RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
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TO: RPBCWD Board of Managers

FROM: Josh Maxwell, Water Resources Coordinator

DATE: February 1, 2023

RE: TO 006J – Barr Assistant with WOMP Station

Since 2004, the RPBCWD has operated three permanent continuous automated water quality monitoring stations for its own assessments but also in cooperation with the Metropolitan Council (METC) Watershed Outlet Monitoring Program (WOMP) (Figure 1). In 2013, the Scenic Heights Station was decommissioned due to continual flooding of the unit. Other METC WOMP Stations operated in the district (not by the district) include two stations located near the intersection of Flying Cloud Drive and Bluff Creek (METC) and Riley Creek (METC & Eden Prairie) (Figure 1). BARR Engineering has assisted the collection, maintenance, and operation if these units since they were installed, but slowly district staff have taken over some of the responsibilities (Table 1).

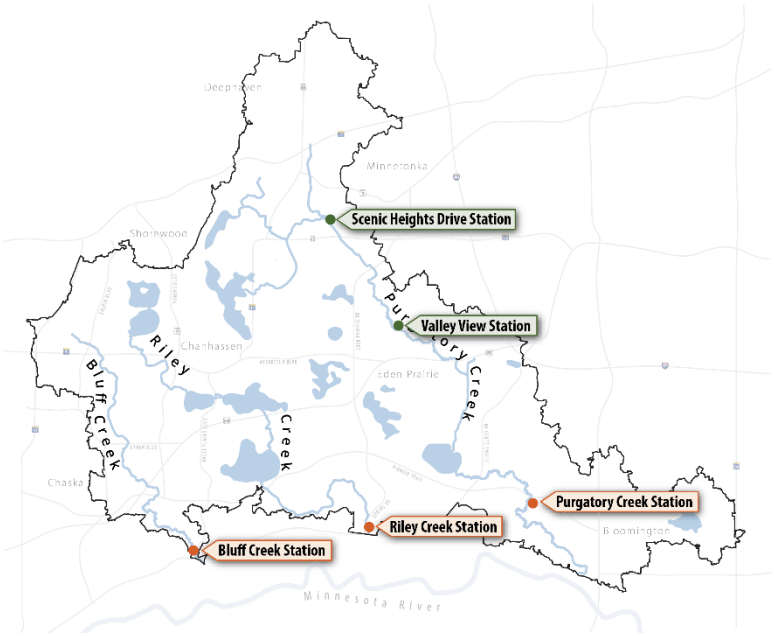

Figure 1 Permanent Continuous Automated Water Quality Monitoring Stations within the Riley Purgatory Bluff Creek Watershed District.
Green = District Stations
Orange = Watershed Outlet Monitoring Stations

The units continuously measure stage, temperature, specific conductance, and some measure turbidity. Water quality samples are routinely collected every other week and additional samples are collected to capture storm events. The WOMP program supports the METC's regional planning and water quality modeling efforts and promotes local stewardship and decision-making. Data collected characterizes the conditions of individual streams, determine the extent and sources of point- and nonpoint-source pollution, and allow us to track water quality trends. The data helps determine compliance with the state's water quality standards, shape total maximum daily load (TMDL) plans, and measure progress towards achievement of standards as best management practices are implemented.

BARR Engineering has assisted in the collection, maintenance, and operation if these units since they were installed, but slowly district staff have taken over some of the responsibilities (Table 1). Prior to 2013, before full time staff were hired, Barr conducted all the duties associated with the monitoring stations. From 2014 – 2019 district staff collected the biweekly sampling data for both stations and Barr conducted all other duties associated with the reduced 2 units. From 2020, district staff, in coordination with the Metropolitan Council, has taken over duties for the Purgatory Creek WOMP station and still collects all the biweekly water sample collection data at the district's Valley View Station.

