

# **GROUND WATER INVESTIGATION PROGRAM**

Montana Bureau of Mines and Geology

## **General Information for submitting a GWIP project nomination 2024**

The Montana Bureau of Mines and Geology's Ground Water Investigation Program (GWIP) investigates site-specific water-resource issues throughout Montana. Proposed GWIP projects are prioritized by the Ground Water Assessment Steering Committee (GWSC) (MCA [85-2-525](#)). The GWSC consists of representatives from state agencies and units of government that have management responsibilities related to groundwater, and ex-officio representatives of other organization/groups as specified in MCA [2-15-1523](#).

Previous proposed projects have included:

- Cumulative effects of existing and proposed water development on groundwater and stream flow,
- Impacts to groundwater and surface water from changes in irrigation practices or land use,
- Groundwater availability and quality related to residential and agricultural development,
- Possible impacts of energy development on groundwater resources,
- Implementation of aquifer storage and recovery (ASR), and
- Evaluation of mitigation/offset plans in closed basins.

Each investigation is expected to take between 2 and 4 years to complete, depending on the complexity. The results of projects will typically include:

- A detailed report that addresses the nominated issues,
- Numerical models that simulate hydrogeologic features and processes, and
- A comprehensive set of hydrogeologic data available through the MBMG Ground Water Information Center (GWIC).

Projects may be nominated by any individual or group. Project sponsors have no financial or administrative responsibilities, but may be asked to help establish contacts in the community. To avoid duplication of effort, we will identify and encourage coordination between nominating groups if similar proposals are submitted. Project sponsors are also encouraged to engage local or state water-resources groups such as your local county or conservation district, the Montana Association of Counties (MACo) or Montana Association of Conservation Districts (MACD) to identify potential project sponsor partners.

More information about the program and updates on active and completed projects are available at the GWIP web site:

<https://www.mbm.g.mtech.edu/waterenvironment/gwip/main.asp#gsc.tab=0>

If you have any questions, contact Ginette Abdo ([gabdo@mtech.edu](mailto:gabdo@mtech.edu); 406-496-4152), GWIP Program Manager, or Attila Folnagy, ([AFolnagy@mt.gov](mailto:AFolnagy@mt.gov); 406-444-6630), GWSC Chair.

## Ground Water Investigation Program 2024 Project Nomination Timeline

The timeline presented below includes the key dates in the submittal, review and ranking of projects.

### Activities are completed on or before the indicated dates

#### ON or BEFORE:

- March 1:** Requests for GWIP project nominations are distributed jointly by the GWSC and GWIP.
- June 1:** Nomination packages are returned to GWIP by the project sponsors.
- September 1:** GWIP prepares project summaries and a draft-ranking matrix (excluding the GWSC Discretionary Points). If necessary, GWIP will seek additional input from sponsors.
- The GWSC voting and ex-officio members are sent the project nomination documents and the draft-ranking matrix.
- October 1:** The GWSC voting and ex-officio members review the proposals; create their individual project ranking based on their experience and the contingency they represent, and submit project comments to the GWSC Chair.
- November 1:** An informational public meeting is held to discuss the projects. At least one week prior to the public meeting, project sponsors will be sent the project summaries and a preliminary ranking matrix.
- During the meeting GWIP provides a summary of each project, project sponsors are invited to provide commentary and answer questions from the GWSC.
- November 15:** The GWSC voting members reconvene at a separate ranking meeting to assign discretionary points based on their professional judgement, directives from their perspective agencies, and other pertinent information (See ranking criteria 8, below).
- November 22:** The final project ranking is publicized.

The GWSC prioritizes the projects based on the information supplied by the project sponsor (Required Information for GWIP Nominations, below), the Ranking Criteria (below). Prior to the GWSC informational public meeting, the GWIP manager will evaluate the available GWIP resources and estimate how many projects GWIP might reasonably investigate during the next cycle. The GWSC will approve an appropriate number of projects based on GWIP resources. In the event GWIP completes the approved investigations prior to the next scheduled round of ranking, the Committee can re-evaluate the existing list of lower-ranked projects and move one or more into the approved category.

## Required Information for GWIP Nominations

Applicants are required to provide information in the categories listed below. The nomination is limited to [three](#) pages of text. Include figures, tables, and references in an appendix.

GWIP projects require landowner access to collect data needed for hydrogeologic interpretations and the success of a project. The project sponsor is expected to assist with site- access permissions and coordinating periodic public meetings. Lack of access can result in discontinuing a project even after it is underway.

