Riley-Purgatory-Bluff Creek Watershed District
Board of Managers Workshop and Regular Meeting

Wednesday, July 12, 2017
5:30pm Board Workshop
7:00pm Regular Board Meeting
DISTRICT OFFICE
18681 Lake Drive East
Chanhassen

Draft Agenda

1. Call to Order

2. Board Workshop - 10 Year Plan

3. Approval of the Agenda (Additions/Corrections/Deletion)

4. Matters of general public interest

Welcome to the Board Meeting. Anyone may address the Board on any matter of interest in the watershed. Speakers will be acknowledged by the President; please come to the podium, state your name and address for the record. Please limit your comments to no more than three minutes. Additional comments may be submitted in writing. Generally, the Board of Managers will not take official action on items discussed at this time, but may refer the matter to staff for a future report or direct that the matter be scheduled on a future agenda.

5. Reading and approval of minutes

Board of Manager Meeting, June 7, 2017

6. Consent Agenda
(The consent agenda is considered as one item of business. It consists of routine administrative items or items not requiring discussion. Any manager may remove an item from the consent agenda for action.)
   a. Accept Staff Report
   b. Accept Engineer’s Report (with attached Inspection Report)
   c. Approve Salary Adjustment for Community Outreach Coordinator with updated Community Outreach Coordinator Job Description
   d. Approve Permit 2017-024: Prairie Bluff Senior Living with staff recommendations
   e. Approve Permit 2017-038: West Park subdivision and site plan review with staff recommendations
f. Approve Purgatory Creek Restoration at Highway 101 Pay Application #3

g. Approve Permit 2017-040: Basin 05-12-C Pond Cleanout with staff recommendations

h. Approve Lotus Lake Alum Feasibility Task Order

i. Approve staff recommendations for Single Family Homeowner Cost-Share Applications
   i. 8583 Red Oak Drive, Eden Prairie (lake buffer)
   ii. 7935 S Bay Curve, Eden Prairie (lake buffer)
   iii. 8513 Red Oak Drive, Eden Prairie (lake buffer)
   iv. 17689 Sheffield Lane, Eden Prairie (wetland buffer)
   v. 4557 Timber Woods Lane, Minnetonka (pond buffer)

j. Approve Task Order 24: Silver Lake Phase I

7. Citizen Advisory Committee

8. Action Items

   a. Accept May Treasurer’s Report
   b. Approve Paying of the Bills
   c. Order Lake Susan Park Pond
   d. Approve Permit 2017-030: Elevate
      i. Approve variance request
      ii. Approve permit with staff recommendations
   e. Approve Permit 2017-044: Toft Shoreline Naturalization exception with staff recommendations
      i. Approve exception
      ii. Approve permit with staff recommendations
   f. Approve Permit 2015-016 (expired): Blossom Hills Letter of Credit Reduction

9. Discussion Items

   a. Upcoming Meeting

10. Upcoming Events

   ● Citizen Advisory Committee, District Office, July 17th, 6:30pm, 18681 Lake Drive East, Chanhassen
   ● Save the Date: Watershed Tour 10 year plan highlight, District Office, July 31st, 4:00pm
   ● Board of Managers Regular Meeting and Workshop, August 2nd, Riley Purgatory Bluff Creek Watershed District office, 5:30pm
   ● Citizen Advisory Committee, District Office, August 21st, 6:30pm
MEETING MINUTES
Riley-Purgatory-Bluff Creek Watershed District
June 7, 2017, Board of Managers Plan Workshop and Monthly Meeting

PRESENT:
Managers: Mary Bisek, Secretary
Richard Chadwick
Jill Crafton, Treasurer
Perry Forster, President
Leslie Yetka, Vice President
Staff: Claire Bleser, District Administrator
Zach Dickhausen, Water Resources Technician**
Michelle Jordan, Community Outreach Coordinator
Louis Smith, Attorney (Smith Partners)
Scott Sobiech, Engineer (Barr Engineering Company)
Other attendees: Brian Beck, Wenck Assoc.*
John Bender, Westwood**
Joe Bischoff, Wenck*
Jim Bracke, Friends of Red Rock Lake Association**
Dan Blake, Pemtom**
Paul Bulger, CAC**
Mark Costello, Eden Prairie Resident**
Roger Humphrey, Stantec**
John Kirk, Eden Prairie Planning Comm.**
Larry Koch, Chanhassen Resident
Dave Modrow, City of Eden Prairie**
Peggy Moeller, Redpath &Co.**
Bonnie Noterman, Lion’s Tap**
Rev. Dr. Jack Perrin, Eden Prairie Assembly**
Robin Ruben, Eden Prairie Resident**
Zac Stillwell, Eden Prairie Assembly**
JoAnn Syverson, Chanhassen Resident**
David Ziegler, CAC

*Indicates attendance at the plan workshop only ** Indicates attendance at the board meeting only

1. Plan Workshop

President Forster called to order the Wednesday, June 7, 2017, Board of Managers Plan Workshop at 5:41 p.m. in the District Office, 18681 Lake Drive East, Chanhassen, MN 55317.

Administrator Bleser reminded the Board of its interest in learning more about the timing of alum treatments. She stated that the first part of the workshop would be a presentation by Mr. Joe Bischoff of Wenck Associates on that topic. She said that the second part of the workshop would be an update on the progress on the 10-year plan and manager feedback on chapters already presented and the distribution of new chapters.

Mr. Bischoff presented information, using PowerPoint slides about alum treatment timing in lakes. He reviewed internal phosphorous loading processes. He identified the points to be considered when deciding the timing of alum treatments. Mr. Bischoff talked about causes of in-lake phosphorous release, alum treatment lifespan, the
lake response model, sedimentation model assumptions, and the Alum Risk Assessment including possible drawbacks to the assessment method. He said the Alum Risk Assessment framework could be incorporated into the District’s decision matrix to help decide when an alum treatment may or may not be appropriate.

Administrator Bleser reviewed the decision matrix and described how the Alum Risk Assessment could be incorporated. She noted that watershed improvements still need to get done in order to help the longevity of alum treatments. She also noted the usefulness of the lake sediment cores and sediment chemistry data.

Administrator Bleser and Mr. Bischoff responded to questions.

Administrator Bleser moved on to the 10-year plan and handed out the updated Watershed Management Plan Update Process and Timeline. She pointed out that a component has been added to introduce the public to the 10-Year Plan including the process involved in developing it, what’s in the plan, and moving forward with the plan. Administrator Bleser emphasized that the added public component is a public information session and is not the public hearing. She also pointed out that the new timeline anticipates final approval of the plan in mid-2018.

She asked for comments and questions about the updated process and timeline and asked for confirmation that the Board is fine with it and with the addition of the additional public information session. The Board indicated approval, and Administrator Bleser said that this updated information will get posted on the District’s website and the District will email information to people who signed up to receive 10-Year Plan updates.

Administrator Bleser handed out sections 6, 7, and 8, which is considered the “One Waters” sections. She summarized these new chapters. She explained that if managers have comments on these sections, staff will collect the hard copies with the comments. She asked if managers have any feedback right now on anything in the plan that they have reviewed to-date. Administrator Bleser collected comments from the managers and Attorney Smith.

Manager Crafton moved to adjourn the workshop. Manager Chadwick seconded the motion. Upon a vote, the motion carried 5-0. President Forster closed the Plan Workshop at 6:56 p.m.
Ms. JoAnn Syverson, Chanhassen Resident, stated that she lives on Lotus Lake and is a Board member of the Lotus Lake Conservation Alliance. She thanked the Board for allowing her to speak and thanked the District for agreeing to participate in the June 20th meeting between the City of Chanhassen, the RPBCWD, and other Lotus Lake stakeholders to discuss Lotus Lake water quality. She said that the LLCA feels like it is in a partnership with the District. She talked about this season’s water quality of Lotus Lake including mats of algae, Curlyleaf pondweed, and fish kills. Ms. Syverson said that the LLCA wants to know what is causing these issues and problems that are a Lotus Lake subwatershed problem. She stated that the LLCA hopes that the problems and solutions as well as funding identification will be discussed at the June 20th meeting. President Forster directed Administrator Bleser to public notice the June 20th meeting.

Mr. Jim Bracke of the Friends of Red Rock Lake read aloud a letter of appreciation to the RPBCWD from the Friends of Red Rock Lake and concluded by stating that the Friends of Red Rock Lake hopes that the District will continue such activities [as described in letter] and other in 2017 and beyond.

Mr. David Ziegler, Eden Prairie Resident, commented that he has been out on some of the watershed’s lakes this season including Mitchell Lake and Duck Lake and he has seen a lot of algae blooms and dead fish so it seems that issues raised by Ms. Syverson span many of the area lakes.

President Forster called for additional comments. Upon hearing none, he moved on to the next agenda item.

5. Permit 2017-007: Cedarcrest Stables Variance Request

President Forster reminded the Board that this item was tabled at a previous Board meeting until this meeting. Engineer Sobiech noted that at the May meeting the Board talked about this permit application and variance requests and at that time the Board requested additional information. Engineer Sobiech presented the additional information and talked about the site’s drainage patterns, pond capacity, the site’s restrictions, and the applicant’s two variance requests. Mr. Sobiech responded to questions. Mr. Modrow with the City of Eden Prairie provided input upon request regarding recent maintenance of the two ponds discussed. Engineer Sobiech stated that the Engineer recommends approval of both variances based on the conditions he has described.

Manager Chadwick moved to approve both variance requests based on the specific reasons identified by the District Engineer. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

Manager Chadwick moved to approve permit 2017-007 Cedarcrest Stables based on the specific conditions described by the District Engineer. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

6. Permit 2017-031 Lion’s Tap Variance Request

Engineer Sobiech stated that the applicant proposes to re-do the site’s parking lot. He explained the variance request and described the site, the flow of water through the site, the alternatives investigated by the applicant and the site’s practical difficulties. There was a discussion of practical difficulties and a confirmation by Attorney Smith that under the District’s variance criteria, cost alone cannot be the basis for granting a variance.

Manager Crafton moved to approve the variance for permit 2017-031 with the conditions recommended by staff. Manager Bisek seconded the motion. Upon a vote, the motion carried 5-0.

Manager Crafton moved to approve permit 2017-031 based on the conditions recommended by staff. Manager Bisek seconded the motion. Upon a vote, the motion carried 5-0.
7. Presentation of Annual Audit: Redpath & Company

Administrator Bleser introduced Peggy Moeller of Redpath & Company. Ms. Moeller reported that the 2016 audit is complete as was issued on May 2016. She explained that four reports are issued in conjunction with the annual audit: the financial report, which includes the auditor’s opinion on the financial statement, the internal control report, the legal compliance report, and the communication of those charges governance. She stated the auditor’s responsibility and presented a summary of each of the four reports. She noted that the audit was delayed due to a delay in receiving materials from the District. Manager Chadwick asked several questions and Ms. Moeller responded.

Manager Crafton moved to accept the auditor’s report as presented. Manager Yetka seconded the motion. Administrator Bleser said that for all three findings staff and Manager Crafton and President Forster worked to provide management response. Manager Chadwick raised the issue of the transparency of the $50,000 settlement from CH2M Hill in 2016. Manager Crafton, President Forster, and Administrator Bleser responded. Upon a vote, the motion carried 5-0.

8. Reading and Approval of Minutes

a. May 3, 2017, RPBCWD Board of Managers Plan Workshop and Monthly Meeting

Manager Bisek requested a spelling correction on page 5.

Manager Crafton moved to accept the minutes as amended. Manager Yetka seconded the motion. Upon a vote, the motion carried 5-0.

b. May 15, 2017, RPBCWD Board of Managers Public Hearing and Special Meeting

President Forster requested a spelling correction of his name on page 3. Manager Crafton requested an edit on page 1 to change the name “Bassett Creek” to “Bluff Creek.”

Manager Crafton moved to accept the minutes as amended. Manager Yetka seconded the motion. Upon a vote, the motion carried 5-0.

9. Consent Agenda

President Forster read aloud the Consent Agenda items: a. Accept Engineer’s Report (with attached inspection report); b. Accept Staff Report; d. Approve Permit 2015-036: Saville West Modification Request with staff recommendations; e. Approve Permit 2015-050: Arbor Glen Modification Request with Staff Recommendations; f. Approve Permit 2017-023: Eden Prairie Assembly of God Church Addition with Staff Recommendations; g. Approve Permit 2017-036: Minnetonka High School Upper Field Access Road with Staff Recommendations; h. Approve Review Period Extension 2017-024: Prairie Bluffs Senior Living; i. Approve Lake Riley Alum Monitoring Task Order with Wenck.

Manager Crafton moved to approve the Consent Agenda as presented. Manager Yetka seconded the motion. Upon a vote, the motion carried 5-0.

10. Citizen Advisory Committee (CAC)

Mr. Paul Bulger reported that the CAC requests a vote or response in writing to the two items listed in the CAC minutes: provide draft chapters of the 10-year plan by the June date and by July 10th provide materials for the
July workshop on the 10-year plan. He said that the CAC developed its schedule based on the 10-year plan timeline. President Forster responded that the CAC won’t receive the information by June 8th. He said that it is possible that information could be provided by the July date. President Forster said that he thinks it is important that the Board and staff have time to work on the plan, and he noted that in this evening’s 10-year plan workshop a new timeline with new dates was handed out. President Forster summarized the new timeline and dates. Mr. Bulger said that the CAC would like to have time to provide additional input into the 10-year plan for example if the CAC thinks that things are missing and not just provide editorial comments. He said that the CAC trusts and anticipates that the Board will be receptive to the CAC’s comments at the time as indicated on the timeline. Mr. Bulger described other items the CAC discussed at its meeting including feedback on the Education and Outreach Plan and website updates and proposed changes. He also talked about the CAC trying out a new format utilizing subcommittees. Manager Yetka asked him to list the subcommittees and he said that he can provide a list.

11. Action Items

a. **Accept April Treasurers Report**
   Manager Crafton moved to accept the Treasurer’s Report as presented. Manager Yetka seconded the motion. Manager Chadwick asked if there is anything unusual in the report. Manager Crafton responded no. Manager Chadwick asked for details on the payment to the Freshwater Society. Administrator Bleser responded. **Upon a vote, the motion carried 5-0.**

b. **Approve Paying of Bills**
   Manager Crafton moved to pay the bills. Manager Bisek seconded the motion. **Upon a vote, the motion carried 5-0.**

c. **Order Lake Susan Park Pond**
   Administrator Bleser stated that the Engineer’s update and timeline is in the meeting packet. She said she would like to table this item until next month because the District is still in discussion with the City of Chanhassen. There was a short discussion of the timeline. The Board agreed to table the item until the next monthly meeting.

d. **Accept Engineer’s Recommendation for Chanhassen High School Reuse Project and Authorize Rebidding of Project**
   Engineer Sobiech recommended that the Board direct the Engineer and staff to reject all the bids received, notify the bidders, return the bid bonds to the bidders and rebid the project, combining it with the Lake Susan Park Pond project if that project moves forward.

   Manager Chadwick moved the Engineer’s recommendation as stated. Manager Yetka seconded the motion. **Upon a vote, the motion carried 5-0.**

12. Discussion Items

a. **Upcoming Meetings**
   President Forster noted that the next monthly meeting and workshop will be on July 12. He stated that he, Manager Chadwick and Administrator Bleser are attending the LLCA meeting on June 20 at 6:30 p.m. at the Chanhassen Library and said that anyone else interested in invited to attend. President Forster said that on June 12 he and Administrator Bleser will present to the Shorewood City Council about the watershed plan. Administrator Bleser highlighted that on July 31 the District will hold its watershed tour
and the focus of the tour will be the Watershed Plan. The managers discussed the date of the July monthly meeting. Manager Crafton moved to change the July 5, 2017, meeting to Wednesday, July 12, 2017, and to direct staff to advertise in the newspaper the change. Manager Chadwick seconded the motion. Upon a vote, the motion carried 5-0.

### 13. Upcoming Events

- Citizen Advisory Committee, Monday, June 19, 6:30 p.m., District Office, 18681 Lake Drive East, Chanhassen
- Board of Managers Regular Meeting and Workshop, Wednesday, July 12, 5:30 p.m., District Office, 18681 Lake Drive East, Chanhassen
- Citizen Advisory Committee, Monday, July 17, 6:30 p.m., District Office, 18681 Lake Drive East, Chanhassen
- Save the Date: Watershed Tour – 10 Year Plan highlight. Monday, July 31, District Office, 18681 Lake Drive East, Chanhassen
- Board of Managers Regular Meeting and Workshop, Wednesday, August 2, 5:30 p.m., District Office, 18681 Lake Drive East, Chanhassen

### 14. Adjourn

Manager Crafton moved to adjourn the meeting of the Board of Managers. Manager Chadwick seconded the motion. Administrator Bleser asked about the date of her review. The Board decided to conduct her review on Monday, July 17 at 7 p.m. Upon a vote, the motion carried 5-0. The meeting adjourned at 8:29 p.m.

Respectfully submitted,

________________________
Mary Bisek, Secretary
Administrative

10-Year Plan
Staff continues to work on the 10-year plan.

Aquatic Invasive Species
Herbicide treatment was performed on Lake Riley as part of the Water Quality project. Staff went out and collected lake profile data and water samples to assess the herbicide dissipation in Lake Riley. Staff have been working with Ray Newman from the University of Minnesota; samples were sent in for analysis.

Zebra mussel veliger sampling occurred on all lakes in June. All lakes were sample once with both Lotus and Riley sampled twice because of the higher volume of traffic.

Budget
Administrator is working on a budget proposal for 2018.

City Engagement
Staff Jeffery and Administrator Bleser are coordinating a meeting with Public Works Directors and City Engineers to discuss:
   a.) help with potential shortfalls in the BWSR Road Replacement Program,
   b.) address water conservation, and
   c.) to manage and mitigate flooding.

Data Request
We had several data requests this month pertaining to information pertaining to our 10-year plan as well information from our last board meeting.

Grants
No new updates.

Office
Signage for our Office will be installed mid-July.

Permitting
It is another busy month. Staff Jeffery has been working with permit applicants explaining the permitting process as well as guiding them through the permit application. A few permits were issued administratively in conformity to the adopted resolution of the board.
Site Investigations
Staff received a phone call from a Lotus Lake resident concerning algae (spiroygira) growth and
dead fish found on Lotus Lake in early June. Staff distributed our spiroygira fact sheet and
explained the columnaris bacterium which is most likely what has caused some fish to perish
(happened last year on Lotus).

Citizens Advisory Committee
June meeting
The CAC met for their regular monthly meeting on June 19. Two members of the CAC have
resigned their positions: Dennis Yockers and Judy McClellan. Draft minutes are included in the
board packet.

Technical Advisory Committee
No additional updates.

Programs and Projects
District-Wide

Cost-share program
Please see board packet for information on cost-share recommendations. Third round
applications are being accepted with a deadline of August 15.

MPCA Community Resiliency Grant
We are finalizing reporting to cities from our workshop. Two cities have received drafts and are
providing comments for suggestions.

Total Maximum Daily Load
No additional updates.

Data Collection (J. Maxwell)
Rice Marsh Aeration
Staff will pulse the unit once a month to make sure lines remain clear. Barr Engineering will
repair the motor that went down this year and the District has purchased another one as a back
up.

Summer Field Season
Staff began regular lake and creek sampling near the end of April which has continued through
June. In addition to zooplankton collection, staff has added phytoplankton sampling once a
month to gauge harmful algae levels and overall health of the lake. The Lake Lucy level sensor
was installed in early June after having issues connecting with the field computer and staff sent
in the unit to ISCO for repair. The sensors internal battery had been depleted so staff ordered an
external battery pack which can be connected directly to the sensor. Many of our lake level sensors are aging, so this will be a good test to see how the battery packs work and if we want to purchase more in the future. A fisheries permit was sent to the MN DNR at the end of June which requested placing trap nets in Staring Lake to collect native fish for the educational event at the Staring Lake Outdoor Center involving Conservation Corps students which is to happen on July 10th. We are waiting for the permit to be approved. The auto sampling unit placed on the NorthWest side of Rice Marsh Lake (same place as last year) to collect additional nutrient data entering the lake, had some issues early on, but appears to be working now. Staff collected a base flow sample from the drainage and the pond since some rain events were missed.

Fish spawning was witnessed this month on most lakes which finished up by mid June. Staff witnessed minor fish kills (bluegills and crappies) occurring on Lotus Lake and Hyland Lake which was most likely caused by the columnaris bacterium which occurs naturally in the water. When a rapid increase in temperature occurs coupled with increase fish stress from spawning, columnaris bacteria can be enough to kill fish or cause secondary infections which result in fish death. Staff has been working with MN DNR to publish a fact sheet that can be distributed when such events occur.

Carp Management
The barrier was opened on March 3rd to allow northern pike to move up into the recreational area to spawn and return to Staring Lake. The barrier was closed on April 4th as temperatures reached above 10 degrees Celsius on multiple days prior to closing. The floating trap net was deployed April 11th to capture fish for education and outreach events and gauge carp movement. The City of Eden Prairie opened, cleaned, and closed the fish barrier multiple times this spring due to high water levels in the Purgatory Recreational Area this spring. Fish species captured included mainly northern pike, black crappie, freshwater drum, bigmouth buffalo, bluegills, and black bullheads. The first carp was captured on April 21st and the kill count is up to about 150 carp so far. We had hoped a larger number of fish would have been captured by the trap net, but as an experimental gear we were unsure of how many would be captured. At one point we did have 300-500 fish trapped between the fish barrier and the net however the net became overcome with a large rain event and the fish escaped by the time we could arrange the use of a backpack electrofisher. Staff has been looking into the purchase of such a unit to prevent the situation from occurring in the future. Staff have been tracking carp movement via telemetry this spring, but were not able to get out last month. Staff have found two carp in the net that had been tagged last year, but they lost their tags, so more care will be taken this year to ensure limited tag loss. Staff reached out to the SMSC Organics Recycling Facility in Shakopee, MN with regards to the disposal of carp captured; the facility is allowing the District to bring carp to facility to be composted, waiving any organics disposal fees. Staff will bring excessive numbers of carp caught to the recycling facility. Regular carp monitoring will begin at the end of July.

The City of contacted the District this month after receiving an inquiry from residents located near Pond A and Pond B about carp found in the ponds. Staff went out to check for tagged fish in both ponds and Neill Lake to see if they were from Staring Lake (most likely). Staff have hypothesized that since the carp were prevented from accessing the Purgatory Recreational Area to spawn, they moved downstream from Staring and accessed the ponds. It is unknown whether
the carp in the ponds would be successful at spawning due to the high salinity concentrations, shallow depths, and high water temperatures, but staff will continue to monitor the ponds. If successful recruitment occurs, the District may want to look into placing a fitted gate on the outlet culvert from the ponds.

**Bighead Carp on the Move!**
Former District intern Nick Amunrud contacted the District on June 4th after arrowing a large carp in his family farm gravel pond located near Belview, MN on the Minnesota River. He requested confirmation that the carp was an invasive bighead carp and asked what he should do with the fish. District staff directed him to contact the area DNR office to report the fish. The fish was a large adult female weighing 61.7 lbs and measuring 47.5 in. The pond is located in the floodplain of the Minnesota River which allows fish to move into it during high flows. This bighead carp was captured about 80 miles upstream from the only other bighead carp captured in the Minnesota River. The DNR further netted and electrofished the pond, but did not find any additional fish. Water samples to be tested for bighead and silver carp eDNA were also collected and are pending.

![Bighead Carp on the Move!](image)

**Creek Restoration Action Strategy**
Barr Engineering and District staff have been working on an updated edition of the CRAS and on a future publication for a professional journal. Additionally, staff have been working on a final creek walk summary book to have on hand to easily reference.

Staff conducted creek walks of the two most southern ravine tributaries of Lotus Lake this spring. Overall, scores were fairly similar to estimated scores; the stream sections were in fairly
good shape. Staff will conduct more stream assessments in the fall as the surrounding vegetation has become dense.

University of Minnesota Grant
21 June 2017
Ray Newman, University of Minnesota, with input from TJ Ostendorf
Riley Purgatory Bluff Creek Watershed District (RPBCWD) Aquatic Plant progress report for June 2017.

Pre-treatment point intercept surveys have been processed and data entered. Peak curlyleaf surveys were completed on Mitchell, Riley and Susan; Staring will be completed this week. Preliminary observations suggest lake-wide control of curlyleaf in Riley, Susan and Staring and good control in Mitchell. Milfoil herbivore surveys were conducted in Riley and Susan. Eurasian watermilfoil was delineated in Lake Riley and treatment areas proposed. The lake was treated on 21 June with triclopyr (west side blocks) and 2,4-d (east side blocks) and herbicide residue samples are being collected. Plans for the rest of June and July include sample processing, data entry and herbivore surveys. Melaney Dunne will defend her MS thesis entitled The Response of Aquatic Macrophytes to Lake Management Practices and the Role of Light in the Germination of Macrophyte Propagules at 9AM, Skok Hall, St Paul Campus on 29 June.

WOMP Station - Metropolitan Council
Staff have visited the WOMP stations twice this month and have been using the Met Council's new procedures.

Service Learners
No new update.

Volunteering
Volunteers are being recruited to help with water quality and fisheries monitoring this summer and fall.

Education and Outreach (M. Jordan)
Adopt a Dock Program
Volunteers continue to check their plates. No invasive mussels have been identified. District staff built 19 plates for the Nine Mile Creek Watershed District to use in launching the program on their local lakes.
**AIS Jr Inspector**
Nine Mile Creek Watershed District requested to use the toy boat version of the activity with their new pop-up education cart this summer. Staff will also be utilizing the activity in July at two schools in the Minnetonka school district.

**Earth Day Mini Grants**
Another recipient submitted their report for reimbursement. Rachel Valek from Chanhassen Elementary was able to take 60 4th graders to the Rapids Lake Wildlife Refuge. In Rachel’s words from her report: “With limited access to outdoor learning at our school, the refuge provides a wonderful outdoor space right along the Minnesota River. It is much more meaningful to the students to experience nature rather than talk about it back at school….The first station, the river nature hike, focused on how water and wind contribute to erosion. We investigated several areas of the river that have changed since the refuge opened. We tied this to our recent unit on geology and what types of rocks must be present along the Minnesota River, as well as our water unit with a mini-lesson on “Who Polluted the Minnesota River”. This was a great time to visit as the river was 13.0 feet above flood stage. “

**Lakes and Creeks Water Quality Report**
No new updates.

**Master Water Stewards Program**
2016 stewards continue to work on logging their volunteer hours, while 2017 stewards work on their capstone projects. We are currently recruiting for the next cohort of stewards, and will be looking for up to 6 community members to participate.

**Project WET**
Planning continues, and registrations are being collected.

**Shoreline Restoration Workshop**
The June 29th workshop was well attended and well received. Participants learned how to identify common weeds, techniques for maintenance, and had time for questions and answer and to test out their new skills. The hands-on workshop took place on-site at the Timber Lakes Association lakeshore buffer on Mitchell Lake. This project was a 2015 cost-share grant recipient. Based on the reception, this would be a good event to repeat on an annual basis.

**Summer Watershed Tour**
Planning is well underway for the tour and registrations are coming in. The theme for this year’s tour is the 10-Year Plan, and we’ll be highlighting the draft goals of the new plan.

**Website & Newsletter**
The July newsletter was published the first week of July. Work continues on the website update.

**Winter & Turf Maintenance Training**
A level II winter training will be hosted at the district August 8th.

**Bluff Creek One Water**
**Chanhassen High School**
No new updates.

**Bluff Creek**
No new updates.

**Riley Creek One Water**

**Lake Susan Park Pond**
Working with all of our partners to determine contribution and if additional funds needed to complete the project.

**Riley Creek**
Staff is working with the City of Eden Prairie to determine final financial support for the project. Lower Minnesota River Watershed District will be contributing $150,000.

**Lake Riley CLP Treatment**
Herbicide on Lake Riley for EWM was performed. University of Minnesota researchers will be evaluating effectiveness.

**Lake Riley Water Quality Project (Alum)**
No new updates.

**Lake Susan CLP Treatment**
No new updates.

**Purgatory Creek One Water**

**Fire Station 2**
The primary site sign has been finalized and approved (see below), and work has begun on the signage for the cisterns. Seeding of the site was conducted mid-June and the reuse system is set to be installed mid to late August.
Purgatory Recreational Area Berm
No new update.

Purgatory Creek at 101
Purgatory Creek restoration at 101 is complete. We will continue to monitor it. During the last wind storm a couple trees have fallen in the creek. We notified the City of Minnetonka. One of the trees will need to be removed. The City will be removing it.

Mitchell Lake Plant Management
Herbicide treatment is completed.

Red Rock Lake Plant Management
Herbicide treatment is completed.

Scenic Heights School Forest
Working with the School District and the City to finalize cooperative agreements. Design is ongoing. We are working on public engagement pieces.

Staring Lake Plant Management
Herbicide treatment is completed.

Professional Workgroups and Continuing Education

The Fundamentals of River Science: AppliedGeomorphology and Ecology Workshop
Joshua Maxwell attended the The Fundamentals of River Science: Applied Geomorphology and Ecology Workshop on June 19th - 23rd. The MNDNR training occurred in Fergus Falls, MN. The trainings main purpose was to teach the fluvial geomorphological processes involved in creating and maintaining a streams shape and stability, as well as the fundamental hydrology and hydraulics of rivers. We utilized/familiarized ourselves with the Rosgen Stream Classification System to identify stream and valley type. We learned surveying techniques to determine a stream segments type and degree of stability by collecting pertinent field data including bankfull dimensions, cross sectional area, flood prone width, entrenchment, hydraulic radius, shear stress movable particles, sinuosity, radius of curvature, slope, etc. Students collected actual field data to be used by the MNDNR on two waterbodies; Longbranch Creek and Buffalo River. After which students were required to process all the data and present what they found the following day. Students utilized two main software packages to analyze the collected data which included RiverMorph and Mecklenburg. Students also visited multiple stream/river sites of varying stream types and looked at multiple large scale restorations that had occurred.

Overall the training was very beneficial and skills learned can be directly applied within the District. Some main take home topics include: 1) We shouldn’t necessarily be attempting to restore streams to what naturally existed before because of the massively transformed watersheds we live in. We should be gearing our restorations to allow for our streams to return to an equilibrium state based on the current stream conditions. 2) You cannot design a project to fix every problem. Some problems cannot be fixed due to the large scale of the project, watershed impacts, limited funding, stakeholder restraint, space limitations, etc. 3) Stream restorations should not focus on installing structures (mainly in regards to trout). All segments of a stream (riffle, run, pools) are critical for life in a stream not just deep pools. Eventually, all structures will fail so the key is to design the restoration correctly using the data collected. Sinuosity and channel dimensions are critical in order to dissipate stream energy and reduce shear stress. If you account for these factors the stream will create its own “structure” and be more stable than any built structures can do.

As the CRAS is further developed we plan to incorporate some of the monitoring techniques into our monitoring to collect more and better data. This class would allow the District staff to collect or assist in the collection of data pre and post restoration on both restoration and reference sites, to evaluate the success of such projects. The class will also allow Josh to attend future MN DNR trainings in the River Science Series to further his skills as it was a prerequisite. Possible future trainings include:

- River Restoration: Design and Application
- River Monitoring and Assessment
- Restoration Solutions in a Fragmented River Ecosystem
The Art of Hosting
Staff attended at two-day Art of Hosting facilitation training. This style of facilitation training was used in the public input process of the 10-Year Plan update with much success. Through the training, staff increased their knowledge and proficiency in utilizing the facilitation techniques. The Art of Hosting is a highly effective way of harnessing the collective wisdom and self-organizing capacity of groups of any size. Based on the assumption that people give their energy and lend their resources to what matters most to them – in work as in life – the Art of Hosting blends a suite of powerful conversational processes to invite people to step in and take charge of the challenges facing them. Groups and organizations using the Art of Hosting as a working practice report better decision-making, more efficient and effective capacity building and greater ability to quickly respond to opportunity, challenge and change. People who experience the Art of Hosting typically say that they walk away feeling more empowered and able to help guide the meetings and conversations they are part of move towards more effective and desirable outcomes. Many people experience meetings that waste time, conversations that feel more like debates, and invitations to input which turn out to be something altogether different. People want to contribute, but they can’t see how. Leaders want contribution, but they don’t know how to get it. The Art of Hosting offers a blend of some of the most powerful methods to create open and meaningful conversation that leads to commitment and good results. Working with a range of collaborative methods – like Circle, World Café, Appreciative Inquiry, Open Space Technology, ProAction Café, storytelling and more – practitioners can tailor the approach to their context and purpose.

Minnesota Association of Watershed District
The MAWD tour focused on water-level management as well as fisheries management. Manager Forster and Crafton represented the District in their MAWD meeting. Request for the annual meeting have been finalized and will be distributed out. There was discussion on pre-mawd workshop. Workshops could include an human resources track and a field safety track.
Watershed Partners

The district is participating in watershed partners again in 2017, and supporting their Clean Water Minnesota project. “Clean Water Minnesota is a collaborative outreach project of the Metro Watershed Partners. Working together, we provide resources, training, and support to partners as they work with homeowners in the Twin Cities metro area to keep water clean and healthy. In 2016, we kicked off the first year of a three-year project to produce the very best clean water educational messages and programs, based on the latest research in social science, for our partners to use in their outreach and communications. We promoted our program, gained new partners, and raised $120,000 to support this work. We launched a new website at cleanwatermn.org, with new photography, blog stories, and downloadable informational resources. We created and implemented a system to track engagement with these resources, that measures the impact of the campaign overall, and in each member's service area. With your support, we will continue to build on these successes in 2017. We will produce twelve new, seasonally appropriate blog stories about community members in the metro area taking action to protect lakes and rivers, along with new photographs and informational resources for our partners to use in their education and outreach work. We will continue to build our following on social media, and help you build yours. We will host trainings and meetings to help our partners use Clean Water MN resources, and build new audiences for clean water messages. In addition, we will begin to build the foundation and framework for a metro-wide Adopt-a-Drain program, with promotional resources and activities, including a toolkit to support community clean-up events with a neighborhood focus, aimed to inspire residents to sweep up, rake up, and pick up streets and sidewalks in the metro area. To do this work, we need to raise $120,000 per year. Your contribution will ensure that the people you are trying to reach hear you. Please contribute membership funds now, and make a plan to support us throughout this 3-year campaign. For MPCA permitted cities and watersheds, your membership contribution helps you meet your MS4 public education requirements.”
Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers and District Administrator
From: Barr Engineering Co.
Subject: Engineer’s Report Summarizing June 2017 Activities for July 12, 2017, Board Meeting
Date: June 30, 2017

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 June 2017.