Table 1 Yearly Automated Station Work Breakdown

	Pre 2013	2014 -2019		2020-2022	
Work Breakdown	BARR	BARR	District	BARR	District/ METC
Stations	3 Stations	Valley View	Purg WOMP	Valley View	Purg WOMP
Biweekly Water Sample Collection	78 samples		52 samples		52 samples
Unit Calibration flow transects and unit calibration	monthly	monthly		monthly	monthly
Event Sample Collection	45 samples	30 samples		15 samples	15 samples
Maintenance sensors, pumps, heaters, communications, electrical	When needed	When needed		When needed	When needed
Data Management QA/QC of data, upload to EQUIS database	December	December		December	December

-Scenic Heights Station decommissioned in 2013 due to continual flooding of the unit.
-Rain event samples can range from 5 to 25 samples per year due to precipitation levels.

Due to the district's extensive monitoring program and the time commitment associated with the operation, and maintenance of the continuous automated water sampling stations, staff support the assistance of Barr Engineering for the operation of the Valley View Station.

TASK ORDER No. 6j- 2023 WOMP Station Services
Pursuant to Agreement for Engineering Services
Riley Purgatory Bluff Creek Watershed District and BARR Engineering Company.
January 23, 2023

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. Description of Services:

   TASK A

   The Pioneer Trail Station is enrolled in Metropolitan Council's (MCES) Watershed Outlet Monitoring Program (WOMP). As part of the WOMP, the District will work with MCES in a cooperative effort to collect flow, rainfall, and water quality data at the Pioneer Trail Station. In 2023, District staff will assume responsibility for all operation and maintenance tasks. The Engineer will help with data management tasks.

   TASK B

   Perform operation and maintenance, data management, and project management tasks related to the Purgatory Creek Monitoring Station located at Valley View Rd in Eden Prairie (Valley View Rd Station). (Note: the Valley View Rd Station will not be enrolled in MCES'S WOMP, so this station will be the sole responsibility of the District).

2. Scope of Services:

   TASK A – Pioneer Trail Station

   District staff will assume responsibility for all operation and maintenance tasks for the Pioneer Trail Station as requested by the MCES WOMP Coordinator and approved by the District Administrator. The MCES uses a discrete auto-sampler and datalogger system to collect storm event samples and has adopted a bi-weekly grab sampling routine at this station. MCES staff sets activation levels for storm events, but expects the co-operator (i.e., District staff) to collect the storm event samples and the bi-weekly grab samples. MCES staff will continue to be responsible for conducting flow measurements and rating curve development. However, the MCES may request District staff to take a flow measurement on occasion, if MCES staff is unavailable.

   District Engineer Tasks will include:

a) Obtaining 2022 water quality and flow data from MCES for entry into the EQuIS database.

NOTE: As part of the WOMP contract, the MCES responsibilities include all laboratory work/fees associated with the sampling, data management (year-end QA/QC, summarizing, storing in database), major maintenance costs (i.e., replacement cost of equipment, subcontractor fees for repair, etc.), and project management/coordination tasks.

TASK B – Valley View Road Station

The District Engineer will perform the following operation and maintenance tasks:

a) Supporting District staff bi-weekly grab sampling efforts, project coordination and data and file management. District staff will be responsible for grab sample collection, delivery to lab and completion of sample submission forms for the lab.
b) Setting sample activation parameters (i.e., activation level and volume) to trigger the station's auto-sampler during storm events. Collecting storm event composite samples for significant events (i.e., rainfall > ½ in.) and delivering these samples to a certified laboratory for testing.
c) Performing routine maintenance of the equipment at the station; including verifying/calibrating water quality sensors, clearing debris from sensors, changing out desiccants, and winterizing the station.
d) Replacing baseboard heater in the monitoring shelter with a new unit. The existing heater is no longer working.
e) Troubleshooting equipment issues, as needed. The amount of troubleshooting in any given year is unpredictable. Therefore, the maintenance portion of the budget has included up to 20 hours of time to troubleshoot equipment issues. If additional time beyond what has been assumed in the budget below is needed, the troubleshooting effort will be coordinated with the District Administrator. The assumed time allocated for troubleshooting equipment will not be exceeded without prior authorization by the District Administrator.
f) Performing stage-discharge measurements for development, verification and/or updating of the rating-curve equation (i.e., the relationship between stream flow and wat er level that is developed based on manual measurements at a monitoring station).
g) Downloading and reviewing monitoring data (i.e., stage, flow, conductivity, temperature, rainfall, turbidity) throughout the monitoring period; including QA/QC tasks.
h) Year-end QA/QC and summary of all monitoring data for the station.

i) Managing and coordinating project.
j) Entering 2022 water quality and flow data into EQuIS database.

