Plan) were accepted during a 45-day period from June 19 – August 4, 2023. Comments were solicited through advertisements and direct outreach to stakeholders. Specifically,

- Fifty-four radio spots ran over five weeks on Montana Talks, Montana Public Radio, Yellowstone Public Radio and Northern Ag Network. These stations represent 24 AM stations, and 62 FM stations located across Montana. Online radio spots were also aired over four weeks.
- The Montana News Association distributed ads for 62 hard copy newspapers and 34 participating online newspapers.
- Sponsorships/ads were placed on Facebook and Instagram.
- Outreach emails, including information about the plan and how to submit comments, was sent to 48 statewide associations, as well as agencies and partners, including conservation and agricultural nonprofits. Emails requested that organizations review the plan, submit comments, and disseminate Plan and public comment information to their networks. The information was shared in multiple newsletters and through presentations at scheduled meetings.

Comments were accepted through the Plan development website (mtdroughtinfo.org) and via email. Forty-two comments were received through the website, and 10 letters were received through email. Commenters offered many meaningful suggestions that were incorporated into the final plan. Comments are organized and summarized according to the sections of the plan; general comments are organized topically at the end of this document.

COMMENTS ON THE PLAN

Monitoring and Assessment

Comment: Two commenters stated that this section should include references to Montana Climate Assessment and the Greater Yellowstone Area Climate Assessment.

Response: *Comment noted and Plan adjusted where appropriate.*

Comment: One commenter stated that the development community has a lot of data on monitoring and soil samples from around the state that could benefit communities.

Response: *Comment noted and relayed to Monitoring Subcommittee.*

Comment: One commenter had several suggestions for improving this section: using plain language to explain percentiles; deleting the word “average” from streamflow percentile; revising the seasonal descriptions to focus more on hydrological drought and water supply instead of soil moisture; and including the United States Geological Survey (USGS) WaterWatch streamflow drought tool website.

Response: *Text was revised in Table 2, Primary Drought Metrics, to more accurately reflect how streamflow percentiles and streamflow averages are used by the Monitoring Subcommittee. Both streamflow percentiles and streamflow percent of average (as presented by the USGS Water Watch and Montana Department of Natural Resources and Conservation (DNRC) Stream and Gage Explorer (StAGE) Web Application) are used by the Monitoring Subcommittee, but, like many metrics, using streamflow in isolation can misrepresent actual drought conditions. This is why the convergence of evidence approach is emphasized throughout this section. The text in this section was written to be technically accurate, yet accessible to most readers; however, it was impossible to avoid certain technical terms, like percentile. The seasonal descriptions include streamflow in Table 3, Guidance for monitoring by season, for spring, summer, and fall. The text within that section describes the major biophysical processes that influence drought occurrence and intensity. The USGS Water Watch Portal was added as a resource under Local Drought Monitoring.*

Comment: One commenter requested more information and evaluation of possible links between wildfire and prescribed burning (heat and particulate matter released) and drought conditions, such as air temperatures, precipitation, snowpack, soil hydrophobicity and moisture absorption. The commenter also requested an evaluation of fuel reduction practices on drought-related metrics.

Response: *Comment noted; see related responses under Operational and Administrative Framework and Response and under Land Management and Fire. Also note the addition of a recommendation to “Continue Emphasizing Cross-boundary Forest Management and Promoting Drought Resilient Forests Through the Montana Forest Action Plan and its Associated Programs,” which notes that drought and forest health are intricately linked in Montana.*

Comment: One commenter asked several questions: if the United States Drought Monitor (USDM) and local drought monitoring and assessment entities have effective communication channels and uniform data compilation best practices; if the drought monitoring and assessment [Monitoring Subcommittee] shares drought indicator information with community members and agriculturists in order to gather on the ground feedback from stakeholders; and how is the information shared with the public?

Response: *The weekly interaction with the USDM for developing the Montana’s drought classification is channeled through Montana’s Drought Monitoring Subcommittee. The Subcommittee provides weekly recommendations as described in Box 2 – Weekly drought assessment Process. Data used to generate Montana’s recommendation are the same metrics and indices used by the USDM. The public can access that data at the Upper Missouri Drought Dashboard, which is maintained by the MT Climate Office. Stakeholders can provide on the ground feedback to the Subcommittee via the MT Drought Impacts Reporter.*

Comment: Several commenters were complimentary of this section for being sophisticated, comprehensive, and understandable.

Response: *Comments noted.*

Vulnerability and Adaptation

Comment: Two commenters criticized the weak connection between the various drought impacts to the climate adaptation and resiliency work that needs to occur.

Response: *The introductory paragraphs in this section are intended to help readers understand the purpose of vulnerability assessments and how they inform adaptation strategies. Additional text was added in this section to clarify that the adaptation strategies (Management Recommendations section) are presented later in the plan.*

Comment: One commenter stated that the development community has information on wildfire impacts and access to federal financial aid for fire-impacted communities.

Response: *Comment noted.*

Comment: A commenter expressed concern about Figure 4 (now Figure 6) and associated analyses because of its potential to mislead readers. Specifically, the commenter noted the relatively short timeframe of the data from the USDM, which does not capture long-term climate variability. The commenter also was concerned that readers would assume that western and southwestern Montana is becoming “less droughty” over time.

Response: *Thank you for drawing attention to the potential for misunderstanding in Figure 4.*

Drought is complex, human-defined phenomenon that is difficult to monitor, assess, and define, so choosing the correct variables to represent exposure was challenging. Ultimately, the climate scientists consulted for the plan determined that data from the U.S. Drought Monitor would best represent drought exposure because it is the national standard for drought. Despite its relatively short timeframe, it represents the convergence of multiple sources of evidence, as well as the professional judgement of drought experts, which made it preferable than trying to select the right drought metrics to use. In addition, the USDM data can also show smaller spatial scales than one could obtain from most climate models.

The change in conditions over time variable is just one part of the vulnerability calculation. The exposure component of vulnerability captured two aspects of drought in Montana: drought frequency (number of weeks each county experienced a severe (D2) or greater drought) and change in conditions over time (general trend over time). Frequency and change over time were weighted equally in calculating exposure. Importantly, exposure itself is just one-third of the total drought vulnerability. Sensitivity and adaptive capacity, which tend to represent societal and structural measures of drought, are similarly important to this calculation, and each was weighted equally to exposure. Visual comparisons of the scores for each water sector suggest that the change in conditions over time variable did not bias the outcome.

The context of the vulnerability assessment is also important. The methods used to assess exposure and compute the overall vulnerability scores are intended to provide a visual representation of relative vulnerability across the state. This visual tool is complemented by the robust stakeholder narratives, which document drought impacts within various water use sectors.

To provide additional clarification, text was added to the methods to note the relatively short timeframe for USDM data. Also, the word “relative” was added to the figure titles for both exposure figures to convey the comparative nature of the analysis, and the color scheme was revised to use warm colors,

instead of the blue-to-red color scheme, to reduce the likelihood of readers assuming the western part of the state has become “less droughty.”

Comment: A commenter expressed criticism that this section did not contain vulnerabilities associated with federal decision making, specifically the Bureau of Reclamation (USBR) and Columbia River Technical Management Team, which led to a decision to not release water from Hungry Horse Reservoir in July of 2023, causing economic loss (agriculture and tourism) in the Flathead Valley. The commenter noted this was exacerbated by Confederated Salish and Kootenai Tribes (CSKT) Energy Keepers, who own the Seli’š Ksanka Qlispe’ hydroelectric project and released more water than was entering Flathead Lake.

Response: *Text was added to better explain vulnerability and the role of human activities to the introduction of the vulnerability assessment.*

Comment: A commenter expressed concern that, “of the 150 interviews, only 5 included tourism... none from NW Montana.”