General Services

a. Met with Administrator Bleser and Lower MN River Watershed District on June 29th to discuss potential boundary revisions.
b. Met with NMCWD Engineer to discuss potential boundary revisions.
c. Met with Permitting Coordinator Jeffery and Counsel Welch on June 21st to brainstorm and discuss opportunities to streamline and improve RPBCWD regulatory program.
d. Assisted Administrator Bleser with preparation for 10-year plan update to Board of Manager’s at June 7th workshop.
e. Participated in June 7, 2017 regular Board meeting.
f. Prepared Engineer’s Report for engineering services performed during June 2017.
g. Regular and frequent communication and coordination with Administrator Bleser discussing Board workshop, meeting agenda, and status updates for various task orders.
h. Overall project management, administration, webmap data management, and coordination of task orders.

Permitting Program

a. Permit 2015-025: Blossom Hill Development- Subdividing a 6.5 acre lot into 12 single family lots at 10841 Blossom Road, Eden Prairie, MN. Discussions with Permit Coordinator Jeffery about partial financial assurance release.
b. Permit 2016-030: IDI Distribution Building Expansion – Expansion of existing building and northern parking lot. Stormwater management facilities, including pervious pavers, a filtration basin with underlying infiltration, and a water reuse system will be constructed to provide volume control, water quality, and rate control for runoff prior to discharging offsite. The site is located at 8303 Audubon Road, Chanhassen, MN. Analyzed a revised permit modification resubmittal on June 6, 2017. The modification request is considered complete as of the June 6th submittal. Notified applicant the needed revisions to comply with stormwater criteria.
on June 19th. Answered applicant questions about comments and received new information from Applicant on June 30th.

c. **Permit 2015-036: Saville West:** This is a residential development in Minnetonka located at the southeast quadrant of CSAH 101 and Excelsior Boulevard. The project was conditionally approved at the Board's September 7, 2016 meeting. Notified applicant of conditionally approved modification request at the June 7th meeting. Met with applicant and Permit Coordinator Jeffery on June 20 to discuss financial assurance.

d. **Permit 2016-043: Bongards Redevelopment:** This project involves expansion of an existing building and adjacent parking lot at Bongards Creamery at 8330 Commerce Drive, Chanhassen. The project will trigger Rules C and J. Permit was conditionally approved at the December 7, 2016 meeting. Responded to questions from applicant's engineer about potential modifications based on City's requirement to demonstrate proof of parking and coordinated with Permit Coordinator Jeffery.

e. **Permit 2017-007: Cedarcrest Stables:** This project involves construction of a 17-lot single family home subdivision. The project will trigger Rules C and J. Notified applicant of Board’s conditional approval at June 7th meeting.

f. **Permit 2017-010: Riley Lake Park:** This project involves construction of site improvements at Riley Lake Park and the public boat launch. The project will trigger Rules B, C, E, F, G, and J. Reviewed submittal and provided comments to applicant. Reviewed information in support of fulfilling conditional approval items, including relocating one BMP due to soil condition to provide the approved abstraction amount.

g. **Permit 2017-023: Eden Prairie Assembly of God:** This project involves construction of a building addition and associated site modifications at 16591 Duck Lake Trail. The project will trigger Rules C and J. Notified applicant of Board’s conditional approval at June 7th meeting.

h. **Permit 2017-024: Prairie Bluffs Senior Living:** This project involves construction of a senior living facility, parking lot, and landscaping at 10280 Hennepin Town Road in Eden Prairie. The project will trigger Rules C, D, and J. Reviewed revised submittal and drafted staff report for Manager consideration at July 12th meeting.

i. **Permit 2017-029: Elevate Apartments:** This project involves construction of 222 apartments combined with approximately 12,000 square feet for commercial retail and associated site infrastructure located near the intersection of Prairie Center Drive and Highway 212. Stormwater reuse, green roof, permeable pavement and a tree trench system will provide storm water quantity, volume and quality control. Reviewed two revised submittal packages and drafted staff report for Manager consideration at July 12th meeting.

j. **Permit 2017-032: 11193 Bluestem Lane:** This project involves stabilization of a roughly 100 reach of lower Purgatory Creek and an associated ravine with groundwater seep. Several discussion with Permitting Coordinator Jeffery. Met onsite with applicant (Eden Prairie), applicants engineer (WSB) and Permitting coordinator Jeffery to strategize restoration methods and clarify permitting requirements.

k. **Permit 2017-036: Minnetonka High School Upper Field Access Road:** This project involves construction of 480 foot impervious access road and 190 feet of retaining wall on the
Minnetonka High School property. An existing underground detention system will provide the required storm water rate, volume and quality control. The project will trigger Rules C and J. Notified applicant of Board’s conditional approval at June 7th meeting.

l. Attended several preapplication meeting with developers and Permit Coordinator Jeffery.

m. Met with Permit Coordinator Jeffery on June 29th to discuss permitting process, tracking database, coordination between staff, engineer, and legal, permit workloads.

n. Met with Permitting Coordinator Jeffery and Counsel Welch on June 21, 2017 to identify opportunities to improve and simplify RPBCWD rules and regulatory process.

o. Performed erosion control inspections of active sites during the week of June 15th (see attached inspection report).

p. Conversations with several project engineers/developers about permit requirements for potential development and redevelopment projects.

Data Management/Sampling/Equipment Assistance

a. Built database and prepared beta user interface to collect field and stream data using a hand-held electronic device while in the field. Testing this tool will begin in early July.

b. Uploaded 2015 Hyland Lake data provided by the MPCA. Verified, and adjusted when needed, previously uploaded 1994-2014 and 2016 data against MPCA records.

c. Uploaded and verified 12 laboratory reports to EQuIS.

Task Order 6: WOMP Station Monitoring

**Purgatory Creek Monitoring Station at Pioneer Trail**

a. Download and review data.

b. Storm event sampling – set station for sampling; collect, prep, and deliver sample to lab.

**Purgatory Creek Monitoring Station at Valley View Rd**

a. Downloaded and reviewed data.

b. Storm event sampling – set station for sampling; collect, prep, and deliver sample to lab.

c. Review MCES Lab invoice.

d. Data QA/QC.

Task Order 7b: Purgatory Creek Stabilization near Hwy 101—Construction

a. Reviewed payment application #3 submitted by the contractor and prepared payment recommendation for Manager consideration at July meeting.

b. Construction of this project is substantially complete. Project close-out items and the vegetation warranty period remain.
Task Order 13a: Lake Susan Watershed Treatment and Stormwater Reuse Enhancements

a. Discussion with Administrator Bleser and Project Manager Jeffery about questions from Emerson, permit budgeting, and task order development.

Task Order 14b: Lower Riley Creek Final Design

a. Worked with Administrator Bleser to help draft an agreement with the city of Eden Prairie.

b. At the direction of Administrator Bleser, project was put on hold several weeks during June as potential project funding was coordinated with the city of Eden Prairie.

Task Order 16: Watershed Management Plan Refresh

a. Met with Administrator Bleser and Project Manager Jeffery on June 16th to go over status of various subsections of the implementation chapter of the Plan and incorporate staffs revisions to the draft implementation table and lake management strategy.

b. Continued work on draft of the 2017 Watershed Management Plan document, including revisions to document formatting to reflect District branding and document organization.

c. Developed draft text and tables of the implementation section.

d. Drafted watershed sections (formerly “One Water” sections) text, figures and tables and provided drafts to Managers and Administrator Bleser for review.

e. In the next month, Barr staff will continue drafting text of the plan document, including associated tables and figures. Barr will provide Administrator Bleser draft sections as they are completed.

Task Order 18: MPCA Resiliency Grant

a. Presented results for the Community Resilience Workshop series in an open public meeting at Discovery Point in Eden Prairie.

b. Completed the development of four-page graphical workshop reports for the participating cities of Bloomington and Edina as well as initial draft report for the city of Hopkins. The reports highlight the specific concerns workshop participants have about the impacts of climate change in their communities along with the actions they believe to be most appropriate. Community actions addressed three different areas including impacts to infrastructure, environment and people. These recommended actions will be incorporated into each city's Comprehensive Plan to be completed in 2018.

Task Order 19: Chanhassen High School Stormwater Reuse Design

a. Recommendation to Board to delay awarding the bid and rebidding the project in the winter 2017/2018.

b. Coordination with Peterson regarding value engineering the system (future meeting to be scheduled end of July).
Task Order 20: Hyland Lake UAA Update

a. Organized and attended initial stakeholder meeting on June 23rd with RPBCWD, the city of Bloomington, Three Rivers Park District, and Barr staff. Discussed known issues with the lake’s water quality and potential best management practices to investigate.

b. Began reviewing and compiling historical water quality data and reports.

c. Reviewed the water quality modeling that was done for the 2016 TMDL and 2002 UAA studies.

d. Started writing the report text and creating figures and graphs.

Task Order 21: Bluff Creek Feasibility Study

a. Reviewed hydraulic modeling and the design approach.

b. Began developing plan sheets.

Task Order 22: Groundwater Assessment

a. Developed draft report and figures.

b. Held meeting with District staff on June 19 to go over progress and draft report/figures.

c. Currently revising figures and text based on feedback from District staff.

Task Order 23: Scenic Heights School Forest Restoration

a. Finalizing design on the forest restoration plans and specifications, including the redesign of the failed flared end section draining into the pond on site. Project scheduling for bidding and construction has been outlined and will be discussed at upcoming meetings.

b. Met with Eagle Scout candidates to discuss potential project on the site.

c. Met with School District and Three Rivers Park District staff to discuss outdoor learning classrooms and miscellaneous site amenities.

Lake Susan Spent Lime System Update

This spring Barr completed additional evaluation, field investigations, and laboratory testing for the Lake Susan spent lime system, at no cost to the District. As a result of the additional evaluation, we identified modifications to the system to improve system performance. Barr contracted directly with Minger Construction to make the modifications this past month. Here is a brief summary of the investigations Barr performed and work Minger performed. After completing the modifications on June 30th, the system was brought back online and Barr staff confirmed that water was flowing through the spent lime and collected some grab samples for analysis.

Field Testing/Observation

Several field tests were completed within the filtration system.
1. Double-ring infiltrometer measurements of infiltration capacity indicated the hydraulic conductivity of the lime material was approximately 18 inches per hour, which is similar to what was used for design of the system.

2. Filling the system with water and timing the drawdown with no outlet restriction. Cameras in the header pipe with allow us to see preferential inflows. Field tests indicated the hydraulic conductivity of the lime material similar to the double-ring infiltrometer test.

3. Field observations noted that the black film that has accumulated on the surface at the Lake Susan system is likely decomposing leaves and at the time of the field investigation did not appear to be affecting the performance of the system.

4. Water levels in the upstream wetland have not fluctuated as anticipated based on predesign field observations and model simulations. This could be because of the wet conditions since the system went online last year.

5. Lastly, a dye test was conducted to determine flow patterns at the surface to see if water is flowing downward through the media, or horizontally to the walls, bypassing the media. Dye test results indicated that velocities were too low to be conclusive regarding preferential flow paths along the walls. However, there were preferential flow paths identified towards the cleanouts.

Data Analysis
1. We confirmed with the City that the upward trend of the water surface observed in the wetland was a result of the upstream pipe being blocked by tree roots or other organic matter and not the spent lime system. The City removed tree roots and cleaned the pipe and water levels in the upstream wetland receded.

2. Barr collected influent and effluent samples, and had them tested. Results generally confirmed testing provided by the District.

3. During Barr sampling we confirmed that there was positive flow out of the spent lime system (i.e., the creek was not back flowing into the chamber).

Laboratory Experiments
1. We evaluated phosphorus removal in using jar tests. Tests were conducted using spent lime from the Lake Susan system, water from the Lake Susan system that was spiked due to very low P levels, and spent lime from the Wakefield Lake system (the one other system installed several years ago). For all tests, SRP removals were on the order of 80-90%.

2. We evaluated phosphorus removal using column tests. Column test were conducted to simulate the contact time within the Lake Susan system. Column test showed removals of 30-40% SRP.

3. We reviewed continuous test results previously completed by Barr using spent lime from the City of Fairmont wastewater facility. Tests indicated that even after 2 weeks of continuous flow spent lime was still removing phosphorus (nearly 50% removal of total phosphorus). Two weeks is when the study was stopped.

Modifications to the system by Minger
Observations made during the field investigation identified that there was potential for short circuiting within the filtration system. The proposed modifications to the system are intended to address the potential flow paths that allow for short circuiting within the system. In general modifications will include:

- Replacing the cleanout pipes to eliminate leaky joints
- Modifying the header pipe so that pipe joints have welded connections
- Filling holes at the bottom of splash basin at the entrance to the system
• Filling the 3-inch monitoring hole in the side of the chamber
• Added some more spent lime to the system
• Removed one stoplog in manhole with the intention of promoting water level fluctuation in the spent lime system.
• The system was brought back online on June 30th.
To: RPBCWD Board of Managers  
From: Dave Melmer  
Subject: June 15, 2017—Erosion Inspection  
Date: June 30, 2017  
Project: 23/27-0053.14 PRMT9016

Barr staff has inspected construction sites in the Riley Purgatory Bluff Creek Watershed District for conformance to erosion and sediment control policies. Listed below are construction projects and the improvement needed for effective erosion control. The sites were inspected from June 15, 2017.

## Site Inspections

<table>
<thead>
<tr>
<th>Site Code</th>
<th>Location</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-005</td>
<td>CSAH 101 Mntka</td>
<td>2017-06-16</td>
<td>Eastern side streets have had final top coat laid-vegetation is established-catch basin protection has been removed in many areas. BMP's look good. Site is inspected and well maintained by contractor/site inspector. Construction is completed at creek crossing-BMP's look good at this location. Curb/gutter/side walk installation at south end and eastern side of project continues (June-2017). Many areas have been spray-tac'd. Street cleanup is done quite frequently. Paving and sidewalk work continues. Entire site is being graded and matted or sod is installed. (June-2017)</td>
</tr>
<tr>
<td>2015-008</td>
<td>3520 Meadow Lane</td>
<td>2017-06-16</td>
<td>Site BMP's are adequate. Silt fence is down in some areas on west side--will not affect site runoff. Site cleanup and house painting underway. (June-2017)</td>
</tr>
</tbody>
</table>
| 2015-010  | Children's Learning Adventure | 2017-06-15 | Open CA(s): Pond slope to west has failed--causing slope erosion to pond downstream. Site representative was notified of Corrective Action. Deadline: 7/15/2017  
Building construction complete. Inlet protection has been removed. Site BMP's look good. Parking lot curb/gutter installation complete. Asphalt has been installed. Landscaping is complete. Sod was installed and application of spray tac to exposed soils. Vegetation growing thru mats and in spray-tac'd areas. |
| 2015-011  | Eden Prairie Ponds | 2017-06-15 | Construction and gas line work complete. Vegetation established. Site is stable. All temporary BMP's have been removed. Wetland buffer signage location in place. This will be last field inspection for this permit. |
2015-012 Meditech Site Improvements 2017-06-16

Construction activities complete. Inlet protection has been removed. Bio-logs still in place at SE parking lot. Bio-logs at catch basin near east entrance need to be removed. Site representative was notified that BMP's can/should be removed. June--: bio-logs have been removed. All temporary BMP's have been removed. Site is stable. This will be last field inspection for this permit.

2015-014 12420 Sunnybrook Road 2017-06-15

Site has been surveyed. No construction has started.

2015-016 Blossom Hill 2017-06-15

Construction on second, third and fourth home sites has begun. BMP's look good, look ok for unsold lots.

2015-027 Bloomington Hyland Greens Pond Storm Sewer Maintenance 2017-06-15

Construction has not started.

2015-035 LaMettry's Chanhassen 2017-06-15

Building construction continues. Rock entrances have been upgraded and tracking to street has been addressed. Minor tracking to street observed. Future parking lot areas are full rock base now. North slope grading and landscaping under way...swale BMP's look good- north slope has erosion control mat over entire area. Curb and gutter installation complete. Soil grading continues.

2015-036 Saville West Subdivision 2017-06-16

No earthwork has begun to date. Trees have been tagged along street side and trees/brush has been cleared near power lines. Wetland has been delineated. Utility flags installed along with some site surveying. (June-2017)

2015-037 Purgatory Creek at Hwy 101 Restoration 2017-06-16

BMP's are in place. Erosion mats are installed and stream stabilization complete. Exposed soils have been covered with spray tac-some areas have vegetation growing. Walked entire stream reach. -BMP's are excellent--some minor erosion at far southeast end of reach and large trees down across stream from storms. (June-2017)

2015-038 Improvements to Field 8 at Miller Park 2017-06-15

BMP's look good. Site construction complete. Soils have been covered---vegetation is growing.

2015-048 Pagel II Ice Facility Addition 2017-06-16
Construction of building foundation/walls complete. Silt fences in place. Parking lot paved and staging area dismantled. Site BMP's look good. Site grading underway. Slope on south side of building --covered with plastic and silt fences installed. Erosion and silt runoff on southwest corner of site has been cleaned up. Catch basin protection installed.

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015-050</td>
<td>Arbor Glen Chanhassen</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction has started.</td>
<td></td>
</tr>
<tr>
<td>2015-053</td>
<td>RBSC Chanhassen LLC</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction has begun. Site was being used as lay down yard for Hwy. 5 construction. Demobilization is complete. Catch basin protection still in place. Exposed soils have been covered and now vegetation is established.</td>
<td></td>
</tr>
<tr>
<td>2015-056</td>
<td>Oster Property</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Silt fences /bio-logs have been removed. Vegetation mats and wood chips have been installed on all bare soils. All other BMP's look good. Vegetation s growing. (June-2017)</td>
<td></td>
</tr>
<tr>
<td>2015-058</td>
<td>Prairie Center Clinic Addition</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete on building. Some BMP's have been removed for landscaping. Vegetation growing in some areas. Prep for final parking lot top coat complete. Landscaping and final grading underway.</td>
<td></td>
</tr>
<tr>
<td>2015-060</td>
<td>Optum Parking Expansion</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. BMP's have been removed. East parking lot is complete and stable-catch basin protection has been removed. Asphalt on west lot is complete and curb-gutter have been installed. Vegetation mats installed (fall-2016)-vegetation has sprouted and is growing/sparse in areas. Overall site conditions are good.</td>
<td></td>
</tr>
<tr>
<td>2015-061</td>
<td>Ingram Property</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction observed to date.</td>
<td></td>
</tr>
<tr>
<td>2016-004</td>
<td>Round Lake Park Improvements</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>BMP's look good. Site construction complete--parking lot/lots- curb gutter and asphalt has been installed. (November). Vegetation has sprouted/growing--some sparse areas observed.</td>
<td></td>
</tr>
<tr>
<td>2016-006</td>
<td>Soccer Field 10 at Miller Park</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>BMP's look good. Site construction complete. Vegetation established. Site is stable. BMP's still in place.</td>
<td></td>
</tr>
<tr>
<td>Permit No.</td>
<td>Project Description</td>
<td>Date</td>
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<tr>
<td>-----------</td>
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<tr>
<td>2016-009</td>
<td>Stratus Court Stormsewer Outfall</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No activity to date.</td>
<td></td>
</tr>
<tr>
<td>2016-012</td>
<td>Minnetonka HS Parking Additions</td>
<td>2017-06-16</td>
</tr>
<tr>
<td></td>
<td>Construction is complete. Parking lot curb/gutter installed-asphalt is in place. BMPs have been removed. All exposed soils have been spray-tac'd and vegetation has started growing. Areas of bare soil exposed -- no vegetation will grow. Site representative was notified concerning bare soils--they will be addressing the lack of vegetation growth.</td>
<td></td>
</tr>
<tr>
<td>2016-014</td>
<td>Chanhassen Chick-Fil-A</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Landscaping complete. Parking lot construction complete. Temporary BMP's have been removed. Vegetation mats installed - no growth observed to date. Sod installed at street side of project.</td>
<td></td>
</tr>
<tr>
<td>2016-015</td>
<td>18321 Heathcote Lane</td>
<td>2017-06-16</td>
</tr>
<tr>
<td></td>
<td>Silt fences installed/in good condition. Rock/gravel entrance is good. BMP's look good. House construction continues. (June-2017)</td>
<td></td>
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<tr>
<td>2016-017</td>
<td>SWLRT</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction observed to date.</td>
<td></td>
</tr>
<tr>
<td>2016-018</td>
<td>6830 Utica Terrace</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>House construction complete. Silt fences/bio-logs have been removed. Rock walls are complete. Landscaping underway--yard area has been seeded and is growing. Downstream catch basin protection still onsite.</td>
<td></td>
</tr>
<tr>
<td>2016-019</td>
<td>Powers Ridge Lot 2</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction has begun to date.</td>
<td></td>
</tr>
<tr>
<td>2016-021</td>
<td>Cedar Hills Park</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Earthwork has begun. Rock entrance has been &quot;refreshed&quot;. Silt fences have been installed. Work near creek is complete-foot bridge installed. BMP's look good. Walking path location has been surveyed and marked.</td>
<td></td>
</tr>
<tr>
<td>2016-022</td>
<td>SP 1017-105 Cable Barrier</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Vegetation mats in place and vegetation is growing thru. Vegetation established. All visible BMP's have been removed. Site is stable. This will be last field inspection for this permit.</td>
<td></td>
</tr>
<tr>
<td>Permit ID</td>
<td>Location/Project</td>
<td>Date</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>2016-024</td>
<td>Bandimere Park Improvements</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Silt fences installed. BMP's are good. Sprayed tac and landscaping completed. Ice rink installation completed. Vegetation growing/some bare areas.</td>
<td></td>
</tr>
<tr>
<td>2016-025</td>
<td>18374 Heathcote Lane</td>
<td>2017-06-16</td>
</tr>
<tr>
<td></td>
<td>Construction of additions complete. Driveway installed and landscaping complete. Site is stable. Bio-logs can be removed. Site representative was notified that BMP's can be removed- one log still in place to date.</td>
<td></td>
</tr>
<tr>
<td>2016-026</td>
<td>Foxwood Development</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>House construction has begun-BMP’s look good- silt fences and rock entrances installed/ good perimeter control. Curb and gutter have been installed/road bed is being prepped for asphalt. Silt fences installed on entire site. BMP’s look. Areas of exposed soils have been covered with straw and vegetation is growing. Slight tracking to street.</td>
<td></td>
</tr>
<tr>
<td>2016-028</td>
<td>Summit Place Apartments Drainage Improvements</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction observed to date.</td>
<td></td>
</tr>
<tr>
<td>2016-030</td>
<td>IDI Distribution Building Expansion</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction of addition complete .Catch basin protection has been installed. Silt fences on north side installed. Some over topping of first row of silt fence- 2 additional fences have been installed. Rock entrance installed at new entrance has been refreshed. Catch basin protection at Basin east southeast of entrance has been installed. Stockpiles of dirt have been removed--silt fences still in place.</td>
<td></td>
</tr>
<tr>
<td>2016-031</td>
<td>MN River Bluffs Trail Crossing</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Catch basin protection has been removed. All temporary BMP’s have been removed. Vegetation is established and site is stable. This will be last field inspection for this permit.</td>
<td></td>
</tr>
<tr>
<td>2016-032</td>
<td>County Highway 61</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction started. Survey crews onsite.</td>
<td></td>
</tr>
<tr>
<td>2016-033</td>
<td>Anderson Lakes-Purgatory Trail</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction observed to date.</td>
<td></td>
</tr>
<tr>
<td>2016-035</td>
<td>Riley Lake Road Sidewalk</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction complete. Sidewalk in place. BMP's removed. Sod and vegetation mats installed. Sod was installed last fall--Some areas are dead</td>
<td></td>
</tr>
</tbody>
</table>
due to lack of watering. Vegetation established. All temporary BMP’s have been removed. Site is stable. This will be last field inspection for this permit.

<table>
<thead>
<tr>
<th>2016-036</th>
<th>Collegeview Drive Sidewalk</th>
<th>2017-06-15</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>2016-037</th>
<th>Prestige Day Care</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork and construction continues. Perimeter control silt fence in place, Rock entrance installed. Site looks good.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-038</th>
<th>Optum Technology Drive Improvements</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hillside has been scraped--And covered with erosion mats. BMP’s installed and are good. Vegetation has sprouted and growing-sparse in some areas.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-039</th>
<th>Powers Ridge Senior Apartments</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction continue. BMP’s are good. Slight tracking to street from concrete trucks.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-040</th>
<th>18995 Minnetonka Blvd</th>
<th>2017-06-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of house continues. Silt fence in place. Slopes with vegetation mats have growth showing. Southwest corner has more BMP’s to control sediment erosion. Corrective Action items completed. BMP’s installed are adequate.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-041</th>
<th>Chanhassen West Water Treatment Plant</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silt fences have been installed on site. Construction continues. Earthwork underway. Rock entrance is updated. BMP’s look good to date. Minor tracking to street observed. (June)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-042</th>
<th>18663 St. Mellion Place--Eden Prairie (Bear Path)</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction continues. BMP’s are good. Silt fence in one small area is at 40% of height. Some erosion on hill is causing silt fence to fill, will monitor.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-043</th>
<th>Bongards Redevelopment</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction has started. BMP’s are adequate. Parking lot installed-- catch basins installed and protected--pavement installation still needs to be completed. (June)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2016-044</th>
<th>Dell Rd &amp; Riley Creek Repair Project</th>
<th>2017-06-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction complete. Site will be straw/mat covered until spring. Vegetation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
will be installed in spring-2017. BMP's are good. Observed some erosion near newly beehive catch basin-city is aware of erosion and will repair. (May). Repairs have been made. Vegetation is growing.

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Details</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-045</td>
<td>MCES Blue Lake Interceptor Rehab</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>No construction observed to date.</td>
<td></td>
</tr>
<tr>
<td>2016-046</td>
<td>Lifetime Fitness Chanhassen</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction/earthwork has begun. BMP's installed and look good. Rock entrance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installed. Minor tracking to street. Construction continues. BMP's are</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installed. Underground storage/infiltration is being installed today.</td>
<td></td>
</tr>
<tr>
<td>2016-046</td>
<td>Lifetime Fitness Chanhassen</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Construction/earthwork has begun. BMP's installed and look good. Rock entrance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installed. Minor tracking to street. Construction continues. BMP's are</td>
<td></td>
</tr>
<tr>
<td></td>
<td>installed. Underground storage/infiltration is being installed today.</td>
<td></td>
</tr>
<tr>
<td>2016-047</td>
<td>9507 Sky Lane Eden Prairie</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Open CA(s): Catch basin between properties needs protections and soils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>covered. Site representative was notified. Deadline: 7/15/2017</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction continues. Silt fences down in some areas but secondary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>containment is good. Rock entrance has been refreshed. Catch basin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>protection needs to be maintained (street side CB). Catch basin between</td>
<td></td>
</tr>
<tr>
<td></td>
<td>properties needs protections and soils covered. Tracking to street needs to be</td>
<td></td>
</tr>
<tr>
<td></td>
<td>cleaned up. Site representative will be notified.</td>
<td></td>
</tr>
<tr>
<td>2016-FT02</td>
<td>Mitchell and McCoy Lake Outlet Sediment Removal</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Site construction complete. Bio-log still in place. Vegetation established.</td>
<td></td>
</tr>
<tr>
<td>2017-002</td>
<td>7012 Dakota Ave</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>house construction underway. Site in good condition.</td>
<td></td>
</tr>
<tr>
<td>2017-003</td>
<td>18761 Heathcote Dr Building Addition</td>
<td>2017-06-16</td>
</tr>
<tr>
<td></td>
<td>House construction continues. BMP's are adequate for stockpile-silt fence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>would've been best--bio-logs are working. Minor tracking to street observed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pool installation underway--additional silt fence install and working good.</td>
<td></td>
</tr>
<tr>
<td>2017-004</td>
<td>9627 Sky Lane Eden Prairie</td>
<td>2017-06-15</td>
</tr>
<tr>
<td></td>
<td>Minor tracking to street. BMP's have been installed. Driveway installed and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>landscaping/earthwork is underway. Catch basin protection in front of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>property has been removed. BMP's look good.</td>
<td></td>
</tr>
</tbody>
</table>
To: RPBCWD Board of Managers  
From: Dave Melmer  
Subject: June 15, 2017—Erosion Inspection  
Date: June 30, 2017  
Page: 8

2017-005 9527 Sky Lane Eden Prairie  
Open CA(s): Catch basin protection needs to be maintained (street side CB). Tracking to street needs to be cleaned up. Site representative was notified. Deadline: 7/15/2017

Construction continues. Silt fences down in some areas but secondary containment is good. Rock entrance has been refreshed. Catch basin protection needs to be maintained (street side CB). Catch basin between properties needs protections and soils covered. Tracking to street needs to be cleaned up. Site representative was notified.

2017-006 6687 Horseshoe Curve Chanhassen  
No activity observed to date.

2017-007 Cedarcrest Stables  
No activity observed to date.

2017-008 Prairie Meadows Site Renovation  
Construction has begun. BMP’s in place. Site looks good. Some minor tracking to street- catch basin protection is installed.

2017-009 Emerson Chanhassen East Renovation  
Construction has started. BMP’s installed. Rock entrance in place.

2017-010 Riley Lake Park Renovations  
No activity to date.

2017-011 Galpin Blvd Watermain Improvements  
Supplies are staged for installation. Construction has begun. Bio-logs are being used for erosion control where needed. BMP’s are adequate.

2017-012 9667 Sky Lane  
BMP’s look good. Minor tracking to street. Dirt stockpile in backyard does not have protection but is surrounded by sod and area is flat. (June)

2017-013 16201 Berger Drive  
All temporary BMP’s removed. House construction complete. Sod installed. Site is stable. This will be last field inspection for this permit.
<table>
<thead>
<tr>
<th>Project Number</th>
<th>Location</th>
<th>Date</th>
<th>Status Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-014</td>
<td>3410 Groveland Lane</td>
<td>2017-06-16</td>
<td>BMP's installed. Construction complete. Landscaping needs to be completed. (June-2017)</td>
</tr>
<tr>
<td>2017-015</td>
<td>9995 Lawson Lane</td>
<td>2017-06-15</td>
<td>BMP's in place are ok. Landscaping/earthwork underway.</td>
</tr>
<tr>
<td>2017-016</td>
<td>9982 Windsor Terrace</td>
<td>2017-06-15</td>
<td>BMP's in place are ok. Construction continues.</td>
</tr>
<tr>
<td>2017-017</td>
<td>9989 Windsor Terrace</td>
<td>2017-06-15</td>
<td>Landscaping complete --sod installed. All temporary BMP's have been removed. Site is stable. This will be last field inspection for this permit.</td>
</tr>
<tr>
<td>2017-018</td>
<td>Bloomington 2017-102 Street Maint</td>
<td>2017-06-15</td>
<td>No activity observed to date.</td>
</tr>
<tr>
<td>2017-019</td>
<td>Bloomington 2017-110 Trail Improvements</td>
<td>2017-06-15</td>
<td>Construction has begun. Catch basin protection in place. Silt fences installed where needed. Sidewalk has been installed--landscaping still needs to be completed. Some minor debris in curb.</td>
</tr>
<tr>
<td>2017-023</td>
<td>Eden--Prairie Assembly of God</td>
<td>2017-06-15</td>
<td>Site has been surveyed. No construction activity to date.</td>
</tr>
<tr>
<td>2017-025</td>
<td>735 Pleasantview Road</td>
<td>2017-06-15</td>
<td>Construction continues. BMP's installed. Bio-logs for perimeter control--adequate. Site has recently been graded. Bio-logs on road side slope signs of overtopping during recent rainfalls. Street has been cleaned up.</td>
</tr>
</tbody>
</table>
Site has been cleared and surveyed. BMP's installed --silt fence for erosion perimeter control. Photos taken of existing conditions.

Please contact me at 952.832-2687 or dmelmer@barr.com if you have questions on the projects listed above or any additional items that need to be addressed for the erosion control inspections.
Monday, June 26, 2017

Re: Personnel Matters

Dear Managers,

The District has completed personnel review for staff member Michelle Jordan. As part of the review, Staff Jordan’s job description was significantly modified to reflect all the work she has been preforming. The job description expands on her roles and duties but also reflects her supervisory role that she has taken on while building capacity for the District.

It is recommended that Michelle Jordan’s salary be adjusted to $49,500 beginning July 15th based on the Job Description changes and responsibilities. Mrs Jordan will be then placed on a 6 months probation period in her new role.

This matter was reviewed and approved to go to the board for approval with the Personnel Committee Members Manager Crafton and Manager Bisek.

Sincerely,

Claire Bleser, Administrator

Staff Recommendation

Manager __________, Seconded by Manager ____________ to approve salary adjustment for Mrs Jordan under her new role as Community Outreach Coordinator.
Community Outreach Coordinator
2017 Job Description

POSITION TITLE: Community Outreach Coordinator
REPORTS TO: Administrator
STATUS: Full time, exempt (from Fair Labor Standards Act)

SALARY RANGE: $47,500 – $62,500

PRIMARY OBJECTIVE:
The role of the Community Outreach Coordinator is to design, maintain, and implement an Education and Outreach (E&O) Program to protect, manage, and restore water resources. The E&O Program directly contributes to the goals of the District’s 10-Year Plan, and improves water quality by leveraging the power of residents, students, professionals, and local leaders to effect change. By fostering an engaged community, the District can increase awareness, grow stewardship, and build capacity to do the shared work of protecting our water resources.