Note: A certified laboratory will provide the lab work services. A budget has been included for anticipated lab fees for samples collected from the Valley View Station based on the MCES Lab's analyte costs.

3. Deliverables:
TASK A:
The water quality, flow, and rainfall data collected at the Pioneer Trail Station will be stored in a database maintained by MCES. The District and the District Engineer will have access to this data either through the MCES website or per request to the MCES WOMP coordinator. The data will also be maintained in the Engineer's EQuIS database For District use.

TASK B:
QA/QC'd water quality, flow, and rainfall data will be summarized and stored per the District Administrator's instruction in the Engineer's EQuIS Database for District use.

4. Budget:
Services under this Task Order will be compensated for in accordance with the engineering services agreement and will not exceed $29,900, without written authorization by the Administrator. (Note: the District will likely be reimbursed $5,000 through a State Grant Agreement with MCES) Table 1 provides a summary of the anticipated cost for major tasks associated with scope of services described above. Attachment 1 provides additional detail of the anticipated cost for each task and subtask, schedule, and laboratory costs.

Table 1. Summary of Task Order 06j Anticipated Cost for Major Tasks

Task	Description	Labor Costs[1]	Other Expenses[2]	Total Cost
A	Data Management: Obtain 2022 Water Quality and Flow Data from MCES and Enter into EQuIS Database	$2,500	$0	$2,500
B	Operate and Maintain the Purgatory Cr. Monitoring Station at Valley View Rd for 2023	$19,900	$7,500	$27,400
Task Order 6j Total				$29,900

[1]Labor costs will be billed on an hourly rate per time spent on each task, but will not exceed amount shown without written authorization. District staff will be responsible for monthly grab sample collection, delivery to lab and data management.
[2]Other expenses billed as costs incur, including purchase of new equipment, mileage, laboratory charges (if applicable), equipment rental if needed, and supplies as necessary.

5. Schedule and Assumptions Upon Which Schedule is Based
    a) TASK A: The project schedule is included as part of Attachment 1. The Pioneer Trail Station is operated and maintained year-round.
    b) TASK B: The project schedule is included as part of Attachment 1. This schedule is weather dependent; for example, a late spring and ice conditions could push back Mar-2023 tasks to April-2023.

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_____	Its_____
Date:	Date:
	APPROVED AS TO FORM & EXECUTION
	_____

Attachment 1: Breakdown of Services for Task Order 6j including Anticipated Cost and Schedule

Task/Phase	Subtask	Description	Labor Costs[1]	Other Expenses[2]	Total Cost	Schedule
Task A - Data Management for Purgatory Cr. WOMP Station at Pioneer Trail	1	Obtain 2022 water quality and flow data from Met Council and enter into EQuIS database.	$2,500.00	$0.00	$2,500.00	Feb to Jun-23
	Subtotals		$2,500.00	$0.00		
	Task A Subtotals				$2,500.00	
Task B Operate and Maintain the Purgatory Cr. Monitoring Station at Valley View Rd.	1	Storm event samples: collect composite samples during storm events (assumes sampling begins in March and 15 sampleable storm events of > 0.5" of rain occur).	$6,900.00	$650.00	$7,550.00	Mar to Dec-23
	2	Replace baseboard heater inside monitoring shelter.	$1,000.00	$500.00	$1,500.00	May to Jun-23
	3	Maintenance: verify/calibrate sensors, troubleshoot problem issues as necessary, prepare for monitoring season in spring, and winterize station.	$4,000.00	$375.00	$4,375.00	Feb to Dec-23
	4	Rating Curve: perform stage-discharge measurements to verify rating curve is accurate and update rating curve if needed.	$2,500.00	$175.00	$2,675.00	Feb to Dec-23
	5	Data management: download and review data throughout monitoring period. Year's end QA/QC tasks and data summary.	$4,000.00	$0.00	$4,000.00	Feb to Dec-23
	6	Data management: enter 2022 water quality and flow data into EQiUS database.	$1,500.00	$0.00	$1,500.00	Feb to Jun-23
	Subtotals		$19,900.00	$1,700.00		
	Task B - Subtotals				$21,600.00	