Response: *All the participants (approximately 150) from the regional stakeholder groups were invited to participate in an interview. Additional interviewees were recruited by asking each participant to recommend other possible participants. Direct outreach was also used in an effort to balance the geographic and water use sector representation. All stakeholders who volunteered were interviewed – a total of 63 people. Five of them identified recreation and tourism as their primary water use sector. In addition, 245 people responded to the online survey. The full geographic breakdown of survey and interview participation can be found in Appendix C, but, in the western region, there was one interviewee and 59 survey respondents who identified recreation and tourism as their primary water use sector (although many people identified more than one water use sector). It is also important to also note that the quantification of vulnerability – the computation of vulnerability scores for each water use sector by county – used county-level indicator data specific to each sector. Thus, the maps produced from this effort complement the interview and survey data by objectively comparing vulnerability throughout the state.*

Comments: Several commenters expressed appreciation for the Plan’s efforts to collect and document stakeholder experiences in the vulnerability assessment. One of them appreciated this approach to including perspectives across multiple water sectors because it can inform future communications and outreach. Another commenter recommended that a separate vulnerability score be done for major (and perhaps minor) watersheds because they are hydrologic rather than just political boundaries.

Response: *Comments noted. Regarding the calculation of vulnerability scores for major and minor watersheds, this is a compelling idea, but, unfortunately, it would be challenging to do in practice. The data used to compute vulnerability was already limited by availability and scale (i.e., it needed to be available at the county level, or be convertible to that level). Acquiring and/or converting watershed-specific data would be difficult and prone to error. However, this is an idea that warrants revisiting in future updates to the Plan.*

Comment: One commenter suggested broadening the assessment framework to include additional socioeconomic vulnerability data because this would facilitate the development of recommendations

that focus on the needs of disadvantaged communities and provide greater insights into the intersections of equity and drought impacts throughout Montana.

Response: *Comment noted. This idea may warrant consideration in future Plan updates. However, indicator data for computing vulnerability scores were limited by availability and scale. The insights gained from the interviews and surveys do not have this limitation, and thus, they provide complementary information on Montana’s drought vulnerabilities.*

Operational and Administrative Framework and Response

Comment: Two commenters expressed concerns about the ability of public water supply systems to respond to and mitigate supply deficits caused by drought. These commenters recommended revising Montana law to create a provision for emergency essential water use during supply shortages.

Response: *Comments noted. While Montana law allows for the emergency diversion of water for fire protection without a water right, individual beneficial use types are not prioritized under Montana’s system of prior appropriation, even if water supply is severely limited due to drought. Although this was not included as a Management Recommendation in the Plan, it is something that could be discussed by the community water task force, if implemented, as well as during future updates to the Plan.*

Comment: Several commenters recommended that the state strengthen its relationships with tribal nations and incorporate traditional ecological knowledge into management and planning. One asserted that tribal nations had been left out of the planning process and another suggested listing all the tribal nations in Montana as part of the drought response actions and framework diagram.

Response: *Comments noted. Representatives from tribal nations participated in planning process, and their contributions were valued parts of the Plan (including the Monitoring and Assessment; Vulnerability Assessment; and Management Recommendations sections). In addition, the climate adaptation activities on the Blackfeet Nation, which use traditional ecological knowledge, were highlighted in one of the adaptation profiles (adaptation profiles will be part of the final Plan). Entities that do not currently have a discrete role in Montana’s operational and administrative framework were not listed individually in the diagram in an effort to consolidate information. However, the Plan contemplates appointing additional members to the Drought and Water Supply Advisory Committee (Drought Committee), including representatives from tribal nations. In addition, the Plan recommends greater drought coordination and communication across Montana and highlights the Native Drought Resilience Project as a model.*

Comment: Two commenters suggested including the work of local watershed groups in the response actions table.

Response: *Local watershed groups were added to the baseline communications and coordination (“local water supply outreach and communications”) in the “Baseline” category, and they were also added to the communications and coordination in the “Watch” category (in conjunction with the Drought Committee).*

Comment: One commenter noted that the development community has additional resources and financial assistant for drought response.

Response: *Comment noted.*

Comment: One commenter suggested including county and regional hazard mitigation plans in the Plan.

Response: *Incorporating local- and regional-level hazard mitigation and other plans into the Plan was not feasible, but input from representatives from the Montana Department of Military Affairs – Disaster and Emergency Services was critical to the planning process. The Department of Emergency Services (DES) and DNRC communicated regularly as part of the respective plan updates (this Plan and the State Multi-Hazard Mitigation Plan update).*

Comment: One commenter noted a “complete lack of coordination regarding government-created water level fluctuations. Should have a mechanism for multi-jurisdiction communication when reservoir release plans change to coordinate planning among agencies.”

Response: *The state acknowledges the challenges associated with the multiple authorities involved in reservoir operations and management (federal, state, and tribal governments, among others). The Plan is intended to build resilience through adaptation, and the state will continue to advocate for these principles and strategies in the Technical Management Team and other multi-agency forums.*

Comment: One commenter recommended adding the USGS to streamflow monitoring in the response actions table.

Response: *The USGS’s role in state streamflow monitoring has been added to Table 4.*

Comment: One commenter noted that “state doesn’t have much response to drought – only a hay hotline – USDA is only agency with assistance.”

Response: *Comment noted; the hay hotline was included in the Response section of the draft Plan but has since been removed because the hotline was discontinued on August 1, 2023. The state acknowledges that the United States Department of Agriculture (USDA) has a lead role in helping agricultural producers recover from drought and other hazards. Several of the Management Recommendations in the plan, if implemented, could fill in gaps between state and federal programs and support (e.g., “bridge” funding; business relief program; and instream flow leasing program), and proactive strategies can minimize the need for such programs in the future (e.g. voluntary program for drought-resilient agriculture; local watershed capacity; and others that will build drought resilience).*

Comment: One commenter recommended that a drought management team provide oversight over agency management/prescribed burning operations to ensure that fuel reduction practices and prescribed burning do not worsen drought conditions and impacts.

Response: *The Drought Committee regularly receives reports from state fire officials at their meetings. In addition, the Agency Coordination recommendations propose greater exchange of drought information, as well as implementing drought resilience into existing state programs, including the promotion of drought resilient forests through the Montana Forest Action Plan.*

Comment: One commenter asked about the role of motor vehicle restrictions or cattle inspections under a drought emergency.

Response: *Easing restrictions, such as motor vehicle weight limits and timelines for livestock inspections, allows for the streamlined transport of animals, stock water, and feed during a drought emergency.*

Comment: A commenter recommended “creating a seat at the table for tribal governments, universities and NGO partners [who] may improve integration of the Draft Plan more effectively at the community level” in reference to the Drought Committee.

Response: *Membership in the Drought Committee is defined in statute ([§ 2-16-3308 \(2\), MCA](#)), so adding new voting members would require legislation. However, the code provides for additional, nonvoting membership in the Drought Committee through governor appointment, and expansion of the Committee is contemplated in one of the management recommendations (Expand Montana’s Drought and Water Supply Advisory Committee, under Agency Coordination and Partnerships).*

Comment: One commenter noted, in regard to the Operational and Administrative Framework diagram, that “extensive communication with disparate demographics and communities is critical to the success of this endeavor and must include more than just drought status reports. Agency partners should develop and clarify the strategy for communicating with communities along with its excellent summary of programs to be delivered to local communities.”

Response: *Comment noted. The state proposes to meet this through the creation of a deliberate, systematic process for communicating drought information from the state to local communities.*

Management Recommendations

1. Water Storage, Supply, and Delivery

Comments: Commenters expressed broad support for all the recommendations in this category; in particular, natural storage and floodplain management were commonly mentioned. Two commenters suggested including weather modification as a recommendation.

Response: *Comments noted. An additional recommendation to complete a cloud seeding pilot project (feasibility analysis and design) was added to this section.*

A. IDENTIFY FUTURE STABLE FUNDING FOR REHABILITATION AND MAINTENANCE OF STATE AND PRIVATE WATER PROJECTS

Comment: One commenter recommended securing legislative earmarked funding for storage facilities, as well as partnering to leverage state dollars with federal grants, like WaterSMART, and private funding from nongovernmental organizations, to accelerate improving storage and operations at existing facilities. Another commenter suggested collecting information on existing storage and maintenance and past revenue streams and projections.

Response: *Comment noted.*

Comment: Several commenters noted that when spending state resources, e.g., grant and loan programs, on private infrastructure, such as maintenance of existing dams, there must be a link to public benefits. The commenters also recommended explicit language tying these projects to measurable improvements in instream flows.