ESSENTIAL FUNCTIONS
1. Engage the District’s audiences (residents, K-12, businesses/professionals, local leaders) in projects and programs by building and maintaining connections with, and a presence in, the communities it serves.
   a. Plan and implement formal and informal communication efforts: website and social media, electronic newsletter, press releases, annual communication, and others.
   b. Manage project specific passive (ex: flyers, articles) and active (ex: community meetings, tours, open houses) engagement.
2. Build community awareness of local resources, issues, and best practices. Tailor strategies to present complex and/or technical issues in a manner appropriate for each audience.
   a. Coordinate K-12 education programs and opportunities.
   b. Coordinate outreach and trainings for local leaders, businesses, and professionals.
   c. Develop events/programs for residents that include educational and recreational opportunities.
3. Provide resources to increase stewardship within the community. Identify and respond to District and community resource needs.
   a. Manage the Cost Share Program, including organizing site visits, leading funding recommendation committees, preparing funding recommendations and grant agreements, and tracking individual grant budgets and reimbursement requests.
   b. Coordinate and present at workshops, trainings, and community events.
4. Build community capacity by working with District audiences to develop a network of watershed champions.
   a. Build connections with existing community groups and volunteer organizations.
   b. Identify opportunities for partnership and collaboration.
   c. Develop and manage volunteer programs.
5. Collect data, evaluate, and adjust the E&O program to improve effectiveness.
6. Other
   a. Research and stay up to date on developments in the fields of water resources, facilitation, education, and communications.
   b. Serve as liaison to Citizen Advisory Committee.
   c. Supervise District interns, service learners, and volunteers as appropriate.
   d. Support project management team to identify E&O needs and opportunities.
e. Assist District staff as needed (ex. data collection).
f. Other duties as assigned.

REQUIRED KNOWLEDGE & SKILLS
1.Bachelor’s in environmental science/natural resources, or education/communications.
2. 5 years of related experience.
3. Understanding of the principals of stormwater management and aquatic ecosystems.
4. Project or program management experience.
5. Supervisory experience.
6. Ability to present and communicate effectively to a wide range of audiences.
7. Experience working with K-12 students, either formally or informally.
8. Availability to work evenings and weekends.
9. Ability to manage multiple deadlines concurrently.
10. Valid driver’s license.

DESIRED KNOWLEDGE & SKILLS
1. Masters degree in environmental science/natural resources, or education/communications.
2. Project WET certification.
3. Graphic design experience.
4. Art of Hosting or similar facilitation training.
Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-024

Received complete: May 1, 2017 (60 day review period extension approved on June 7, 2017)

Applicant: Prairie Bluff Senior Living, LLC, Albert Miller

Consultant: Civil Site Group, David Knaeble

Project: Prairie Bluffs Senior Living – Construction of two new senior living buildings along with new parking lots, underground parking and landscaping. Two underground detention facilities with elevated drain tile to provide infiltration and one surface infiltration basin will provide stormwater quantity, volume and quality control.

Location: 10280 Hennepin Town Road, Eden Prairie, MN

Reviewer: Scott Sobiech, PE- Barr Engineering

Rules: Applicable rules checked

<table>
<thead>
<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Rule B: Floodplain Management</td>
<td>Rule H: Appropriation of Public Waters</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Rule C: Erosion and Sediment Control</td>
<td>Rule I: Appropriation of Groundwater</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Rule D: Wetland and Creek Buffers</td>
<td>Rule J: Stormwater Management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rule E: Dredging and Sediment Removal</td>
<td>Rule K: Variances and Exceptions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rule F: Shoreline/Streambank Stabilization</td>
<td>Rule L: Permit Fees</td>
<td></td>
</tr>
</tbody>
</table>

Rule Conformance Summary

<table>
<thead>
<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Floodplain Management</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Erosion Control Plan</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Wetland and Creek Buffers</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition D1</td>
</tr>
<tr>
<td>J</td>
<td>Stormwater Management Rate</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stormwater Management Volume</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition J1.</td>
</tr>
<tr>
<td></td>
<td>Stormwater Management Water Quality</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stormwater Management Low Floor Elev.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stormwater Management Maintenance</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition J2.</td>
</tr>
<tr>
<td>L</td>
<td>Permit Fee</td>
<td>See Comment</td>
<td>$1,500 was received on April 25, 2017. Additional $973.30 for excess cost recovery</td>
</tr>
<tr>
<td>M</td>
<td>Financial Assurance</td>
<td>See Comment</td>
<td>The financial assurance has been calculated at $102,400.</td>
</tr>
</tbody>
</table>
Project Description

The project proposes the construction of two new senior living buildings along with new parking lots, underground parking and landscaping on a site in the SW quadrant of US 169 and Pioneer Trail in Eden Prairie. The existing site is primarily wooded with an access road for a city of Eden Prairie owned lift station creating approximately 0.3 acres of existing impervious surfaces. Two underground detention facilities with elevated drain tile to provide infiltration and one surface infiltration basin will provide stormwater quantity, volume and quality control. The construction drawing also suggest work to construct a right turn lane on Hennepin Town Road. The right turn lane work will not be authorized by this permit, if issued. The applicant confirmed in the May 31, 2017 response to comments the work to construct the right turn lane will be a city of Eden Prairie project and the City will be responsible to provide any required stormwater management. The city must submit a separate application with necessary supporting materials for the Eden Prairie Road work.

The project site information is summarized below:

1. Total Site Area: 4.7 acres
2. Existing Site Impervious Area: 0.3 acres (13,068 square feet)
3. Post Construction Site Impervious: 2.46 acres (107,294 square feet)
4. New (Increase) in Site Impervious Area: 2.16 acres (94,089 square feet) (>100% increase in site impervious area)
5. Disturbed impervious surface: 0.3 acres (13,068 square feet) (100% of existing site impervious area)
6. Total Disturbed Area: 4.7 acres

Exhibits:

1. Permit Application dated May 1, 2017.
4. MIDS Model received June 6, 2017.
5. Existing and Proposed Conditions HydroCAD Model received June 6, 2017.
8. Geotechnical Exploration Report Addendum #1 dated May 31, 2017
11. MNRAM dated September 24, 2015

**Rule Specific Permit Conditions**

**Rule B: Floodplain Management and Drainage Alterations**

Because the proposed construction involves the placement of 161 cubic yards of fill below the 100-year flood elevation of the wetland (914.45), the project activities must conform to the RPBCWD’s Floodplain Management and Drainage Alterations rule (Rule B).

The proposed two senior living buildings adjacent to the wetland will be constructed with low floor elevations of 919.56 thus providing the required two feet of freeboard above the 100-year flood elevation complying with Rule B, Subsection 3.1. Rule B, Subsection 3.4 imposes no requirements on the project because no work in the floodplain of a watercourse is proposed. The supporting materials demonstrate, and the RPBCWD Engineer concurs, that 161 cubic yards of fill will be placed and 318 cubic yards of compensatory storage will be created below the 100-year floodplain, thus providing a net increase in the floodplain storage. The compensatory storage is provided at the same elevation (+/- 1 foot) below the 100-year floodplain, thus the project conforms to Rule B, Subsection 3.2. The project will not alter surface flows (Rule B, Subsection 3.3). A note on plan sheet C2.0 indicates that activities must be conducted to minimize the potential transfer of aquatic invasive species conforming to Rule B, Subsection 3.5.

The proposed project conforms to the floodplain management and drainage alteration requirements of Rule B.

**Rule C: Erosion and Sediment Control**

Because the project will alter 4.7 acres (204,732 square feet) of land-surface area the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plan prepared by Civil Site Group includes installation of silt fence, inlet protection for storm sewer catch basins, a rock construction entrance, placement of a minimum of 6 inches of topsoil, decompaction of areas compacted during construction, and retention of native topsoil onsite. Greg Johnson, Nottingham Construction, will be responsible for erosion control at the site. The proposed project conforms to the erosion and sediment control requirements of Rule C.

**Rule D: Wetland and Creek Buffers**

Because the proposed work triggers a permit under RPBCWD Rules B and J and the onsite wetland is protected by the state Wetland Conservation Act, Rule D, Subsections 2.1a and 3.1 require buffer on the
portion of the wetland downgradient from the proposed land-disturbing activities. No draining, filling of the onsite wetland is proposed.

A 2015 wetland delineation for the site was included with the submittal. The MnRAM analysis dated September 24, 2015 indicates that the wetland onsite is a medium value wetland according to Appendix D1. Rule D, Subsection 3.1.a.iii requires a wetland buffer with an average of 40 feet from the delineated edge of the wetland, minimum 20 feet. The applicant proposed wetland buffers for the wetland which provide a 45-foot average, 20-foot minimum consistent with the widths identified in Rule D, Subsection 3.1 for medium value wetlands. The applicant is proposing buffer monument locations consistent with criteria in Rule D, Subsection 3.3. The Applicant is proposing revegetating disturbed areas within the proposed buffer with native vegetation in conformance with Rule D, Subsection 3.2. A note is included on plan sheet C2.0 indicating the potential transfer of aquatic invasive species must be minimized to the maximum extent possible conforming to Rule D, Subsection 3.5. To conform to the RPBCWD Rule D the following revisions are needed:

D1. Buffer areas and maintenance requirements must be documented in a declaration recorded after review and approval by RPBCWD in accordance with Rule D, Subsection 3.4.

**Rule J: Stormwater Management**

Because the project will alter 4.7 acres (204,732 square feet) of surface area, approval under the RPBCWD Stormwater Management Rule is required. The proposed land-disturbing activities will disturb 100% of the existing impervious area (i.e., more than 50 percent of the existing impervious area), therefore under the paragraph 2.3 redevelopment framework, the RPBCWD stormwater management criteria apply to the entire project site.

The developer is proposing a combination of two underground detention facilities with elevated drain tile to provide infiltration, one surface infiltration basin, six sump manholes and one sump manhole with SAFL baffle to provide the required rate control, volume abstraction and water quality management on the site. The Level I Environmental Assessment report indicated no recognized environmental conditions and no recognized historical environmental conditions thus indicating there no apparent contamination on the site.

**Rate Control**

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The Applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in the table below.
Modeled Discharge Location & 2-Year Discharge (cfs) & 10-Year Discharge (cfs) & 100-Year Discharge (cfs) & 10-Day Snowmelt (cfs) 

<table>
<thead>
<tr>
<th></th>
<th>Ex</th>
<th>Prop</th>
<th>Ex</th>
<th>Prop</th>
<th>Ex</th>
<th>Prop</th>
<th>Ex</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA1</td>
<td>5.1</td>
<td>5.0</td>
<td>9.0</td>
<td>8.6</td>
<td>13.9</td>
<td>12.5</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>DA2</td>
<td>0.2</td>
<td>0.1</td>
<td>1.0</td>
<td>0.9</td>
<td>3.3</td>
<td>3.1</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>DA3</td>
<td>0.1</td>
<td>0.0</td>
<td>0.4</td>
<td>0.0</td>
<td>1.4</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>DA4</td>
<td>0.1</td>
<td>0.1</td>
<td>0.6</td>
<td>0.3</td>
<td>2.1</td>
<td>0.9</td>
<td>0.1</td>
<td>&lt;0.1</td>
</tr>
</tbody>
</table>

The proposed project conforms to RPBCWD Rule J, Subsection 3.1.a.

**Volume Abstraction**

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from all impervious surface of the parcel. An abstraction volume of 9,835 cubic feet is required from the 2.46 acres (107,294 square feet) of impervious area on the project for volume retention. The Applicant proposes two underground detention facilities with elevated drain tile and pretreatment sump manholes, one surface infiltration basin with a pretreatment sump manhole with a SAFL baffle, and wetland buffer to abstract runoff from the site. The table below summarizes the volume abstraction on the site.

<table>
<thead>
<tr>
<th>Required Abstraction Depth (inches)</th>
<th>Required Abstraction Volume (cubic feet)</th>
<th>Provided Abstraction Volume (cubic feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>9,835</td>
<td>10,787</td>
</tr>
</tbody>
</table>

Soil borings performed by Professional Service Industries, Inc. (PSI) show that soils in the project area below the upper layer of topsoil and fill consist primarily of sand and silty sand (Loamy sand) to the depths of 15± feet below existing site grades. The MN Stormwater Manual indicates an infiltration rate of 0.8 inches per hour for loamy sand soils and 0.45 inches per hour for silty sand soils. The soil boring information summarized in the table below shows that groundwater is at least 3 feet below the bottom of the proposed infiltration basins (Rule J, Subsection 3.1.b.ii).
The phase II geotechnical investigations states “Groundwater was observed during drilling operations at a depth of 14 feet below existing site grades in Borings B-12, B-13, and B-14 (elevations 811± to 814± feet). Groundwater at the location nearest infiltration area 2 (B-12) was observed at elevation 811 during drilling but not at the boring completion but the soils water waterbearing.” While these boring are close to the proposed Underground Infiltration System 2 they do not appear to be within the system footprint as required in Rule J, subsection 4.3c. An additional analysis provided by the applicant’s geotechnical consultant indicates the silt soils may create a perched groundwater condition during times of high precipitin and runoff. This suggests there is not 3 feet of separation between the proposed bottom of Underground Infiltration System 2 (809.6) and the seasonal high groundwater unless additional investigations show groundwater at the proposed BMP location is lower than the current boring suggest or remedial design measure are implemented. While design alternatives are discussed in the geotechnical memo no plan for remedial measures is shown on the proposed construction drawings. To conform to the RPBCWD Rule J, Subsection 3.1.b the following revision is needed:

J1. Paragraph 4.3c of the rule requires a soil boring at the proposed infiltration sites to demonstrate that the bottoms of the infiltration basins are at least 3 feet above the water table, the soils present below the basin and confirm the infiltration capacity. The applicant must submit documentation verifying the soils present, infiltration capacity of the soil and the groundwater elevation at the proposed underground infiltration system 2. This can be accomplished by soil boring, infiltrometer test, potholing or other methods. If the soils, groundwater elevation or infiltration capacity are less than anticipated, design modifications for underground infiltration system 2 would be required.

**Water Quality Management**

Subsection 3.1.c of Rule J requires the Applicant provide for at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff. The Applicant is proposing two underground detention facilities with elevated drain tile with pretreatment sump manholes and one surface infiltration basin with a pretreatment sump manhole with a SAFL The table below summarized the water quality treatment...
provided for the site. Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.c.

<table>
<thead>
<tr>
<th>Pollutant of Interest</th>
<th>Regulated Site Loading (lbs/yr)</th>
<th>Required Load Removal (lbs/yr)¹</th>
<th>Provided Load Reduction (lbs/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>947</td>
<td>853 (90%)</td>
<td>891 (94%)</td>
</tr>
<tr>
<td>Total Phosphorus (TP)</td>
<td>5.24</td>
<td>3.14 (60%)</td>
<td>4.64 (88.5%)</td>
</tr>
</tbody>
</table>

¹Required load reduction is calculated based on the removal criteria in Rule J, Subsection 3.1.c and the new and reconstructed impervious area site load.

**Low floor Elevation**

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation and no stormwater management system may be constructed or reconstructed in a manner that brings the low floor elevation of an adjacent structure into noncompliance according to Rule J, Subsection 3.6.

The low floor elevations of the structure and the adjacent stormwater management feature are summarized below.

<table>
<thead>
<tr>
<th>Location Riparian to Stormwater Facility</th>
<th>Low Floor Elevation of Building (feet)</th>
<th>100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)</th>
<th>Freeboard (feet)</th>
<th>Provided Distance Between Building and Adjacent Stormwater Feature (feet)</th>
<th>Required Separation to Groundwater based on Appendix J, Plot 5 (feet)</th>
<th>Provided Separation to Groundwater (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Building</td>
<td>819.56</td>
<td>822.98 (Onsite inundation from stormwater facility west Hennepin Town Rd)</td>
<td>-3.42</td>
<td>23</td>
<td>2.9</td>
<td>5.56</td>
</tr>
<tr>
<td>Northern Building</td>
<td>819.56</td>
<td>814.9 (Wetland)</td>
<td>4.62</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Northern Building</td>
<td>819.56</td>
<td>815.04 (Infiltration System 2)</td>
<td>4.52</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Southern Building</td>
<td>819.56</td>
<td>822.47 (Infiltration System 1)</td>
<td>-2.91</td>
<td>40</td>
<td>2.3</td>
<td>20.56</td>
</tr>
<tr>
<td>Southern Building</td>
<td>819.56</td>
<td>824.83 (Infiltration Basin 3)</td>
<td>-5.27</td>
<td>15</td>
<td>3.3</td>
<td>20.56</td>
</tr>
</tbody>
</table>
An analysis in accordance with Appendix J1 was completed for the proposed structures and adjacent stormwater feature when the low floor elevation of the proposed structures was less than the required 2 feet above the 100-year event flood elevation of the adjacent stormwater feature.

The horizontal distance between the northern building and the existing NW low area is 23 feet; therefore, the required separation to groundwater at the building is 3.3 feet in order to be in compliance with Plot 5 in Appendix J1. As shown in the above table the proposed northern structure provides 5.56 feet of separation from groundwater in conformance with Rule J, Subsection 3.6.

The horizontal distance between the southern building and infiltration basin 3 is about 15 feet; therefore, the required separation to groundwater at the building is 3.3 feet in order to be in compliance with Plot 5 in Appendix J1. The horizontal distance between the southern building and underground infiltration system 1 is about 40 feet; therefore, the required separation to groundwater at the building is 2.3 feet in order to be in compliance with Plot 5 in Appendix J1. As shown in the above table the proposed southern structure provides 20.56 feet of separation from groundwater in conformance with Rule J, Subsection 3.6.

**Maintenance**

Subsection 3.7 of Rule J requires the submission of maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed.

J2. Permit applicant must provide a draft maintenance and inspection plan, including the off-site detention pond. Once approved by RPBCWD, the plan must be recorded on the deed in a form acceptable to the District.

**Rule L: Permit Fee:**

Fees for the project are:

Rule C & J ........................................................................................................................................... $1,500

The RPBCWD permit fee schedule adopted in December 2015 indicates that costs of site inspections, analysis of the proposed activities, services of consultants and compliance assurance in excess of $2,500 for properties less than 5 acres will be charged to the permit applicant. The review of this permit application has resulted in $3,473.30 of consultant time.

L1. In accordance with the adopted RPBCWD permit-fee schedule, because the engineer and legal time to review this permit exceeded $2,500 the applicant must submit an additional permit fee of $973.30 for excess cost recovery.
**Rule M: Financial Assurance:**

Rules C: Silt fence: $2,800 L.F. x $2.50/L.F. = ................................................................. $7,000

Restoration: 4.7 acres x $2,500/acre = ................................................................. $11,800

Rules D: Wetland Buffer: $5,000 + $1,000/acre over 10 acres = ................................................................. $5,000

Rules J: Infiltration: 7,937 sq. ft. x $6.00/sq. ft. = ................................................................. $47,700

Contingency (10%) ............................................................................................................................ $7,200

Administration (30%) ...................................................................................................................... $23,700

Total Financial Assurance .............................................................................................................. $102,400

**Applicable General Requirements:**

1. The RPBCWD Administrator shall be notified at least three days prior to commencement of work.

2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.

3. Return or allowed expiration of any remaining surety and permit close out is dependent on the permit holder providing proof that all required documents have been recorded and providing as-built drawings that show that the project was constructed as approved by the Managers and in conformance with the RPBCWD rules and regulations.

**Findings**

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.

2. The project conforms to Rule B and C requirements.

3. The proposed project will conform to Rule D and J if the Rule Specific Permit Conditions listed above are met.

**Recommendation:**

Approval, contingent upon:

1. Continued compliance with General Requirements.

2. Financial Assurance in the amount of $102,400.

3. The applicant must submit documentation verifying the soils present, infiltration capacity of the soil and the groundwater elevation at the proposed underground infiltration system. This can be accomplished by soil boring, infiltrometer test, potholing or other methods. If the soils,
groundwater elevation or infiltration capacity are less than anticipated, design modifications for underground infiltration system 2 would be required.

4. Receipt of an additional permit fee of $973.30 for excess cost recovery
5. Receipt in recordation a maintenance declaration for the stormwater management facilities and wetland buffer. A draft must be approved by the District prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, stormwater facilities conform to design specifications as approved by the District.

**Board Action**

It was moved by Manager ____________, seconded by Manager __________ to approve permit application No. 2017-024 with the conditions recommended by staff.
NO BUILDINGS

REMOVAL NOTES (APPLY TO SHEETS C1.0-C1.1):

CITY OF EDEN PRAIRIE REMOVAL NOTES:

REMOVALS LEGEND:

TREE INVENTORY AND REPLACEMENT CALCULATIONS:

REMOVAL NOTES (APPLY TO SHEETS C1.0-C1.1):

1. EROSION CONTROL NOTES:

ISSUE/SUBMITTAL SUMMARY

DATE DESCRIPTION

PRAIRIE BLUFFS SENIOR LIVING

EDEN PRAIRIE, MN

2631 QUENTIN AVENUE SOUTH, ST. LOUIS PARK, MN 55416

ALBERT MILLER

PROJECT

PHONE

FAX

CivilSiteGroup.com

Matt Pavek Pat Sarver

763-213-3944 952-250-2003

48776

David J. Knaeble

LICENSE NO.

DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

5/19/17

8/17/16 CITY RESUBMITTAL

9/12/16 CITY RESUBMITTAL

9/23/16 CITY RESUBMITTAL

12/15/16 CITY RESUBMITTAL

1/26/17 CITY RESUBMITTAL

3/16/17 WATERSHED SUBMITTAL

4/20/17 WATERSHED RESUBMITTAL

5/19/17 WATERSHED RESUBMITTAL

REVISION SUMMARY

DATE DESCRIPTION

C1.0

REMOVALS PLAN

NORTH

TREE INVENTORY AND REPLACEMENT CALCULATIONS:

X

GOPHER STATE ONE CALL
WWW.GOPHERSTATEONECALL.ORG

(800) 252-1166 TOLL FREE

(651) 454-0002 LOCAL

TREE PROTECTION

N T S

TREE INVENTORY AND REPLACEMENT CALCULATIONS:

REMOVALS PLAN

NORTH

TREE INVENTORY AND REPLACEMENT CALCULATIONS:
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

5/19/17

REMOVALS PLAN SOUTH

GOPHER STATE ONE CALL
WWWGOPHERSTATEONECALLORG
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL

REMOVALS LEGEND

\[\text{REMOVALS PLAN SOUTH}

\]
PLACE MNDOT CATEGORY 4 TURF REINFORCEMENT MAT AND MNDOT CATEGORY 4 EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1 PER MANUFACTURERS RECOMMENDATIONS. TURF REINFORCEMENT MAT SHALL BE SOIL FILLED.

SITE LAYOUT NOTES (APPLY TO SHEETS C2.0-C2.1):

SITE PLAN LEGEND:

SITE PLAN NORTH
Issue/Submittal Summary

Date | Description
--- | ---
The document contains engineering details and plans for the project at Prairie Bluffs Senior Living in Eden Prairie, MN. The plans include drainage, curbs, and gutters for the project located at 2631 Quentin Avenue South, St. Louis Park, MN 55416. The project is prepared by Albert Miller, and the certification statement confirms the plans were prepared under the supervision of a licensed professional engineer in Minnesota. The dates listed are for various submittals and revisions, such as City Resubmittals and Watershed Submitting dates.
C5.2

CIVIL DETAILS

Casting Schedule

CASTING SCHEDULE

N T S

22-23, 23A, 73-75A, 80-80A

CATCH BASIN/MANHOLE/RISER

STORM MANHOLE

R-3250-I

CASTING SCHEDULE

N T S

21A-B, 32, 42-44, 72, 76-79, ACCESS RISERS

RIPRAP @ FLARED END SECTION

TRENCH DRAIN

N T S

7

HEAVY DUTY BITUMINOUS PAVEMENT

N T S1

FINISHED GRADE

RIBBON CURB

N T S3

DOWNSPOUT TO PIPE CONNECTION

N T S

4

VALLEY GUTTER

N T S

1

5

ACCESSIBLE PARKING PAVEMENT MARKING

N T S

11

LIGHT DUTY BITUMINOUS PAVEMENT

N T S

2

CONCRETE PAVERS

N T S6

WETLAND BUFFER SIGN DETAIL
ISSUE/SUBMITTAL SUMMARY
DATE DESCRIPTION
8/17/16 CITY RESUBMITTAL
9/12/16 CITY RESUBMITTAL
9/23/16 CITY RESUBMITTAL
12/15/16 CITY RESUBMITTAL
1/26/17 CITY RESUBMITTAL
3/16/17 WATERSHED SUBMITTAL
4/20/17 WATERSHED RESUBMITTAL
5/19/17 WATERSHED RESUBMITTAL

REVISION SUMMARY
DATE DESCRIPTION
5/19/17

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

REQUIRED LANDSCAPE CALCULATIONS:

REQUIRED LANDSCAPE MATERIALS CALCULATIONS:

LANDSCAPE MATERIALS CALCULATIONS:

REQUIRED TREES PER CITY CERAMICS:

TREE PLANTING SITE CHART:

DECIDUOUS & CONIFEROUS TREE PLANTING

DECIDUOUS & CONIFEROUS SHRUB PLANTING

IRRIGATION NOTES:
1. THE MATERIALS REQUIRED FOR THE EXCAVATION AND TANKING ARE TO BE FURNISHED AND EXCAVATION WORK IS TO BE PERFORMED BY THE CONTRACTOR.
2. THE CONTRACTOR IS TO FURNISH AND INSTALL THE TANKING AND LANDSCAPE FABRIC AS REQUIRED.
3. THE AREA IS TO BE GRADED TO THE DESIGN OF THE CONTRACTOR.
4. THE AREA IS TO BE SEeded WITH GRASS SEED AND TOPDRESSED WITH SOIL.
5. THE AREA IS TO BE WATERED AS REQUIRED.

REQUIRED LANDSCAPE CALCULATIONS:

REQUIRED TREES PER CITY CERAMICS:

LANDSCAPE MATERIALS CALCULATIONS:

TOTAL: 1017

SUMMARY:

TRIM PLACEMENT CALCULATION:

REMOVED PER SF:

TOTAL REMOVED LANDSCAPE:

SCHEDULE:

SHEET PEI:

L1.1
Prairie Bluffs Senior Living

SW1.00

Legend:

EXISTING LIGHT
EXISTING GAS METER
EXISTING MANHOLE
EXISTING CATCH BASIN
EXISTING GATE VALVE
EXISTING HYDRANT
EXISTING GAS VALVE
EXISTING ELECTRIC BOX
EXISTING UNDERGROUND CABLE
EXISTING UNDERGROUND ELECTRIC
EXISTING STOPBOX
EXISTING GAS MAIN
EXISTING WATER MAIN
EXISTING STORM SEWER

CITY OF EDEN PRAIRIE EROSION CONTROL NOTES:
1. SEE SHEETS SW1.0 - SW1.5 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.
2. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.
3. CONTRACTOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND COMPLIANCE WITH NPDES PERMIT.

SWPPP NOTES:

GOPHER STATE ONE CALL
WWW.GOPHERSTATEONECALL.ORG
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL

RPBCWD SITE SPECIFIC NOTES:
ISSUE/SUBMITTAL SUMMARY

DATE DESCRIPTION

PRAIRIE BLUFFS SENIOR LIVING
EDEN PRAIRIE, MN
2631 QUENTIN AVENUE SOUTH, ST. LOUIS PARK, MN 55416

ALBERT MILLER

PROJECT

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

N

REVISION SUMMARY

DATE DESCRIPTION

SW1.01
SWPPP - EXISTING CONDITIONS - SOUTH

LEGEND:

EXISTING LIGHT
EXISTING GAS METER
EXISTING MANHOLE
EXISTING CATCH BASIN
EXISTING GATE VALVE
EXISTING HYDRANT
EXISTING GAS VALVE
EXISTING ELECTRIC BOX
EXISTING UNDERGROUND CABLE
EXISTING UNDERGROUND ELECTRIC
EXISTING STOPBOX
EXISTING GAS MAIN
EXISTING WATER MAIN
EXISTING STORM SEWER

GOPHER STATE ONE CALL
WWW.GOPHERSTATEONECALL.ORG
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL
NO BUILDINGS
PLACE MNDOT CATEGORY 4 TURF REINFORCEMENT MAT AND MNDOT CATEGORY 4 EROSION CONTROL BLANKET ON ALL SLOPES STEEPER THAN 3:1 PER MANUFACTURERS RECOMMENDATIONS. TURFREINFORCEMENT MAT SHALL BE SOIL FILLED.

ISSUE/SUBMITTAL SUMMARY
DATE DESCRIPTION
PRAIRIE BLUFFS SENIOR LIVING EDEN PRAIRIE, MN
2631 QUENTIN AVENUE SOUTH, ST. LOUIS PARK, MN 55416
ALBERT MILLER PROJECT

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SW1.10 SWPPP - PROPOSED CONDITIONS - NORTH

LEGEND:

EXISTING LIGHT
EXISTING GAS METER
EXISTING MANHOLE
EXISTING CATCH BASIN
EXISTING GATE VALVE
EXISTING HYDRANT
EXISTING GAS VALVE
EXISTING ELECTRIC BOX
EXISTING UNDERGROUND CABLE
EXISTING UNDERGROUND ELECTRIC
EXISTING STOPBOX
EXISTING GAS MAIN
EXISTING WATER MAIN
EXISTING STORM SEWER

CITY OF EDEN PRAIRIE EROSION CONTROL NOTES:
1. SEE SHEETS SW1.0 - SW1.5 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.
2. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.
3. CONTRACTOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND COMPLIANCE WITH NPDES PERMIT.

SWPPP NOTES:
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WWW.GOPHERSTATEONECALL.ORG
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL

RPBCWD SITE SPECIFIC NOTES:
ISSUE/SUBMITTAL SUMMARY

DATE	DESCRIPTION
------
8/17/16	CITY RESUBMITTAL
9/12/16	CITY RESUBMITTAL
9/23/16	CITY RESUBMITTAL
12/15/16	CITY RESUBMITTAL
1/26/17	CITY RESUBMITTAL
3/16/17	WATERSHED SUBMITTAL
4/20/17	WATERSHED RESUBMITTAL
5/19/17	WATERSHED RESUBMITTAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SW1.11
SWPPP - PROPOSED CONDITIONS - SOUTH

LEGEND:

EXISTING LIGHT
EXISTING GAS METER
EXISTING MANHOLE
EXISTING CATCH BASIN
EXISTING GATE VALVE
EXISTING HYDRANT
EXISTING GAS VALVE
EXISTING ELECTRIC BOX
EXISTING UNDERGROUND CABLE
EXISTING UNDERGROUND ELECTRIC
EXISTING STOPBOX
EXISTING GAS MAIN
EXISTING WATER MAIN
EXISTING STORM SEWER

GOPHER STATE ONE CALL
WWW.GOPHERSTATEONECALL.ORG
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL

CivilSite Group
ALBERT MILLER
EDEN PRAIRIE, MN
2631 QUENTIN AVENUE SOUTH, ST. LOUIS PARK, MN 55416

Matt Pavek                                         Pat Sarver
763-213-3944                                952-250-2003

48776

5/19/17

80-35533-27-14
**ISSUE/SUBMITTAL SUMMARY**

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**REVISION SUMMARY**

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**TRAINING PARTICIPANTS**

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<tr>
<th>PARTICIPANT</th>
<th>COMPANY/ADDRESS</th>
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**OWNER INFORMATION**

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<thead>
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**PARTIES RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PERMANENT STEAM WATER MANAGEMENT SYSTEM**

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
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<tbody>
<tr>
<td>PRACRINE MILLER</td>
<td>2631 QUENTIN AVENUE SOUTH</td>
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**SUPPLEMENTARY SITE SPECIFIC EROSION CONTROL NOTES:**

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**PARTLY RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PERMANENT STEAM WATER MANAGEMENT SYSTEM**

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Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-038
Received complete: May 19, 2017
Applicant: Pulte Homes, Attn: Paul Heuer
Consultant: Mark Rausch, Alliant Engineering
Project: West Park – Construction of 82-multifamily units in a residential subdivision. A stormwater detention pond which will be used for irrigation reuse and a bioretention basin are to be constructed to provide storm water rate, volume, and quality control.
Location: 760 & 781 Lake Susan Drive and 8601 Great Plains Boulevard, Chanhassen, MN
Reviewer: Terry Jeffery, Permit Coordinator

Rules: Applicable rules checked

<table>
<thead>
<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Floodplain Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Erosion and Sediment Control</td>
<td>Rule C: Erosion and Sediment Control</td>
<td>Rule E: Dredging and Sediment Removal</td>
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<tr>
<td>D</td>
<td>Wetland and Creek Buffers</td>
<td>X Rule D: Wetland and Creek Buffers</td>
<td>Rule J: Stormwater Management</td>
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<tr>
<td>F</td>
<td>Shoreline/Streambank Stabilization</td>
<td>X Rule F: Shoreline/Streambank Stabilization</td>
<td>Rule L: Permit Fees</td>
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Rule Conformance Summary

<table>
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<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
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<tr>
<td>C</td>
<td>Erosion Control Plan</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition C1.</td>
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<tr>
<td>J</td>
<td>Stormwater Management</td>
<td>Rate</td>
<td>Yes</td>
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<tr>
<td></td>
<td>Volume</td>
<td>Yes</td>
<td></td>
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<td>Water Quality</td>
<td>Yes</td>
<td></td>
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<td></td>
<td>Low Floor Elev.</td>
<td>Yes</td>
<td></td>
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<tr>
<td></td>
<td>Maintenance</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition J1.</td>
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<tr>
<td>L</td>
<td>Permit Fee</td>
<td>Yes</td>
<td>$3,000 was received on May 19, 2017.</td>
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<tr>
<td>M</td>
<td>Financial Assurance</td>
<td>See Comment</td>
<td>The financial assurance has been calculated at $106,592.</td>
</tr>
</tbody>
</table>
**Project Description**

The project proposes the subdivision of four parcels into a high density residential development comprised of 16 multi-family buildings and the construction of approximately 1,100 feet of private road and other appurtenant structures and utilities. The subject property is currently a farmstead with a residence and several outbuildings. These will be demolished as part of the development.

