

TASK ORDER No.45
Development of District Wide Groundwater Monitoring Network
Pursuant to 2023 Agreement for Engineering Services
Riley Purgatory Bluff Creek Watershed District and Barr Engineering Company.
January 31, 2024

This Task Order is issued pursuant to Section 1 of the above-cited engineering services agreement between the Riley Purgatory Bluff Creek Watershed District (District) and Barr Engineering Company (Engineer) and incorporated as a part thereof.

- 1. Background:** The District included the goal “promote the sustainable management of groundwater resources” in the current 10-year watershed management plan. The District outlined three groundwater strategies in the 10-year plan. Those included (1) promoting conservation of groundwater resources through education and outreach; (2) developing a groundwater action plan in cooperation with counties and state agencies to better understand groundwater-surface water interaction and develop management strategies that consider the protection of both resources; (3) increase understanding of the interaction between groundwater resources and surface waters within the District and consider those interactions in future management decisions.

In 2017, the District completed a regional groundwater / surface water interaction study (Barr, 2017). This study used publicly available data to evaluate the connection between regional groundwater and surface water across the District and also evaluated the potential vulnerability of surface waters to changes in the groundwater system. One recommendation of that study was to re-establish a monitoring well network within the District and implement a groundwater monitoring program. The District previously monitored wells in some areas of the District but those wells are no longer accessible, have been damaged, or were abandoned and sealed associated with development over time. The 2023 budget approved by RPBCWD’s Board of Managers in December 2022 allotted \$100,000 to groundwater conservation. It is our understand that those funds were transferred to the District’s reserve fund for 2024 but could be reallocated toward this monitoring program. The scope of work outlined in this Task Order includes the installation of monitoring wells across the District to re-establish a monitoring well network for the purpose of better understanding the ground water/surface water interaction as related to such things as stream baseflow, lake levels, wetland hydrology, etc.

- 2. Description of Services:** Barr staff will develop monitoring well specifications and conduct preliminary field siting for up to nine new water-table monitoring wells within the District. Barr will assist District staff in obtaining up to three quotes from licensed well drillers in Minnesota and oversee the completion of the monitoring well installation. These new monitoring wells will establish a groundwater monitoring network across the District.
- 3. Scope of Services:** Barr will provide the following scope of services to re-establish a groundwater monitoring program and monitoring well network for the District.

Task 1. Well Siting

Figure 1 shows preliminary locations for monitoring wells to be installed as part of this scope. The preliminary well locations shown on Figure 1 were chosen to provide geographic coverage across the District, leverage existing wells monitored by the Minnesota Department of Natural Resources, and help improve understanding of groundwater-surface water interaction. All proposed locations are on

publicly-owned (municipal) parcels. Barr will conduct a site visit to each location to evaluate the feasibility of installing a monitoring well. Public utilities will be flagged through Gopher State One Call service and overhead obstructions and other site constraints will be observed to establish a preferred well location at each property. Barr will work with District staff and the property owners to adjust monitoring locations based on property owner feedback. It is assumed that District staff will work with each property owner to obtain site access and establish any necessary agreements to install a monitoring well at each location.

Task 2. Development of Monitoring Well Specifications

Based on well siting (Task 1) Barr will develop technical specifications for monitoring well installation. These specifications will include well construction, development, and completion details. Several potential drilling methods will be allowed and specified. These specifications will be used to obtain up to three quotes from Minnesota-licensed well drillers. Barr will assist with obtaining and reviewing the quotes as well as providing a recommendation based on the quotes for the Board of Manager consideration. If the Board of Manager elects to award a contract, it is assumed that the District will contract directly with the drilling contractor.

Task 3. Drilling Oversight

Upon selection of a drilling contractor, Barr staff will provide construction oversight during installation of the monitoring wells and log the geologic conditions encountered during drilling. Boring and well-completion logs will be provided as part of Task 4. District staff will survey reference elevation (top of casing) and geographic coordinates for each monitoring well and instrument the wells with data logging pressure transducers.

Task 4. Reporting

Barr will develop a technical memorandum summarizing the monitoring well installation including boring and well construction logs.

Task 5 Project Management

Project management will be required in all phases to ensure the work meets the expectations of District staff and other stakeholders, and that the work is completed in a satisfactory manner, within the project timeline and within the agreed-upon budget.

Assumptions

Several assumptions were made in preparing the scope of work for this agreement. Assumptions are as follows:

- District staff will be responsible for all field data collection following installation of the monitoring wells. This includes periodic downloads of pressure transducers and manual depth-to-water measurements. The budget allots 2 hours of time to provide office assistance to RPBCWD on data collection and interpretation.
- RPBCWD will provide the data-logging pressure transducers. The budget allots 1 hour of time for assisting District staff with equipment selection.
- District staff will survey well reference elevations and geographic coordinates.
- RPBCWD will obtain permission and execute any necessary agreements with property owners for the installation of monitoring wells.
- RPBCWD will contract directly with the drilling contractor.

- Annual maintenance permits with the Minnesota Department of Health for monitoring wells will be the responsibility of RPBCWD. Currently, local governmental units are exempt from maintenance permit fees but need to annually renew maintenance permits until the wells are sealed.
- Site restoration requirements will be included in the monitoring well specifications and will be the responsibility of the drilling contractor.

4. Budget:

Barr’s services will be compensated for in accordance with the engineering services agreement, except that current hourly rates will be used and will not exceed \$28,400, without written authorization by the Administrator. The following table provides a breakdown of the anticipated cost for major tasks associated with scope of services described above.