Response: *Comment noted. Projects funded with state resources must have a public benefit. Public benefits are defined in the Renewable Resource statute as “those benefits that accrue from a water development project or activity to persons other than the private grant or loan recipient and that*

enhance the common well-being of the people of Montana. Public benefits include but are not limited to recreation, flood control, erosion reduction, agricultural flood damage reduction, water quality enhancement, sediment reduction, access to recreation opportunities, and wildlife conservation” (85-1-102(8), MCA). The broad definition allows for a wide range of projects to be funded by this program.

Comment: One commenter offered general support for funding maintenance and repair of storage projects.

Response: *Comment noted.*

B. ASSESS OPPORTUNITIES TO EXPAND SURFACE WATER STORAGE PROJECTS

Comment: General comments about this recommendation ranged from full support for maximizing built storage, especially in the headwaters of critical watersheds, to cautious support for rehabilitating and enhancing existing water storage projects in some circumstances. In addition, several commenters also encouraged the building of new off-stream storage projects, and one commenter was critical of the lack of funding mechanisms within the Plan to build new and/or maintain existing projects.

Response: *Comments noted. The State Water Plan (2015) cited several limitations to building large new storage: availability of locations, cost, public support, mitigation of environmental impacts, and legal/physical availability of water. Smaller projects are more feasible, but unless they have significant carryover storage, they may not be effective during multi-year droughts. Another strategy identified in the State Water Plan is to assess existing projects for potential opportunities to increase storage through infrastructure and/or management. Securing funding for new infrastructure and rehabilitating existing projects is an ongoing challenge for public and private projects. The Plan recommends identifying and developing stable funding sources.*

Comment: One commenter recommended revisiting the existing feasibility studies for state water projects to see if they offer room for expansion to provide additional late-season flow.

Response: *Revisiting the existing state water project feasibility studies for opportunities to enhance storage is an essential part of implementing this recommendation.*

Comment: One commenter recommended clarifying the language to include the evaluation of storage project policy and management strategies in the statewide feasibility study.

Response: *Text was added (“evaluation of operation plan”) to administrative part of this recommendation.*

Comment: One commenter noted that Appendix D lacks sufficient reiteration of the importance of and paths forward for pursuing increased built water storage.

Response: *Comment noted; Appendix D focused on enhancing natural storage and exploring managed aquifer recharge as adaptation strategies. The document is intended to provide complementary information and resources, but not detailed guidance for implementation.*

C. EVALUATE MANAGED AQUIFER RECHARGE AS AN ADAPTATION STRATEGY

Comment: Several commenters expressed support for Managed Aquifer Recharge. One commenter recommended using it to capture off-season flows, and another urged the state to build new administrative and geohydrologic tools for groundwater mitigation permitting and enhancing flexibility in groundwater augmentation. Another commenter suggested mapping of water capture zones.

Response: *Comments noted.*

Comment: Several commenters suggested a cautious approach to using Managed Aquifer Recharge: it must consider the connections between surface and groundwater, and it needs to take care to avoid unintended consequences, such as basement flooding, hillside destabilization, geochemical alterations, and impacts to vegetation.

Response: *Comments noted.*

D. COMPLETE A FEASIBILITY ANALYSIS AND PREPARE A PRELIMINARY PROJECT DESIGN FOR A CLOUD SEEDING PILOT PROJECT IN MONTANA.

Recommendation added in response to public comments.

E. USE AND INCENTIVIZE NATURE-BASED SOLUTIONS TO MAXIMIZE WATER CAPTURE AND RETENTION

Comment: One commenter suggested including the many other types of process-based restoration methods (e.g., post-assisted log structures; Zeedyk structures, managed grazing). The commenter also suggested the Plan be more explicit about the importance of beavers and include discussion of the ecosystem services provided by healthy streams and wetlands (e.g., drinking water; fire, flood, and drought mitigation).

Response: *Text was modified to show that Beaver Dam Analogs (BDAs) are one example of process-based restoration methods. The text already contained references to the landscape-scale benefits provided by beavers, as well as the importance of beaver habitat in drought, flood, and wildfire mitigation.*

Comments: One commenter stated that Plan should go beyond recommending BDAs by promoting habitat and management of beaver populations and protecting them from trapping. Beavers are ecosystem engineers that provide numerous ecosystem services (carbon sequestration, water storage, water quality, firebreaks, habitat), and it is futile to promote natural storage without including provisions for beavers. Another commenter recommended that Montana Fish Wildlife & Parks (FWP) include beaver habitat in upcoming revision to Montana State Wildlife Action Plan and create a Montana Beaver Management Plan.

Response: *Comment noted. The recommendation to “use and incentivize nature-based solutions to maximize water capture and retention” promotes restoration of beaver habitat as a nature-based solution to mitigate floods, droughts, and wildfire. This recommendation also references the Montana Beaver Action Plan (2021) and Beaver Restoration Assessment tool. The Montana Beaver Action Plan identifies hunters, trappers, and anglers as part of its Tier 1 audience (highest priority with broadest influence over others), and the Montana Trappers Association was a participant in plan development. In regard to FWP’s management plans, this suggestion will be conveyed to the appropriate FWP staff.*

Comment: One commenter stated that nature-based water storage solutions should have been the priority throughout the first category of recommendations (Water Storage and Delivery).

Response: *Comment noted. Addressing drought in Montana is a significant challenge and requires a thorough evaluation of all possible strategies and solutions.*

Comment: One commenter expressed concerns about nature-based solutions because of the potential interactions with existing water rights. Specifically, the commenter questioned the ability to control water in these situations and the possibility of retaining water that might otherwise reach another a water right-holder.

Response: *Nature-based solutions are designed (and have been proven) to retain water on a landscape scale to lengthen the period of time that winter rainwater and earlier-season snowmelt are available throughout the year. In basins where there is regular interaction between rivers and floodplains, streams are able to periodically flood onto their floodplains, and it is stream-floodplain connectivity that promotes the attenuation of early and/or higher-than-average spring snowmelt. Water travels much more quickly through channelized streams and in basins where floodplains are perched above surface water sources due to development or riparian vegetation and ecosystem degradation. The water retained through use of natural storage is typically excess water that would otherwise exit a basin before being put to use; in other words, nature-based storage solutions are designed to store additional water that would not have been available to appropriators without the project. These projects strategically promote stream-floodplain connectivity and are not intended to attenuate or re-route bankfull flows. In low-connectivity basins, water users rely on the continued presence of sufficient flows to fulfill their water rights, and flood irrigation activities and ditch seepage typically serve as significant sources of available late-season flows. Additionally, many projects are developed collaboratively with watershed groups and local stakeholders so there is opportunity for downstream users to express concerns and participate.*

Comment: A commenter noted that “detailed causes of impaired stream function go beyond erosion, overgrazing, and artificial channelization. Other issues like subdivision development, and replacement of native vegetation with Kentucky bluegrass need to be included.”

Response: *The text was modified to include development activities.*

Comment: A commenter suggesting expanding the recommendation to “preserving and restoring floodplains and wetlands.”

Response: *This sentiment is captured in the recommendation, as well as in the one that follows on integrated floodplain management. In addition, a reference to Montana Freshwater Partners’ Channel Migration Easement Program, was added to the latter.*

Comment: A commenter stated that nature-based solutions for water storage need to be incentivized, and that expansion of the DNRC Renewable Resource Grant and Loan (RRGL) program to include natural storage would be a meaningful step toward this.

Response: *Under existing law (85-1-602, MCA) Renewable Resource Grant and Loan funding may be provided for “water-related projects that improve water quantity, including streamflows and water storage in existing natural systems, such as riparian areas, flood plains, and wetlands.”*

Comment: One commenter recommended streamlining the permitting process for natural storage projects.

Response: Comment noted. The state recognizes that project permitting (e.g., 310 permits, SPA 124 permits, Floodplain Development permits, 404 permits, and 318 Authorizations) can be challenging and time-consuming and usually involves multiple agencies, with different timeframes and requirements for each. Developing a streamlined process for certain types of project types would be difficult, but many of the agencies are receptive to working with applicants to meet timelines and budgets.

F. EXPLORE A NEW PARADIGM OF INTEGRATED FLOODPLAIN MANAGEMENT

Comment: One commenter suggested including Montana Freshwater Partners' Channel Migration Easement Program within this recommendation.

Response: Text and a hyperlink were added accordingly.