Task B Anticipated Laboratory Testing Costs for Valley View Station	**Analyte**	**Lab Test Cost**	**No. of Samples**	**Total Cost**	
	Alkalinity	$13.50	19	$256.50	
	Bacteria, E. Coli	$28.25	24	$678.00	
	Carbon, Total Organic	$18.00	19	$342.00	
	Chemical Oxygen Demand	$9.75	15	$146.25	
	Chloride	$15.75	39	$614.25	
	Chlorophyll-a	$15.50	24	$372.00	
	Dissolved Phosphorus	$15.25	39	$594.75	
	Hardness	$12.00	19	$228.00	
	Metals	$36.00	4	$144.00	
	Nitrogen, Ammonia	$8.25	39	$321.75	
	Nitrogen, Kjeldahl and Total Phosphorus	$15.25	39	$594.75	
	Nitrogen, Nitrate+Nitrite	$7.75	39	$302.25	
	Phosphorus, orthophosphate	$7.75	39	$302.25	
	Solids, Total and Volatile Suspended	$12.25	39	$477.75	
	Sulfate	$13.50	19	$256.50	
	Turbidity	$8.25	15	$123.75	
	Lab Testing Cost Subtotal			**$5,800.00**	Budgeting
Task Order 6j Total				**$29,900.00**	

[1]Labor costs will be billed on an hourly rate per time spent on each task, but will not exceed amount shown without written authorization.

[2]Other expenses billed as costs incur, including purchase of new equipment, mileage, equipment rental if needed, and supplies as necessary.

RESOLUTION NO. 23-016
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

Approving Task Order 006J for Barr to perform WOMP station monitoring

Manager _____ offered the following resolution and moved its adoption, which was seconded by Manager _____:

WHEREAS the Riley Purgatory Bluff Creek Watershed District Board, with the assistance of Metropolitan Council Environmental Services maintains five automated continuously monitoring stations through the Wetland Outlet Monitoring Program (WOMP), and

WHEREAS the data collected is essential for planning and designing improvements throughout the watershed and measuring trends in water quality, and

WHEREAS the district does not have capacity to maintain all five WOMP stations and Barr has demonstrated their ability to assist the district as evidenced by their performance over the last decade.

NOW THEREFORE BE IT RESOLVED that the Riley Purgatory Bluff Creek Watershed District Board of Managers hereby approves Task Order 006J for Barr Engineering to assist with the maintenance of the WOMP station located at Valley View Road on Purgatory Creek.

The question was on the adoption of the resolution and there were __ yeas and __ nays as follows:

	Yea	Nay	Abstain	Absent
CRAFTON				
DUEVEL				
KOCH				
PEDERSEN				
ZIEGLER				

Upon vote, the president declared the resolution adopted.

Dated: February 1, 2023.

_____
Dorothy Pedersen, Secretary

* * * * * * * * * * * *

I, Dorothy Pedersen, secretary of the Riley Purgatory Bluff Creek Watershed District, do hereby certify that I have compared the above resolution with the original thereof as the same appears of record and on file with the District and find the same to be a true and correct transcription thereof.

IN TESTIMONY WHEREOF, I set my hand this ____ day of _____, 2023.

_____
Dorothy Pedersen, Secretary