Barr estimates that drilling contractor costs may range between \$65,000 and \$110,000. The well installation costs will be better understood after the completion of preliminary well siting, specification development, and after receiving quotes from contractors. At that time, some monitoring locations may be eliminated or deferred based on District budget constraints. Barr will work with District staff at that time to prioritize locations, if necessary.

Task	Task Description	Anticipated Budget	Anticipated Completion Date
1	Well Siting	\$5,200	February 2024
2	Development of Monitoring Well Specifications	\$5,900	March 2024
3	Drilling Oversight	\$12,300	May -June 2024
4	Reporting	\$2,800	May - June 2024
5	Project Management	\$2,200	
Task Order 45 Total		\$28,400	

5. Schedule and Assumptions Upon Which Schedule is Based

The schedule outlined above assumes project initiation will occur in February 2024. The schedule may be modified depending on the actual initiation of project work, well contractor availability, weather impacts on field work, and other unforeseen conditions.

IN WITNESS WHEREOF, intending to be legally bound, the parties hereto execute and deliver this Agreement.

CONSULTANT

**RILEY PURGATORY BLUFF CREEK
WATERSHED DISTRICT**

By _____

By _____

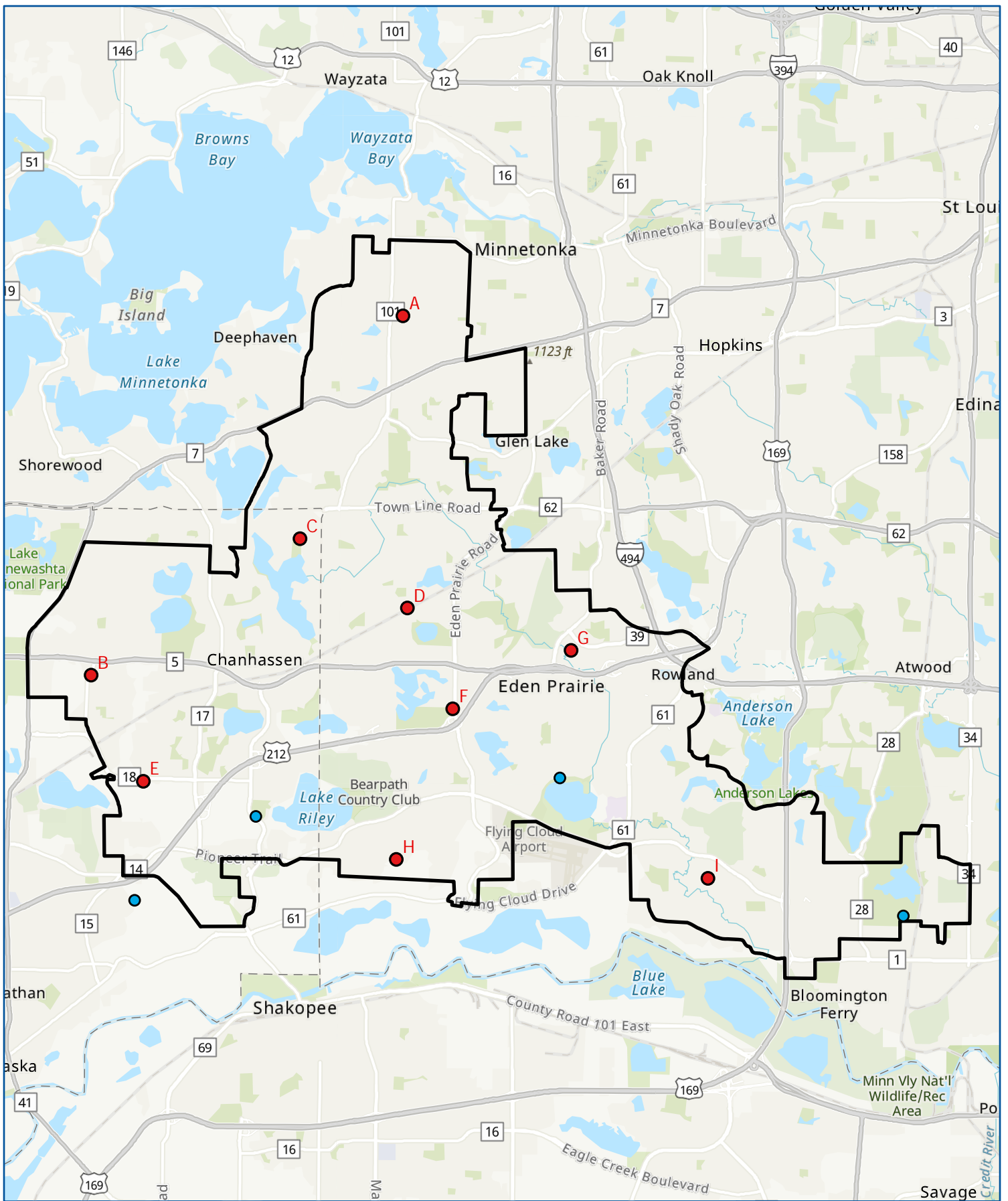
Its Vice President

Its _____

Date:

Date:

APPROVED AS TO FORM & EXECUTION



- Proposed Monitoring Well
- DNR Observation Well
- District Boundary



PROPOSED MONITORING WELL LOCATIONS
FIGURE 1