G. UPDATE STUDIES OF PUBLIC AND PRIVATE IRRIGATION INFRASTRUCTURE CONDITION AND NEEDS

Comment: One commenter supported a statewide study of irrigation infrastructure and suggested adding a comparison of current irrigation practices to 1950s practices.

Response: The objectives of studying irrigation infrastructure in the context of this recommendation are to help guide future public and state investments; however, state hydrologists often do historic comparisons when data are available. The recommendation to invest in statewide hydrologic modeling supports investment in these models, and comparisons of irrigation practices could be included.

Comment: One commenter stated that, "this analysis should consider additional revenue generation options to help offset long-term operation and maintenance costs. Long-term plan for Operation and Maintenance is critical to maintaining existing and any new infrastructure."

Response: Text was added to include an analysis of possible funding sources.

Comment: One commenter stated that a statewide study of irrigation infrastructure conditions needs to include agricultural producers.

Response: Agricultural producers would be an integral part of implementing this recommendation.

Comment: One commenter expressed support for investments in irrigation efficiency and encouraged the state to move quickly on federal funding opportunities before funds are all allocated. The commenter also suggested continuing to leverage federal funds to make state resources (e.g., RRGL, Resource Development Grant (RDG) programs) go further.

Response: Comment noted.

2. Water Policy

Comment: Several commenters voiced general support for increasing flexibility through the policy recommendations. Commenters also voiced encouragement for DNRC, with the backing of the Plan, to pursue policies that encourage creative short-term water use changes to benefit instream flow, demand agency enforcement of water rights, and enhance both natural and built water storage to benefit instream flow as well as other uses.

Response: Comments noted.

Comment: One commenter stated that the state should establish a minimum water right for flow in every river.

Response: *Comment noted.*

Comment: One commenter stated concern that public water supply systems have a responsibility to provide water for essential uses during times of drought. The commenter suggested adding, “Develop a statutory emergency provision to provide municipalities with legal resources needed to ensure water is available for essential uses during times of emergency or drought.”

Response: *The emergency diversion of water for fire protection without a water right is allowed under state law, but individual beneficial uses are not prioritized, even if water supply is severely limited due to drought conditions. This is something that could be discussed by the community water task force if implemented and during future Plan updates.*

Comment: One commenter stated that the Plan should acknowledge and recognize cities’ need to plan for growth with a recommendation, “Study how a growing communities doctrine could help meet reasonably anticipated future needs for growing communities.”

Response: *The state acknowledges the need to protect existing uses while promoting adequate future supplies in its administration of water rights and water management activities. Population pressure is a challenge for many communities in Montana, and the Plan’s focus is to empower them by providing resources and support for planning, infrastructure assessments, and public education and outreach, as well as facilitation of drought resilient building (Community Governance recommendation category). In addition, the Comprehensive Water Review’s 2023-24 Stakeholder Working Group is currently studying Exempt Wells, Water Planning, and Growth with the goal of developing regulatory and policy recommendations to move forward at the state level.*

Comment: One commenter stated that the Plan should provide more explicit guidance for the Comprehensive Water Review process with regard to water mitigation statutes and policies; specifically, to make those policies “more adaptive, flexible, and practical in an increasingly complex water resource management landscape.”

Response: *Comment noted. The state believes that the collaborative discourse facilitated through the Comprehensive Water Review’s Stakeholder Working Group is the best path for ensuring outcomes that address this complexity.*

Comments specific to prior appropriation doctrine:

One commenter stated that, “Montana’s water policy does not need to be modified to promote flexibility because the doctrine of prior appropriation has served Montana well. Montana does not need more rules or regulations like other the examples from other states. A centralized management system and taking enforcement from district courts would just take away local control.” Other commenters voiced similar support of the prior appropriation doctrine.

One commenter criticized current use of the prior appropriation doctrine, “the Plan seems to sidestep the inherent problems with the prior appropriation doctrine, despite the fact that it is an antiquated system, devised over a hundred years ago to keep miners and irrigators from killing each other over water use,” and stated that the doctrine doesn’t fit the 21st century.

Response: *Comments noted. Comments were received in support of and opposition to the Prior Appropriation Doctrine which underpins water management and water rights administration in Montana, and the West. The Comprehensive Water Review has continually affirmed a commitment to protecting existing uses while still ensuring reliable supplies for growing communities and economies.*

Comment: One commenter stated that the right to the “salvage” water created by “increases in efficiencies of irrigating” should remain the property of the water right holder. The commenter also stated that water users should have the right to “expand irrigation or put the water to any other beneficial use as long as other users are not adversely affected.”

Response: *Under § 85-2-419, MCA, and consistent with the state’s policy to encourage the conservation and full use of water under § 85-2-101(3), MCA, a water right holder may retain the right to salvage water for beneficial use provided that any change to the purpose or place of use is approved by the department as a change in appropriation right.*

Comment: One commenter stated that the “state could potentially fix the problems caused by increasing reliance on sprinkler irrigation and increasing consumptive use by changing the definition of a water right ‘change’ to include a change in the method of irrigation.”

Response: *Comment noted.*

Comment: One commenter suggested that the State should examine current “legal availability” analysis because it is based on historical flow data that may overestimate the existing water on a given source, combined with an often-overstated picture of actual water usage.

Response: *The DNRC’s assessment of the legal availability criterion during the permit application review process necessarily considers the full flow rates listed on other water rights included in its analysis because those are legally the highest flow rates that can be used with those water rights, and the Department does not conduct historical use assessments for water rights that are not under review during application processing. Legal availability is only a criterion for issuance for beneficial water use permits, not water right changes.*

Comment: One commenter urged DNRC and agency partners to closely coordinate with the Governor’s Office and legislative leaders to prepare a legislative package well in advance of the 2025 session to fund and implement drought management.

Response: *Comment noted.*

A. OFFER LEGAL PROTECTION FOR WATER USERS WHO VOLUNTARILY CONSERVE WATER

Comments: Many commenters supported abandonment protection for those who voluntarily conserve water. One commenter noted that legal protection for voluntary water conservation for water rights owners who participate in drought response plans is critical to enlisting water users in drought response, and another suggested adding incentives for those who voluntarily conserve water.

Response: *Comments noted.*

Comment: One commenter expressed concern with this recommendation because of the statement “...to any water user who intends to conserve water (I.e., divert less).” The commenter stated that, “one

user could conserve water on their irrigated land and the next user down ditch would have access to it. The amount of water diverted [in that scenario] would not be less and would not return to the stream in all instances. The idea that conserving water automatically impacts resiliency to drought doesn't consider all elements. Water that remains instream is water that is ultimately 'blown out' the bottom of Montana. Without some storage component associated with water conservation the impact on drought resiliency may actually be less due to lack of storage in the soil profile." Similarly, another commenter stated that water conserved by one user should not be available to other users to apply and use. The process of conserving water should legally protect existing users.

Response: *Water conserved through measures that do not require DNRC authorization cannot be protected from downstream use through a call. Water that is left instream to enhance or augment streamflow as a result of a temporary authorization to change an existing water right is protectable through a call from downstream use to the end of the augmented or protected instream place of use listed on that changed water right. The only statutory mechanism available for non-governmental individuals or entities to protect conserved water from downstream diversion using a call is temporarily changing the purpose of a water right to instream flow. Collaborative diversion curtailment agreements among water users are an alternative existing way to protect conserved water from downstream diversion.*

B. STREAMLINE ADMINISTRATIVE REVIEW FOR SHORT-TERM WATER MANAGEMENT ACTIONS

Comment: One commenter stated that this recommendation needs to have "a mechanism for existing water right owners to protect their water right in a time frame that does not impact their business." The commenter agreed that the terminated short-term lease statute is a viable option.

Response: *Comment noted.*

C. ESTABLISH FLEXIBLE, SHORT-TERM WATER LEASING

Comment: Several commenters stated that short-term water leasing would need to protect existing water uses, and one commenter expressed concern that the Plan's focus appears to be on maintaining instream flows given the recommendation to "establish a funding program for instream flow leases."