### 1) Project Sponsor Information

Organization name (if any)

Primary Contact Person

Address

Phone Number

Email

### 2) Defined Project Purpose

Submit a concise statement of the water issue and investigation question. Typically, the length of the project purpose statement with the succinct investigation question should be no more than one paragraph. Bullet points are appropriate.

### 3) Study area

Include a scaled map with the proposed project boundaries. A workable study area size depends on the nature of the investigation question and water issues in the project area. For example, detailed hydrogeologic investigations related to groundwater/surface-water interactions should generally be less than 25 square miles. Focused investigation questions or efforts regarding some specific element of a basin water budget or aquifer system might encompass larger areas. Generally, larger study areas result in less resolution in the results.

### 4) Background Information - Overview and magnitude of the problem

Provide background on the proposed investigation question, what has led up to the problem, current status of concern, be specific. Cite references of previous work within the proposed study area. Identify permit applications for the development of water rights and the timing of adjudication, if it relates to the project question.

Specifically state if the project is being nominated for water issues related to current and anticipated growth of:

- a. Agriculture
- b. Industry
- c. Housing/subdivisions, or
- d. Commercial activity

In your discussion, present credible information supporting why the project is being nominated on the selected issue(s) stated in a – d above. Specify the source(s) of information that supports the nomination issue(s).

### 5) Uses of the Project Results

Provide information on how the project sponsor plans to use the results of the GWIP investigation. Be specific.

Include any other ancillary or secondary uses of the project results.

## **6) Technical Urgency**

Address any pending water resource permits or other water management decisions that may be informed by the technical conclusions of the proposed GWIP project.

Include pertinent information such as dates of pending water right applications, timelines related to water management decisions or other time frames related to growth factors in housing, agriculture, industrial and /or commercial components of the nomination. This will help determine whether pending water management decisions fall within the GWIP timeline for project completion.

## **7) Supports Local, State, or Federal Water Plans**

Describe how the project relates to Local, State or Federal water plans. Provide specifics to how the nominated project supports each respective plan.

Plans may include, but are not limited to:

- The Montana State Water Plan, [https://dnrc.mt.gov/docs/water/Planning\\_implementation\\_coor/2015\\_mt\\_water\\_plan.pdf](https://dnrc.mt.gov/docs/water/Planning_implementation_coor/2015_mt_water_plan.pdf)
- Montana Drought Management Plan, <https://drought.mt.gov/montana-drought-management-plan>
- Water Quality Improvement Plans (or TMDL Reports), <https://deq.mt.gov/water/Programs/tmdl>
- Watershed Restoration Plans, <https://deq.mt.gov/water/Programs/nonpoint>  
(link is under "Other Resources: Watershed restoration plan")
- Forest Service Management Plan, <https://www.fs.usda.gov/main/planningrule/101>.

## **8) Complimentary Investigations and Project Support**

Specify other ongoing investigations in the project area and how GWIP data/results can complement that research. List cooperators on a local and state level such as conservation districts, watershed groups, local government, and/or other entities, etc.

## **9) Appendices**

Include any figures, tables, maps, and references cited in 1 – 8 above.

## The Ranking Criteria (Completed by the GWSC)

The Ranking Criteria listed below includes the information used by the GWSC to prioritize projects. This is provided for informational purposes only.

**Note:** If the project purpose and the geographical area are not appropriate for a GWIP investigation and the water issue and area can be refocused to a GWIP question, MBMG will work with the sponsor to revise the project nomination.

### Criteria

**1. Is the water issue related to the current and anticipated growth of the following activities:**

**a. Agriculture**

- Yes
- No

**b. Industry**

- Yes
- No

**c. Housing/subdivisions**

- Yes
- No

**d. Commercial**

- Yes
- No

**2. Are the purpose and the geographical area appropriate for a GWIP investigation?**

- Yes
- No

**3. Designated Closed Basin or Open Basin with Closed Basin Issues (Score: 0 or 2)**

Based on comparing the nominated study area to the Department of Natural Resources and Conservation (DNRC) Montana Basin Closures map:

<https://dnrc.mt.gov/Water-Resources/Water-Rights/Basin-Closures-Stream-Depletion-Controlled-Ground-Water-Areas>

Open basins experiencing issues similar to closed basins are identified in the DNRC State Water Plan River Basins Plans for the Clark Fork and Kootenai, Yellowstone, Upper Missouri, and Lower Missouri River Basins <https://dnrc.mt.gov/Water-Resources/Water-Planning-Implementation-and-Communications/State-Water-Plan-Regional-Basin-Plans/>

Score 2: Project is in a closed basin or an open basin in an area experiencing closed basin issues.