An area of the site was reviewed that had wetland characteristics but was determined to be non-jurisdictional as it was incidental to the realignment of State Highway 101 and there are no other wetlands or other protected resources on or adjacent to the site, therefore Rule D (buffers) is not triggered. The project includes a stormwater detention basin that will be used for reuse to irrigate open space and a bioretention feature. The project site information is summarized below:

1. Total Site Area: 10.57 acres
2. Existing Site Impervious Area: 0.65 acres
3. New (Increase) in Site Impervious Area: 4.80 acres (738% increase in site impervious area)
4. Total Disturbed Area: 10.5 acres

Exhibits:

7. Soil boring logs performed by Haugo Geotechnical Services, LLC on June 27, 2013.
10. Wetland Delineation Report by Kjolhaug Environmental Services Company, Inc. dated June 1, 2016 (includes MnRAM results dated May 4, 2016).
12. P8 Model dated June 5, 2017
**Rule Specific Permit Conditions**

**Rule C: Erosion and Sediment Control**

Because the project will alter 10.5 acres (±457,380 square feet) of land-surface area the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plan prepared by Alliant Engineering includes phased erosion prevention and sediment control plans, installation of silt fence, inlet protection for storm sewer catch basins, a rock construction entrance, placement of a minimum of 6 inches of topsoil, decompaction of areas compacted during construction, retention of native topsoil onsite, and final stabilization measures. To conform to the RPBCWD Rule C requirements the following revisions are needed:

C1. The Applicant must provide the name and contact information of the individual responsible for erosion and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.

**Rule J: Stormwater Management**

Because the project will alter 10.5 acres (±457,380 square feet) of land-surface area the project must meet the criteria of RPBCWD’s Stormwater Management rule (Rule J, Subsection 2.1). Because the proposed project will increase the imperviousness area of the properties by 738% (i.e., well more than 50 percent), under the paragraph 2.3 redevelopment framework, the RPBCWD stormwater management criteria apply to the entire site.

The developer is proposing construction of a stormwater detention basins which will be used as a reservoir to provide irrigation for the open space on the northern half of the site and a bioretention basin on the southern half of the site to provide the rate control, volume abstraction and water quality management for the overall project. Forebays with rock weepers, which act similar to ditch checks, will provide pretreatment for the bioretention basin. (Rule J, Subsection 3.1.b.i)

**Rate Control**

To meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in the table below. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.
Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from all impervious surface of the parcel. An abstraction volume of 19,163 cubic feet is required from the 4.80 acres (±209,044 square feet) of impervious area on the project for volume retention. The Applicant is proposing a bioretention basin with pretreatment of runoff provided by forebays with rock weirs equal to 10% of the surface area of the bioretention basin to provide abstraction for that portion south of Lake Susan Drive. The Applicant is proposing a stormwater detention pond designed to NURP recommendations on the that portion north of Lake Susan Drive. This basin will be used to provide irrigation at a rate of one inch (1") of water per week from the pond to the 3.41 acres indicated by the blue hatching shown in Figure 1 from the beginning of May through the end of September. The table below summarizes the volume abstraction on the site.

![Figure 1. Area of proposed irrigation (148,740 SF)](image)

<table>
<thead>
<tr>
<th>Modeled Discharge Location</th>
<th>2-Year Discharge (cfs)</th>
<th>10-Year Discharge (cfs)</th>
<th>100-Year Discharge (cfs)</th>
<th>10-Day Snowmelt (cfs)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Ex Prop</td>
<td>Ex Prop</td>
<td>Ex Prop</td>
<td>Ex Prop</td>
</tr>
<tr>
<td>North to Waters Edge</td>
<td>1.92 1.90</td>
<td>4.20 3.50</td>
<td>9.96 7.23</td>
<td>0.23 0.15</td>
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<tr>
<td>East to State Highway 101</td>
<td>8.59 6.68</td>
<td>18.31 18.31</td>
<td>38.08 25.56</td>
<td>1.45 1.39</td>
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<tr>
<td>South to Trunk Highway 212</td>
<td>1.39 1.37</td>
<td>3.92 3.92</td>
<td>8.82 8.81</td>
<td>0.90 0.87</td>
</tr>
</tbody>
</table>

Soil borings performed by Braun Intertec show that soils near the proposed bioretention feature range from clayey sand to poorly graded sand. A test pit excavated at the proposed location of the bioretention feature indicates groundwater at an elevation of 892 feet and a profile consisting of three (3) feet of clay over poorly graded silty sand that extended another six (6) feet to the bottom of the boring. The proposed bottom of the bioretention basin will be at 899 feet msl which is seven (7) feet above the encountered groundwater. The design calls for excavation of in situ soils material to a depth of 892 feet and replacement of these soils with a soil with equivalent infiltration rates of a “B” soil. The first source will be on-site but import may be necessary. The MN Stormwater Manual indicates an infiltration rate for B soils of between 0.3 and 0.45 inches per hour for such soils. The design was made using the more conservative infiltration rate of “C” soils or 0.2 inches per hour. Groundwater is at least 3
feet below the bottom of the proposed bioretention basin (Rule J, Subsection 3.1.b.ii). Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.b.

<table>
<thead>
<tr>
<th>Required Abstraction Depth (inches)</th>
<th>Provided Abstraction Depth (inches)</th>
<th>Provided Abstraction Volume (cubic feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1.2</td>
<td>21,375</td>
</tr>
</tbody>
</table>

**Water Quality Management**

Subsection 3.1.c of Rule J requires the Applicant provide for at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff. The Applicant is proposing to construct a bioretention feature and a stormwater detention pond to achieve the required TP and TSS removals and submitted a P8 model to estimate the TP and TSS removals.

<table>
<thead>
<tr>
<th>Pollutant of Interest</th>
<th>Required Removal (%)</th>
<th>Estimated Removal (%)</th>
<th>Estimated Removal (lbs)</th>
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<tr>
<td>Total Suspended Solids (TSS)</td>
<td>90</td>
<td>90.1</td>
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<tr>
<td>Total Phosphorus (TP)</td>
<td>60</td>
<td>68</td>
<td>9.4</td>
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</table>

Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.c.

**Low floor Elevation**

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation and no stormwater management system may be constructed or reconstructed in a manner that brings the low floor elevation of an adjacent structure into noncompliance according to Rule J, Subsection 3.6.

The low floor elevations of the structures and the adjacent stormwater management features are summarized below.
<table>
<thead>
<tr>
<th>Location Riparian to Stormwater Facility</th>
<th>Low Floor Elevation of Building (feet)</th>
<th>100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)</th>
<th>Freeboard (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lots 1-6, Block 2</td>
<td>914.8</td>
<td>905.99 (NURP Pond)</td>
<td>8.81</td>
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<tr>
<td>Lots 1-5, Block 3</td>
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<td>8.76</td>
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<tr>
<td>Lots 1-4, Block 4</td>
<td>917.2</td>
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<td>11.21</td>
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<td>Lots 1-4, Block 6</td>
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<td>905.99 (NURP Pond)</td>
<td>8.31</td>
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<tr>
<td>Lots 1-6, Block 6</td>
<td>911.0</td>
<td>904.97 (Bioretention Basin)</td>
<td>6.03</td>
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</table>

The low floor elevation of the proposed homes all provide at least 2 feet of freeboard from the 100-year event flood elevation of the pertinent stormwater management feature. The proposed project is in conformance with Rule J, Subsection 3.6.

**Maintenance**

Subsection 3.7 of Rule J requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed.

J1. Permit applicant must provide a draft maintenance and inspection plan. Once approved by RPBCWD, the plan must be recorded on the deed in a form acceptable to the District.

J2. Because the proposed water reuse irrigation system requires consistent use at a specified rate to meet District requirements, performance monitoring for the site will be required to ensure that the project is able to meet the RPBCWD volume abstraction requirement as has been proposed. In accordance with Rule J, Subsection 2.6 performance monitoring, and as a stipulation of issuing a permit for this project, the Applicant must submit an operations plan and monitor the proposed irrigation system to determine the ability of the system to achieve the estimated volume abstraction as presented in the design. The operations and monitoring program must be included in the maintenance declaration that is recorded with the County. The recorded reuse volume must be submitted to the RPBCWD on a yearly basis. If it is determined that the system is not performing as
designed, the Applicant will need to submit a revised design and construction plan to demonstrate that the volume abstraction standard will be achieved.

**Rule L: Permit Fee:**

Fees for the project are:

| Rule C & J | $3,000 |

**Rule M: Financial Assurance:**

Rules C: Silt fence: 4,105 L.F. x $2.50/L.F. = $10,262

  Restoration: 9.0 acres x $2,500/acre = $22,500

Rules J: Infiltration 6,963 S.F. x $6/S.F. = $41,778

  Reuse System ????? x 125% = $50,000

Contingency (10%) = $12,454

Administration (30%) = $41,098

Total Financial Assurance = $178,092

**Applicable General Requirements:**

1. The RPBCWD Administrator shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.
3. Return or allowed expiration of any remaining surety and permit close out is dependent on the permit holder providing proof that all required documents have been recorded and providing as-built drawings that show that the project was constructed as approved by the Managers and in conformance with the RPBCWD rules and regulations.

**Findings**

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

**Recommendation:**

Approval, contingent upon:

1. Continued compliance with General Requirements.
2. Financial Assurance in the amount of $178,092.
3. Submission of the name and contact information of the individual responsible for erosion and sediment control for the site.
4. Receipt in recordation a maintenance declaration for the stormwater management including the re-use system and annual monitoring thereof. A draft must be approved by the District prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, stormwater facilities conform to design specifications as approved by the District.
2. Residential buildings to be constructed on lots in the subdivision created under the terms of permit 2017-038, if issued, must have an impervious surface area and configuration materially consistent with the approved plans. Home design proposed that differs materially from the approved plans will be subject to re-review for compliance with all applicable regulatory requirements.

Board Action

It was moved by Manager ________________, seconded by Manager ________________ to approve permit application No. 2017-038 with the conditions recommended by staff.
June 15, 2017

President Perry Forster and Board of Managers
Riley-Purgatory-Bluff Creek Watershed District
14500 Martin Drive Suite 1500
Eden Prairie, MN 55344

Re: Purgatory Creek at Highway 101 Stabilization Project – Pay Application #3
Barr Project # 23/27-0053.14-007

Dear President Forster and Board of Managers:

Enclosed is the Application for Payment #3 from Minnesota Native Landscapes for work completed through 5/31/2016, on the above-referenced project. Upon your review and approval, please sign three copies and return one copy to me, one copy to the contractor and retain the remaining copy for your files.

Major items of work covered by this pay application include installing trees and shrubs and final mobilization and demobilization. The project is now substantially complete. There is a one-year vegetation management period that is included with the project, and final payment will be completed when the vegetation management period is complete.

Barr Engineering has reviewed the application, and is recommending payment in the amount of $31,925. Payments shall be made directly to Minnesota Native Landscapes.

Please call me at 952-832-2755 if you have any questions or concerns about the application for payment, or about any other related matters.

Sincerely,

Scott Sobiech, P.E.
Barr Engineering Co.

cc: Claire Bleser, RPBCWD
    Jeff Renier, Minnesota Native Landscapes

Enclosure #1 – Application for Payment – Progress Payment 3
Purgatory Creek at Highway 101 Stabilization Project  
Progress Payment Number 3

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<td>2.0</td>
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<td>3.0</td>
<td>Total Completed This Period</td>
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<tr>
<td>4.0</td>
<td>Amount Retained, Pervious Period</td>
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<tr>
<td>5.0</td>
<td>Amount Retained, This Period (See Note 1)</td>
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<td>6.0</td>
<td>Total Amount Retained</td>
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<tr>
<td>7.0</td>
<td>Retainage Released Through This Period:</td>
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<tr>
<td>8.0</td>
<td>Amount Due This Period</td>
<td>$31,925.00</td>
</tr>
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</table>

Note 1: At rate of 10% until Completed to Date equals 50% of current Contract Price and a rate of 0% thereafter.

Note 2: Current Contract Price $269,387.50

SUBMITTED BY:
Name: Jeff Renier  
Title: Project Manager  
Contractor: Minnesota Native Landscapes

RECOMMENDED BY:
Name: Scott Sobiech  
Title: District Engineer  
Engineer: Barr Engineering Company

APPROVED BY:
Name: Perry Forster  
Title: President  
Owner: Riley Purgatory Bluff Creek Watershed District
### Summary of Work Completed through June 9, 2016 for Progress Payment Number 3

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<th>PAY APPLICATION #2</th>
<th>PAY APPLICATION #3</th>
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<td>Acres</td>
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<td>1.06.C</td>
<td>Existing and Save Tree Trunk with Root Ball</td>
<td>Each</td>
<td>24</td>
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<td>1.06.E</td>
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<td>Wet Protection</td>
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<td>1.06.I</td>
<td>Inversion Control Silt Fence</td>
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<td>1.06.J</td>
<td>Sediment Log</td>
<td>L.T.</td>
<td>17</td>
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<tr>
<td>1.06.K</td>
<td>Protection Silt Curtain</td>
<td>L.F.</td>
<td>25</td>
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<td>1.06.L</td>
<td>Inversion Control Blanket</td>
<td>S.Y.</td>
<td>2400</td>
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<tr>
<td>1.06.M</td>
<td>Street Sweeping</td>
<td>Each</td>
<td>12</td>
<td></td>
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<tr>
<td>1.06.N</td>
<td>Control of Weeds</td>
<td>L.S.</td>
<td>2500</td>
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<td>1.06.O</td>
<td>Remove and Silt Disposal (P)</td>
<td>C.Y.</td>
<td>144</td>
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<tr>
<td>1.06.P</td>
<td>Remove of 72&quot; CHP Corvett</td>
<td>L.S.</td>
<td>1</td>
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<tr>
<td>1.06.Q</td>
<td>Corrosion Excavation</td>
<td>C.Y.</td>
<td>803</td>
<td></td>
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<td>1.06.R</td>
<td>Grading</td>
<td>S.Y.</td>
<td>1500</td>
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<td>1.06.S</td>
<td>Remove and Disposal of Minnow</td>
<td>C.Y.</td>
<td>1436</td>
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<td>1.06.T</td>
<td>Asphalt Reinforced Soil Slope (VRSS)</td>
<td>S.F.F.</td>
<td>800</td>
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<td>1.06.U</td>
<td>Fences, Mn/DOT Class</td>
<td>Ton</td>
<td>1</td>
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<td>1.06.V</td>
<td>Screws</td>
<td>L.F.</td>
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<td>1.06.W</td>
<td>Rock Vane</td>
<td>L.F.</td>
<td>45</td>
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<td>1.06.X</td>
<td>Riprap, Mn/DOT Class</td>
<td>L.F.</td>
<td>125</td>
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<tr>
<td>1.06.Y</td>
<td>Inert Rip Rap</td>
<td>L.F.</td>
<td>200</td>
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<td>1.06.AA</td>
<td>Rock (Coir Log)</td>
<td>L.F.</td>
<td>361</td>
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<td>1.06.BB</td>
<td>Traffic Convin</td>
<td>L.S.</td>
<td>1</td>
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<td></td>
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<tr>
<td>1.06.CC</td>
<td>Furfurl and Install Butler Markers</td>
<td>Each</td>
<td>39</td>
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<td>1.06.DD</td>
<td>Pre-construction survey</td>
<td>L.S.</td>
<td>1</td>
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<td></td>
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<tr>
<td>1.06.EE</td>
<td>post construction survey</td>
<td>L.S.</td>
<td>1</td>
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<td></td>
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<tr>
<td>1.06.FF</td>
<td>Temporary fencing</td>
<td>L.F.</td>
<td>390</td>
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<td>1.06.GG</td>
<td>Guard Area</td>
<td>S.Y.</td>
<td>4800</td>
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<td>1.06.HH</td>
<td>Cover Crop Seed Mix</td>
<td>Lbs.</td>
<td>35.5</td>
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<td>1.06.II</td>
<td>Noxious Restoration Seed Mix</td>
<td>Lbs.</td>
<td>117.7</td>
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<tr>
<td>1.06.JJ</td>
<td>Plant Tree</td>
<td>Each</td>
<td>92</td>
<td></td>
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<td>1.06.KK</td>
<td>Plant Shrubs</td>
<td>Each</td>
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<td>1.06.LL</td>
<td>Stone Matt</td>
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<td>1.06.MM</td>
<td>Site Restoration</td>
<td>L.S.</td>
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<td>1.06.NN</td>
<td>Vegetation Management (1 yr)</td>
<td>L.S.</td>
<td>1</td>
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</table>

### Construction Subtotal

$256,767.50

$229,068.75

$181,793.75

$10,350.00

$31,925.00

### Bid Alternatives

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>UNIT</th>
<th>ESTIMATED QUANTITY</th>
<th>PAY APPLICATION #1</th>
<th>PAY APPLICATION #2</th>
<th>PAY APPLICATION #3</th>
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</thead>
<tbody>
<tr>
<td>1.06.OO</td>
<td>Composite Rock-Wood Bank Protection</td>
<td>L.F.</td>
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<td>1.06.PP</td>
<td>Safe Revetment</td>
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### Subtotal

$69,387.50

$239,688.75

$197,413.75

$10,350.00

$31,925.00
Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-040

Received complete: May 23, 2017

Applicant: City of Eden Prairie; Attn: Robert Ellis

Consultant: Kirby Templin, Wenck Associates, Inc.

Project: Basin 05-12-C Cleanout – The project is to remove approximately 1,600 cubic yards of accumulated soft sediment from a constructed storm water detention pond identified in Eden Prairie’s Local Water Management Plan as 05-12-C. This project will restore the pond to its original water quality volume. The pond will be dredged via hydraulic vacuuming through a dewatering filter bag. After dewatering, the material will be removed from the site and disposed of at a facility approved to handle the contaminated soils. This proposed methodology will eliminate the need for backhoes and other equipment which typically results in upland disturbance. This, in essence, makes the practice a sediment control best management practice.

Location: 14180 W 78th Street, Eden Prairie, MN

Reviewer: Terry Jeffery, RPBCWD Permit Coordinator

Rules: Applicable rules checked

<table>
<thead>
<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule B</td>
<td>Floodplain Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule C</td>
<td>Erosion and Sediment Control</td>
<td>X</td>
<td>See Rule Specific Permit Condition C1.</td>
</tr>
<tr>
<td>Rule D</td>
<td>Wetland and Creek Buffers</td>
<td>X</td>
<td>See Rule Specific Permit Condition D1.</td>
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<tr>
<td>Rule E</td>
<td>Dredging and Sediment Removal</td>
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<td></td>
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<tr>
<td>Rule F</td>
<td>Shoreline/Streambank Stabilization</td>
<td>X</td>
<td></td>
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<tr>
<td>Rule G</td>
<td>Waterbody Crossings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule H</td>
<td>Appropriation of Public Waters</td>
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<td></td>
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<tr>
<td>Rule I</td>
<td>Appropriation of Groundwater</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule J</td>
<td>Stormwater Management Rate</td>
<td></td>
<td>No impervious surface will be added</td>
</tr>
<tr>
<td>Rule J</td>
<td>Stormwater Management Volume</td>
<td></td>
<td>No impervious surface will be added</td>
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<tr>
<td>Rule J</td>
<td>Stormwater Management Water Quality</td>
<td></td>
<td>No impervious surface will be added</td>
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<tr>
<td>Rule J</td>
<td>Stormwater Management Low Floor Elev.</td>
<td>Yes</td>
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</tr>
<tr>
<td>Rule L</td>
<td>Permit Fee</td>
<td>NA</td>
<td>Government Entity</td>
</tr>
<tr>
<td>Rule M</td>
<td>Financial Assurance</td>
<td>NA</td>
<td>Government Entity</td>
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</table>
**Project Description**

The project proposes to remove accumulated sediment from a construct stormwater detention pond. Rather than using a backhoe to cast material into dump trucks to be hauled immediately off site, the sediment will be removed by employing a hydraulic vacuum. The materials will be transferred directly into a dewatering, filtration bag which will allow the water to drain out while retaining soils material within the bag to be hauled off site later. This process eliminates the need for much of the equipment typically responsible for the upland disturbance associated with pond cleanouts. This project will restore the water quality volume within the pond back to the designed volume thus improving the treatment efficiency of the pond which is tributary to Purgatory Creek. Though the work will remove more than a cubic yard of sediment, the RPBCWD Dredging and Sediment Removal Rule does not apply because the pond from which it will be removed is not a public water. The project site information is summarized below:

1. Total Site Area: 10.05 acres
2. Existing Site Impervious Area: 0.0 acres
3. New (Increase) in Site Impervious Area: 0.0 acres (0 square feet) (0% increase in site impervious area)
4. Total Disturbed Area: 4500 square feet

Exhibits:


**Rule Specific Permit Conditions**

**Rule C: Erosion and Sediment Control**

Because the project will excavate approximately 1,600 cubic yards of material the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plan prepared by Wenck Associates, Inc. includes installation of floating silt curtain and outlet control during dredging operations, inlet protection for storm sewer catch basins, a stabilized drainageway, placement of a minimum of 6 inches of topsoil, decompaction of areas compacted during construction, retention of native topsoil onsite, and appropriate final stabilization measures. To conform to the RPBCWD Rule C requirements the following revisions are needed:

C1. The Applicant must provide the name and contact information of the individual responsible for erosion and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.
**Rule J: Stormwater Management**

Because the project will remove approximately 1,600 cubic yards of soil material, the project triggers the RPBCWD’s Stormwater Management rule (Rule J, Subsection 2.1). But because there is no impervious surface either disturbed or added, no stormwater management requirements are imposed by the rule.

**Rule L: Permit Fee:**

Not applicable for a government entity

**Rule M: Financial Assurance:**

Not applicable for a government entity

**Applicable General Requirements:**

1. The RPBCWD Administrator shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.

**Findings**

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The project conforms to Rule B requirements, and no requirements are imposed by operation of Rule J.
3. The proposed project will conform to Rule C if the Rule Specific Permit Conditions listed above are met.

**Recommendation:**

Approval, contingent upon:

1. Continued compliance with General Requirements.
2. Submission of the name and contact information of the individual responsible for erosion and sediment control for the site.

**Board Action**

It was moved by Manager ________________, seconded by Manager ________________ to approve permit application No. 2017-040 with the conditions recommended by staff.
Friday, July 7, 2017
To: Board of Managers

From: Claire Bleser, Administrator

Re: Lotus Lake Alum Feasibility Task Order

Dear Managers,

While investigating possible projects for feasibility for Lotus Lake, staff has identified one option as being Lotus Lake Alum Feasibility. This feasibility is beyond what we had budgeted for 2017. Staff is proposing to utilize funds from Reserve ($12,000) and transfer it to the Lotus Lake Phase 1 budget item. The reserve would drop from $135,000 to $123,000. Lotus Lake Phase 1 would increase from $20,000 to $32,000.

Sincerely,

Claire Bleser

Manager ____________, seconded by Manager ____________ move to have $12,000 allocated from Reserve to Lotus Lake Phase 1 and approve Task Order from Wenck Associates titled Lotus Lake Alum Dose and Cost Estimates.
June 23, 2017

Dr. Claire Bleser  
District Administrator  
Riley Purgatory Bluff Creek Watershed District  
18681 Lake Drive East  
Chanhassen, MN 55317

RE: Lotus Lake alum dose and cost estimates

Dear Claire:

Thank you for the opportunity to continue to provide our services to Riley Purgatory Bluff Creek Watershed District (District). As requested, Wenck Associates, Inc. (Wenck) has prepared this proposal to assist the District in developing an aluminum sulfate (alum) dose and treatment cost estimate for Lotus Lake. We appreciate the opportunity to provide you with this proposed scope of services and look forward to assisting you with this project.

The scope of services described below will be completed by Wenck.

**Task 1. Collect sediment cores from Lotus Lake:**

Wenck will collect intact sediment cores from Lotus Lake to estimate sediment chemistry vertical profiles for alum dosage cost estimates. Sediment cores will be collected from five locations on Lotus Lake (Figure 1). Cores will be transported to the University of Wisconsin-Stout for sediment chemistry analysis. Wenck is assuming that core collection will occur with at least one District staff person’s assistance.

**Task 2. Laboratory sediment analysis**

The intact sediment cores will be analyzed at UW-Stout. For Lotus Lake, all sediment cores will be sectioned every one cm from 0 to 6 cm, every two cm from 6 to 10 cm, and every 2.5 cm from 10 to 25 cm to determine vertical profiles of phosphorous fractionation, organic matter content, bulk density, and total metal concentration. Additionally, sediment cores from two locations will be incubated to measure anoxic release rates (Anoxic RR) in deeper portions of the lake (Figure 1). Sediment cores for a shallower area of the lake will be incubated for release rates under oxic conditions (Oxic RR) (Figure 1).

**Task 3. Reporting and Cost estimate analysis**

The final step includes developing the laboratory report and summary memo of the analytical results. This memo will include sediment chemistry results and detailed cost estimates for alum applications on Lotus Lake.
Figure 1. Sediment coring locations on Lotus Lake
Timeline and Budget

Tasks 1-3 will be completed by the end of October 2017 contingent upon timely response from the District and ability to schedule core collection. Wenck will not exceed the authorized budget for the scope of services described above. Costs for this project are outlined in Table 1. If additional work outside this scope is requested by the District, Wenck will provide an additional quote at that time.

Table 1. Cost estimate for alum dosing on Lotus Lake.

<table>
<thead>
<tr>
<th>Task</th>
<th>Wenck Associates</th>
<th>Laboratory Costs</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sediment Coring</td>
<td>$1,069</td>
<td>$0</td>
<td>$1,069</td>
</tr>
<tr>
<td>2 Laboratory Sediment Analysis</td>
<td>$0</td>
<td>$24,334</td>
<td>$24,334</td>
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<tr>
<td>3 Reporting</td>
<td>$6,015</td>
<td>$0</td>
<td>$6,015</td>
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<tr>
<td>Cost Total</td>
<td>$7,084</td>
<td>$24,334</td>
<td>$31,418</td>
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</table>

On behalf of the 300+ employee-owners of Wenck, thank you for this opportunity to work with the Riley Purgatory Bluff Creek Watershed District. Should you have any questions, or need clarification of anything presented in the attached proposal, please do not hesitate to call me at 763-252-6829.

Sincerely,

Wenck Associates, Inc.

Joe Bischoff
Principal, Aquatic Ecologist
763-252-6829
jbischoff@wenck.com

Brian Beck
Water Resource Scientist
763-252-6943
bbeck@wenck.com
Item J. Approve staff recommendations for Single Family Homeowner Cost-Share Applications

<table>
<thead>
<tr>
<th>APPLICANT</th>
<th>ADDRESS</th>
<th>SUB-WATERSHED</th>
<th>PROJECT TYPE</th>
<th>POLLUTION REMOVAL</th>
<th>AREA RESTORED</th>
<th>PROJECT COST</th>
<th>FUNDING REQUEST</th>
<th>STAFF REC</th>
<th>CAC REC</th>
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</thead>
<tbody>
<tr>
<td>DAVID</td>
<td>8583 Red Oak Drive, EP</td>
<td>Red Rock</td>
<td>Lake buffer</td>
<td>x</td>
<td>4700 ft²</td>
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<td>Fund at $3000</td>
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<td>HANSEN</td>
<td>7935 S Bay Curve, EP</td>
<td>Mitchell</td>
<td>Lake buffer</td>
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<td>2500 ft²</td>
<td>$4707</td>
<td>$3000</td>
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<td>O’HARA</td>
<td>8513 Red Oak Drive EP</td>
<td>Red Rock</td>
<td>Lake buffer</td>
<td>x</td>
<td>2000 ft²</td>
<td>$6,259</td>
<td>$3000</td>
<td>Fund at $3000</td>
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<td>TAFFE</td>
<td>17689 Sheffield Lane, EP</td>
<td>Purgatory Creek</td>
<td>Wetland buffer</td>
<td>x</td>
<td>1800 ft²</td>
<td>$6658</td>
<td>$3000</td>
<td>Fund at $3000</td>
<td>Fund at $3000</td>
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<tr>
<td>ROSS</td>
<td>4557 Timber Woods Lane MTK</td>
<td>Purgatory Creek</td>
<td>Pond buffer/erosion control</td>
<td>x</td>
<td>450 ft²</td>
<td>$4085</td>
<td>$2985</td>
<td>Fund at $3000</td>
<td>Fund at $3000</td>
</tr>
</tbody>
</table>

**Staff recommend the five residential cost-share applications in the table above be approved for funding at the amounts listed.**

**Board action**
It was moved by Manager ______________, seconded by Manager ______________ to approve funding to the five residential cost-share applications listed in the table above, in the amounts recommended by staff/CAC.
Cost share grant application 2017

Applicant type (check one)  ☑ Homeowner  ☐ Non-profit - 501(c)(3)
☐ Business or corporation  ☐ Public agency or local government unit  ☐ School

Project type (check all that apply)  ☐ Raingarden  ☐ Vegetated swale  ☐ Lake/creek/wetland buffer
☑ Shoreline/bank stabilization  ☐ Wetland restoration  ☐ Pervious hard surface  ☐ Infiltration basin
☐ Conservation practice  ☐ Other

Applicant information

Name  MARK DAVID  Address  8583 RED OAK DRIVE
City/State/Zip  EDEN PRAIRIE MN 55347
Phone  612-209-7592  Alt phone  952-943-1175  Email  MARKWD@COMCAST.NET

Primary contact  ☑ Same as applicant (leave blank)

Name  Address
City/State/Zip,
Phone  Alt phone  Email

Project location

Address  8583 RED OAK DR  City/State/Zip  EDEN PRAIRIE MN 55347
Property Identification Number (PID)  16-116-22 33 0015
Property owner(s)  MARK AND KAREN DAVID

Project summary

Title  SHORELAND-WOODLAND- Prairie Project
Total project cost  $10,296.75  Grant amount requested  $3,000
Estimated start date  Summer 2017  Estimated completion date  Summer 2017
Sub-watershed  RPBCWD

Project located in priority drainage area?
Tributary to a waterbody?

Is project tributary to a water body?  ☐ No, water remains on site  ☐ Yes, indirectly  ☑ Yes, directly adjacent

2-3 sentence project description

REPLACE 1,200 SF OF GRASS WITH NATIVE PRAIRIE PLANTS.
REMOVE INVASIVE PLANTS FROM SHORELINE/WOODLAND AREA AND PLANT APPROPRIATE SPECIES. ADDITIONAL NATIVE PLANTS TO STABILIZE SHORELINE.

Is this work required as a part of a permit?  ☑ No  ☐ Yes

(If yes: describe how the project provides water quality treatment beyond permit requirements on the next page.)

Site visit One of the requirements for a complete application is a site visit from district staff.
Have you had a site visit?  ☐ No  ☑ Yes

(If you answered no, please contact staff to schedule one: 952-607-6512)
Project details

Checklist To be considered complete the following must be included with the application.
- location map
- site plan & design schematics
- itemized budget or contractor bid
- project time-line
- proof of property ownership
- plant list & planting plan (if project includes plants)

Description
Describe the current site conditions, as well as site history, and past management.

**Current site** (Woodland area) hasn't been well maintained. Periodic invasive plant removal has occurred along with some shoreline cleanup. Owner has spent over 30 hours removing buckthorn and other invasive plants from woodland and shoreline area this spring. Due to fluctuating water levels site has experienced some erosion.

What are the project objectives and expected outcomes? Give any additional project details.

1. Increase/create buffer area between grassy area of yard and lake.
2. Remove any remaining invasive plant species remaining in restoration area.
3. Install/plant over 1000 native plants.

- Increase awareness and need for additional shoreline restoration projects on red rock.

List other key participants and their roles

**Natural Shore Technologies**
- Company will do the restoration and provide (2) years of maintenance.

Which cost share goals does the project support? (check all that apply)
- Improve watershed resources
- Increase awareness of the vulnerability of watershed resources.
- Increase familiarity with and acceptance of solutions to improve waters
- Foster water resource stewardship

How does the project support the goals you checked?

As lakeshore owners we need to be better stewards of the lake and its surrounding area. We need to promote ways and encourage people to make our lakes healthier. This project will be seen by many members of our lake association and will get owners to start thinking about a restoration project of their own. The process will be detailed on our website and promoted to members.
**Benefits** Estimate the project benefits in terms of restoration and/or annual pollution reduction.

If you are working with a designer or contractor, they can provide these numbers. If you need help, contact the district cost share program coordinator.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water captured</td>
<td>gal/year</td>
</tr>
<tr>
<td>Water infiltrated</td>
<td>gal/year</td>
</tr>
<tr>
<td>Phosphorus removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Sediment removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Land restored</td>
<td>Over 4000 ft</td>
</tr>
</tbody>
</table>

**How will you share the project results with your community?**

*PROCESS WILL BE DETAILED WITH CONTACTS, STEPS, PICTURES, ETC ON RED ROCK LAKE WEBSITE.*

*SITE IS ALSO USED FOR ANNUAL LAKE PARTY. OWNER IS MEMBER OF FORRL BOARD.*

Are there other projects that could be initiated as a result of this one?

*SEE ABOVE.*

*NEIGHBORS DIRECTLY TO THE NORTH AND THE SOUTH ARE BOTH INTERESTED IN SHORELINE PROJECTS.*

**Evaluation**

How will the project be monitored and evaluated?

*RBCWD STAFF WELCOME ON SITE AT ANY TIME. CITY OF EDEN PRAIRIE STAFF WILL BE ENGAGED TOO. CONTRACTOR WILL PROVIDE 2 YEARS OF MAINTENANCE.*

**Maintenance agreement**

I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines document. 

*Yes*

**Authorization**

Name of landowner or responsible party:  

**Mark David**

Signature:  

*Mark David*

Date:  

*6-7-2017*
Natural Shore Technologies, Inc.