Response: *Comments noted. A note was added stating that "[a]ll recommendations contained in the Drought Management Plan are subject to the existing institutional and legal framework for water use in Montana as provided for by the Montana Constitution, prior appropriation doctrine, and the Montana Water Use Act." Any policies developed will need to ensure that water rights may not be expanded or used out of priority. With regard to the Plan's focus, the recommendations seek to support all water use sectors. This includes agriculture, natural-resource based tourism businesses, local watershed capacity, and conservation (instream flow).*

Comment: Several commenters noted that short-term, seasonal leases that could be implemented efficiently in response to impending drought and could provide revenues for drought-stressed producers and mitigate the financial risk of switching to crops that require less water.

Response: *Comments noted.*

Comment: One commenter stated several conditions that would need to be met for this recommendation to be amenable: all rights are protected; leased water should not be available for re-use by other appropriators; transactions must be between willing parties; guaranteed autonomy for stream reaches; instream flow should not jeopardize existing rights; instream flow water must come from either a pre-1973 statement of claim or “salvage water” and/or new storage; instream flow leases should be measured as closely as possible to point of diversion.

Response: *Instream flow is a recognized beneficial use per § 85-2-102(5)(c) and (d), MCA. Water rights that list instream flow as a purpose are held to the same statutory criteria as other existing rights with different beneficial uses and are subject to call by downstream senior water users. Clarifying text was added to the Plan.*

D. ASSESS FEASIBILITY OF WATER BANKING AND WATER MARKETING FOR MITIGATION

Comments: Several commenters voiced support for water banking. One urged DNRC to work with partners to develop a pilot mitigation banking program as a model for areas of the state where groundwater appropriations are accelerating.

Response: *Comments noted.*

Comments: Several commenters voiced concerns about water banking, including that it would create a situation for worsening over-appropriation and development; it will lead to someone other than landowners making money; and that public water should not be privatized. One commenter added that discussion of water banking and marketing belongs with that of water storage.

Response: *Comments noted. “Water banks” can take several forms: they can be systems created by and administered by a government entity or a non-profit organization, or they can be agreements among users or user groups. Water banks in other western states are created using water that is already accounted for with existing water rights. Clarifying text was added to Plan.*

F. CONSIDER HYDROLOGIC AND LEGAL MECHANISMS TO FACILITATE AQUIFER RECHARGE WITH EXISTING IRRIGATION INFRASTRUCTURE

Comments: Many commenters were supportive of this recommendation, but they highlighted potential issues and challenges that would need to be addressed. Verbal commenters at a stakeholder meeting cited the need to extend the period of use. One commenter stated concern about localized costs, such as downstream dewatering, fish entrapment, and water quality (nutrients and temperature), and suggested providing mitigating resources. Another verbal comment from a stakeholder expressed concern about ensuring bankfull discharges are achieved to maintain healthy aquatic and riparian ecosystems.

Response: *The potential for unintended consequences from this is noted and will be thoroughly evaluated during implementation. Extensive collaboration among agencies and with stakeholders will be critical to ensure that the best possible outcomes are achieved.*

Comments: One commenter suggested incentivizing pivot users to slow down the application timing to mimic flood irrigation while another suggested providing a tax break to irrigators who recharge aquifers.

Response: *Comments noted.*

Comment: One commenter stated that “recharge” needs to be clearly defined and measured, and the commenter had several questions about how this would be implemented: Would carriage water be considered recharge water? What if a water right is moved to a different ditch and the carriage water is no longer in the same ditch, therefore changing recharge impacts? Would water users be held to a recharge standard similar to the return flow standard?

Response: *Comment noted. The state agrees that the complexity of these questions cannot be overstated, and notes that these issues and others would need to be thoroughly evaluated during implementation.*

G. CLARIFY FUTURE WATER RIGHT ENFORCEMENT ROLES AND RESPONSIBILITIES

Comments: Several commenters expressed support for water right enforcement and post-adjudication support, especially clearly defining roles and responsibilities for DNRC and the Water Court.

Response: *Comments noted. The Comprehensive Water Review is working to develop recommendations for Final Decree Transition through the Stakeholder Working Group.*

Comment: One commenter stated that water right enforcement should be done locally. Similarly, another opposed water commissioner appointments without the request of water users and stated that agencies should work with water users to enforce water rights.

Response: *Comments noted.*

Comment: One commenter stated that DNRC should analyze enforcement and illegal water use.

Response: *Comment noted.*

Funding

Comments: One commenter noted that this section focuses on financial assistance for *after* a drought, as relief, instead of *during* a drought, which could potentially reduce the need for post-drought assistance. Another noted that federal relief programs provide relief to agricultural producers after a drought, but they do not have assistance for aquatic ecosystems or other economic sectors.

Response: *The state discussed the gaps in federal and state programs extensively during the planning process. Agricultural relief programs offered through the Farm Service Agency (Farm Program) are helpful in re-building after a drought but are not intended to provide immediate relief. Similarly, the Small Business Administration offers low-interest loans to help businesses recover after declared disasters. The programs contemplated in this section are primarily intended to address these gaps by offering “bridge funding” to get relief to producers during a drought, as well as a business relief program to help those affected in the recreation and tourism sector. Finally, creating a dedicated funding program to support instream flow leases would help mitigate the potential impacts from low streamflows during future droughts. Importantly, the other recommendations in the Funding section (voluntary incentive program for drought resilient agriculture and local watershed capacity funding) and the other management recommendations are intended to proactively lessen the impacts of future and reduce the overall need for post-drought assistance.*

Comment: One commenter criticized the lack of explicit fiscal mechanisms to create drought resilience funding (including funds for building new storage, aquifer recharge, and instream flow leasing). The commenter noted that relying on existing programs is an “easy way out,” and those programs are usually overextended.

Response: *Program funding was discussed extensively during the planning process; in particular, the creation of a “drought resilience program” as a new programs vs. expanding existing ones. Creating a drought resilience program is complicated in practice because drought resilience projects can have numerous forms: while building new storage, funding instream flow leases, and upgrading infrastructure are commonly thought of strategies, other proactive adaptation can take the form of building soil health, creating better monitoring and forecasting tools, and improving communication and coordination among the local, state, and federal levels (including the better alignment of funding opportunities). Using and expanding existing programs, and ensuring their funding is adequate for the needs, is more efficient than establishing new programs. Although some recommendations will not require significant funding to implement, state agencies will need to work with the legislature to create new funding mechanisms when necessary.*

Comments: One commenter noted a challenge that private entities have when applying for state grants and loans. Many programs require the application to be sponsored by a governmental entity, such as a conservation district, which increases the complexity and timeline for accessing these funds. Another commenter stated that the RRGL program should only be used for agriculture.

Response: *Certain grant and loan programs managed by the state have statutory eligibility requirements that are limited to governmental entities (e.g., cities, counties, political subdivisions, tribal governments, or divisions of state government), 85-1-605, MCA. The Renewable Resource Grant and Loan Program is intended to “enhance Montana’s renewable resources through projects that measurably conserve, develop, manage, or preserve resources,” so agricultural projects are one of several categories of eligible project (85-1-601, MCA).*

Comment: A verbal comment from a stakeholder at an outreach meeting suggested that instream flow leasing programs should be partially funded by tourism revenue.

Response: *Comment noted.*

A. ESTABLISH FLEXIBLE “BRIDGE FUNDING” TO SUPPORT AGRICULTURAL PRODUCERS

Comments: Several commenters voiced support for this recommendation, and one suggested offering incentives or credits to enhance financial flexibility for producers.

Response: *Comments noted.*

B. SUPPORT MONTANA’S DROUGHT-IMPACTED BUSINESSES, ESPECIALLY THOSE RELIANT ON NATURAL RESOURCE-BASED TOURISM AND RECREATION

No comments were received specific to this recommendation.

C. ESTABLISH A FUNDING PROGRAM TO SUPPORT INSTREAM FLOW LEASES

Comments: Commenters voiced general support for this recommendation. One commenter suggested creating a “statewide flow fund,” similar to FWP’s Future Fisheries Program, to invest in projects that increase water supply and sustain flows. Another commenter stated that the current FWP instream flow program needs sufficient funding.

Response: *Comments noted.*

Comment: Stakeholders at an outreach meeting expressed concern about the potential impacts of instream flow leasing on late-season flows. They also mentioned concern about placing a monetary price on water and how lessees would be chosen.

