

Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers and District Administrator
From: Barr Engineering Co.
Subject: Engineer's Report Summarizing December 2021 Activities for January 5, 2022 Board Meeting
Date: December 28, 2021

The purpose of this memorandum is to provide the Riley-Purgatory-Bluff Creek Watershed District (RPBCWD) Board of Managers and the District Administrator with a summary of the activities performed by Barr Engineering Co., serving in the role of District Engineer, during December 2021.

General Services

- a. Finalized and presented technical memorandum and supporting information to inform the managers of the observed and potential impacts of the current Duck Lake outlet elevation.
- b. Compile and share web map application examples to improve data and information sharing.
- c. Participated in the December 2nd meeting with Vice-President Pedersen, Interim Administrator Jeffery, and Counsel Smith to discuss upcoming December 8th agenda.
- d. Developed draft workplan and application for MPCA grant on climate resiliency. Participated in a strategy meeting with Interim Administrator Jeffery on December 12th and a coordination call with several CAC members on December 15th.
- e. Participated in a December 21st virtual meeting with MPCA and manufactured treatment device advisory group to discuss (a) capping TSS removal crediting at 85%, (b) tier 3 crediting related to dissolved phosphorus (DP), and (c) applicability of incorporating total phosphorus testing data between 0.05 and 0.1 mg/L in the credit determination for tier 2. The MPCA follow-up meeting with voting options due January 5 for the steering committee.
- f. Participated in the December 8th regular Board of Managers meeting.
- g. Participated in the December 15th continuance of the December 8th regular meeting.
- h. Prepared Engineer's Report for engineering services performed during December 2021.
- i. Miscellaneous discussions and coordination with Interim Administrator Jeffery about regulatory program, and upcoming Board meeting agenda.
- j. Participated in the December 30th meeting with Vice-President Pedersen, Interim Administrator Jeffery, and Counsel Smith to discuss upcoming January 5th agenda.

Permitting Program

- a. *Permit 2020-003: Moments of Chanhassen* – This project consists of the construction of a 48-unit memory care residential facility located in Chanhassen, MN. The proposed project triggers RPBCWD's erosion prevention and sediment control, waterbody crossings and structures, wetland and creek buffers, and stormwater management rules. Permit application

- was conditionally approved at the April 1, 2020 regular meeting if applicant revises stormwater management facility design to remove tire derived aggregate (TDA) application. Addressed the applicant's engineer's questions as they continue to revise the design to eliminate the TDA and provide abstraction to the maximum extent practicable because in-situ infiltration testing resulted in infiltration rates of 0 inches per hour.
- b. *Permit 2018-066 Castle Ridge Redevelopment:* This permit was originally approved in October 2019 for the redevelopment the Castle Ridge, Broadmoor, and two adjacent owned properties at the southwest quadrant of Flying Cloud Drive and Prairie Center Drive into mixed-use senior housing, market rate apartments, and commercial/retail mixed-use project. The permit modification was conditionally approved at the September 1st meeting. Worked with permit applicant and Phase 3 property owner on remaining conditional approval items.
 - c. *Permit 2021-063 Reserve at Autumn Woods-* The project proposes the construction of an 87-lot development West of Audubon Road and south of Autumn Wood Drive in Chaska. The project proposes construction of four infiltration basins and two ponds to provide stormwater quantity, volume, and rate quality control. Participated in a conference call with the applicant's engineer on December 1st to discuss site restrictions, water quality modeling and abstraction options. Worked with Interim Administrator Jeffery to extend the permit review period until February 22, 2022.
 - d. *Permit 2021-068 Erhart Farm-* The project proposes the construction of a 21-lot development to the west of Hwy 101 in Chanhassen. The project proposes construction of a wet pond and infiltration basin to provide stormwater quantity, volume, and rate quality control. Reviewed Wetland 2 compensatory storage information relative to the Board's conditional approval.
 - e. *Permit 2021-076 Purgatory Creek Sediment Removal -* The project proposes to remove accumulated sediment from Purgatory Creek at the Scenic Heights creek crossing in Minnetonka. Reviewed applicant's revised maintenance agreement and exhibit.
 - f. *Permit 2021-077 Ravine 4&5 Stabilization -* The project proposes the restoration of two ravines within City of Chanhassen-owned parcels. The proposed project features include ravine/channel stabilization and regrading, placement of riprap and four (4) rock weirs along the Site 5 ravine, reconstruction of the pond outlet at Site 4, and pond dredging at Site 4. Runoff in the Site 5 ravine discharges to a wetland, which ultimately discharges to Lake Susan. Reviewed draft maintenance agreement and associated buffer exhibit in response to the Board's conditional approval. The revised information meets the conditions of approval.
 - g. *Permit 2021-079 Tonka-Woodcroft Improvements-* The project proposes full reconstruction of the streets within the Tonka-Woodcroft neighborhood, an area south of Minnetonka Boulevard and between Larchwood Drive, Steele Street and Hillside Terrace in Minnetonka. The project proposes over 36 acres of land-disturbing activities. The project proposes construction of four underground detention systems and seven infiltration pipes to provide stormwater quantity, volume, and rate quality control. The application remains incomplete. Met virtually with the applicants engineer to discuss review comments and potential design revisions on December 16th.
 - h. *Permit 2021-082 Mister Car Wash –* The project proposes the redevelopment of an existing Bremer Bank site to a car wash building with associated parking, vacuum equipment, utilities, and landscaping. The developer proposes construction of an underground infiltration system