Restoration Proposal for:

Mr. Mark David
8583 Red Oak Drive
Eden Prairie, MN

Proposal Date: June 5th 2017

Prepared by:
Bill Bartodziej M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542 bill.b@naturalshore.com
Benefits of our quality restoration work.

Conserve Soil
Native plants
* Build soil health
* Capture carbon

Protect Water Quality
Deep roots
* Promote infiltration
* Reduce run-off
* Prevent erosion from run-off & wave action

Beautiful Landscapes
* Connect with nature
* Enjoy your view
* Wild experiences in your own backyard

Create Habitat
* For: birds, fish, insects & other wildlife
* Diverse plant communities
* Food sources
* Attract pollinators

Educate Future Conservationists
* Field experience
* Make connections between human impact & ecosystem health
Project Summary

1. Dimensions: Shoreland (500 SF), Woodland-Savanna (3,000 SF), Prairie (1,200 SF)

2. Site assessment and plan development include: detailed site preparation methods, plant selection, and a project timeline and work schedule for our staff. Because most of projects involve the establishment of natural buffers, site drawings and planting plans are not necessary. We have found that over time, native plants will seek out the optimal micro-habitats and flourish. However, project plan drawings can certainly be provide at an additional cost upon client request.

3. Delineate and verify total restoration project area.

4. Design planting so that flowering will occur at different periods throughout the growing season. Short prairie grass species will be used around the buffer edges closest to the turf and serpentine pathway down to the dock.

5. Kill all weedy species and turf with an herbicide appropriate for upland or aquatic use. A licensed herbicide applicator from Natural Shore Technologies will apply the treatment.

6. Cut and remove remaining weedy material.

7. Apply a 3" layer of shredded hardwood mulch over the prairie area.

8. Seed (custom native plant mix) and cover woodland area with straw.

9. Lay out plants into plant zones per plan specifications. We will use 1,325 plants for your restoration.

10. Install plants @ approximately 1.5' centers in the prairie and shoreland, and 3' centers in the woodland. Move mulch or straw aside and a light mulch or straw layer will be returned around the base of the plants to hold moisture. Mulch will not be placed below the normal water level.

11. Site monitoring will be conducted and appropriate maintenance will be provided throughout the 2018 growing season.
Guarantee

We stand by our native plant material and our ecological restoration services.

Native plants that we install are guaranteed to establish during the first growing season. Any plant material that does not make it through the first growing season will be replaced at no charge to the client.

On projects that we install and manage, we will guarantee successful establishment of your ecological restoration within three full growing seasons. This proposal provides a plan for accomplishing the restoration of the project site. If successful establishment does not occur within three growing seasons, all necessary steps will be taken to ensure the eventual success of the project, at no additional charge. For purposes of this guarantee, successful establishment is defined as follows: That the presence of at least 80% of the original seeded or planted species can be found on the site, and that the overall density of vegetation is comprised of no less than 80% native species.

The only exceptions to this guarantee have to do with plant death due to acts of God (floods or drought), the actions of others (vandalism), or animal herbivory (e.g., geese, muskrats). If these extreme circumstances do happen to occur, we will work with the client at a reduced rate to make all necessary repairs.

Our goal will always be to create successful, long-term partnerships with our clients. Our guarantee is the best in the business, and provides you with a clear understanding that we are here to fully support your ecological restoration endeavor.

Natural Shore Technologies, Inc.  
David Restoration Project
Project Cost

This bid includes project design and management, all materials, labor, and a two year maintenance plan. This is a comprehensive bid estimate and valid for thirty days. We require a 50% down payment to schedule your project.

Cost Breakdown

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Design, Project Management, Mobilization, labor</td>
<td>$1,422.00</td>
</tr>
<tr>
<td>Site preparation, herb. trts, mulch</td>
<td>$2,380.00</td>
</tr>
<tr>
<td>Plants - 1,325 - 3&quot; and 4&quot; containers</td>
<td>$4,654.75</td>
</tr>
<tr>
<td>Erosion control materials</td>
<td>$720.00</td>
</tr>
<tr>
<td>Maintenance - 2 yr plan - discount w shore plan</td>
<td>$1,120.00</td>
</tr>
</tbody>
</table>

TOTAL = $10,296.75

Site maintenance

Site maintenance includes three visits per year during the growing season to monitor and conduct activities that will ensure proper restoration establishment. We use the most appropriate, up-to-date maintenance techniques such as targeted herbicide application, hand pulling, mowing, and spot weed whipping to effectively control invasive weeds. Our lead maintenance supervisor has a B.S. in Biology and 10 years of field experience.

*Note we do offer long-term maintenance contracts. Over 90% of our clients use that service.

Natural Shore Technologies, Inc.

David Restoration Project
Staff Qualifications

Our company has over 50 years of combined ecological restoration experience. We are a local company that focuses on quality ecological restoration in the Metro area. Our clients vary from private estates on Lake Minnetonka, to large corporate headquarters in Eden Prairie. We also work with many city and county governments and watershed management organizations. We are fully insured.

Our specialty is lakeshore and wetland restoration. We have restored many miles of lakeshore in Minnesota, more than any other company. Please see our portfolio for examples of our restoration projects that include; shorelines, wetlands, prairies, savannas, and rain gardens.

Please see our project photo book at: http://www.blurb.com/books/6034090-natural-shore-technologies-inc-photobook

Natural Shore Technologies Plant Material

We have commercial and retail greenhouses in Maple Plain. Our plants are Minnesota native perennials that will flourish year after year. Utilizing our own plant material in our projects assure quality control. Our wetland and prairie plants are guaranteed to establish during the first growing season. Perennial plants put most of their energy into establishing root systems so please keep in mind that the first year of growth will be mainly underground. You will see some flowering the first year, but significantly more flowering during the second year of establishment.

Information about our retail native plant greenhouses located in Maple Plain is also available at: www.naturalshore.com
Base Map – Shoreland Buffer

Short Grass Prairie
Woodland Slope
Shore Transitional Zone

Natural Shore Technologies, Inc.
www.NaturalShore.com
6425 Technology Road, Maple Plain, MN 55364
612-724-7501

Mark David
8583 Red Oak Drive
Eden Prairie, MN
June 7, 2017

Project Timeline for David Shoreline Restoration Project

April 2017 - meet with watershed employees and develop restoration plan

May 2017 - home owner removes over 30 lawn bags of buckthorn and other invasive plant species

May 2017 - Natural Shore Technologies develops restoration plan for woodland, shoreline and new buffer (Prairie) area

June 2017 - owner commits to project and provides contractor deposit for restoration project

June 2017 - Cost share grant application submitted to RPBCWD and Water Quality Rebate application submitted to City of Eden Prairie

July 2017 - continued invasive plant removal by owner and restoration project started by Natural Shore Technologies

future - maintain all areas and promote shoreline restoration projects to others
## David - Preliminary Plant List

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Shoreland 500 SF</th>
<th>Woodland 3,000 SF</th>
<th>Prairie 1,200 SF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aquatic Emergents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrowhead</td>
<td>Sagittaria latifolia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bur-reed</td>
<td>Sparganium eurycarpum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wet grasses, sedges, rushes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottle brush sedge</td>
<td>Carex comosa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada bluejoint</td>
<td>Calamagrostis canadensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common rush</td>
<td>Juncus effusus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fox sedge</td>
<td>Carex vulpinoidea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake sedge</td>
<td>Carex lacustris</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet flag</td>
<td>Acorus americanus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wet wildflowers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue bottle gentian</td>
<td>Gentiana andrewsii</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue flag</td>
<td>Iris versicolor</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue lobelia</td>
<td>Lobelia siphilitica</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada anemone</td>
<td>Anemone canadensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardinal flower</td>
<td>Lobelia cardinalis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March marigold</td>
<td>Caltha palustris</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monkey flower</td>
<td>Mimulus ringens</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mountain mint</td>
<td>Pycnanthemum virginianum</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prairie blazing star</td>
<td>Liatris pycnostachya</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swamp milkweed</td>
<td>Asclepias incarnata</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Woodland Wildflowers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild columbine</td>
<td>Aquilegia canadensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jack-in-the-pulpit</td>
<td>Arisaema triphyllum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bloodroot</td>
<td>Sanquinaria canadensis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thimbleweed</td>
<td>Anemone cylindrica</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jacobs ladder</td>
<td>Polemonium reptans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zig Zeg Goldenrod</td>
<td>Solidago flexicaulis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grasses/sedges</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little bluestem</td>
<td>Schizachyrium scoparium</td>
<td></td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Prairie dropseed</td>
<td>Sporobolus heterolepis</td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Side oats grama</td>
<td>Bouteloua curtipendula</td>
<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Sprengels sedge</td>
<td>Carex sprengelii</td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td><strong>Upland wildflowers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aromatic aster</td>
<td>Aster</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue-eyed grass</td>
<td>Sisyrrichium montanum</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Butterflyweed</td>
<td>Asclepias tuberosa</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Columbine</td>
<td>Aquilegia canadensis</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Coreopsis</td>
<td>Coreopsis sp.</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Harebell</td>
<td>Campanula rotundifolia</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Prairie onion</td>
<td>Allium stellatum</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Purple coneflower</td>
<td>Echinacea purpurea</td>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Purple prairie clover</td>
<td>Petalostemon purpureum</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Rough blazing star</td>
<td>Liatris aspera</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Spiderwort</td>
<td>Tradescantia occidentalis</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>White prairie clover</td>
<td>Petalostemon candidum</td>
<td></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Shoreland 500 SF</th>
<th>Woodland 3,000 SF</th>
<th>Prairie 1,200 SF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>220</td>
<td>560</td>
<td>545</td>
</tr>
</tbody>
</table>
Cost share grant application
2017

Applicant type (check one) ☑ Homeowner ☐ Non-profit - 501(c)(3)
☐ Business or corporation ☐ Public agency or local government unit ☐ School

Project type (check all that apply) ☐ Raingarden ☐ Vegetated swale ☑ Lake/creek/wetland buffer
☑ Shoreline/bank stabilization ☐ Wetland restoration ☐ Pervious hard surface ☐ Infiltration basin
☐ Conservation practice ☐ Other

Applicant information
Name_ Erik Hansen  Address_ 7935 S Bay Curve
City/State/Zip_ Eden Prairie MN 55347
Phone_ 952-937-2401  Alt phone_ 952-210-9030  Email_ hansen@reumann.com

Primary contact  ☑ Same as applicant (leave blank)
Name_ Address_
City/State/Zip_ Phone_ Alt phone_ Email_

Project location
Address_ 7935 S Bay Curve  City/State/Zip_ Eden Prairie MN 55347
Property Identification Number (PID)_ 17116222240004
Property owner(s)_ Erik & Nichole Hansen

Project summary
Title_ Hansen Restoration Project
Total project cost_ $4707  Grant amount requested_ 3600
Estimated start date_ Summer 2017  Estimated completion date_ Summer 2017 (August 2017)
Sub-watershed_ Mitchell Lake
Is project tributary to a water body? ☐ No, water remains on site  ☑ Yes, indirectly  ☑ Yes, directly adjacent
Is this work required as a part of a permit? ☑ No  ☐ Yes
(If yes: describe how the project provides water quality treatment beyond permit requirements on the next page.)

Project description
Project is to establish a buffer zone/stabilize portion of shore on Mitchell Lake. Currently the area is scrub brush and weeds with some invasive species.

Site visit One of the requirements for a complete application is a site visit from district staff.
Have you had a site visit? ☑ No  ☑ Yes  5/15/17
(If you answered no, please contact staff to schedule one: 952-607-6512)
Project details

Checklist To be considered complete the following must be included with the application.
- location map
- site plan & design schematics
- itemized budget or contractor bid
- project time-line
- proof of property ownership
- plant list & planting plan
(if project includes plants)

Description
Describe the current site conditions, as well as site history, and past management.

Property was overgrown and had invasive species at purchase. Appears to have not been maintained by previous owners.

What are the project objectives and expected outcomes? Give any additional project details.

Long term stabilization of bank and buffer to prevent run off into lake.

List other key participants and their roles

Nicolle Hansen will assist in maintenance and is also an educator who can incorporate information on water stewardship into existing ecological lesson plans.

Which cost share goals does the project support? (check all that apply)
- ★ Improve watershed resources
- ★ Increase awareness of the vulnerability of watershed resources.
- ★ Increase familiarity with and acceptance of solutions to improve waters
- Foster water resource stewardship

How does the project support the goals you checked?

The project will prevent runoff and erosion into Lake Mitchell. The proposed project is in an area of Mitchell Lake that gets substantial boat traffic.
Project details (continued)

Benefits Estimate the project benefits in terms of restoration and/or annual pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help, contact the district cost share program coordinator.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water captured</td>
<td>gal/year</td>
</tr>
<tr>
<td>Water infiltrated</td>
<td>gal/year</td>
</tr>
<tr>
<td>Phosphorus removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Sediment removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Land restored</td>
<td>2,500 ft²</td>
</tr>
</tbody>
</table>

How will you share the project results with your community?

Through meetings and outreach through the Mitchell Lake Association. I am also willing to place signage to show that the project is to help improve water quality.

Are there other projects that could be initiated as a result of this one?

Yes. There is additional shoreline on the property that could be improved.

Evaluation
How will the project be monitored and evaluated?

The project includes monitoring for one year. Additionally, homeowner is planning to attend a Lake Association program on maintenance.

Maintenance agreement
I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines document  Yes

Authorization
Name of landowner or responsible party  Erik Hansen
Signature  Date 5/22/17
Restoration Proposal for:

Mr. Erik Hansen
7935 S Bay Curve
Eden Prairie MN 55347

Proposal Date:  May 14th, 2017

Prepared by:
Bill Bartodziej M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542  bill.b@naturalshore.com
May 14th 2017

Dear Erik:

Thank you again for giving Natural Shore Technologies the opportunity to bid on your project. Below is a Project Summary which outlines our restoration methods and cost breakdown. We would like to emphasize that we tailor our restoration approach to fit your site characteristics and specific objectives. We look forward to developing a partnership with you to produce an exceptional restoration that exceeds your expectations.

We would enjoy the chance to answer any questions that you have regarding this restoration proposal. We take great pride in our reputation and attention to customer satisfaction. After you have read through and are comfortable with the proposed plan and specified cost, please sign the contract that is provided. A down payment and a signed contract are required to book your project.

Best regards,

Bill Bartodziej, M.S.
Senior Restoration Ecologist
Natural Shore Technologies, Inc.
Project Summary

1. Dimensions: 2,500 SF
2. Site assessment and plan development include: detailed site preparation methods, plant selection, and a project timeline and work schedule for our staff. Because most of projects involve the establishment of natural buffers, site drawings and planting plans are not necessary. We have found that over time, native plants will seek out the optimal micro-habitats and flourish. However, project plan drawings can certainly be provide at an additional cost upon client request.
3. Delineate and verify total restoration project area. Mark areas with sedges and other native plant species. These areas will be preserved.
4. Design planting so that flowering will occur at different periods throughout the growing season. Short prairie grass species will be used around the buffer edges closest to the turf. Shorter species will be selected throughout the restoration.
5. Kill all weedy species and turf with an herbicide appropriate for upland or aquatic use. A licensed herbicide applicator from Natural Shore Technologies will apply the treatment.
6. Cut and remove remaining weedy material.
7. Apply a 3” layer of shredded hardwood mulch over selected areas.
8. Lay out plants per plan specifications. We will use 600 – 3” and 4” container plants for your restoration.
9. Interplant areas with native vegetation. In areas with mulch: move mulch aside and plant, a light mulch layer will be returned around the base of the plants to hold moisture. Mulch will not be placed below the normal water level.
10. Site monitoring will be conducted and maintenance will be provided throughout the 2017 growing season.

Natural Shore Technologies, Inc.

Hansen Restoration Project
**Project Cost**

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</tr>
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</tr>
<tr>
<td><strong>TOTAL</strong></td>
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</tr>
</tbody>
</table>

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The only exceptions to this guarantee have to do with plant death due to acts of God (floods or drought) the actions of others (vandalism), or animal herbivory (e.g., geese, muskrats). If these extreme circumstances do happen to occur, we will work with the client at a reduced rate to make all necessary repairs.

Our goal will always be to create successful, long-term partnerships with our clients. Our guarantee is the best in the business, and provides you with a clear understanding that we are here to fully support your ecological restoration endeavor.
Contract

A down payment of $2,353.50 is required to schedule your project. The remainder of the project cost is due at project completion.

Please note that this proposal is valid for 30 days from the date on this Contract.

If you would like to proceed with the above outlined project, please sign the contract below.

Project Name: Hansen Shore Restoration

Client name: Erik Hansen

Signed: ___________________________ Date ___________________________

Contractor: Natural Shore Technologies, Inc.

Signed: ___________________________ Contract Date: Contract Date for 30 Day term

William M. Bartodziej, M.S.
Senior Restoration Ecologist, Natural Shore Technologies

Please return a signed copy of this contract and a check to:

Natural Shore Technologies, Inc.
6275 Pagenkopf Rd.
Maple Plain, MN 55359

Hansen Restoration Project
Benefits of our quality restoration work.

**Conserve Soil**
- Native plants:
  - Build soil health
  - Capture carbon

**Protect Water Quality**
- Deep roots:
  - Promote infiltration
  - Reduce runoff
  - Prevent erosion from runoff & wave action

**Beautiful Landscapes**
- Connect with nature
- Enjoy your view
- Wild experiences in your own backyard

**Create Habitat**
- For birds, fish, insects & other wildlife
- Diverse plant communities
- Food sources
- Attract pollinators

**Educate Future Conservationists**
- Field experience
- Make connections between human impact & ecosystem health
Base Map – Plant Zones

Legend (refer to plant list)

Plant Zone A (Shore zone)

Plant Zone B (upland short grass prairie)
### Hansen Preliminary Plant List

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Zone A - 800 SF</th>
<th>Zone B - 1,700 SF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aquatic Emergents</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrowhead</td>
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<td>Acorus americana</td>
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<tr>
<td><strong>Upland grasses</strong></td>
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<tr>
<td>Little bluestem</td>
<td>Schizachyrium scoparium</td>
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<td>Prairie dropseed</td>
<td>Sporobolus heterolepsis</td>
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<td>Side oats grama</td>
<td>Bouteloua curtipendula</td>
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<td><strong>Upland wildflowers</strong></td>
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<tr>
<td>Aromatic aster</td>
<td>Aster</td>
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<tr>
<td>Blue-eyed grass</td>
<td>Sisyrinchium montanum</td>
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<tr>
<td>Butterflyweed</td>
<td>Asclepias tuberosa</td>
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<tr>
<td>Columbine</td>
<td>Aquilegia canadensis</td>
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<tr>
<td>Coreopsis</td>
<td>Coreopsis sp.</td>
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<tr>
<td>Harebell</td>
<td>Campanula rotundifolia</td>
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</tr>
<tr>
<td>Prairie onion</td>
<td>Allium stellatum</td>
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<tr>
<td>Purple coneflower</td>
<td>Echinacea purpurea</td>
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<tr>
<td>Purple prairie clover</td>
<td>Petalostemum purpureum</td>
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<tr>
<td>Rough blazing star</td>
<td>Liatris aspera</td>
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<tr>
<td>Spiderwort</td>
<td>Tradescantia occidentalis</td>
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<tr>
<td>White prairie clover</td>
<td>Petalostemum candidum</td>
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<td></td>
</tr>
</tbody>
</table>
Cost share grant application

2017

Applicant type (check one) ☒ Homeowner  ☐ Non-profit - 501(c)(3)
☐ Business or corporation  ☐ Public agency or local government unit  ☐ School

Project type (check all that apply)  ☒ Raingarden  ☒ Vegetated swale  ☒ Lake/creek/wetland buffer
☒ Shoreline/bank stabilization  ☐ Wetland restoration  ☐ Pervious hard surface  ☐ Infiltration basin
☐ Conservation practice  ☐ Other

Applicant information

Name  David & Candi O’Hara
Address  8513 Red Oak Drive
City/State/Zip  Eden Prairie, Minnesota 55347
Phone  612-743-9044  Alt phone  612-730-8773  Email  cdowebber@gmail.com

Primary contact  ☒ Same as applicant (leave blank)
Name
Address
City/State/Zip
Phone  Alt phone
Email

Project location

Address  8513 Red Oak Drive
City/State/Zip  Eden Prairie, Minnesota 55347
Property Identification Number (PID)  1711622440018
Property owner(s)  David & Candi O’Hara

Project located in district?  ☒
Tributary to a waterbody?  ☒ Yes, indirectly  ☒ Yes, directly adjacent

Project summary

Title  Red Rock Lake Shoreline Restoration
Total project cost  $6,269.50  Grant amount requested  $3,000.00
Estimated start date  Approx. July - August 2017  Estimated completion date  Approx. July - August 2017
Sub-watershed  Red Rock Lake
Is project tributary to a water body?  ☒ No, water remains on site  ☐ Yes, indirectly  ☒ Yes, directly adjacent

2-3 sentence project description

We plan to have Natural Shore Technologies assess our current lakeshore buffer to preserve beneficial native plants and treat or remove weedy plant species. Once complete, they will apply shredded hardwood mulch over the site and plant several hundred native plants to establish a healthy lake buffer. Site monitoring and maintenance will be provided through the end of 2018 growing season.

Is this work required as a part of a permit?  ☒ No  ☐ Yes
(If yes: describe how the project provides water quality treatment beyond permit requirements on the next page.)

Site visit
One of the requirements for a complete application is a site visit from district staff.
Have you had a site visit?  ☐ No  ☒ Yes
(If you answered no, please contact staff to schedule one: 952-607-6512)
**Project details**

**Checklist** To be considered complete the following must be included with the application.
- Location map
- Site plan & design schematics
- Itemized budget or contractor bid
- Project time-line
- Proof of property ownership
- Plant list & planting plan (if project includes plants)

**Description**
Describe the current site conditions, as well as site history, and past management.

Before we bought the home in April 2015, the home had been rented for about 7 years and very little care seems to have been given to the yard and shoreline. Over the past 2 summers, we removed many buckthorn plants that had taken over the majority of the lakeshore. Along with some remaining buckthorn, there is currently a mix of beneficial native plants and undesirable weedy species along the shore. Lastly, some of the shore area has black plastic landscape sheeting just beneath the turf surface.

What are the project objectives and expected outcomes? Give any additional project details.

The objective of the project is to establish a healthy native lake buffer. The expected outcome is a natural and native buffer that resists the growth of weeds and buckthorn formerly located on the site. Shoreline stabilization should improve the elimination of the buckthorn and the establishment of native shoreline plants. In addition, the plants to be planted will flower at different times during the growing season, providing aesthetic benefits and natural beauty to the lakeshore.

List other key participants and their roles

Our plan is to utilize this project as an educational experience to learn how to identify and maintain desirable native plants in order to establish a healthy buffer between our lawn and Red Rock Lake.

Which cost share goals does the project support? (check all that apply)
- Improve watershed resources
- Increase awareness of the vulnerability of watershed resources
- Increase familiarity with and acceptance of solutions to improve waters
- Foster water resource stewardship

How does the project support the goals you checked?

The restoration of our buffer should improve filtration and quality of water that flows from our yard into Red Rock Lake. By learning how to identify and maintain native plants, we will be more informed and aware of vulnerable watershed resources. Further, this familiarity will equip us to carry this project's water improvement benefits into the future.
Benefits

Estimate the project benefits in terms of restoration and/or annual pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help, contact the district cost share program coordinator.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water captured</td>
<td>gal/year</td>
</tr>
<tr>
<td>Water infiltrated</td>
<td>gal/year</td>
</tr>
<tr>
<td>Phosphorus removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Sediment removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Land restored</td>
<td>~2,000 ft²</td>
</tr>
</tbody>
</table>

Seth Ristow to provide amounts per phone conversation Wednesday, May 11, 2017

How will you share the project results with your community?

As members of the Friends of Red Rock Lake association, we would gladly share details and results of our project with other members at future meetings; sharing before and after photos. We would also welcome shoreline signage promoting RPBCWD Cost Share Grant Program.

Are there other projects that could be initiated as a result of this one?

The northeast portion of our yard still has a large area of buckthorn, which is adjacent to the lake buffer area. Once we restore the lake buffer, it may be logical and beneficial to remove remaining buckthorn and establish native growth to improve the overall health of our surrounding shoreline. Additionally, to improve overall water filtration from the home, we plan to evaluate removing the black plastic landscape sheeting beneath the turf that spans the length of our shoreline and up into the yard.

Evaluation

How will the project be monitored and evaluated?

We plan to live in this home for many years to come, thus have a vested interest in learning how to monitor and maintain our shoreline buffer. Further, Natural Shore Technologies will assist us in that process through the end of 2018 growing season and then on request beyond that timeframe. We plan to learn from their expertise in order to maintain a stable and weed resistant native lakeshore buffer.

Maintenance agreement

I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines document. Yes

Authorization

Name of landowner or responsible party: David D'Hara and Candi D'Hara

Signature: David D'Hara

Date: 5/30/2017
PROPOSED BMP'S

<table>
<thead>
<tr>
<th>BMP ID</th>
<th>BMP TYPE</th>
<th>SIZE (AC-Ft)</th>
<th>COST ESTIMATE</th>
<th>HQ RANK</th>
<th>ESTIMATED GRANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Native Buffer</td>
<td>2,000</td>
<td>54,000</td>
<td>1</td>
<td>Tbd</td>
</tr>
</tbody>
</table>

Notes:
Area of planting should be site verified for precise estimate.

LEGEND
Native Plant Buffer

Cost Share Concept Plan

RILEY Purgatory Bluff Creek Watershed District
Candi and David O'Mara
8513 Red Oak Dr.
Eden Prairie, MN 55347

Cost Share Concept Plan provided by:
Riley Purgatory Bluff Creek Watershed District [RBCWD]
Carver Soil and Water Conservation District [CSWCD]

Date: 4/3/17
Natural Shore Technologies, Inc.

Restoration Proposal for:

Candi & David O'Hara
8513 Red Oak Drive
Eden Prairie, MN

Proposal Date: May 11th, 2017

Prepared by:
Bill Bartodzie M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542 bill.b@naturalshore.com
May 11th 2017

Dear Candi and David:

Thank you again for giving Natural Shore Technologies the opportunity to bid on your project. Below is a Project Summary which outlines our restoration methods and cost breakdown. We would like to emphasize that we tailor our restoration approach to fit your site characteristics and specific objectives. We look forward to developing a partnership with you to produce an exceptional restoration that exceeds your expectations.

We would enjoy the chance to answer any questions that you have regarding this restoration proposal. We take great pride in our reputation and attention to customer satisfaction. After you have read through and are comfortable with the proposed plan and specified cost, please sign the contract that is provided. A down payment and a signed contract are required to book your project.

Best regards,

[Signature]

Bill Bartodziej, M.S.
Senior Restoration Ecologist
Natural Shore Technologies, Inc.
Project Summary

1. Dimensions: 2,000 SF as specified in the plan drawing provided.
2. Site assessment and plan development include: detailed site preparation methods, plant selection, and a project timeline and work schedule for our staff. Because most of projects involve the establishment of natural buffers, site drawings and planting plans are not necessary. We have found that over time, native plants will seek out the optimal micro-habitats and flourish. However, project plan drawings can certainly be provide at an additional cost upon client request.
3. Delineate and verify total restoration project area.
4. Design planting so that flowering will occur at different periods throughout the growing season.
5. Survey site and mark areas for preservation containing patches of native species.
6. Kill all weedy species with an herbicide appropriate for upland or aquatic use. A licensed herbicide applicator from Natural Shore Technologies will apply the treatment.
7. Cut and remove remaining weedy material.
8. Apply a 3" layer of shredded hardwood mulch over the entire project site.
9. Lay out plants into plant zones per plan specifications. We will use 800 – 3-4" container plants for your restoration.
10. Install all plants @ approximately 1.5' centers. Move mulch aside and a light mulch layer will be returned around the base of the plants to hold moisture. Mulch will not be placed below the normal water level.
11. Site monitoring will be conducted and appropriate maintenance will be provided throughout the 2018 growing season.

Natural Shore Technologies, Inc.  O'Hara Restoration Project
**Project Cost**

This bid includes project design and management, all materials, labor, and a two year maintenance plan. This is a comprehensive bid estimate and valid for thirty days. We require a 50% down payment to schedule your project.

**Cost Breakdown**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Design, Project Management, Mobilization, Labor</td>
<td>$1,112.00</td>
</tr>
<tr>
<td>Site preparation, herbicide tris, clearing, mulch</td>
<td>$1,775.00</td>
</tr>
<tr>
<td>Plants - 800 - 3&quot;-4&quot; containers</td>
<td>$2,572.50</td>
</tr>
<tr>
<td>Maintenance - 2 yr plan - discount w shore plan</td>
<td>$800.00</td>
</tr>
</tbody>
</table>

**TOTAL = $6,259.50**

**Site maintenance**

Site maintenance includes three visits per year during the growing season to monitor and conduct activities that will ensure proper restoration establishment. We use the most appropriate, up-to-date maintenance techniques such as targeted herbicide application, hand pulling, mowing, and spot weed whipping to effectively control invasive weeds. Our lead maintenance supervisor has a B.S. in Biology and 10 years of field experience.

*Note we do offer long-term maintenance contracts. Over 90% of our clients use that service.*

---

Natural Shore Technologies, Inc.  
O'Hara Restoration Project
Staff Qualifications

Our company has over 50 years of combined ecological restoration experience. We are a local company that focuses on quality ecological restoration in the Metro area. Our clients vary from private estates on Lake Minnetonka, to large corporate headquarters in Eden Prairie. We also work with many city and county governments and watershed management organizations. We are fully insured.

Our specialty is lakeshore and wetland restoration. We have restored many miles of lakeshore in Minnesota, more than any other company. Please see our portfolio for examples of our restoration projects that include; shorelines, wetlands, prairies, savannas, and rain gardens.

Please see our project photo book at: http://www.blurb.com/books/6034090-natural-shore-technologies-inc-photobook

Natural Shore Technologies Plant Material

We have commercial and retail greenhouses in Maple Plain. Our plants are Minnesota native perennials that will flourish year after year. Utilizing our own plant material in our projects assure quality control. Our wetland and prairie plants are guaranteed to establish during the first growing season. Perennial plants put most of their energy into establishing root systems so please keep in mind that the first year of growth will be mainly underground. You will see some flowering the first year, but significantly more flowering during the second year of establishment.

Information about our retail native plant greenhouses located in Maple Plain is also available at: www.naturalshore.com
Guarantee

We stand by our native plant material and our ecological restoration services.

Native plants that we install are guaranteed to establish during the first growing season. Any plant material that does not make it through the first growing season will be replaced at no charge to the client.

On projects that we install and manage, we will guarantee successful establishment of your ecological restoration within three full growing seasons. This proposal provides a plan for accomplishing the restoration of the project site. If successful establishment does not occur within three growing seasons, all necessary steps will be taken to ensure the eventual success of the project, at no additional charge. For purposes of this guarantee, successful establishment is defined as follows: That the presence of at least 80% of the original seeded or planted species can be found on the site, and that the overall density of vegetation is comprised of no less than 80% native species.

The only exceptions to this guarantee have to do with plant death due to acts of God (floods or drought) the actions of others (vandalism), or animal herbivory (e.g., geese, muskrats). If these extreme circumstances do happen to occur, we will work with the client at a reduced rate to make all necessary repairs.

Our goal will always be to create successful, long-term partnerships with our clients. Our guarantee is the best in the business, and provides you with a clear understanding that we are here to fully support your ecological restoration endeavor.

Natural Shore Technologies, Inc.  
O'Hara Restoration Project
Contract

A down payment of $3,129.75 is required to schedule your project.
The remainder of the project cost is due at project completion.

Please note that this proposal is valid for 30 days from the date on this Contract.

If you would like to proceed with the above outlined project, please sign the contract below.

**Project Name:** O’Hara Shore Restoration  
**Contract Value:** $6,259.50

**Client name:** Candi & David O’Hara

**Signed:**  

**Date:** 5/30/2017

**Contractor:** Natural Shore Technologies, Inc.

**Signed:**

**Contract Date:** Contract Date for 30 Day term

William M. Bartodziej, M.S.  
Senior Restoration Ecologist, Natural Shore Technologies

**Please return a signed copy of this contract and a check to:**  
Natural Shore Technologies, Inc.  
6275 Pagenkopf Rd.  
Maple Plain, MN 55359  

Natural Shore Technologies, Inc.  
O’Hara Restoration Project
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<td>Tussock sedge</td>
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<tr>
<td>Joe-pye weed</td>
<td><em>Eupatorium maculatum</em></td>
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<tr>
<td>Marsh marigold</td>
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<tr>
<td>New England aster</td>
<td><em>Aster novae-angliae</em></td>
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<tr>
<td>Obedient plant</td>
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<tr>
<td>Prairie blazing star</td>
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<td>10</td>
<td></td>
</tr>
</tbody>
</table>

|        |        | 250    | 250    | 300    |
**Cost share grant application**

**2017**

**Applicant type** (check one)  
- [ ] Homeowner  
- [ ] Non-profit - 501(c)(3)  
- [ ] Business or corporation  
- [ ] Public agency or local government unit  
- [ ] School

**Project type** (check all that apply)  
- [ ] Raingarden  
- [ ] Vegetated swale  
- [ ] Lake/creek/wetland buffer  
- [ ] Shoreline/bank stabilization  
- [ ] Wetland restoration  
- [ ] Pervious hard surface  
- [ ] Infiltration basin  
- [ ] Conservation practice  
- [ ] Other [ ]

**Applicant information**

Name: Joseph Taffe  
Address: 17689 Sheffield Lane  
City/State/Zip: Eden Prairie MN 55344

Phone: 952-765-3419  
Alt phone:  
Email: jtnaffاخ@RBC.com

**Primary contact**  
- [ ] Same as applicant (leave blank)

Name:  
Address:  
City/State/Zip:  
Phone:  
Alt phone:  
Email:

**Project location**

Address: 17689 Sheffield Lane  
City/State/Zip: Eden Prairie MN 55344

Property Identification Number (PID):  
Property owner(s): Joseph and Stephanie Taffe

**Project located in district?** [Yes] [No]

**Tributary to a waterbody?**  
- [ ] No  
- [ ] Yes, indirectly  
- [ ] Yes, directly adjacent

**Project summary**

Title: Taffe Wetland Buffer  
Grant amount requested: 3,000

Total project cost: 3,000  
Estimated start date: 7-15-2017  
Estimated completion date: 9-1-2017

Sub-watershed:  
Project located in priority drainage area? [Yes]

Is project tributary to a water body?  
- [ ] No, water remains on site  
- [ ] Yes, indirectly  
- [ ] Yes, directly adjacent

2-3 sentence project description

Wetland buffer project at rear of home. Wetland plant installation and erosion control.