Response: *Comments noted.*

D. CREATE A VOLUNTARY STATE INCENTIVE PROGRAM TO PROMOTE DROUGHT RESILIENT AGRICULTURE

Comments: Several commenters expressed support for creating a voluntary incentive program to promote drought resilient agriculture. Commenters noted that incentives are critical, as is ensuring the program is voluntary and is developed collaboratively with stakeholders.

Response: *Comments noted.*

Comment: One commenter had a range of suggestions for how to improve this recommendation: DNRC should allocate additional funding to CDs to provide on-farm tech assistance and grant funding; state should invest in irrigation efficiency measures to improve yields, reduce electricity costs, and help farmers prepare for drier conditions; state should provide funds to develop compost infrastructure and deliver it to producers; and state should subsidize crop insurance premiums for producers who plant cover crops.

Response: *Comments noted.*

E. CREATE DEDICATED, SUSTAINABLE FUNDING TO BUILD LOCAL WATERSHED MANAGEMENT CAPACITY

Comments: Several commenters expressed support for this recommendation.

Response: *Comments noted.*

3. Drought and Water Supply Monitoring

A. FUND THE LONG-TERM OPERATION AND MAINTENANCE OF MONTANA’S WEATHER AND SOIL MOISTURE MONITORING (MESONET) NETWORK

Comment: One commenter suggested expanding the weather station network in eastern Montana, while another suggested including personal weather stations in Mesonet network.

Response: *Comments noted. As the Plan details, the U.S. Army Corps of Engineers is funding the installation of more than 200 new Mesonet weather stations across central and eastern Montana.*

B. INCREASE FUNDING IN SUPPORT OF THE STATE’S USGS REAL-TIME STREAM GAGE NETWORK

Comments: Several commenters expressed support for this recommendation. One commenter suggested some revisions to increase clarity: note the funding increase of 15% is over a two-year, not

one-year, time period; and that DNRC and FWP are the primary state cost-share partners, but federal agencies, such as USBR and U.S. Army Corps of Engineers are also cost-share partners in Montana.

Response: *Comments noted. The Plan has been changed to reflect the increase occurred between FY23 and FY24, and that the cost listed was for FY22. The report to the 2022 MT Water Policy Interim Committee on Stream Gaging in Montana is linked in the Plan, and this report offers comprehensive detail on the funding challenges for stream gages. The report consists of eight recommendations, including advocating for a significant and sustained federal investment in the USGS stream gage network. The Plan focuses on the measurable increase of state funding, with the understanding that federal priorities, although important, would be less measurable in the near term.*

C. COMPLETE THE BUILD-OUT OF THE DNRC REAL-TIME STREAM GAGE NETWORK

Comments: Several commenters expressed support for investing in the state gage network.

Response: *Comments noted.*

D. INCREASE GROUNDWATER MONITORING THROUGH REAL-TIME MEASUREMENT

Comments: One commenter noted that the USGS also funds and operates a network of real-time groundwater monitoring wells (six of which are in Montana). Another commenter suggested that DNRC should work with the Montana Bureau of Mines and Geology (MBMG) rather than develop a new, standalone monitoring program.

Response: *Text was added about the USGS network to the background information in recommendation. Note that DNRC and MBMG are collaborating on the pilot study in this recommendation.*

E. SUPPORT THE MONTANA CLIMATE OFFICE AND THE UPPER MISSOURI RIVER BASIN DROUGHT DASHBOARD

No comments were received specific to this recommendation.

F. ASSESS MECHANISMS TO EXPAND STATEWIDE MEASUREMENT OF WATER USE

Comments: Commenters expressed support for this recommendation, and one commenter noted that this is especially critical for dewatered streams.

Response: *Comments noted.*

G. INVEST IN STATEWIDE HYDROLOGIC MODELING

No comments were received specific to this recommendation.

4. Human Health

A. SUPPORT COMMUNITIES IN IMPLEMENTING RECOMMENDATIONS IDENTIFIED IN THE CLIMATE CHANGE AND HUMAN HEALTH IN MONTANA REPORT

Comments: Several commenters expressed support for this recommendation.

Response: *Comments noted.*

Comments: Several commenters stated that the plan “discusses the need to address the human health impacts of climate change, but does little else to address the biggest threat of our time... the intensity and frequency of drought are increasing as a result of the changing climate...”, and one commenter highlighted recent research suggesting that future declines in hydropower generation from drought will lead to significant impacts on human health because of increased greenhouse gas emissions.

Response: *Comments noted; please also see section on climate change below.*

B. INCREASE PUBLIC AWARENESS OF, AND FUNDING FOR, RESOURCES RELATED TO SUICIDE, SUBSTANCE ABUSE, AND MENTAL HEALTH, ESPECIALLY AMONG RURAL POPULATIONS

Comments: Several commenters expressed support for this recommendation, and one expressed concern regarding the limited capacity at the local level (providers and government staff) to meet mental health needs.

Response: *Comments noted.*

5. Community Governance

Comments: Several commenters expressed support for the Plan’s attention to better planning for development and growth such that they do not compound drought impacts. One commenter stated that the plan should include more detail on structures and processes for community engagement, perhaps using the National Oceanic and Atmospheric Administration’s practitioner guide on Centering Equity in Climate Resilience Planning, to ensure equity and participation.

Response: *Comments noted. Ongoing community engagement during Plan implementation will strive to ensure equitable community engagement and participation.*

Comment: One commenter proposed addressing leaky infrastructure in public water supply systems through adjustments in grant/loan eligibility requirements and/or mandating 1% loss or less from municipal water systems.

Response: *Text was added to address leaky infrastructure in two places: an option for state to assist with coordinating multi-jurisdictional grant applications to help with issues like leaky infrastructure was added to the recommendation to increase state assistance for municipal water and land-use planning and management, and “conducting water loss studies” was added to the list of primary planning steps in that recommendation. Also, note that “leak repair and infrastructure upgrades” is listed as a potential topic for the community water task force.*

Comments: Several commenters expressed support strategies that would conserve water in municipalities, such as lawn watering restrictions, water use efficiency improvements, outdoor water use metering, turf removal, and reclaiming and reusing water.

Response: *Comments noted. In general, these types of water conservation measures are best implemented at the local level. The Plan offers recommendations to empower local communities, including state assistance for water/land use planning and a community water task force.*

Comment: One commenter noted that local communities may need to distinguish between residents who use water to grow food vs. those who water lawns and landscaping, although the latter is

preferable to bare soil because the cooling properties offered by trees and grass (evapotranspiration and shade), as well as minimizing dust and erosion.

Response: *Comment noted.*

Comment: One commenter stated that the state should investigate the benefits of local governments hiring dedicated staff to work on local water planning and sustainability.

Response: *Comment noted.*

A. MODIFY STATE POLICY TO PROMOTE DROUGHT-RESILIENT BUILDING

Comments: Several commenters express support for this recommendation. One commenter suggested that the state could coordinate multi-jurisdictional applications for grant funding to support voluntary water conservation programs.

Response: *Comments noted, and text added to the recommendation to increase state assistance for municipal water and land-use planning and management to suggest the state coordinate multi-jurisdictional grant proposals.*

Comment: One commenter criticized this recommendation because voluntary water efficiency standards already exist in that developers can go beyond the minimum standards if they wish. The commenter also explained that local codes should not be more stringent than state statute to protect development, maintain housing affordability, and ensure consistency. Any incentives should occur at the developer level so savings can be passed to homeowners.

Response: *Clarified the recommendation to emphasize that any local efficiency standards exceeding the state standard would be voluntary and incentive-based, not mandatory.*

B. INCREASE STATE ASSISTANCE FOR MUNICIPAL WATER AND LAND-USE PLANNING AND MANAGEMENT

Comment: One commenter noted that DNRC Regional offices could provide technical assistance to communities.

Response: *Comment noted. The DNRC Regional Office staff are uniquely positioned to understand the needs of local communities, so they should be part coordinating municipal planning resources.*

C. CONVENE AND SUPPORT AN INTERDISCIPLINARY COMMUNITY WATER TASK FORCE TO DEVELOP DROUGHT RESILIENCE RESOURCES FOR MONTANA COMMUNITIES

No comments were received specific to this recommendation.