to provide stormwater quantity, volume, and rate quality control. Received revised submittal on December 20th and informed the applicant a permit fee deposit has not been provided to the district.

- i. *Permit 2021-085 7851 Park Drive Expansion* – The project proposes an expansion of the outside gravel storage area and addition of a second driveway access at Lakeshore Equipment at 7851 Park Drive in Chanhassen. The outside storage area will be expanded by approximately 10,467 square feet. The applicant proposes construction of a stormwater filtration/detention swale to provide stormwater quantity, volume, and rate quality control. The project triggers RPBCWD's erosion prevention and sediment control, wetland buffers, and stormwater management rules. Reviewed the December 15th submittal and provided review comments on December 29th.
- k. Coordinated with the city of Eden Prairie and Stantec about the city's upcoming pond dredging project and methods that could be used to demonstrate compliance with RPBCWD's Waterbody Crossings and Structure rule (Rule G). Provided modeling results from RPBCWD hydrologic and hydraulic models to support their design efforts.
- j. Miscellaneous preapplication calls from applicant with questions about rule applicability and criteria.
- k. Miscellaneous conversations with Interim Administrator Jeffery about rule revision process, permit database status, which permits will be reviewed by staff versus Barr, and rule application.

Data Management/Sampling/Equipment Assistance

- a. Prepared, loaded, and verified one RMB laboratory (RMB) report.
- b. Prepared, loaded, and verified lake data collected in October 2021 with the Survey123 mobile application.
- c. Prepared, loaded, and verified 2021 data for Hyland Lake collected by Three Rivers Park District.
- d. Prepared, loaded, and verified nine Pace Analytical laboratory reports containing sediment data that the District collected.
- e. Reviewed and corrected data in the EQUIS Enterprise database after communication with the District.

Task Order 6: WOMP Station Monitoring

Purgatory Creek Monitoring Station at Pioneer Trail

- a. Download and review data.
- b. File management – lab sheets.

Purgatory Creek Monitoring Station at Valley View Rd

- a. Download and review data.
- b. File management – lab sheets.

- c. Water quality and flow data review and QAQC.

Task Order 24B: Silver Lake Water Quality Improvement Project

- a. Meetings with Interim Administrator Jeffery and Counsel Welch on requirements to pursue legal next steps related to liquidated damages (in relation to Contractor not starting before substantial completion of September 30th)
- b. Follow-up with Contractor regarding status of punchlist items
- c. Communications with City of Chanhassen staff regarding project work/status
- d. Review work completed in relation to anticipated pay application requests and follow-up with Contractor to expedite next pay application request. As of December 30th, the Contractor has not submitted the next pay application.