Is this work required as a part of a permit?  
- [ ] No  
- [ ] Yes

(IF yes: describe how the project provides water quality treatment beyond permit requirements on the next page.)

**Site visit**

One of the requirements for a complete application is a site visit from district staff.

Have you had a site visit?  
- [ ] No  
- [ ] Yes

(IF you answered no, please contact staff to schedule one: 952-607-6512)
**Project details**

**Checklist** To be considered complete the following must be included with the application.

- [x] location map  
- [ ] site plan & design schematics  
- [x] itemized budget or contractor bid  
- [x] project time-line  
- [ ] proof of property ownership  
- [x] plant list & planting plan (if project includes plants)

**Description**
Describe the current site conditions, as well as site history, and past management.

Hill at rear of house acts as a buffer to the Edenbrook conservatory/rain gutter creek. The hill is eroding and overgrown by invasive weeds and buckthorn.

What are the project objectives and expected outcomes? Give any additional project details.

Stabilize the slope with erosion control techniques and establish a natural habitat for wildlife; remove invasive species, create natural way for rain water to soak into the ground.

List other key participants and their roles

Natural Shore Technologies

Which cost share goals does the project support? (check all that apply)

- [ ] Improve watershed resources  
- [ ] Increase awareness of the vulnerability of watershed resources.  
- [ ] Increase familiarity with and acceptance of solutions to improve waters  
- [ ] Foster water resource stewardship

How does the project support the goals you checked?

The project is increasing our knowledge of protecting our waters and natural resources, and is helping us become better stewards of the natural habitat near our house.
**Project details (continued)**

**Benefits** Estimate the project benefits in terms of restoration and/or **annual** pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help, contact the district cost share program coordinator.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water captured</td>
<td>gal/year</td>
</tr>
<tr>
<td>Water infiltrated</td>
<td>gal/year</td>
</tr>
<tr>
<td>Phosphorus removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Sediment removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Land restored</td>
<td>1800 ft²</td>
</tr>
</tbody>
</table>

How will you share the project results with your community?

we will and have already begun to socialize our future project with friends and neighbors and will post our progress, goals and pictures on social media.

Are there other projects that could be initiated as a result of this one?

I suspect that our neighbors will wish to improve their wetland buffers as well. Several neighbors have similar issues with invasive growth and erosion.

**Evaluation**

How will the project be monitored and evaluated?

Natural Shore Technologies will maintain and monitor the project and/or we will closely monitor and maintain the project on our own.

**Maintenance agreement**

I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines document. □ Yes

**Authorization**

Name of landowner or responsible party: Joseph Taffie

Signature: ___________________________ Date: 10/10/17
Restoration Proposal for:

Mr. Joe Taffe
17689 Sheffield Ln
Eden Prairie, MN

Proposal Date: June 8th 2017

Prepared by:
Bill Bartodziej M.S., Senior Restoration Ecologist
Natural Shore Technologies, Inc.
612.730.1542  bill.b@naturalshore.com
June 8th 2017

Dear Joe:

Thank you again for giving Natural Shore Technologies the opportunity to bid on your project. Below is a Project Summary which outlines our restoration methods and cost breakdown. We would like to emphasize that we tailor our restoration approach to fit your site characteristics and specific objectives. We look forward to developing a partnership with you to produce an exceptional restoration that exceeds your expectations.

We would enjoy the chance to answer any questions that you have regarding this restoration proposal. We take great pride in our reputation and attention to customer satisfaction. After you have read through and are comfortable with the proposed plan and specified cost, please sign the contract that is provided. A down payment and a signed contract are required to book your project.

Best regards,

Bill Bartodziej, M.S.
Senior Restoration Ecologist
Natural Shore Technologies, Inc.
Project Summary

1. Dimensions: 1,800 SF (as specified in the map provided)
2. Site assessment and plan development include: detailed site preparation methods, plant selection, and a project timeline and work schedule for our staff. Because most of projects involve the establishment of natural buffers, site drawings and planting plans are not necessary. We have found that over time, native plants will seek out the optimal micro-habitats and flourish. However, project plan drawings can certainly be provide at an additional cost upon client request.
3. Delineate and verify total restoration project area.
4. Design planting so that flowering will occur at different periods throughout the growing season. Short prairie grass species will be used around the buffer edges closest to the turf.
5. Kill all weedy species and turf with an herbicide appropriate for upland or aquatic use. A licensed herbicide applicator from Natural Shore Technologies will apply the treatment.
6. Cut and remove remaining weedy material.
7. Apply a 3” layer of shredded hardwood mulch over the entire project site. Install wood fiber logs on slope.
8. Lay out plants into plant zones per plan specifications. We will use 818 -3” container plants for your restoration.
9. Install all plants @ approximately 1.5’ centers. Move mulch aside and a light mulch layer will be returned around the base of the plants to hold moisture. Mulch will not be placed below the normal water level.
10. Site monitoring will be conducted and appropriate maintenance will be provided throughout the 2018 growing season.

Taffe Restoration Project
Project Cost

This bid includes project design and management, all materials, labor, and a two year maintenance plan. This is a comprehensive bid estimate and valid for thirty days. We require a 50% down payment to schedule your project.

Cost Breakdown

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Design, Project Management, Mobilization, labor</td>
<td>$1,112.00</td>
</tr>
<tr>
<td>Site preparation, herb. trts, mulch</td>
<td>$1,710.00</td>
</tr>
<tr>
<td>Plants - 818 - 3&quot; containers</td>
<td>$2,576.70</td>
</tr>
<tr>
<td>Erosion control materials - wood fiber log</td>
<td>$300.00</td>
</tr>
<tr>
<td>Maintenance - 2 yr plan - discount w shore plan</td>
<td>$960.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$6,658.70</strong></td>
</tr>
</tbody>
</table>

Site maintenance

Site maintenance includes three visits per year during the growing season to monitor and conduct activities that will ensure proper restoration establishment. We use the most appropriate, up-to-date maintenance techniques such as targeted herbicide application, hand pulling, mowing, and spot weed whipping to effectively control invasive weeds. Our lead maintenance supervisor has a B.S. in Biology and 10 years of field experience.

*Note we do offer long-term maintenance contracts. Over 90% of our clients use that service.*

Natural Shore Technologies, Inc.  

Taffe Restoration Project
Benefits of our quality restoration work.

**Conserve Soil**
- Native plants:
  - Build soil health
  - Capture carbon

**Protect Water Quality**
- Deep roots:
  - Promote infiltration
  - Reduce runoff
  - Prevent erosion from runoff & wave action

**Beautiful Landscapes**
- Connect with nature
- Enjoy your view
- Wild experiences in your own backyard

**Create Habitat**
- For birds, fish, insects & other wildlife
- Diverse plant communities
- Food sources
- Attract pollinators

**Educate Future Conservationists**
- Field experience
- Make connections between human impact & ecosystem health
**Recommended Shrubs:**
High-bush or Dwarf-bush cranberry, Nannyberry, Pagoda dogwood, Downy arrowwood, Redtwig and Grey dogwood, American elderberry, Chokecherry, American hazelnut, Black chokeberry, Spikenard, Witchhazel, New Jersey Tea, Common ninebark, Smooth sumac, Serviceberry and Blackhaw viburnum

**Recommended Perennials:**
Wild ginger, Mayapple, Solomon’s seal, Lady fern, Ostrich fern, Sensitive fern, Long beaked sedge, Bottlebrush grass, White doll's eye, Red baneberry, Columbine, and Bellwort

**PROPOSED BMP’S**

<table>
<thead>
<tr>
<th>BMP ID</th>
<th>BMP TYPE</th>
<th>SIZE (sq-ft)</th>
<th>COST ESTIMATE</th>
<th>RANK</th>
<th>ESTIMATED GRANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shade Planting</td>
<td>1790</td>
<td>$7,500</td>
<td>1</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**Notes:**
Planting location depends on plant requirements (Soil moisture, soil type, and sun exposure.)
Cost share grant application
2017

Applicant type (check one)  [ ] Homeowner  [ ] Non-profit - 501(c)(3)
[ ] Business or corporation  [ ] Public agency or local government unit  [ ] School

Project type (check all that apply)  [ ] Raingarden  [ ] Vegetated swale  [ ] Lake/creek/wetland buffer
[ ] Shoreline/bank stabilization  [ ] Wetland restoration  [ ] Pervious hard surface  [ ] Infiltration basin
[ ] Conservation practice  [ ] Other

Applicant information
Name  Beth Ross  Address  4557 Timber Woods Lane
City/State/Zip  Minnetonka, MN
Phone  612-227-6725  Alt phone  612-926-3506  Email  beth.ross.2011@gmail.com

Primary contact  [ ] Same as applicant (leave blank)
Name  Address
City/State/Zip
Phone  Alt phone  Email

Project location
Address  4557 Timber Woods Lane
City/State/Zip  Minnetonka, MN  55345
Property Identification Number (PID)
Property owner(s)  Beth & Tim Ross

Project located in district?  [ ]

Tributary to a waterbody?  [ ] No  [ ] Yes, indirectly  [ ] Yes, directly adjacent

Project located in priority drainage area?  [ ]

Project summary
Title  ROSS Hillside Project
Total project cost  $4,025  Grant amount requested
Estimated start date  July 2017  Estimated completion date  July 2018
Sub-watershed  Riley Purgatory Watershed District
Is project tributary to a water body?  [ ] No, water remains on site  [ ] Yes, indirectly  [ ] Yes, directly adjacent

2-3 sentence project description
Stabilize top side of hillside buffer to prevent erosion and handle immediate storm water and gutter drainage.

Is this work required as a part of a permit?  [ ] No  [ ] Yes
(If yes: describe how the project provides water quality treatment beyond permit requirements on the next page.)

Site visit  One of the requirements for a complete application is a site visit from district staff.
Have you had a site visit?  [ ] No  [ ] Yes
(If you answered no, please contact staff to schedule one: 952-607-6512)
Project details (continued)

Benefits Estimate the project benefits in terms of restoration and/or annual pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help, contact the district cost share program coordinator.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
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<tr>
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<tr>
<td>Phosphorus removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Sediment removed</td>
<td>lbs/year</td>
</tr>
<tr>
<td>Land restored</td>
<td>ft²</td>
</tr>
</tbody>
</table>

How will you share the project results with your community?
- Share best practices with neighbors
- Document progress and make information available to community via Nextdoor.com

Are there other projects that could be initiated as a result of this one?
- There are a number of similar infiltration basins in the area that could use an example to follow including neighboring back yards.

Evaluation
How will the project be monitored and evaluated?
I will be overseeing project and will be happy to share results

Maintenance agreement
I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines document [Yes]

Authorization
Name of landowner or responsible party: Elizabeth Ross
Signature: Elizabeth Ross
Date: 6/10/2017
Project details

Checklist To be considered complete the following must be included with the application.

☑ location map
☑ site plan & design schematics
☑ itemized budget or contractor bid

☑ project time-line
☐ proof of property ownership
☐ plant list & planting plan (if project includes plants)

Description
Describe the current site conditions, as well as site history, and past management.

History:
Overgrown slope, young woods, with lots of invasive species including buckthorn and wild garlic mustard.
- Previous owners cleared center section of property to the pond of all underbrush.
- This summer worked on eliminating garlic mustard, buckthorn sprouts

What are the project objectives and expected outcomes? Give any additional project details.

1) Overall project goal - make woodland - pond area healthy and absorb immediate stormwater: suffer drainage

2) Breaking area down into parts

3) Project goal is to replace invasives with more substantial options to improve water quality of drainage and prevent erosion

List other key participants and their roles

- Ecologies - consulting, plants, some work
- Local native plant nurseries for plants
- Family: friends for project planting

Which cost share goals does the project support? (check all that apply)
☐ Improve watershed resources
☐ Increase awareness of the vulnerability of watershed resources.
☐ Increase familiarity with and acceptance of solutions to improve waters
☐ Foster water resource stewardship

How does the project support the goals you checked?

A lot of water drains into my project area located off of Highway 7 and surrounded by a number of houses. By increasing the quality and quantity of native plants it will be fostering water resource stewardship, increasing familiarity of solutions to improve waters, and increasing vulnerability of watershed.
**Cost Estimating Worksheet - Ross Hillside Project**

<table>
<thead>
<tr>
<th></th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total</th>
<th>Potential Source</th>
<th>SF-Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>GeoJute (4' x 70')</td>
<td>1</td>
<td>$50</td>
<td>$50.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood Stakes (2&quot; x 2&quot; x 48&quot; - hardwood)</td>
<td>25</td>
<td>$0.75</td>
<td>$25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coir Rope (1/4&quot; x 425')</td>
<td>1</td>
<td>$10</td>
<td>$10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulch (3&quot; depth)</td>
<td>9 cu/yd</td>
<td>$30</td>
<td>$270</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black dirt/compost/delivery</td>
<td>5 cu/yd</td>
<td>$300</td>
<td>$300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion block</td>
<td>2</td>
<td>$30</td>
<td>$70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Plant: Plugs</td>
<td>528</td>
<td>$0.69+ship</td>
<td>$300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Plant: 3&quot; Pot</td>
<td>215</td>
<td>4.00</td>
<td>$860</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native Tree: 10-20 Gallon</td>
<td>5</td>
<td>100</td>
<td>$500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation</td>
<td>1hr.(s)</td>
<td>$100.00</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design/Plant Purchase</td>
<td>5hr.(s)</td>
<td>$10.00</td>
<td>$50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Prep</td>
<td>45hr.(s)</td>
<td>$10</td>
<td>$450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliveries/Installation Trees</td>
<td>4hr.(s)</td>
<td>$100</td>
<td>$400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery of Plants</td>
<td>60hr.(s)</td>
<td>$10</td>
<td>$600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation of Plants/mulch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A) Total Requested Funds from RPDCWD: $3000.00 (Materials, Tree installation)
B) Total Matching/In-Kind Funds: $1085 (Labor)
C) Project Total: $4085.00
Part Shade/Shade Plant List
Pennsylvania sedge - Carex pensylvanica
Wild Geranium - Geranium maculatum
Wild Ginger - Asarum canadense
Bloodroot - Sanguinaria canadensis
Jacobs Ladder - Polemonium caeruleum
Tall Meadow Rue - Thalictrum dasycarpum
Rue Anemone- Thalictrum thalictroides
Columbine - Aquilegia canadensis
(Save current native plants)

Timeline
July- Aug.: - Prepare top hillside by deck for Pennsylvania Sedge
(remove natives and replant, remove buckthorn sprouts, smother creeping charlie)
September:
- Add compost and erosion blanket and plant Pennsylvania plugs
- plant trees
Oct. : Prepare remaining areas by removing weeds around existing natives, add leaves for spring compost, mulch to prevent erosion
Dec. : Order plants for May
May - Sept : Plant new plants and remove reoccuring weeds.

Erosion Control
To prevent erosion during planting a jute mesh erosion blanket, hardwood mulch, and erosion blocks (Hanes Geo Components 87459 Erosion Block), and large branches will be used until plants take root.
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:**

   The 2017 *Lotus, Silver, Duck, Round, Mitchell, Red Rock Use Attainability Analysis; and Lower Purgatory Creek Stabilization Study* (UAA) identified the Silver Lake subwatershed SiL_2 as a targeted location within the Silver Lake watershed to reduce the phosphorus loading and improve the water quality of Silver Lake. Runoff from approximately 13 acres drains through the location of the proposed stormwater treatment system. The UAA suggested an iron enhanced sand filtration system to treat discharge from Pleasantview Road and Ridge Road. Iron mixed with the filtration media removes dissolved constituents, including phosphorus, from stormwater. The preliminary engineering study will evaluate the feasibility of other stormwater BMPs including infiltration, woodchip bioreactor, and spent lime treatment near the location identified in the UAA. In addition other BMPs recommended by District staff or City stakeholders will be considered in the preliminary engineering study. This assessment will include developing an estimated construction cost and conceptual schematics for up to three of the most feasible BMPs.

2. **Scope of Services:**

   Engineer’s services under this task order shall include:

   **Phase 1. Preliminary Engineering Study and Stakeholder Involvement**

   The preliminary engineering study will include stormwater BMPs that are innovative methods to remove phosphorus. Therefore, it is essential that the Board of Managers, RPBCWD staff, and interested stakeholders understand the potential system effectiveness and the unknowns related to each BMP. Because the proposed project is located on city of Chanhassen property it is critical to obtain City support of the design concept before proceeding. Therefore the following subtasks have been included as part of the preliminary engineering and stakeholder involvement phase.

   **Task 1-1. Kickoff Meeting**

   An initial meeting will be held with RPBCWD and city of Chanhassen staff to discuss each stakeholder’s respective goals for the project and to learn about any key items that must or must not be considered during design.

   **Task 1-2. Site Characterization**

   Site characterization includes gathering information near the location of the proposed BMP. Barr staff will request available public and private utility information, field verify diameters of stormwater pipes, collect photographs of the site and identify the extents of ravine erosion. Information collected during the site characterization will be considered in the preliminary design of stormwater BMPs for the site. Barr will rely on District staff to assist in collection of site specific data such as photographs and measurements. We assume that site survey, soil
borings and wetland delineation tasks would be completed during a subsequent phase of design, should the Managers order the project.

**Task 1-3. Hydraulics Review**

The hydraulics of the proposed stormwater BMP will require careful consideration and design. The design goal will be diversion of low-flows for treatment to meet the phosphorus removal goal, while maintaining sufficient capacity for high flows to prevent impacts to existing structures while preventing further erosion within the drainage swale upstream of Silver Lake. Therefore, the applicable portion of the RPBCWD's SWMM hydrologic and hydraulic model will be updated to evaluate each stormwater BMP. This task includes developing conceptual designs for the inlet structure that diverts stormwater into the BMP, the BMP, and the outlet to the Silver Lake including an evaluation of ravine stabilization recommendations.

**Task 1-4. Phosphorus Removal Review and Preliminary Design**

Estimate phosphorus removal from conceptual designs based. Recommendations for future monitoring of the recommended treatment system will also be made in the Preliminary Engineering Memorandum to evaluate actual pollutant removal effectiveness post-construction. This task includes developing conceptual designs and layouts for each BMP. It is assumed that up to three schematics (i.e., one for each BMP) may be prepared.

**Task 1-5. Design Meeting**

Participate in one preliminary design meeting with city of Chanhassen, RPBCWD staff, and other key stakeholders identified during the preliminary engineering study. During the design meeting, Barr staff will present initial design concepts based on stakeholder feedback on project constraints (e.g., maintenance, wetland impacts, water level fluctuations, resident concerns, etc...) provided during the kickoff meeting. Barr staff will use stakeholder comments to refine the preliminary design of stormwater BMPs.

**Task 1-6. Preliminary Engineering Memorandum**

A brief summary memorandum will be prepared to document the recommended conceptual design, alternative design concepts considered, design constraints, design assumptions, and anticipated phosphorus removals. The memorandum will also present a comparison of estimated construction costs for the recommended stormwater BMP to the costs associated with an iron enhanced sand filtration system presented in the UAA Update. Barr staff assume one round of comments from RPBCWD and city of Chanhassen staff.

**Task 1-7. Public Hearing and Presentation to RPBCWD Board**

Barr staff will present the recommended preliminary design to the Board of Managers, RPBCWD staff, and interested stakeholders, at their regularly scheduled meeting which is assumed to double as the public hearing for the project.

**Assumptions**

We have made several assumptions in preparing the scope of work for each task in this agreement. Assumptions relating to individual work tasks are listed along with the detailed description. However, additional assumptions that do not correspond with a single work task are listed below:

- The design meeting will last approximately 2 hours and will be held at RPBCWD’s office.
- The project site is free from contamination.
• The soils are adequate for construction of a small concrete structure.
• The groundwater table will be estimated based on water levels in Silver Lake.
• Soil borings to better characterize the underlying soil and groundwater elevation will not be collected during this phase of the design.
• Wetland delineation to better quantify wetland impacts will not be completed during this phase of the design.
• The proposed budget includes costs for mileage reimbursement for site visits.

Deliverables:
The following deliverables will be prepared and provided to the RPBCWD for the preliminary engineering study and stakeholder involvement:
• Conceptual schematic(s) of proposed treatment system
• Agenda and meeting notes for one kickoff meeting
• Agenda and meeting notes for one design and stakeholder meeting
• Preliminary engineering memorandum summarizing concepts considered, design constraints, design assumptions, anticipated phosphorus removal estimates, and potential impacted property owners
• Presentation to RPBCWD
• Monthly progress updates

3. Budget:
Services under this Task Order will be compensated for in accordance with the engineering services agreement and will not exceed $19,900 without written authorization by the Administrator.

Barr understands the importance of working as efficiently as possible while providing the services described above. Therefore we will look for cost saving during the entire preliminary design process, such as looking to the city of Chanhassen to supply any existing topographic and soil boring information of the area in an effort to avoid unneeded duplication of past efforts. The following table provides a breakdown of the anticipated cost for major tasks associated with scope of services.

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
<th>Anticipated Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1</td>
<td>Kickoff Meeting</td>
<td>$1,100</td>
</tr>
<tr>
<td>1-2</td>
<td>Site Characterization</td>
<td>$3,300</td>
</tr>
<tr>
<td>1-3</td>
<td>Hydraulics Review</td>
<td>$3,800</td>
</tr>
<tr>
<td>1-4</td>
<td>Phosphorus Removal Review &amp; Preliminary Design</td>
<td>$4,100</td>
</tr>
<tr>
<td>1-5</td>
<td>Stakeholder Design Meeting</td>
<td>$1,600</td>
</tr>
<tr>
<td>1-6</td>
<td>Preliminary Design Memorandum</td>
<td>$5,100</td>
</tr>
<tr>
<td>1-7</td>
<td>Presentation to RPBCWD Board</td>
<td>$900</td>
</tr>
<tr>
<td></td>
<td><strong>Task Order 24 Total</strong></td>
<td><strong>$19,900</strong></td>
</tr>
</tbody>
</table>
4. **Schedule and Assumptions Upon Which Schedule is Based**

The following proposed schedule has been developed assuming authorization in July 2017, and that the District would like construction to occur in 2019/2020:

- Project Kickoff Meeting – week of July 24\textsuperscript{th}  
- Design and Stakeholder Meeting – week of September 18\textsuperscript{th}  
- Preliminary Design Memorandum – week of November 13\textsuperscript{th}  
- Presentation to RPBCWD Board and public hearing – January 3\textsuperscript{rd}

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

**CONSULTANT**

RILEY PURGATORY BLUFF CREEK  
WATERSHED DISTRICT

By_________________________  
Its__Vice President__________

Date:

**APPROVED AS TO FORM & EXECUTION**
Minutes: Monday June 19, 2017
RPBCWD Citizen’s Advisory Committee Monthly Meeting
Location: RPBCWD new offices: 18681 Lake Street, Chanhassen

CAC MEMBERS

<table>
<thead>
<tr>
<th></th>
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<th>E</th>
<th>P</th>
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<tr>
<td>Jim Boettcher</td>
<td>Peter Iverson</td>
<td>E</td>
<td>Matt Lindon</td>
<td>P</td>
<td>Dorothy</td>
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<td></td>
<td></td>
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<td></td>
<td>Palmquist</td>
<td>Pedersen</td>
</tr>
<tr>
<td>Paul Bulger</td>
<td></td>
<td>P</td>
<td>Judy McClellan—Resigned</td>
<td>X</td>
<td>Dennis Yockers—Resigned</td>
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<tr>
<td>Others</td>
<td>Sharon McCotter</td>
<td>P</td>
<td></td>
<td></td>
<td>David Ziegler</td>
</tr>
</tbody>
</table>

Others

Michelle Jordan District Liaison P

Summary of key actions/motions for the Board of Managers: None this month.

Meeting

1. Call to Order: President Pedersen called the June 19 meeting of the CAC to order at 6:37 p.m. Attendance noted above. Also note, two members, Yockers and McClellan have resigned, effective immediately. We thank them for their participation and wish them the best. Note: They will not be replaced until the regular annual appointments.

2. Approval of the Agenda: Agenda approved with no changes. Motion was made (Ziegler/Bulger) and passed.

3. Approval of meeting minutes from May 2017: Motion to approve minutes, as drafted without amendments, made by Ziegler/Lindon and passed unanimously.

4. Matters of general public interest: None, no petitioners present.

5. June Board of Managers meeting, if any questions (Bulger):
   - Paul reported on the June Board Meeting and updated the timeline for the ten-year plan, reflecting a delay. See more on this below.
   - Joan requested that the CAC members who attend the Board Meetings bring details back to us on things we should be aware of that are not covered in sufficient detail in the Board Minutes (e.g. the minutes might say “questions were asked and answered” which doesn’t provide much information).
   - One such topic in June was discussion on alum treatments. There are many factors in terms of the type of sentiments, type of lake, internal and external loading of phosphorous, etc. that impact whether alum treatments are effective and how effective. The headline is that this is a relatively new approach, and there are still a lot of uncertainties and experimentation going on as we learn more about how to do this effectively.
6. Old Business:

   a. Update on 10-year plan process: Michelle

   • Michelle handed out the revised plan timeline, which calls for agency and public review in Nov./Dec. and review and response period in 2018.
   • The CAC will receive the 10-year plan (draft version approved by the board) on September 7. It should consist of all sections. As noted in earlier minutes, Education and Outreach plan is a separate document, an appendix to the plan, but will also be provided at this time.
   • It is the Board’s preference to provide the CAC with the entire draft document they have approved, rather than in pieces, over time.
   • This schedule will give us a little more than two weeks to review it individually and provide our thoughts and questions. Most likely we will use Google Docs for this purpose so we can make identified individual comments and track changes. Dorothy will set us up so it’s a private account; we should all be able to make individual comments, and see each others’ comments. Please keep the document and comments within our group until we’ve come up a consensus.
   • On Sept. 25th the plan will be presented to the CAC at a workshop starting at 5:30 p.m. (see below). By then we should have all read it, made our comments, and be prepared with questions. CAC feedback to the board will be given on the 25th and additional feedback can be provided up to a week later.

b. Adopt a Storm Drain Update (ASD Subcommittee—Sharon and Matt): Matt Lindon

   • Matt updated the CAC on activities. Sharon has contacted a few cities, and gave them their proposal addressing Storm Drains. Matt continues to try to connect with Lori at the City of Eden Prairie. He hopes to get Eden Prairie to agree to work with the CAC, treating their program as a two-year pilot phase. Plans include an event day, and other activities to get cities to coordinate with us and move forward. Dorothy offered to help connect them with Shorewood city staff. CAC provided positive feedback to Matt and Sharon (in abstention) for the work they are doing in this area and agreed that this is an area and a problem area shared by all, where we can have some impact.
   • Michelle shared that RPBCWD new staff member, Terry, told her that from the city’s perspective, he would have been very excited about this program if he had been asked about it when he worked for the city of Chanhassen. Delete sentence here.
   • Note: Per May meeting minutes, Matt and Sharon will share a more fleshed out plan and timeline when it is available and at that point the CAC will determine what and when should be brought before the managers. This might include an overview of the 3-year plan, status update and specifics around the proposed fall clean-up.

7. New Business:

   a. Cost Share Reviews:
Michelle had provided CAC members an advanced copy of 8 applications, along with a summary sheet of staff recommendations.

Discussion:
- Pedersen provide some general comments and feedback on the applications, and will provide her written notes to staff for them to review and incorporate.
- As we have not reached the cap amount for grants this year, we agreed it is logical to keep the application process open, with one more cut-off date, allowing applicants to resubmit plans by around August 15. Michelle will determine the exact day in August and will publicize on the site. Note, this is for residential only.
- Michelle commented that we have many applicants for buffers; that people seem to understand the importance of buffers; we should be on the lookout for more opportunities for rain gardens or curb-cut raingardens. She asked how we can expand best management practices to incorporate this. Joan suggested a handout/flyer or FAQ on the topic of “Is a Rain Garden Right for You?” or something similar. How can we expand best management practices? Nine Mile has some good information on their site that perhaps we could benchmark (e.g. cost per square foot for various actions).
- CAC members reiterated the importance of buffer and rain garden maintenance and plant identification, and need for educational events, like the upcoming Shoreline Maintenance program.
- Motion was made by Ziegler/Palmquist, and was passed, to accept staff recommendations for approval of applications by David, Hansen, O’Hara and Taffe with modifications of Taffe plan as noted (staff recommendations).
- Motion was made by Ziegler/Palmquist and passed, to:
  1) Accept staff recommendations for approval of applications by Ross and Griffin & Farley incorporating staff comments/requests, and input from Pedersen, and
  2) Ask Regan and O’Meara to resubmit with additional information, as staff requested, and incorporating Pedersen’s comments.

b. Date of September Meeting: Due to shift in timeline for availability of 10-year plan documents from the Management Board, the decision was made to move our regular September meeting from the 18th to the 25th, starting at 5:30 p.m. The meeting will begin with a presentation of the plan, followed by discussion. Ziegler made the motion, Palmquist seconded and it carried.

Topics for Next Month: Ten-year plan and idea sharing session to discuss possible activities CAC could spearhead (e.g. a “Water week”), etc.

Adjournment: The motion to adjourn was made by Palmquist, seconded by Ziegler, and passed unanimously. Meeting was adjourned at 8:18.

Upcoming Events
- Regular Board Meeting, Wednesday, July 12, 5:30 pm, District Office
- Next CAC meeting: July 17, 2017, District Office, 6:30 pm
- Watershed tour, 10-year plan highlights, July 31, 4:00 pm

Respectfully submitted by Joan Palmquist, recorder
Friday, July 7, 2017

Re: Item 8a and b – May Treasurer’s report

Dear Managers,

As per District’s Internal Controls and Procedures for Financial Management, the Administrator has reviewed the bills and recommends payment as outlined on page 2 of the Treasurer’s report.