6. Agency Coordination and Partnerships

Comment: One commenter stated that the Plan needs to address “federal government initiated reservoir low water levels” in regard to low water levels on Flathead Lake. The commenter attributed this as a human-caused drought impact due to decision-making by Columbia River Technical Management Team (TMT), which makes recommendations to the USBR regarding reservoir operations, and stated that the TMT emphasizes fish habitat at the expense of local economies. Since the State owns all the water in Montana, the Plan needs to advocate for getting more representation into water release decisions.

Response: *The state acknowledges the frustration of residents, visitors, and businesses in the Flathead Valley because of this challenging situation, which was compounded by the multiple authorities – federal, states, tribal, and local entities – involved in complex water management decisions. The state will continue to advocate for adaptive water management principles in multi-agency forums. Montana’s Drought Management Plan seeks to build resilience and adaptation that will minimize the impacts of future drought events; improving coordination and communication at all levels is a key component of this.*

A. EXPAND MONTANA’S DROUGHT AND WATER SUPPLY ADVISORY COMMITTEE

No comments were received specific to this recommendation; however, please see comment and response about expanding the Drought Committee under Operational and Administrative Framework (above).

B. BETTER ALIGN STATE AND FEDERAL FUNDING OPPORTUNITIES

No comments were received specific to this recommendation.

C. CONTINUE EMPHASIZING CROSS-BOUNDARY FOREST MANAGEMENT AND PROMOTING DROUGHT RESILIENT FORESTS THROUGH THE MONTANA FOREST ACTION PLAN AND ITS ASSOCIATED PROGRAMS

Recommendation added in response to public comments.

D. INCORPORATE DROUGHT RESILIENCE MEASURES INTO EXISTING STATE PROGRAMS

Comment: Two commenters suggested specifically identifying grant programs in state government that enhance floodplain water storage through restoration projects that also benefit water quality. The commenters recommended elevating drought resilience in the review and evaluation of these programs.

Response: *This recommendation encourages the incorporation of drought resilience measures into existing state programs, including grant programs. Many projects that benefit water quality and/or floodplains also benefit drought resilience, so it is a matter of making the connection, and conditioning grant criteria and other evaluation mechanisms to favor drought resilience projects. A list of possible examples (not exhaustive) is provided in Box 4 associated with the recommendation.*

E. DEVELOP A STATE DROUGHT COMMUNICATIONS STRATEGY TO IMPROVE INFORMATION EXCHANGE AT STATE AND LOCAL LEVELS

Comment: One commenter suggested using social media for communications.

Response: *Comment noted.*

F. IMPROVE DROUGHT COORDINATION AND COMMUNICATION ACROSS MONTANA

Comment: One commenter suggested that DNRC Regional Offices could collaborate with conservation districts and National Resources Conservation Service (NRCS) to host members of the agricultural community, such as workshops, presentations, or other events.

Response: *Comment noted – excellent idea.*

Comment: An actionable plan and successful implementation requires ongoing collaboration with tribal nations, rural communities, and local governments, with outlined structures and processes for community engagement and stakeholder participation to promote more successful implementation of policies that fit individual community needs.

Response: *This concept is at the heart of the recommendation to coordinate adaptation strategies across state planning resources because effective collaboration, communication, and participation across all levels is key to building resilience at both local and state levels.*

OTHER COMMENTS

General comments

Comment: One commenter asked about the real purpose of the plan and if it can help get funding from the federal government. The commenter stated that the State Water Plan just sits on a shelf and speculated that this Plan will do the same. Will the plan get the State more funding from the federal government?

Response: *The State Water Plan (SWP) provides a roadmap of work and funding priorities. It has 68 recommendations organized by short-term (0-2 years), Intermediate term (2-6 years), and long-term (6-10 years). Reports on the progress of the recommendations have been presented regularly to Water Policy Interim Committee. As of March 2022, six recommendations have been completed, 55 have been initiated or will be initiated soon, and seven have no activity. Work to date includes supporting pertinent workshops and the development of key resources about irrigation efficiency, water management for municipalities, water commissioner training, and waterwise landscaping. Multiple studies have been completed that align with the SWP recommendations, and projects include expansion of the DNRC Stream Gage Program, completion of the Upper Missouri River Basin Study, and development of the Montana Drought Management Plan.*

Implementation of SWP is often cited as project justification in state and federal grant proposals, and it is expected that the Drought Plan will be used similarly by a wide range of local and state entities. To further facilitate this, the Plan includes a table of common concepts and strategies (under “Coordinating Adaptation Strategies Across State Planning Resources”), which will help practitioners find similar resources to support their projects.

Plan implementation will begin with prioritization, based on input received during the public comment period. Once priorities are identified, DNRC will work with the Drought and Water Supply Advisory Committee, the Executive and Legislative Branches, and stakeholders to develop a work plan for the biennium and beyond.

Comment: One commenter stated that Appendix D should more robustly reiterate the importance of existing local drought management plans and the path forward for DNRC to encourage, support, and facilitate their creation and implementation. Similarly, another commenter suggested providing a more detailed description of the tools and resources for planning, outreach, and project implementation. The commenter suggested convening a task force to promote the development of watershed drought management plans and also noted that explicitly stating best practices and/or lessons learned (or

commit DNRC to articulating those things in a usable way for other watersheds or local groups) would be helpful.

Response: *Creating momentum for the development of local drought management plans and other resilience-building activities is a prominent goal of the Plan; however, Appendix D was intended as a complementary resource for adaptation, not as a guiding tool.*

The state will unveil a new website, drought.mt.gov, with the release of the final plan, and this website will contain a variety of tools and resources for local drought resilience activities, including developing drought management plans. DNRC Planning staff will commit to providing the best possible information, resources, and support through the website and on-the-ground because effectively building drought resilience starts at the local level.

Comment: One commenter stated that the Plan appears to promote taking water away from agriculture in favor of other uses, which would harm agriculture, a major industry in the state.

Response: *The DNRC administers water rights in Montana, and it cannot legally prioritize individual beneficial uses of water over any other. Unappropriated water that is found to be physically and legally available can be permitted for a new beneficial use, and the purposes of existing water rights can be changed to new uses; however, proving a lack of adverse effect to other users is a criterion of issuance of these applications, and the DNRC legally cannot grant any application - no matter what it's for - that is found to potentially adversely affect other water rights. All uses of water permitted by DNRC or decreed by the Water Court are subject to call by downstream senior appropriators, and water rights owners may access administrative remedies if they believe their water right is being adversely affected by illegal use. Water right owners also have the opportunity to object to water right change and permit applications that may impact their water right during the public notice period that is statutorily required for all applications (§ 85-2-307(3), MCA).*

Comment: One commenter stated that drought management is not an appropriate use of tax dollars. Instead, the state should address development of good farmland by identifying what properties should stay in agriculture and what should be developed.

Response: *Comment noted.*

Comment: One commenter criticized the Plan for focusing too heavily on meetings, monitoring, and reporting aspects rather than planning for how to keep water in the streams given the well-known overappropriation of water in Montana's rivers, streams, and groundwater. In addition, the commenter stated that the Plan avoids some of the most difficult but persistent problems facing the state's water supply issues, especially with regard to aquatic ecosystems and the impacts to threatened/endangered species, as well as native fish and wildlife. The commenter also said that no solutions are offered to address the collapse of aquatic ecosystems and fisheries, and assuming volunteer entities will address these responsibilities has failed.

Response: *The state acknowledges these formidable challenges facing Montana's water resources. Adapting to drought requires action at both state and local levels. Critical, on-the-ground resilience work, such drought planning and project implementation, is locally-driven, while the state's role is to offer big-picture planning, smart policy, and robust programs. The Plan provides a wide range of*

recommendations that either remove barriers to or provide better support of local-level action. Implementation of the Plan will require the commitment of a broad range of Montanans – government representatives (federal, tribal, state and local), non-profit organizations, and stakeholders – who understand the challenges facing water users and who are willing to collaborate on solutions. Interested, motivated stakeholders should participate in this effort.

Comment: One commenter criticized the Plan for not updating the Chronically Dewatered Streams List (FWP 2005) as an “unimaginable omission,” and leaving it for FWP to address does not solve the problem, and the list should be central to a statewide drought plan.