Score 0: Project is not in a closed basin and is not experiencing legal availability issues.

**4. Controlled Groundwater Area (Score: 0, 1 or 2)**

Controlled groundwater area location and status is based on information from the project sponsor and DNRC based on pending petitions and temporary controlled groundwater area designations.

- Score 2: Project is within the boundary of a pending controlled groundwater area petition.
- Score 1: Project is within a temporary controlled groundwater area.
- Score 0: Project is located outside active pending petition or temporary controlled groundwater area.

**5. Impaired Surface-Water Quality and Flow (Score: 0, 1 or 2)**

The score is based on information provided in the nominating package, available public data (for example the Montana State 303(d) TMDL list from DEQ) committee members, and scientific research.

- Score 2: There has been a documented impact to surface-water quality and/or flow and a groundwater pathway; it is the reason the project is nominated.
- Score 1:
  - a. There is a suspected threat to surface-water quality/flow, and a groundwater pathway is likely. The project would aid in understanding the threat, or
  - b. There is a documented impact to water quality/flow, however, the project was not nominated for the impairment, but would provide information to aid in understanding the impairment or threat.
- Score 0:
  - a. There is no known surface-water quality or flow impact, or threat, or
  - b. There is a documented impact to surface water-quality/flow but the project does not address the impairment nor provide any further interpretation to resolve the impairment.

**6. Impaired Groundwater Quality and Quantity (Score: 0, 1 or 2)**

The score is based on information provided in the nominating package, databases, committee members, and scientific research.

- Score 2: There has been a documented impact to groundwater quality and/or quantity, and it is the reason the project is nominated.
- Score 1:
  - a. There is a suspected threat to groundwater quality/quantity. The project would aid in understanding the threat, or
  - b. There is a documented impact to groundwater quality/quantity, the project was not nominated for the impairment but would provide information to aid in understanding the impairment or threat.
- Score 0:
  - a. There is no known groundwater quality or quantity issues, or suspected threats, or
  - b. There is a documented impact to groundwater quality/quantity but the project does not address the impairment and would not provide any further interpretation.

**7. Project Approach and Transferability of Information (Score: 0, 1 or 2)**

This criterion is based on the hydrogeologic approach, and the transferability of information to other areas in the State.

- Score 2: New approaches to evaluating water quantity/quality (e.g., Managed Aquifer Recharge or a novel approach to monitoring drought by developing groundwater metrics/indicators or evaluating groundwater conditions).
- Score 1:
  - a. Project question will utilize innovative hydrogeologic approaches, and/or

b. Project question and approach is transferable to other areas.

Score 0: Project question can be answered using a known hydrogeologic approach, and/or the information is not transferable.

#### **8. Ground Water Steering Committee Discretionary Points (Score 0 to +3)**

Steering Committee membership (MCA [2-15-1523](#)) is based on expertise on water issues across the state.

Voting GWSC members may choose to assign additional scoring points based on:

- **Professional judgment,**
- **Directives of their agencies, and**
- **Additional information, such as**
  - water permit applications in the project area
  - census data
  - ongoing or complimentary projects in the study area
  - likelihood of using project results
  - value of project results
  - number of subdivision lots in the past 5 years
  - considerations regarding Local, State or Federal water plans
  - other information, as appropriate.

#### **9) Groundwater Steering Committee Exofficio Points (Score 0 to 1)**

Steering Committee exofficio members are representative of agencies and units of government with expertise or management responsibility related to groundwater (MCA [2-15-1523](#)). The exofficio members are asked to rank the projects. The following scores will be assigned:

Score 1: To the top 3 projects ranked by the ex-officio members

Score 0: Projects ranked below the top 3

#### **10) Efficiency of effort (Score: 0 or 1)**

If an adjacent and related study area is nominated where the GWIP program can combine field work and analysis, efficiency in effort can be realized. Efficiency of effort also includes those areas where existing data and previous publications provide an initial hydrogeologic framework for data collection and interpretation.

Score 1: Project meets the criteria described above for *efficiency of effort*.

Score 0: There is no efficiency of effort.