Sincerely,

Claire Bleser
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

Treasurers Report

May 31, 2017

REPORT INDEX

<table>
<thead>
<tr>
<th>page #</th>
<th>Report Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Cash Disbursements</td>
</tr>
<tr>
<td>2</td>
<td>Fund Performance Analysis - Table 1</td>
</tr>
<tr>
<td>4</td>
<td>Multi-Year Project Performance Analysis - Table 2</td>
</tr>
<tr>
<td>4</td>
<td>Grant and Other Income Performance Analysis - Table 3</td>
</tr>
<tr>
<td>5</td>
<td>Balance Sheet</td>
</tr>
<tr>
<td>6</td>
<td>Klein Bank Visa Activity</td>
</tr>
<tr>
<td>7</td>
<td>Opinion Report</td>
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</tbody>
</table>
# RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
## Cash Disbursements
### May 31, 2017

<table>
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<tr>
<th>Accounts Payable</th>
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<tr>
<td>Amy Herbert LLC</td>
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<td>Metropolitan Council Environmental Serv</td>
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<td>Zachary Dickhausen</td>
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**Total Accounts Payable**  
$184,004.94

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<td>Employee Salaries</td>
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<td>Employee Payroll Taxes</td>
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<td>PERA Match</td>
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**Total Payroll Disbursements**  
$27,339.81

**Total Disbursements**  
$211,344.75

### Memos

The 2016 mileage rate is 0.54¢ per mile. The 2017 mileage rate is 53.5¢. Klein Bank Visa will be paid online.
# RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

**Fund Performance Analysis - Table 1**  
**May 31, 2017**

## REVENUES

<table>
<thead>
<tr>
<th></th>
<th>2017 Budget</th>
<th>Month Ended May. 31, 2017</th>
<th>Year to Date May. 31, 2017</th>
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</thead>
<tbody>
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<td>Other Income - Refunds</td>
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<td>Other Income - District Floodplain</td>
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<td>Plan Implementation Levy</td>
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<td>Permit Income</td>
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<td><strong>TOTAL REVENUES</strong></td>
<td><strong>$ 2,874,000.00</strong></td>
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## EXPENDITURES

### Administration

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<th>Year to Date May. 31, 2017</th>
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<td>Engineering Services</td>
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<td>Insurance and Bonds</td>
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<td>Manager Expenses</td>
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<td>Recording Services</td>
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<td><strong>Total Administration Costs</strong></td>
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### District Wide

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<th>Year to Date May. 31, 2017</th>
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<td>Education &amp; Outreach</td>
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<td>Cost Share Program</td>
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<td><strong>Total District Wide Costs</strong></td>
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### Bluff Creek One Water

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<th>Year to Date May. 31, 2017</th>
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<tbody>
<tr>
<td>Fish Passage Bluff Creek</td>
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<tr>
<td>Bluff Creek Tributary</td>
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<tr>
<td>Chanhassen HS reuse</td>
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<td><strong>Total District Wide Costs</strong></td>
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<td><strong>$ 11,675.06</strong></td>
<td><strong>$ 121,264.74</strong></td>
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</table>

### Riley Creek One Water

- Denotes Multi-Year Project - See Table 2 for details
- Denotes the project will be overlapping by one year as it was not fully complete by year end.
- Includes the Master Design items - See Table 2 to details

See Accountants Compilation Report
## Fund Performance Analysis - Table 1

**May 31, 2017**

<table>
<thead>
<tr>
<th>Project Description</th>
<th>2017 Budget</th>
<th>Month Ended May 31, 2017</th>
<th>Year to Date May 31, 2017</th>
</tr>
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<tbody>
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<td>◆ Chanhassen Town Center</td>
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<td>Rice Marsh Lake Aeration</td>
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<td>Lake Riley - CLP Treatment</td>
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<td>Lake Susan - CLP Treatment</td>
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<td>Rice Marsh Lake WQ Improvement - Phase 1</td>
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<table>
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<td>Purgatory Creek Rec Area</td>
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<td>Hyland Lake UAA</td>
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<td>Lotus Lake - Phase 1</td>
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<td>Silver Lake Restoration - Phase 1</td>
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<td>◆ Scenic Heights</td>
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<td><strong>Total Purgatory Creek One Water Costs</strong></td>
<td>$180,000.00</td>
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<table>
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<td>Contingency Reserve</td>
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<table>
<thead>
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<th>TOTAL EXPENDITURES (Deficiency)</th>
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<td>Excess (Deficiency)</td>
<td>$15,000.00</td>
<td>(212,004.42)</td>
<td>(764,487.42)</td>
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</tbody>
</table>

- ◆ Denotes Multi-Year Project - See Table 2 for details
- ◆ Denotes that the project is overlapping by one year as it was not fully complete by year end.
- ◆ Includes the Master Design items - See Table 2 for details

See Accountants Compilation Report
### Multi-Year Project Performance Analysis - Table 2
May 31, 2017

<table>
<thead>
<tr>
<th>Projects</th>
<th>Total Available for Project</th>
<th>2017 Budget</th>
<th>Month Ended May 31, 2017</th>
<th>Year to Date May 31, 2017</th>
<th>Lifetime Costs</th>
<th>Remaining Budget Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>O  ♦  Chanhassen Town Center</td>
<td>63,000.00</td>
<td>0.00</td>
<td>0.00</td>
<td>12,605.56</td>
<td>35,196.56</td>
<td>27,803.44</td>
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<tr>
<td>O  ♦  Fish Passage Bluff Creek</td>
<td>415,000.00</td>
<td>0.00</td>
<td>2,947.42</td>
<td>8,392.43</td>
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<td>O  ♦  Lake Lucy Iron Enhanced</td>
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<td>0.00</td>
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<td>32,385.00</td>
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<td>365,354.56</td>
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<td>250,000.00</td>
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<td>8,727.64</td>
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<td>O  ♦  Community Resilience MPCA</td>
<td>47,000.00</td>
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<td>1,106.00</td>
<td>25,492.55</td>
<td>43,667.68</td>
<td>3,332.32</td>
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<tr>
<td>O  ♦  Scenic Heights</td>
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<td>3,535.00</td>
<td>7,045.60</td>
<td>7,045.60</td>
<td>252,954.40</td>
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<td>O  ♦  Bluff Creek Tributary</td>
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<td>Total Multi-Year Project Costs</td>
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<td><strong>$ 1,753,045.68</strong></td>
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<table>
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<tr>
<th>Programs</th>
<th>Total Available for Project</th>
<th>2017 Budget</th>
<th>Month Ended May 31, 2017</th>
<th>Year to Date May 31, 2017</th>
<th>Lifetime Costs</th>
<th>Remaining Budget Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>O  ♦  Repair and Maintenance</td>
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<td>102,005.00</td>
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<td>O  ♦  Survey and Analysis</td>
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<td><strong>$ 0.00</strong></td>
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<td><strong>$ 115,091.74</strong></td>
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<table>
<thead>
<tr>
<th>Other</th>
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<td>Total Other</td>
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<td>Total Multi-Year Project Costs</td>
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### Grant and Other Income Performance Analysis - Table 3
May 31, 2017

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<tr>
<th>Projects</th>
<th>Total Available for Project</th>
<th>Total Grant Amount</th>
<th>Required District Match</th>
<th>Additional District Funds</th>
<th>Partner Funds</th>
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<tr>
<td>O  ♦  Chanhassen Town Center</td>
<td>$ 63,000.00</td>
<td>$ 48,000.00</td>
<td>$ 12,000.00</td>
<td>$ 3,000.00</td>
<td>$ 0.00</td>
</tr>
<tr>
<td>O  ♦  Fish Passage Bluff Creek</td>
<td>415,000.00</td>
<td>150,000.00</td>
<td>37,500.00</td>
<td>77,500.00</td>
<td>150,000.00</td>
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<td>233,400.00</td>
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<td>91,650.00</td>
<td>0.00</td>
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<tr>
<td>♦  Metropolitan Council - WOMP</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>O  ♦  Chanhassen HS Reuse</td>
<td>250,000.00</td>
<td>200,000.00</td>
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<td>0.00</td>
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<td>♦  Fire Station 2 Water Reuse</td>
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<td>O  ♦  Community Resilience MPCA</td>
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<td>27,000.00</td>
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<td>0.00</td>
<td>10,000.00</td>
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<tr>
<td>♦  Scenic Heights</td>
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<td>50,000.00</td>
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<td><strong>$ 1,521,687.00</strong></td>
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<td><strong>$ 337,150.00</strong></td>
<td><strong>$ 205,000.00</strong></td>
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</table>

☐ Denotes Multi-Year Project - See Table 2 for details
♦ Grants are supplementing the projects - See table 3 for further details
* Denotes the project will be overlapping by one year as it was not fully complete by year end.
‡ Includes the Master Design Items - See Table 2 to details
**ASSETS**

**Current Assets**
- Checking: $3,181,306.68
- Money Market Savings: 75,520.41
- Investments: 0.00

**Total Current Assets:** $3,256,827.09

**Other Assets**
- Security Deposit: 9,744.00
- Prepaid Expenses: 20,593.63
- Delinquent Property Taxes: 17,622.16

**Total Other Assets:** $47,959.79

**Total Assets:** $3,304,786.88

---

**LIABILITIES AND NET ASSETS**

**Liabilities**

**Current Liabilities**
- Accounts Payable: $175,071.20
- Payroll Withholding: 332.80
- Accrued Payroll: 10,816.15
- PERA Withholding: 2,000.22

**Total Current Liabilities:** $188,220.37

**Other Current Liabilities**
- Retainages Payable: 23,786.93

**Total Other Current Liabilities:** $23,786.93

**Long-Term Liabilities**
- Deferred Revenues: $17,622.16
- Unearned Revenue: 132,396.16
- Permit Escrows: 638,250.00

**Total Long-Term Liabilities:** $786,268.32

**Total Liabilities:** $1,002,755.62

**Net Assets**
- Cumulative Fund Balance: $3,068,998.68
- Excess (Deficiency) Current: (764,487.42)

**Total Net Assets:** $2,304,511.26

**Total Liabilities and Net Assets:** $3,304,786.88
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<thead>
<tr>
<th>DATE</th>
<th>PURCHASE FROM</th>
<th>AMT</th>
<th>DESCRIPTION</th>
<th>ACCT #</th>
<th>Total</th>
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<td>30-Apr</td>
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<td>Ikea</td>
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<td>19-Apr</td>
<td>Kowalski's</td>
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<td>9-May</td>
<td>Kowalski's</td>
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<td>Wayfair</td>
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<td>$2,427.27</td>
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**TOTAL PURCHASES**  $3,884.19 $3,884.19

**Total Credits**

**TOTAL DUE**  $3,884.19 $3,884.19
Riley Purgatory Bluff Creek
Watershed District
Eden Prairie, MN

To the Board of Managers:

Accountant’s Opinion

The Riley Purgatory Bluff Creek Watershed District is responsible for the accompanying May 31, 2017 Treasurer’s Report in the prescribed form. We have performed a compilation engagement in accordance with the Statements on Standards for Accounting and Review promulgated by the Accounting and Review Services Committee of the AICPA. We did not audit or review the Treasurer’s Report nor were we required to perform any procedures to verify the accuracy or completeness of the information provided by the Riley Purgatory Bluff Creek Watershed District. Accordingly, we do not express an opinion, a conclusion, nor provide any form of assurance on the Treasurer’s Report.

Reporting Process

The Treasurer’s Report is presented in a prescribed form mandated by the Board of Managers and is not intended to be a presentation in accordance with accounting principles generally accepted in the United States of America. The reason the Board of Managers mandates a prescribed form instead of GAAP (Generally Accepted Accounting Principles) is this format gives the Board of Managers the financial information they need to make informed decisions as to the finances of the watershed.

GAAP basis reports would require certain reporting formats, adjustments to accrual basis and supplementary schedules to give the Board of Managers information they need, making GAAP reporting on a monthly basis extremely cost prohibitive. An outside independent auditing firm is retained each year to perform a full audit and issue an audited GAAP basis report. This annual report is submitted to the Minnesota State Auditor, as required by Statute, and to the Board of Water and Soil Resources.

The Treasurer’s Report is presented on a modified accrual basis of accounting. Expenditures are accounted for when incurred. For example, payments listed on the Cash Disbursements report are included as expenses in the Treasurer’s Report even though the actual payment is made subsequently. Revenues are accounted for on a cash basis and only reflected in the month received.

JMSc, PLLC
St. Louis Park, MN
July 07, 2017
Friday, July 7, 2017

To: Board of Managers

From: Claire Bleser, Administrator

Re: Order Lake Susan Park Pond

Dear Managers,

On April 5th, 2017 a public hearing was held showing the results conducted for Lake Susan Improvement Phase 2: lake Susan Park Pond. A series of options were presented with preference to option 4a: a pump and treat with iron enhanced sand and stormwater reuse on the ballfield. Their was discussion for item 4b which would include reuse on the Emmerson campus. Staff has not been successful in getting Emmerson interested in partnering on this project. The City of Chanhassen has indicated that they would contribute $50,000 for this project. The District received a grant for a total of $233,400 and has levied $150,000 previously. Currently, the District has approximately $400,000 to implement the project, which includes the City of Chanhassen financial support. In order to implement alternative 4a, we would need an additional $80,000. To implement option 4b, an additional $256,000 would be needed.

Staff recommends that we order the project under scenario 4a with an additional $80,000 to be leveraged in 2018 to finish implementing the project. Staff recommends approval of Task Order 13 b.

Sincerely,

Claire Bleser

Manager ____________, seconded by Manager ____________ move to order Lake Susan Park Pond with the recommendation of leveraging additional funds ($80,000) in 2018 and approve Task Order 13 b.
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:**
   Barr will work with District staff to complete the final engineering, design and permitting services to implement a water quality improvement project at the park pond location, immediately northwest of Lake Susan, consistent with the recommendations of the 2013 Lake Susan Use Attainability Analysis report and the 2017 Engineer’s Report-Lake Susan Park Pond Watershed Treatment and Stormwater Reuse Enhancements Project.

   Based on the results of the engineering assessment, potential site impacts, water conservation potential and cost per pound of phosphorous removed, Conceptual Design 4a — pump and treat using an iron enhanced sand bench, stormwater reuse for the Lake Susan Park ballfield and pond outlet retrofit, was recommended as the most feasible and cost-effective BMP that aligns with the goals presented in the awarded Clean Water Legacy grant and provides multiple environmental benefits. While Concept Design 4a is not the lowest cost per pound of phosphorus removed, it provides the added benefit of eliminating the use of more than 610,000 gallons of drinking water annually to irrigate the ballfields. The phosphorus reduction estimated for the reuse concepts, including 4a, could potentially be further enhanced by using the pond water instead of the city drinking water supply because the city water is treated with polyphosphate for pipe corrosion protection and possibly results in higher phosphorus concentrations in the applied water than occurs in the pond, thus increasing the phosphorus load applied to the ballfield. The engineering assessment was based on information collected during a review of available data and preliminary site characterization. Collection of more data and additional site-specific information (e.g., soil borings) that become available if the Board orders the project may result in modifications to the proposed configuration, cost, and function of the iron enhanced sand filtration system to maximize the volume of water treated while minimizing site impacts. A significant portion of the funding ($233,400) for this project will be provided through a Projects and Practices grant from the Board of Water and Soil Resources (BWSR) Clean Water Funds (CWF).

   There are several proposed Project tasks to meet the Project goals including project development and coordination, design of the stormwater reuse system, bidding, and construction administration and observation. The work involved with each Project Task is outlined below. Barr’s activity is divided into three phases:

   - **Phase 1:** Preliminary Feasibility Design (Past Task Order 13a-complete)
   - **Phase 2:** Final Design and Permitting (This Task Order 13b);
   - **Phase 3:** Construction Administration Services (This Task Order 13b).

2. **Scope of Services:**
   Engineer’s services under this task order shall include:
Phase 1 - Project Stakeholder Agreement

Task 1.1: Develop Stakeholder Agreement
RPBCWD staff will coordinate with the city of Chanhassen to assist RPBCWD legal counsel in developing a draft term sheet between all stakeholders regarding the Lake Susan Park Pond Project design, construction and maintenance. This task will be led by RPBCWD staff and counsel. Barr will provide up to 12 hours of technical support during the development of the agreement. After meeting with the City to discuss comments on the draft cooperative agreement term sheet, a draft agreement will be developed for City and Board consideration. If feedback is received the agreement will be finalized. The agreement should specify the responsibilities of each organization throughout Tasks 2, 3, and 4 of the project as described below, as well as the long term-term inspection and maintenance of the reuse system and IESF. The agreement should also specify the financial responsibilities of each organization as it relates to the project.

Meetings:
- One (1) meeting attended by RPBCWD and city of Chanhassen

Deliverables:
- Draft stakeholder agreement (by RPBCWD counsel)
- Final stakeholder agreement to be completed (by RPBCWD counsel)

Phase 2 - Final Design and Permitting

Task 2.1: Data collection and review
A design kickoff meeting will be held at the District office with RPBCWD and Chanhassen staff. The intent of this meeting is to work with stakeholders to review the design standards as it relates to the proposed IESF, pond outlet modifications, and stormwater reuse and irrigation system. This may also include a site visit to see the existing irrigation, storm water retention pond, and outlet infrastructure. We are also proposing to meet with several water reuse vendors to inform the design and value engineer the system to improve overall performance while looking for ways to reduce project costs.

Barr will perform a topographic and utility survey of the current irrigation system (irrigation box/connections/valves), stormwater management system as it relates to the existing stormwater pond proposed for reuse, the stormwater pond area and outlet structure, the location of the potable water supply system to the site, and the location of other utilities on the site will need to be performed. A soil boring will also need to be collected to support the design.

It is assumed that RPBCWD staff will collect a water quality grab sample from Lake Susan Park Pond to have tested for a variety of water quality parameters of interest to help inform the system design. These parameters include: TSS, Turbidity, Chlorides, Ammonia, Nitrate, Phosphorus (TP), E. coli, BOD, pH, TDS, Sodium, Boron, Calcium, Magnesium, specific conductivity, iron, and total alkalinity.

Meetings:
- One (1) design kick-off meeting attended by Barr, RPBCWD, and city of Chanhassen. This meeting will include a facility walk-through and review of design standards/schedule.
- One (1) meeting with potential reuse vendors, RPBCWD, and City to discuss project design and implementation efficiencies.

Deliverables:
• Topographic and utility basemap of the project area/area impacted by the proposed reuse system. MnDNR 2011 LiDAR will be considered in areas outside of the project area.
• Up to one soil boring at the site.

Task 2.2: Permitting Assistance
Because the work potentially involves work on the bank of Riley Creek we are assuming that a MnDNR public waters work permit is will required.

Depending on the amount of disturbance, a city of Chanhassen permits for excavation/grading will likely be needed along with a permit for the installation of utilities/underground construction permit for any work on City property. Additionally, RPBCWD erosion and sediment control, buffer, shoreline and streambank stabilization, waterbody crossings and structures, and stormwater management permits may also be needed, depending on the amount of disturbance.

Deliverables:
• MnDNR Public Water Work permit submitted to MnDNR (by Barr).
• City of Chanhassen & RPBCWD permits

Task 2.3: Preparation of Construction Plans and Specifications
After the site visit, review of the existing system information, and collection of survey data, Barr will prepare design drawings and specifications for construction and bidding. We anticipate there being one design review meeting with Barr, RPBCWD, and city of Chanhassen staff at approximately 30, 60, and 90% design. We have estimated that the plan set will be 12 sheets and these drawings will be provided electronically (PDF format) approximately one (1) week prior to the scheduled design review meeting. We have assumed that the design review meeting will occur at the RPBCWD offices and will last up to one (1) hour.

Nearly complete plans and specs (90%) could be compiled for Board review discussion at the December 2017 regular meeting. Complete (100%) design plans and specifications could be available at the January 2018 meeting, where the Board could authorize the solicitation of bids. The timing will be coordinated with the Administrator.

Barr will provide technical specifications and a project bidding form for the project. Barr will develop technical specification sections using Construction Specifications Institute (CSI) format including all “upfront” sections such as general conditions, supplementary conditions, summary of work and those related to bidding and contracting. Barr assumes specifications will be in CSI format with Engineers Joint Contract Documents Committee (EJCDC) general conditions. Barr reserves the right to modify budget if technical specification format is other than stated in this paragraph. It is assumed that District Counsel will provide one round of edits and review comments.

Task 2.4: Project Management
Project Management will continue to be a key component to help meet project milestones will help to ensure the work meets the expectations of District staff and other stakeholders, and that it is completed in a satisfactory manner, within the project timeline and within the agreed-upon budget.

Barr will continue to provide updates to the project team that document project progress and coordinate tasks. We will provide monthly progress reports and budget status updates as part of the monthly invoicing process. We will solicit feedback from you on an ongoing basis to ensure clear and timely communication.
Meetings:
- Three (3) meetings between Barr, RPBCWD, and city of Chanhassen to review draft design drawings (30, 60 & 90% design).
- One (1) meeting Barr and RPBCWD to present the (90%) design to the RPBCWD board for approval and authorization to bid.

Deliverables:
- Draft drawing set (30 and 60%) and specifications submitted to RPBCWD, and city of Chanhassen (by Barr)
- 90% submittal set for authorization to issue for bid at RPBCWD board meeting (by Barr) and submittal to RPBCWD, and city of Chanhassen for review and comment (by Barr)
- Final drawing set (100%) and specifications
- Engineer’s Estimate of Cost developed (by Barr)

Phase 3 – Bidding /Bid Opening/Recommendation to Board
Barr will lead the bidding and procurement process by preparing the bid list and bidding documents for distribution, by attending the pre-bid meeting, responding to comments during the bid period and issuing addendums as necessary, holding the bid opening, and reviewing and compiling the bid results. Barr will also assist with procurement of the stormwater reuse system equipment, as specified. The required bidding period is 21 days and the project would be advertised in the District’s legal papers.

The bid process is anticipated from early January 2018 through February 2018, with the approval of the recommended bidder possibly at the February RPBCWD board meeting. Notice of Award would follow the RPBCWD meeting with a Notice to Proceed potentially by early March 2018.

Meetings:
- One (1) pre-bid meeting attended by Barr Engineering and RPBCWD.
- One (1) bid opening

Deliverables:
- Compiled bid package (by Barr)
- Advertisement for bid (by Barr)
- Bid addendums and response to questions (by Barr)
- Bid tab following bid submittals (by Barr)
- Recommended bidder to RPBCWD Board (by Barr)
- Review contractor submittals and draft Notice of Award/Notice to Proceed

Phase 4 - Construction administration and observation
Barr will lead construction administration and observation of the project with the following services:
- Review shop drawings, fabrication drawings, and product data submittals and coordinate with RPBCWD and city of Chanhassen, as needed
- Review requests for information (RFIs) and issue design bulletins and addendums, as needed
- Complete a punch list walk-through with RPBCWD and the contractor
- Submit record drawings to RPBCWD upon project completion
- Assistance to RPBCWD with final paperwork and reporting to BWSR
The notice to proceed is expected in late February with construction beginning in early June. The timeframe prior to construction is to allow for materials procurement. Specifics related to construction schedule will need to be coordinated with the city of Chanhassen. The timeline allows for a 7 month construction window to provide adequate time to procure the required equipment, contractor scheduling flexibility, and site restoration in the fall during cooler weather conditions. These should help increase the competitiveness of contractor bids. While the timeline allows for a 7 month construction, the actual work should be coordinated with the successful contractor to minimize the actual duration and timing of site disruption. We have assumed a six (6) week active construction period that would require site observation.

RPBCWD, Barr, and the city of Chanhassen will need to work closely during the entire process to achieve a successful project. Following completion of construction, a construction documentation memorandum will be developed to document construction activities, RFIs, any change orders, as-built drawings and operations & maintenance procedure.

Meetings:
- One (1) preconstruction meeting in late May 2018.

Deliverables:
- Reviewed and redlined construction documents such as shop drawings, RFIs, etc. completed by the end of construction (by Barr)
- Record drawings, including survey of key components to be maintained throughout construction (by Barr)
- O&M manual including product manuals etc. (by Barr)
- Pay applications from contractor(s)
- Change orders (if necessary), up to two
- Monthly update memo will be provided via email describing project progress and remaining budget (by Barr)
- Final construction memo summarizing the construction activities, changes during construction and final project.

3. Assumptions:
We have made several assumptions in preparing the scope of work for each work item in this agreement. Assumptions relating to individual work tasks are listed along with the detailed description. However, additional assumptions that do not correspond with a single work task are listed below:
- A single soil boring is needed for the site
- Post-construction survey will not be completed because the construction documents will require the contractor to supply information
- One presentation for the District Board prior to final approval before bidding the project.
- Meetings with stakeholders will last approximately 1 hour and will be held at RPBCWD’s office.
- RPBCWD staff will collect any needed water quality samples
- The project site is free from contamination.
- An EAW/EIS will not be needed for this project.
- Total time required to complete construction administration and documentation will not exceed 100 hours, based on an assumed total construction timeframe.
- USACE permit is not required.
• No property acquisition or easements will be needed for the project. If property acquisition/easements are needed, those services will be coordinated with the District Administrator on a time and expense basis.
• The proposed budget includes costs for mileage reimbursement for site visits and site observation.
• The District and City will provide all available and applicable GIS and CAD files to Barr in an electronic format.
• Comments on the 30, 60, 90% design will be provided within one week of supplying the information.
• Permit fees will be paid for directly by the District. If needed to expedite the application process, Barr could pay the permit fees and charge that expense to the District as needed. This effort will be coordinated with the Administrator on a time and expense basis.

4. **Budget:**

Services under this Task Order will be compensated for in accordance with the engineering services agreement and will not exceed $122,200 without written authorization by the Administrator. The estimated fee for each task is:

<table>
<thead>
<tr>
<th>Phase</th>
<th>Subtask</th>
<th>Anticipated Budget</th>
<th>Tentative Completion</th>
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<tr>
<td><strong>Phase 1 - Project Stakeholder Agreement</strong></td>
<td></td>
<td></td>
<td>Oct-17</td>
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<tr>
<td>Meeting</td>
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<td>Technical Assistance</td>
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<td><strong>Phase 2 - Final Design, Permitting and Project Management</strong></td>
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<td>Mar-18</td>
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<td>Meetings (up to 4)</td>
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<tr>
<td>Data collection and review</td>
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<td>Permitting Assistance</td>
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<td>Preparation of Construction Plans (30, 60, 90, 100%) and Specifications</td>
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<td>Project Management</td>
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<td><strong>Phase 3 – Bidding /Bid Opening/Recommendation to Board</strong></td>
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<td>Apr-18</td>
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<tr>
<td>Meetings (up to 3)</td>
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<td>Bidding Advertisement &amp; Contractor Questions</td>
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<tr>
<td>Review Bids/Recommendation to Board</td>
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<td>$1,000</td>
<td></td>
</tr>
<tr>
<td>Review Successful Contractor Submittals and Notice of Award &amp; Notice to Proceed</td>
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<td>$1,500</td>
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<tr>
<td><strong>Phase 4 - Construction administration and observation</strong></td>
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<td>Dec-18</td>
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<tr>
<td>Meetings (up to 2)</td>
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<td>Site observation during construction (assume 12 hrs per week for 6 weeks)</td>
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<td>Submittals Review</td>
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<tr>
<td>Record Drawings - Key survey shots only</td>
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<tr>
<td>Operation &amp; maintenance manual</td>
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<td>$6,100</td>
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<tr>
<td>Final construction memo</td>
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<td><strong>Task Order 13b Total Budget</strong></td>
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<td></td>
<td><strong>$122,200</strong></td>
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</table>
5. **Schedule:**
The proposed schedule (above) is based on the substantial construction occurring during the summer of 2018, with final site restoration being completed in fall 2018. The schedule outlined above assumes project initiation will occur in July 2017. The schedule may be modified depending on actual initiation of project work, permit approvals, and stakeholder coordination efforts.

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

**CONSULTANT**

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

By_________________________  By_________________________

Its  Vice President  Its_________________________

Date: Date:

*APPROVED AS TO FORM & EXECUTION*

________________________________
Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-030

Received complete: May 19, 2017

Applicant: RT Minneapolis Franchisee, LLC, Dave Baltar and Anchor Bank, Dennis Nisler

Consultant: Civil Site Group, David Knaebel

Project: Elevate Apartments – Construction of 222 apartments combined with approximately 12,000 square feet for commercial retail and associated site infrastructure located near the intersection of Prairie Center Drive and Highway 212. Stormwater reuse, green roof, permeable pavement and a tree trench system will provide stormwater quantity, volume and quality control.

Location: 12900 Technology Drive, Eden Prairie, MN

Reviewer: Scott Sobiech, PE- Barr Engineering

Rules: Applicable rules checked

<table>
<thead>
<tr>
<th>Rule</th>
<th>Description</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>B</td>
<td>Floodplain Management</td>
<td>Rule H: Appropriation of Public Waters</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Erosion and Sediment Control</td>
<td>Rule I: Appropriation of Groundwater</td>
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</tr>
<tr>
<td>C</td>
<td>Erosion Control Plan</td>
<td>Rule J: Stormwater Management</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Wetland and Creek Buffers</td>
<td>Rule K: Variances and Exceptions</td>
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<tr>
<td>F</td>
<td>Shoreline/Streambank Stabilization</td>
<td>Rule L: Permit Fees</td>
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<tr>
<td>G</td>
<td>Waterbody Crossings</td>
<td>Rule M: Financial Assurances</td>
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Rule Conformance Summary

<table>
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<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>C</td>
<td>Erosion Control Plan</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition C1.</td>
</tr>
<tr>
<td>J</td>
<td>Stormwater Management Rate</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Volume</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water Quality</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low Floor Elev.</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>See Comment</td>
<td>See Rule Specific Permit Condition J1.</td>
</tr>
<tr>
<td>K</td>
<td>Variances and Exceptions</td>
<td>See Comment</td>
<td>Variance request from 2 feet of freeboard. See Rule Specific Permit Condition K1.</td>
</tr>
<tr>
<td>L</td>
<td>Permit Fee</td>
<td>See Comment</td>
<td>$1,500 was received on April 25, 2017. Additional $2,663 for excess cost recovery</td>
</tr>
<tr>
<td>M</td>
<td>Financial Assurance</td>
<td>See Comment</td>
<td>The financial assurance has been calculated at $497,700.</td>
</tr>
</tbody>
</table>
Project Description

The project proposes the construction of a 222 unit apartment building combined with approximately 12,000 square feet of commercial retail and associated site infrastructure located near the intersection of Prairie Center Drive and Highway 212 in Eden Prairie, MN. The subject property is currently a vacant restaurant building, bank building and parking lots with approximately 2.4 acres of existing impervious surfaces. The site also contains several large at grade electrical transformers and associated underground electrical line as well as existing municipal utilities (e.g., sanitary sewer, watermains, etc.). The site is bordered on the north and east sides by the conditionally approved Southwest Light Rail Transit line and associated stormwater management facilities. Stormwater reuse, green roof, permeable pavement, sump manhole with SAFL baffle, and a tree trench system will provide storm water quantity, volume and quality control. The project site information is summarized below:

1. Total Site Area: 3.16 acres
2. Existing Site Impervious Area: 2.4 acres (104,544 square feet)
3. Post Construction Site Impervious: 2.25 acres (98,010 square feet)
4. New (Increase) in Site Impervious Area: -0.15 acres (-6,534 square feet) (6.25% decrease in site impervious area)
5. Disturbed impervious surface: 2.4 acres (104,544 square feet) (100% of existing site impervious area)
6. Total Disturbed Area: 3.12 acres

Exhibits:

2. Design Plan Sheets (Sheets 1-20) dated April 7, 2017 (revised June 5, 2017).
4. MIDS Model received May 19, 2017 (revised June 15, 2017).
5. P8 Model received May 19, 2017 (revised June 1, 2017)
6. Updated Model Information Memo for updated P8 Model dated June 2, 2017
8. Bathymetric data for offsite pond received May 19, 2017 (revised June 15, 2017)
10. Updated HydroCAD models for proposed tree trench and permeable pavement section received June 15, 2017
12. Addendum to Geotechnical Exploration Report by Haugo GeoTechnical Services dated May 18, 2017
15. Email Correspondence from Eden Prairie for work within public right of way dated June 2, 2016

Rule Specific Permit Conditions

Rule C: Erosion and Sediment Control

Because the project will alter 3.12 acres (135,907 square feet) of land-surface area the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control plan prepared by Civil Site Group includes installation of silt fence, inlet protection for storm sewer catch basins, a rock construction entrance, placement of a minimum of 6 inches of topsoil, decompaction of areas compacted during construction, and retention of native topsoil onsite. To conform to the RPBCWD Rule C requirements the following revisions are needed:

C1. The Applicant must provide the name and contact information of the individual responsible for erosion control at the site. RPBCWD must be notified if the responsible individual changes during the permit term.

Rule J: Stormwater Management

Because the project will alter 3.12 acres (135,907 square feet) of surface area, approval under the RPBCWD Stormwater Management Rule is required. The proposed land-disturbing activities will disturb 100% of the existing impervious area (i.e., more than 50 percent of the existing impervious area), therefore under the paragraph 2.3 redevelopment framework, the RPBCWD stormwater management criteria apply to the entire project site.

The developer is proposing a combination of stormwater reuse, green roof, permeable pavement, sump manhole with SAFL baffle, and a tree trench system to provide the required rate control, volume abstraction and water quality management on the site.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations.
where stormwater leaves the site. The Applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in the table below.

<table>
<thead>
<tr>
<th>Modeled Discharge Location</th>
<th>2-Year Discharge (cfs)</th>
<th>10-Year Discharge (cfs)</th>
<th>100-Year Discharge (cfs)</th>
<th>10-Day Snowmelt (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ex</td>
<td>Prop</td>
<td>Ex</td>
<td>Prop</td>
</tr>
<tr>
<td>DA1</td>
<td>10.2</td>
<td>9.7</td>
<td>16.0</td>
<td>15.6</td>
</tr>
<tr>
<td>DA2</td>
<td>0.7</td>
<td>0.3</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>DA3</td>
<td>0.7</td>
<td>0.3</td>
<td>1.2</td>
<td>0.5</td>
</tr>
<tr>
<td>DA4</td>
<td>0.6</td>
<td>0.6</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>DA5</td>
<td>0.3</td>
<td>0.3</td>
<td>0.6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

The proposed project conforms to RPBCWD Rule J, Subsection 3.1.a.

**Volume Abstraction**

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from all impervious surface of the parcel. An abstraction volume of 8,984 cubic feet is required from the 2.25 acres (98,010 square feet) of impervious area on the project for volume retention. The Applicant proposes stormwater reuse, green roof, permeable pavement and a tree trench system to abstract runoff from the site.

The following information was considered during the abstraction analysis:

- Soil borings performed by Haugo Geotechnical Services show that soils in the project area consist primarily of about 10 to 15 feet of existing Fill soils over soft organic swamp deposits and/or alluvial and glacially deposited soils that extended to the termination depths of the borings. The MN Stormwater Manual indicates an infiltration rate of 0.06 inches per hour for such soils. Soil borings performed by Haugo Geotechnical Services groundwater was encountered in the soil borings at depths ranging from about 14 to 30 feet below the ground surface corresponding to elevations ranging from about 821 to 803.5 feet. Two piezometers installed at the site indicate groundwater is at elevations ranging from about 825.5 to 826.5 feet. This indicates that groundwater is at least 3 feet below the bottom of the proposed permeable pavement area (Rule J, Subsection 3.1.b.ii).
- The applicant’s geotechnical engineering report indicates that the concentration of infiltrated runoff in the underlying organic soils could result in future pavement settlement. The
introduction of additional water to these soils could cause them to lose strength due to the increase in moisture content unless underdrains are included in the design. The inclusion of underdrains would result in runoff being discharged from the site rather than abstracted on-site. An underground infiltration system is not feasible to construct due to the high cost of structural supports that would be necessary because of the low strength soils present at this site.

- The site and adjacent property are fully developed with minimal green space.
- The use of permeable pavement was reviewed to determine if it would be a feasible option for stormwater infiltration. The applicant's geotechnical engineer identified only one small area at the southern end of the site where pervious pavement could be installed because the soil boring data indicate the absence of organic swamp deposits at this location. The pervious pavement would cover 4,390 square feet and provide 539 cubic feet of abstraction.
- Water reuse was found to be a feasible option to irrigate the majority of the site pervious area (19,652 square feet). The proposed reuse system will provide an abstraction volume of 639 cubic feet.
- To provide additional abstraction volume from the site the applicant is proposing 3,500 square feet of green roof. The green roof areas provide 321 cubic feet of abstraction.
- The final abstraction method proposed for the design is a 2,160 square foot tree trench to provide 230 cubic feet of abstraction. The applicant is proposing to line the tree trench with an impermeable plastic liner to prevent water from reaching the groundwater and limit the potential for groundwater mounding concerns. The primary abstraction method would be evapotranspiration from the vegetation.
- The applicant investigated gray water cistern and reuse to provide additional abstraction but determined the system to be infeasible due to cost.

The Engineer concurs that soil information showing the majority of this site is underlain with fill over organic swamp deposits and the presence of the existing large electrical transformers and associated underground utilities indicate that the abstraction standard in Subsection 3.1 of Rule J cannot practicably be met, the site is considered a restricted site and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J. For restricted sites, Subsection 3.3 of Rule J requires rate control in accordance with Subsection 3.1a and that abstraction and water quality protection be provided in accordance with the following sequence: (a) Abstraction of at least 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or (b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or (c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c. Because of low structural strength of the underlain organic deposits the abstraction standard in Subsection 3.3a of Rule J cannot practicably be achieved. The stormwater management facilities described above have been maximized based on the available green space, suitable roof area, and...
suitable soil areas for pervious pavement. The proposed project does not provide 0.55 inches of abstraction from the disturbed and new impervious on the site (98,010 square feet) in accordance with Rule J, subsection 3.3a because of the various site restrictions discussed above.