Response: *Text was added to the recommendation to incorporate drought resilience measures into existing state programs, “Continue using the chronically dewatered streams list in decision making and planning, including reviews of water right changes and beneficial use permit applications. Work with FWP to keep the list updated and current.” In addition, chronically dewatered streams were included in the computation of vulnerability scores (see Vulnerability Assessment).*

Comment: One commenter stated that the Plan should include an action item for increased surface water assessment because it is critical to understanding site-specific interdependency of surface water and groundwater. Studies that go beyond monitoring to collect data and conduct in-depth analyses are very useful; for example, the Surface Water Assessment and Monitoring Program (SWAMP) conducted on an irrigation canal in the Gallatin River Basin (in cooperation with MBMG and USBR) was “extremely successful.” The commenter recommended that the state legislature fully fund a larger Surface Water Assessment and Monitoring Program through MBMG.

Response: *The Plan includes support for DNRC-operated StAGE (stream gage site), and contemplates investments in statewide hydrologic modeling, which is currently being developed at DNRC.*

Comment: One commenter stated concerns about recent flooding and specific activities in a floodplain in Stillwater County.

Response: *Comment noted.*

Comment: One commenter suggested collaborating with Conservation Districts to rethink the 310 permit approach to be more comprehensive instead of reactionary.

Response: *Comment noted.*

Climate change

Comments: Many commenters expressed concern that the Plan does not do enough to address climate change given its role in exacerbating drought conditions and increasing the frequency and duration of droughts. Comments stated that the state should “should discuss how to mitigate the resulting harm to lessen the severity, frequency, and impacts of drought,” and “adopt a holistic, proactive approach to truly reduce the causes and mitigate the impacts of a hotter, drier future.” A different commenter stated, “no new fossil fuel extraction as of today 8/18/23.”

Other commenters criticized the discussion and framing of climate change in the plan, stating, “there needs to be a clear connection between drought and climate change,” discussion of vulnerability and adaptation should explicitly include climate change, and climate change should be brought up much earlier in the Plan. One commenter suggested that climate change was intentionally avoided, while

another called attention to lack of connection between human behaviors and worsening drought conditions and water quality-related issues; specifically, “More ambitious and targeted measures are needed to mitigate the emissions and health burden from the electricity sector during drought.”

Notably, one commenter agreed with the inclusion of information from the Montana Climate Assessment (2017), and another expressed appreciation that the Plan acknowledges climate change’s role in drought. Still another commenter stated that drought is part of the natural cycle of weather patterns that cannot be controlled.

Response to above comments: *Comments noted. Text was revised and added to Executive Summary, Key Messages, and Drought – Past and Future to explicitly link a changing climate to exacerbation of drought conditions. The Montana Climate Assessment was already referenced in Drought – Past and Future, and an additional reference to the Greater Yellowstone Climate Assessment was added.*

Exempt wells

Comment: Two commenters expressed concerns about the impact that new exempt wells have on existing well levels of neighboring landowners.

Response: *The state recognizes the concerns about exempt wells their impacts on groundwater resources. DNRC’s Comprehensive Water Review process identified “Exempt wells, water planning, and growth” as a key challenge, and the Stakeholder Working Group will study and evaluate it over the next biennium with the goal of offering recommendations for the 2025 legislative session.*

Comment: One commenter asked that, since domestic water use has a “de-minimus impact to the groundwater landscape,” and since the development community has proposed water metering to demonstrate this, would the state consider incentivizing exempt wells and septic over closed systems that withdraw water from groundwater to meet community needs?

Response: *The state recognizes the complexity inherent in this issue for stakeholders on all sides. Exempt wells are a priority topic for DNRC’s Comprehensive Water Review Stakeholder Working Group for the 2023-24 biennium.*

Weather modification

Comment: Several commenters noted the absence of weather modification in the Plan, and they encouraged Montana to evaluate this technology to mitigate drought.

Response: *A recommendation to evaluate weather modification through a cloud seeding pilot project (feasibility analysis and design) was added.*

Land management and wildfire

Comment: One commenter advocated for better agricultural land management through adaptations, including the use of proper stocking rates for rangeland, enhancing soil organic matter through biological approaches, and not subsidizing poor land management (i.e., not all land is suitable for crop growing and so there should not be subsidies to encourage it there). Similarly, another commenter stated that the agricultural community needs to learn from mistakes and adapt to changes.

Response: *Land management is a key part of adapting to drought. With regard to agricultural practices, the Plan contemplates the establishment of a voluntary state incentive program to promote drought*

resilience agriculture. In addition, the Plan recognizes the importance of community support in the agriculture community, and it advocates for improving coordination and communication about drought.

Comment: One commenter requested information on how monitoring data are going to be used to guide and support agriculture, farming, ranching businesses to minimize moisture losses from their soil through adopting practices that “minimize excessive tilling, slash and burning clearance.”

Response: *The state will continue to collaborate with federal and local partners to develop and disseminate this type of information to the agricultural community. This could be a critical part of creating a voluntary incentive program for drought resilient agriculture, as well as bolstering drought coordination and communication across the state.*

Comment: One commenter requested more information and evaluation of possible links between wildfire/prescribed burning (heat and particulate matter released) and drought conditions, such as air temperatures, precipitation, snowpack, soil hydrophobicity and moisture absorption. The commenter also requested an evaluation of fuel reduction practices on drought-related metrics, as well as coordination among the state’s drought monitoring program and agencies that conduct fire/forest management (e.g., United States Forest Service, Bureau of Land Management, and DNRC) to ensure that fuel reduction treatments, especially prescribed burning, is not exacerbating drought. Forest management practices should be done in a way that maximizes moisture retention.

Other commenters expressed concerns regarding the interactions between forest management and drought. One recommended conducting forest management operations to minimize water losses through evapotranspiration and sublimation, while two others advocated for management practices that reduce water consumption and manage fuels to improve water availability. A third commenter suggested that current forest practices of prescribed burning and removal of understory are making drought and wildfires worse.

Response: *Managing forests to “increase forest resilience to wildfire, windthrow, insects and diseases, drought, invasive species, and climate change” is a major recommendation from the Montana Forest Action Plan (2020). The Montana Forest Action Plan guides forest management activities across the state through federal funding programs, and it is uniquely positioned to promote drought resilient forest management through collaborations with federal agencies and private landowners. The recommendation “Continue Emphasizing Cross-boundary Forest Management and Promoting Drought Resilient Forests Through the Montana Forest Action Plan and its Associated Programs” was added to the Plan.*

Water reuse

Comment: One commenter expressed support for building water recycling facilities.

Response: *Comment noted.*

Mitigation water

Comment: One commenter inquired about the number of water rights DNRC holds that are not being used and could be released for mitigation, if DNRC calculates state-held rights into mitigation, and, if a water user does not use their entire volume, does it get applied as mitigation water?

Response: *There is growing public interest and curiosity about the use of mitigation water to increase resilience during severe drought. There are significant water policy considerations related to the inclusion of water to mitigate severe drought (rather than net depletions to surface or groundwater in over-appropriated basins) as a beneficial use. Water mitigation as a larger topic and potential tool for addressing shortage will continue to be addressed in the DNRC's Comprehensive Water Review process.*

Private ponds

Comment: One commenter recommended that the state review private pond permitting as it impacts water usage and loss to evaporation.

Response: *Comment noted.*

Plan implementation

Comments: Several commenters encouraged Plan implementation and the development of a detailed implementation plan. The implementation plan should include measurable goals, timelines, and processes for community engagement, as well as the specific statutory or rule changes associated with each recommendation. The timelines should detail short- and long-term priorities from the Management Recommendations to facilitate evaluation of success, in tandem with measurable metrics and benchmarks to ensure follow through. One commenter requested an action plan for funding, and incentives for people to adhere to or participate in recommendations.

Two commenters encouraged ongoing solicitation of stakeholder feedback either through review of the implementation plan or through annual public comment periods.

Response: *Comments noted. The state is grateful for its engaged stakeholders and encourages anyone interested in following along with implementation to sign up for the Drought Plan Updates and Info newsletter at <https://public.govdelivery.com/accounts/MTDNRC/subscriber/topics>.*

Future planning efforts

Comments: Several commenters proposed suggestions for future planning efforts: involve Canada and neighboring states; involve realtors and developers; provide a longer public comment period; and update the plan every ten years.

Response: *Comments noted.*