Task Order 28B: Rice Marsh Lake (RM_12a) Water Quality Improvement Project

- a. Utility work was completed on December 23rd. Due to the frozen ground conditions, the site was left without temporary stabilization with the expectation that the contractor would immediately stabilize the site once the ground begins to thaw in the spring (at the direction of Barr).
- b. The MCES 66-in sanitary sewer line beneath the bypass piping was not found during construction, but the 15-in bypass was insulated at the presumed crossing.
- c. A monitoring well was added to one of the access manholes at Kraken Unit 1 for the RPBCWD to monitor performance of the units.
- d. Stockpiles were leveled/removed. Tree protection, perimeter fencing, and erosion control measures were maintained on the site through the winter.
- e. The "trail closed" signs were removed from the site and compacted gravel was used to temporarily replace the park trail until asphalt can be obtained in the spring.
- f. The grading of the rain garden, soil amendments, and final restoration will occur in spring 2022. Reviewed contractor's first application for payment and submitted recommendation memo to RPBCWD.



Project site looking south towards Rice Marsh Lake (before final grading and stockpile removal)

Task Order 29B: Middle Riley Creek (Reach R3) Stabilization Project Design

- a. Sunram Construction completed stream stabilization construction and site seeding, mulching, and placement of erosion control blanket in November. Additional vegetative plantings will be installed at both sites in Spring 2022.
- b. Reviewed Sunram's second application for payment and submitted recommendation memo to RPBCWD.
- c. The amended construction services budget for the Middle Riley Creek project is exhausted due to the extensive coordination and revisions to the cooperative agreement and declaration, more coordination with Bearpath than anticipated, boulder wall coordination, and needing to spend significantly more time directing the Contractor on field fitting the stream stabilization measures.

Task Order 30B: Pioneer Trail Wetland Restoration Project

- a. Sunram Construction completed replacement of the wetland outlet, flood storage excavation, temporary restoration of the site, and placement of wetland buffer signs on November 30th
- b. Connection to the existing draintile and installation of the water level control structure was also completed.
- c. The backflow preventors were installed on December 22nd.
- d. A second round of herbicide treatment, final grading and final restoration will occur in the spring 2022.
- e. Reviewed contractor's second application for payment and submitted memo recommending payment for the board's consideration at the January 5, 2022 meeting.



Constructed flared end sections looking upstream from the ditch into the wetland.



Open water pool looking upstream from the outlet into the wetland

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Page: 6 of 7

Task Order 032A: Upper Riley Creek Ecological Enhancement Plan

- a. Presented the project at a public hearing on December 8, 2021. Addressed comments from the Board and public participants.
- b. Currently developing a scope of work for detailed design.

Task Order 033: Wetland Assessment – Phase 1

- a. Continued drafting Phase 1 report to define ecosystem services and describe methodology for assessing each service.

Task Order 034: Lotus Lake Aquatic Vegetation Management Plan

- b. Developed aquatic vegetation community summaries
- c. Continued drafting Aquatic Vegetation Management Plan

Task Order 035: Eden Prairie Stormwater Model Update and Flood-Risk Area Prioritization

- a. This month staff have completed initial simulations of the 500-year 24-hour duration rainfall event to identify locations where additional overland flow paths are required to simulate surface inundation. Staff have been adding overland flow routes to the models. This work is anticipated to continue through January 2022.
- b. Staff received additional storm sewer information from the City of Eden Prairie for Riley Creek. The additional information included as-built and record drawings, design files, and survey information for the municipal storm sewer system. The additional information provided by the City will be incorporated into the model by the end of January.
- c. City of Eden Prairie staff anticipate providing a similar submittal containing additional storm sewer information for Purgatory Creek in January. When additional information is available, it will be imported into the District's stormwater model. When additional information is available, it will be imported into the District's stormwater model.
- d. Next month staff will prepare an interim project status report for the MPCA. The interim progress report is a required submittal per the grant agreement for the project.
- e. This spring, staff will complete initial model validation simulations to verify that the models are still able to simulate measured water levels. Model validation is anticipated to continue through the spring of 2022.
- f. The schedule for this task order extends through 2022. In 2022, work will include model validation, simulation of design events, inundation mapping, identification and prioritization of flood prone areas, and documentation.

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Page: 7 of 7

Task Order 036A: Bluff Creek Reach 5 Concept Design

- a. Finalizing feasibility assessment report including cost estimates for concept designs.
- b. Discussed a potential scope adjustment with Interim Administrator Jeffery to consider wider watershed considerations that could be affecting this reach of stream (e.g., the wetland upstream of Galpin) and drafted a memo for consideration.