<table>
<thead>
<tr>
<th>Required Abstraction Depth (inches)</th>
<th>Required Abstraction Volume (cubic feet)</th>
<th>Provided Abstraction Volume (cubic feet)</th>
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</thead>
<tbody>
<tr>
<td>0.55</td>
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<td>1,783</td>
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</tbody>
</table>

Because the proposed water reuse irrigation system requires consistent use at a specified rate to meet District requirements, performance monitoring for the site will be required to ensure that the project is able to meet the RPBCWD volume abstraction requirement as has been proposed. In accordance with Rule J, Subsection 2.6 performance monitoring, and as a stipulation of issuing a permit for this project, the Applicant must submit an operations plan and monitor the proposed irrigation system to determine the ability of the system to achieve the estimated volume abstraction as presented in the design. The operations and monitoring program must be included in the maintenance declaration that is recorded with the County. The recorded reuse volume must be submitted to the RPBCWD on a yearly basis. If it is determined that the system is not performing as designed, the Applicant will need to submit a revised design and construction plan to demonstrate that the volume abstraction standard will be achieved.

The District Engineer agrees with provided sequencing demonstrating volume abstraction is proposed to the maximum extent practicable, thus conforming to the volume control requirements in Rule J, Subsection 3.3b.

**Water Quality Management**

Subsection 3.1.c of Rule J requires the Applicant provide for at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff. The Applicant is proposing stormwater reuse, green roof, permeable pavement, sump manhole with SAFL baffle, a tree trench system, and an existing off-site wet detention basin constructed when the site was initially developed in the 2000’s to achieve the required TP and TSS removals. The existing pond was surveyed by Wenck and Associates in 2017 and modeled in P8 to estimate the existing treatment capacity water quality treatment of runoff from 11.26 acres of existing impervious surface, including the existing 2.4 acres of imperious surface of the applicant’s site. The modeling demonstrates the existing detention pond provides 88.4% TSS removal and 56.3% TP removal from the applicant’s site, thus indicating that additional water quality treatment is needed to meet RPBCWD criteria. The Applicant is proposing stormwater reuse, green roof, permeable pavement, sump manhole with SAFL baffle, a tree trench system to provided the additional water quality treatment.
needed. The table below summarized the water quality treatment provided for the site. Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.c.

<table>
<thead>
<tr>
<th>Pollutant of Interest</th>
<th>Regulated Site Loading (lbs/yr)</th>
<th>Required Load Removal (lbs/yr)(^1)</th>
<th>Provided Load Reduction (lbs/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>805</td>
<td>724.5 (90%)</td>
<td>728.9 (90.6%)</td>
</tr>
<tr>
<td>Total Phosphorus (TP)</td>
<td>4.43</td>
<td>2.68 (60%)</td>
<td>2.83 (63.9%)</td>
</tr>
</tbody>
</table>

\(^1\)Required load reduction is calculated based on the removal criteria in Rule J, Subsection 3.1c and the new and reconstructed impervious area site load.

**Low floor Elevation**

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation and no stormwater management system may be constructed or reconstructed in a manner that brings the low floor elevation of an adjacent structure into noncompliance according to Rule J, Subsection 3.6.

The low floor elevations of the structure and the adjacent stormwater management feature are summarized below.

<table>
<thead>
<tr>
<th>Location Riparian to Stormwater Facility</th>
<th>Low Floor Elevation of Building (feet)</th>
<th>100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)</th>
<th>Freeboard (feet)</th>
<th>Provided Distance Between Building and Adjacent Stormwater Feature (feet)</th>
<th>Minimum Permissible Separation to Groundwater based on Appendix J, Plot 1 (feet)</th>
<th>Provided Separation to Groundwater (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Building</td>
<td>828.0</td>
<td>831.01 (Permeable Pavement)</td>
<td>-3.01</td>
<td>75</td>
<td>1.8</td>
<td>2</td>
</tr>
<tr>
<td>Proposed Building</td>
<td>828.0</td>
<td>831.53 (Tree Trench)</td>
<td>-3.53</td>
<td>6</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Proposed Building</td>
<td>828.0</td>
<td>834.6 (SWLRT basin 104)</td>
<td>-6.6</td>
<td>20</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

An analysis in accordance with Appendix J1 was completed for the proposed structure and adjacent stormwater feature because the low floor elevation of the proposed building (828.0 msl), is less than the required 2 feet above the 100-year event flood elevation of three adjacent stormwater features. (Rule J, Subsection 3.6.)
The low floor elevation of the proposed building is less than the required 2 feet above 100-year event flood elevation of the permeable pavement section, tree trench area and BMP 104, a stormwater management facility proposed among the compliance measures for the Southwest Light Rail Transit project, the permit for which was conditional approved by RPBCWD. Because the required minimum separation to the 100-year flood elevation is not provided, the applicant completed an analysis in accordance with Appendix J1 for the structure as summarized in the above table. The analysis with Appendix J1 indicates the permeable pavement section is sufficiently separated from the building to meet Appendix J1. The minimum permissible depth to groundwater per Appendix J1 would not be provided for the BMP 104 and proposed tree trench, thus not conforming to the flood-protection/freeboard criteria based on the proposed structure location. The applicant has requested a variance from the flood-protection/freeboard requirements (see Rule K variance discussion below).

**Maintenance**

Subsection 3.7 of Rule J requires the submission of maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. In addition, because the applicant is relying on stormwater reuse to meet the RPBCWD abstraction requirement, the declaration must also include a reuse monitoring and reporting plan.

J1. Permit applicant must provide for maintenance and inspection of the stormwater facilities in perpetuity. The declaration must also include a stormwater reuse monitoring and reporting plan. A draft of the declaration for maintenance on onsite stormwater facilities must be approved by the District prior to recordation. In addition, the applicant must provide the RPBCWD with documentation for approval of the administrator of a legal right to flow stormwater to the offsite stormwater management facility, utilize demonstrated treatment capacity in the facility and require maintenance of the facility.

**Rule K: Variances and Exceptions**

The Applicant requested a variance from the RPBCWD flood-protection/freeboard requirement (Rule J, subsection 3.6). The attached variance request letter submitted on behalf of the applicant cites several facts related to the development in support of the request. Rule K requires the Board of Managers to find that because of unique conditions inherent to the subject property the application of rule provisions will impose a practical difficulty on the Applicant. Assessment of practical difficulty is conducted against the following criteria:

1. how substantial the variation is from the rule provision;
2. the effect of the variance on government services;
3. whether the variance will substantially change the character of or cause material adverse effect to water resources, flood levels, drainage or the general welfare in the District, or be a substantial detriment to neighboring properties;
4. whether the practical difficulty can be alleviated by a technically and economically feasible
method other than a variance. Economic hardship alone may not serve as grounds for issuing a variance if any reasonable use of the property exists under the terms of the District rules;

5. how the practical difficulty occurred, including whether the landowner, the landowner's agent or representative, or a contractor, created the need for the variance; and

6. in light of all of the above factors, whether allowing the variance will serve the interests of justice.

While the applicant must address these criteria to support a variance request, the following is the RPBCWD engineer’s assessment of information from the request relevant to the applicant’s request for a variance from the flood-protection/freeboard requirements:

- Related to variance criterion 1 – The proposed low floor elevation is 6.6 below the 100-year flood elevation of the approved offsite SWLRT BMP 104 rather than 2 feet above the flood elevation. The analysis with Appendix J1 indicates five feet of separation between the proposed low floor and groundwater is required because the building is about 20 feet from the BMP. The proposed separation between the low floor and groundwater elevation is 1.5-2.5 feet.

- Importantly and relevant to variance criterion 3, the shortfalls from compliance only affect the proposed buildings on the applicant’s property; the proposed project conforms to rate control, volume abstraction and water quality treatment requirements.

- The applicant considered measures relevant to variance criterion 4 to the freeboard requirement:
  - To prevent surface flooding from entering the structure the applicant is proposing the low opening of the building at elevation of 836.50, which is almost four feet above the flood elevation of the adjacent BMP (HWL=832.70). The emergency overflow around the building through the parking lot is at an elevation of 835.35.
  - To prevent soil saturation issues, the building will be waterproofed and an additional impermeable plastic liner will be installed adjacent to the building in the area within 70 feet of the SWLRT BMP. This impermeable liner will minimize any potential groundwater mounding issues that could result from infiltration via the stormwater BMP.
  - The applicant is proposing to install two tile lines in the tree trench to limit the flood elevation within the tree trench section. They are also proposing to line the tree trench with an impermeable plastic liner to prevent water from reaching the groundwater and limit the potential for groundwater mounding concerns.

- With regard to variance criterion 5, the existing shared pavement access/parking and approved SWLRT BMP 104—site conditions that the applicant did not create or exacerbate—cause to a substantial degree the need for the variance because the proposed site grading must match into adjacent parking/access and the adjacent approved SWLRT BMP will have a flood elevation that the site design must account for.
• In summary, the lack of freeboard and separation to groundwater for the proposed building on
the site does not present an increased material risk to downstream properties or Purgatory
Creek.

If the Managers grant the requested variance the RPBCWD engineer recommends including the
following relevant condition:

K1. The applicant must provide written draft indemnification of the RPBCWD against all claims
and causes of action for flood damages to the property for RPBCWD approval, and record
the noncompliant elevations/locations on the title to the property.

Rule L: Permit Fee:
Fees for the project are:

Rule C & J ...........................................................................................................................................$1,500

The RPBCWD permit fee schedule adopted in December 2015 indicates that costs of site inspections,
analysis of the proposed activities, services of consultants and compliance assurance in excess of $2,500
for properties less than 5 acres will be charged to the permit applicant.

L1. In accordance with the adopted RPBCWD permit-fee schedule, because the engineer and legal
time to review this permit exceeded $2,500 the applicant must submit an additional permit fee
of $2,663 for excess cost recovery.

Rule M: Financial Assurance:

Rules C: Silt fence: 1,683 L.F. x $2.50/L.F. = .........................................................................................$4,300
Restoration: 3.1 acres x $2,500/acre = ...............................................................................................$7,900
Rules J: Green Roof: 125% Construction Cost (1.25*98,000) = ..........................................................$122,500
Pervious Pavement: 125% Construction Cost (1.25*35,000) = ............................................................$43,800
Tree Trench: 125% Construction Cost (1.25*80,500) = .....................................................................$100,700
Stormwater Reuse: 125% Construction Cost (1.25*55,000) = .............................................................$68,800
Contingency (10%) ...............................................................................................................................$34,800
Administration (30%) .........................................................................................................................$114,900
Total Financial Assurance .............................................................................................................$497,700

Applicable General Requirements:

1. The RPBCWD Administrator shall be notified at least three days prior to commencement of
work.
2. Construction shall be consistent with the plans and specifications approved by the District as a
part of the permitting process. The date of the approved plans and specifications is listed on the
permit.
3. Return or allowed expiration of any remaining surety and permit close out is dependent on the permit holder providing proof that all required documents have been recorded and providing as-built drawings that show that the project was constructed as approved by the Managers and in conformance with the RPBCWD rules and regulations.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The Applicant has requested a variance from compliance with the Rule J criteria related to providing 2 feet of freeboard between the low floor and 100-year flood elevation of stormwater facilities.
3. The proposed project will conform to Rule C if the Rule Specific Permit Conditions listed above are met; the applicant is requesting a variance from the freeboard requirements of Rule J but otherwise conforms to Rule J.

Recommendation:

Approval of the permit contingent upon:

1. Continued compliance with General Requirements.
2. Financial Assurance in the amount of $497,700.
3. Applicant providing the name and contact information of the individual responsible for erosion and sediment control at the site.
4. Receipt of an additional permit fee of $2,663 for the excess cost recovery.
5. Permit applicant must provide for maintenance and inspection of the stormwater facilities in perpetuity. The declaration must also include a stormwater reuse monitoring and reporting plan. A draft of the declaration for maintenance on onsite stormwater facilities must be approved by the District prior to recordation. In addition, the applicant must provide the RPBCWD with documentation for approval of the administrator of a legal right to flow stormwater to the offsite stormwater management facility, utilize demonstrated treatment capacity in the facility and require maintenance of the facility.
6. Indemnification of RPBCWD against all claims and causes of action for flood damages to the property for RPBCWD approval, and record the noncompliant elevations/locations on the title to the property.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, stormwater facilities conform to design specifications as approved by the District.
2. Per Rule J Subsection 2.6, performance monitoring, the applicant must an operations plan and monitor the proposed irrigation system to provide the volume abstraction as presented in the design. The recorded reuse volume must be submitted to the RPBCWD annually. If it is determined that the irrigation system is not performing as designed, a revised design must be submitted to the District for approval to demonstrate that the volume abstraction and water quality standard is achieved.

**Board Action**

It was moved by Manager ____________, seconded by Manager __________ to approve permit application No. 2017-030 with the conditions recommended by staff.
Memorandum

TO: Mr. Scott Sobiech  
   RPBCWD Consultant

FROM: David Knaeble, PE  
       Civil Site Group

DATE: 5/22/17

RE: RPBCWD Permit 2017-030: Elevate Variance Request due to SWLRT BMP 104A

Dear Scott,

This memo is intended to be included as part of the stormwater report dated May 17, 2017 that was submitted to the RPBCWD for the Elevate Mixed-Use development project in the City of Eden Prairie.

The Elevate development team has been coordinating with the Southwest Light Rail Transit Project Office (SWPO) regarding a proposed stormwater infiltration BMP (SWLRT BMP 104A) that is being proposed by the SWPO directly northwest of the proposed project site.

Based on RPBCWD Rule J.3.6: Low-Floor Elevation

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-YR event flood elevation and no stormwater management system may be constructed or reconstructed in a manner that brings the low floor elevation of an adjacent structure into noncompliance with this standard.

   a. All structures riparian to inundation areas or constructed or natural stormwater management facilities must be located and elevations must be set according to Appendix J1 – “Low Floor Elevation Guidance.”

Based on the required elevation of the proposed Elevate building (828.00) and the existing groundwater elevation (826.00), Appendix J1 – Plot 2 indicates that separation of 70 feet is required between the proposed SWPO BMP and the proposed Elevate building.

The Elevate development team had requested that the SWPO relocate this BMP so that it is more than 70 feet away from our proposed building. On May 22, 2017, the SWPO informed the Elevate development team that they cannot relocate this BMP.

This proposed SWPO BMP is providing approximately 309 CF of abstraction volume out of 38,300 CF that is required within the RPBCWD area. If this BMP were eliminated, the SWLRT would still be providing 99.2% of the volume that they are currently providing and would not require the Elevate project to need a variance.

This rule and approval of the SWPO BMP has created a situation where the proposed BMP is limiting the ability for our site to develop in a location that is approved by the City of Eden Prairie. This will require a variance from Rule J.3.6.
VARIANCE REQUEST FROM RULE J – 3.6 (RULE K)

To grant a variance, the Board of Managers must find, based on demonstration by the applicant, that because of unique conditions inherent to the subject property, which do not apply generally to other land or structures in the Riley Purgatory Bluff Creek watershed, strict application of a rule provision will impose a practical difficulty on the applicant, not a mere inconvenience. For purposes of the Board of Managers’ determination of whether a practical difficulty exists, the following factors will be considered for each variance request:

K-1.1 How substantial the variation is from the rule provision.
K-1.2 The effect of the variance on government services.
K-1.3 Whether the variance will substantially change the character of or cause material adverse effect to water resources, flood levels, drainage or the general welfare in the District, or be a substantial detriment to neighboring properties.
K-1.4 Whether the practical difficulty can be alleviated by a technically and economically feasible method other than a variance. Economic hardship alone may not serve as grounds for issuing a variance if any reasonable use of the property exists under the terms of the District rules.
K-1.5 How the practical difficulty occurred, including whether the landowner, the landowner’s agent or representative, or a contractor, created the need for the variance.
K-1.6 In light of all the above factors, whether allowing the variance will serve the interests of justice.

This project will be requesting a variance from the RPBCWD to allow the proposed Elevate building to be set less than 2 feet above the 100-YR event flood elevation of an adjacent stormwater management facility and at a distance less than what would be required per Rule J, Appendix J1.

This situation is unique to this property because the stormwater system BMP that is creating the issue is not on the project property and has not been constructed yet. This BMP will be constructed as part of the SWLRT project construction and may not be completed until after the proposed Elevate building is constructed. These conditions will not apply generally to other land or structures within the district, because this appears to be a very unique situation.

K-1.1 – The Low-floor Elevation Rule J.3.6 requires two feet of separation from the 100-YR flood elevation and the low floor of any proposed or reconstructed buildings and should be set a distance away from any infiltration stormwater facility per Appendix J1. The intent of this rule is to prevent buildings from being directly flooded during large rain events and to prevent soil saturation from impacting low floors.

PREVENT FLOODING
The proposed low floor of our building is below the 100-YR flood elevation, but the low opening of the building is at an elevation of 836.50, which is almost four feet above the flood elevation of the adjacent BMP (HWL=832.70). The emergency overflow around the building through the parking lot is at an elevation of 835.35. During larger rain events than the 100-YR event, emergency overflow protection has been provided for the building.

PREVENT SOIL SATURATION
Appendix J1 has been provided to assist in determining how to minimize the impacts to structures based on the amount of groundwater rise that could be expected due to an increase in an adjacent stormwater BMP elevation. Based on the existing clay onsite soils and a two feet separation from the groundwater elevation to the low floor of the building, the stormwater BMP should be set 70 feet away
from the building. The proposed building location will only be 20 feet away from the SWPO stormwater BMP.

To prevent soil saturation issues, the building will be waterproofed as required by building codes and an additional impermeable plastic liner will be installed adjacent to the building in the area within 70 of the SWPO BMP. This liner will be installed two feet away from the building and will extend from the groundwater elevation of 826.00 to an elevation of one foot below the FFE at an elevation of 835.50. This impermeable liner will minimize any potential groundwater mounding issues that could occur from the stormwater BMP.

The developer is also willing to sign an indemnification letter stating that the RPBCWD will not be held liable if any groundwater issues do occur.

K-1.2 – Allowing this variance will not impact any government services.

K-1.3 – Allowing this variance will not change the character of or cause material adverse effect to water resources, flood levels, drainage or the general welfare in the District. This variance only affects the proposed building on this property.

K-1.4 – Multiple options have been reviewed to determine if the practical difficulty could be eliminated by either a technically and economically feasible method other than a variance.

One way to eliminate this practical difficulty would be to raise the low floor elevation of the building to provide greater than six feet of separation between the groundwater table and the low floor. This increased separation would meet the rules of Appendix J1. This option has been reviewed and determined to be infeasible for multiple reasons. The first reason is because it is not possible to raise the building four feet and still meet accessibility requirements. This project will be the redevelopment of an existing site that is bounded by the Park and Ride parking structure to the west, the Shoppes at Southwest Station retail development to the south, and the future SWLRT rail lines to the north and east. The project will need to match into existing pavement grades to the south and west of our site, which strictly limits our ability to change the elevation of our proposed building. The building would not be accessible if the grades were raised up four feet.

The second reason is that if the FFE were maintained to provide accessibility, raising the low floor by four feet would eliminate the required below grade parking garage. The City of Eden Prairie has recently adopted new zoning ordinances and modifications to their Comprehensive Plan to designate this site as a Transit Oriented Development (TOD) zoning classification. This zoning classification requires a higher unit density than a normal mixed-use site. This increased density restricts the ability to reduce the size of the building and the number of parking spaces. The parking count requirements were reduced in the TOD zoning district, but the project is still providing the minimum number of stalls (For example, 1 parking stall per unit shall be provided as a minimum and 1 per bedroom as a maximum. Typical city ordinance requires 2 stalls per dwelling unit). If the lower level parking stalls were removed, this project would not meet City of Eden Prairie requirements.

Another way to eliminate this practical difficulty would be move the building so that it is more than 70 feet away from the proposed SWPO BMP. This increased separation would meet the rules of Appendix J1. This option has been reviewed and determined to be infeasible. The site configuration as currently shown has been designed to fit in with the surrounding buildings and parking lots and is situated to match the location of the existing buildings. The site configuration has also been designed to provide a direct pedestrian connection between the SWLRT station and the Prairie Center Drive and Technology
Drive intersection. Moving the building to provide the 70 feet of separation would either require eliminating the number of units provided and impacting the current optimal building configuration. This would not be allowed based on the City of Eden Prairie TOD zoning requirements.

K-1.5 – This practical difficulty did not occur by the current landowner, or any of their agents. This proposed BMP was created by the SWLRT project and not the property owner.

K-1.6 – This variance request will serve the interests of justice because no other properties or landowners will be impacted by approving this request and this is not a substantial variation from the rule provision. The developer is also willing to provide an indemnification letter to the RPBCWD.

The variance from Rule J.3.6 should be granted based on the reasoning stated above.

David Knaeble P.E.
Civil Site Group
763-234-7523
Ryan,

This is regarding the Declaration of Reciprocal Easements, Covenants Conditions and Restrictions dated December 31, 2002 (the “Declaration”), relating in part to Southwest Station Second Addition (the “Second Addition”). You have asked for clarification regarding the rights and obligations of the owners of Lots 1 and 2 of the Second Addition, with respect to a detention pond located on the south side of Lot 3 of the Second Addition.

Drainage Right:
The inquiry from your contact at the watershed district makes reference to the definition of the Common Areas, and whether the pond is part of the Common Areas. I think that inquiry is just slightly off. Based on the easement grant, the pond does not need to be part of the Common Areas in order for storm water on Lots 1 and 2 to drain into it. The easement right granted in Section 1(b) of the Declaration is “over, across, upon and under the portion of the Common Area…located above the subsurface storm sewer and drainage lines and surface drainage ways…for the sole and exclusive purpose of running and transferring water accumulating and originating on each Development Tract to the Storm Sewer System.” That easement right allows Lots 1 and 2 to run water over the Common Areas and into the Storm Sewer System. The easement rights granted to Lots 1 and 2 allow drainage into the Storm Sewer System, which includes “drainage lines and surface drainage ways.” Thereafter, it is only reasonable that those drainage lines and surface drainage ways would drain into the detention pond on Lot 3.

I do acknowledge that the definitions of Common Areas and Storm Sewer System are not perfectly clear in the Declaration, but the best reading of the Declaration is that the Storm Sewer System either (a) drains into the pond, or (b) includes the pond as one of its elements. The definition of Common Areas in Section 3 includes “other facilities,” so despite the pond not being specifically identified, it may be incorporated into the definition of Common Areas, and if so, it could be incorporated into the definition of Storm Sewer System. Alternatively, the allowance for the Storm Sewer System to drain into the pond is supported by Section 5(c), in which the definition of “CAM Expenses” includes “maintenance and repair of off-site detention areas.” That sentence does not specifically identify the pond on Lot 3, but if the owners have to pay to Declarant “CAM Expenses” (see romanette (iii) of the first paragraph of Section 5(b)), the reasonable interpretation is that the off-site detention areas that make up CAM Expenses are within an area over which Declarant exercises some control (e.g., the pond on Lot 3). If the pond is “off-site”, but it is maintained by the Declarant and is connected to the Storm Sewer System, it is only reasonable that the Declaration permits the draining of the Storm Sewer System into the pond.
It would be helpful if Exhibit A and Exhibit C of the Declaration were clearer, but we have been unable to track down a clearer version of either. That being said, my view of a grainy Exhibit C is that the detention pond is in fact included as part of the Storm Sewer System. If it is not part of the Storm Sewer System, Lots 1 and 2 have drainage rights into the Storm Sewer System, and it is reasonable (based on the above paragraph) that the Storm Sewer System is permitted to drain into the pond on Lot 3.

**Maintenance Obligation for the Pond:**
The second inquiry from your contact at the watershed district is regarding who has obligation to maintain the stormwater facilities. For reasons set forth above, I think it is sufficiently clear that the obligation is on the Declarant. Under romanette (i) of Section 5(c), the Declarant has obligations to maintain and repair the Common Areas (which could include the pond, as set forth above). Alternatively, if the pond is not part of the Common Areas, the Declarant has obligations to maintain and repair “off-site detention areas.” If the Declarant has obligation to maintain and repair those areas, they must be within the area covered by the Declaration. “Off-site” could simply refer to off of the Common Areas. If the language were referring to detention areas outside of the entire Development Tract, it may be that the Declarant has to contribute towards upkeep costs, but it would not be sensible that the Declarant has maintenance and repair obligations with respect to those areas.
VERIFY LOCATIONS OF STORM AND SANITARY STRUCTURES, PIPES, AND INVERTS. REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION

CONTRACTOR TO FIELD VERIFY ALL EXISTING SANITARY AND WATER SERVICES ON SITE PRIOR TO CONSTRUCTION. REPORT FINDINGS TO PROJECT ENGINEER

CITY OF EDEN PRAIRIE REMOVAL NOTES:

REMOVALS LEGEND:

ISSUE/SUBMITTAL SUMMARY

DATE DESCRIPTION

ELEVATE

PROJECT NO.: 16131

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Gopher State One Call
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(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL
RAIN HEAD INLET FILTER ON ALL ROOF DRAINS

154 LF 6" PERFORATED

GENERAL UTILITY NOTES:

RAINWATER HARVEST SYSTEM, INCLUDE:

- INLINE PRE-FILTER
- FIRST-FLUSH DIVERTER
- 5,500 GAL. CAPACITY TANK(S)
- 25 GPM INLINE PUMP
- INLINE FINES FILTER W/ REPLACEABLE FILTER CARTRIDGE.

SYSTEM SHALL ALSO INCLUDE OVERFLOW OUTLET, WATER LEVEL INDICATOR, AND ALL NECESSARY APPURTENANCES. SYSTEM DESIGNED TO ACCOMMODATE 19,000 SF OF LANDSCAPE AREA @ APPROX. 1" IRRIGATION PER WEEK. (DEPENDENT UPON SPECIFIC RAIN EVENT DURATION & SEQUENCE).

SYSTEM SHALL BE INCORPORATED AND COORDINATED INCORPORATION OF POTABLE/STANDARD IRRIGATION LINE CONNECTIONS. SEE MECHANICAL PLANS FOR FINAL LAYOUT AND CONNECTIONS.

PROPOSED GATE VALVE AND VALVE BOX CONTRACTOR TO FIELD VERIFY

VERIFY LOCATIONS OF STORM AND SANITARY STRUCTURES, PIPES, AND INVERTS. REPORT FINDINGS TO ENGINEER PRIOR TO CONSTRUCTION.

IRRIGATION CONTROLLER, PUMP, & VALVE MAKE CONNECTION TO RAINWATER HARVEST TANKS, SEE MECHANICAL PLANS FOR FINAL LAYOUT AND CONNECTIONS.

CONSTRUCT OVER EXISTING STORM SEWER CASTING AS NECESSARY TO MATCH PROPOSED GRADES RIM=±831.80

CASTING AS NECESSARY TO ELEVATE FOUNDATION SUPPORT

ELEVATE FOUNDATION SUPPORT

REBUILD OVER EXISTING STRUCTURE

RECONSTRUCT EXISTING CB CASTING AS NECESSARY TO MATCH PROPOSED GRADES RIM=±831.80

RECONSTRUCT EXISTING CB

REBUILD OVER EXISTING STRUCTURE

RECONSTRUCT EXISTING CB

REBUILD OVER EXISTING STRUCTURE

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**AGGREGATE MAINTENANCE STRIP**

- AGGREGATE MAINTENANCE STRIP
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADJUST APPEARANCE OR FUNCTION OF THE AREA
- MATERIAL: aggregate
- APPLICATION: along the boundary of the area
- MOWING/EDGING: keep the area tidy
- ROLLING: to compact the aggregate
- FERTILIZING: to maintain soil health
- PEST CONTROL: to prevent infestations
- CLEANUP: to remove debris

**DECIDUOUS & CONIFEROUS TREE PLANTING**

- DECIDUOUS & CONIFEROUS TREE PLANTING
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADD OR REPLACE TREES
- MATERIAL: tree saplings
- APPLICATION: around the area
- MOWING/EDGING: avoid damage to young roots
- ROLLING: keep the area compact
- FERTILIZING: to promote growth
- PEST CONTROL: to prevent pests
- CLEANUP: to remove debris

**DECIDUOUS & CONIFEROUS SHRUB PLANTING**

- DECIDUOUS & CONIFEROUS SHRUB PLANTING
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADD OR REPLACE SHRUBS
- MATERIAL: shrub saplings
- APPLICATION: around the area
- MOWING/EDGING: avoid damage to young roots
- ROLLING: keep the area compact
- FERTILIZING: to promote growth
- PEST CONTROL: to prevent pests
- CLEANUP: to remove debris

**PERENNIAL BED PLANTING**

- PERENNIAL BED PLANTING
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADD OR REPLACE PERENNIAL PLANTS
- MATERIAL: perennial plants
- APPLICATION: around the area
- MOWING/EDGING: avoid damage to young roots
- ROLLING: keep the area compact
- FERTILIZING: to promote growth
- PEST CONTROL: to prevent pests
- CLEANUP: to remove debris

**Gopher State One Call**

- GOPHER STATE ONE CALL
- WWW.GOPHERSTATEONECALL.ORG
- (800) 252-1166 TOLL FREE
- (651) 454-0002 LOCAL

**Landscape Plan**

- LANDSCAPE PLAN
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADD OR REPLACE LANDSCAPE ELEMENTS
- MATERIAL: various landscaping elements
- APPLICATION: around the area
- MOWING/EDGING: avoid damage to young roots
- ROLLING: keep the area compact
- FERTILIZING: to promote growth
- PEST CONTROL: to prevent pests
- CLEANUP: to remove debris

**Project Information**

- PROJECT NO.: 16131
- ISSUED BY THE LANDSCAPE ARCHITECT TO ADD OR REPLACE LANDSCAPE ELEMENTS
- MATERIAL: various landscaping elements
- APPLICATION: around the area
- MOWING/EDGING: avoid damage to young roots
- ROLLING: keep the area compact
- FERTILIZING: to promote growth
- PEST CONTROL: to prevent pests
- CLEANUP: to remove debris

**Certification**

- I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.
1. This project is greater than one acre and will require an MPCA NPDES permit. Additional notes, controls, and practices are also required from the City of Eden Prairie.

2. See sheets SW1.0 - SW1.5 for all erosion control notes, descriptions, and practices.

3. See grading plan for additional grading and erosion control notes.

4. Contractor is responsible for SWPPP implementation, inspections, and compliance with noted permit.

RPBWC EROSION CONTROL NOTES:

1. The contractor must notify and United States and all utilities affected. Above and below ground utilities must be coordinated with the affected utilities.

2. The City has recorded utility locations with the U.S. Geological Survey (USGS) and is responsible for the accuracy and completeness of these records. The contractor is responsible for removing and replacing all utility covers. (Contact the Zion Public Utility Commission for additional information.)

3. The City of Eden Prairie has subcontracted with the United States and all utilities affected. Utilities must be maintained in a safe condition during construction.

4. The contractor must notify the City of Eden Prairie of any new utility connections.

CITY OF EDEN PRAIRIE ER OSION CONTROL NOTES:

1. Contractors and subcontractors must comply with all applicable City of Eden Prairie Erosion Control Notes.

SWPPP NOTES:

1. GOPHER STATE ONE CALL
   WWW.GOPHERSTATEONECALL.ORG
   (800) 252-1166 TOLL FREE
   (651) 454-0002 LOCAL

2. All specified erosion and sediment control practices and measures contained in this SWPPP are the minimum requirements. Additional practices may be required during the course of construction.

3. Construction site management practices are required to minimize the impact to the environment. All specified erosion and sediment control practices, and measures contained in this SWPPP are the minimum requirements. Additional practices may be required during the course of construction.

4. Contractors and subcontractors must notify the City of Eden Prairie of any new utility connections.
1. THIS PROJECT IS GREATER THAN ONE ACRE AND WILL REQUIRE AN MPCA NPDES PERMIT. AN EROSION CONTROL PERMIT IS ALSO REQUIRED FROM THE CITY OF EDEN PRAIRIE.
2. SEE SHEETS SW1.0 - SW1.5 FOR ALL EROSION CONTROL NOTES, DESCRIPTIONS, AND PRACTICES.
3. SEE GRADING PLAN FOR ADDITIONAL GRADING AND EROSION CONTROL NOTES.
4. CONTRACTOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND COMPLIANCE WITH NPDES PERMIT.

SWPPP NOTES:

LEGEND:

ALL SPECIFIED EROSION AND SEDIMENT CONTROL PRACTICES, AND MEASURES CONTAINED IN THIS SWPPP ARE THE MINIMUM REQUIREMENTS. ADDITIONAL PRACTICES MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION.

RPBCWD EROSION CONTROL NOTES:

CITY OF EDEN PRAIRIE EROSION CONTROL NOTES:
<table>
<thead>
<tr>
<th>DATE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/08/17</td>
<td>CITY RESUBMITAL</td>
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<tr>
<td>05/17/17</td>
<td>WATERSHED RESUBMITAL</td>
</tr>
<tr>
<td>04/07/17</td>
<td>CITY SUBMITTAL</td>
</tr>
<tr>
<td>06/05/17</td>
<td>WATERSHED RESUBMITAL</td>
</tr>
</tbody>
</table>

**CivilSiteGroup.com**

Matt Pavek                                         Pat Sarver
763-213-3944                                952-250-2003
ISSUE/SUBMITTAL SUMMARY

DATE DESCRIPTION

ELEVATE

12900 TECHNOLOGY DRIVE, EDEN PRAIRIE MN 55344

8000 NORMAN CENTER DR., STE. 830, BLOOMINGTON, MN 55437

TIMBERLAND PARTNERS

PROJECT

05/08/17 CITY RESUBMITTAL

05/17/17 WATERSHED RESUBMITTAL

PROJECT NO.: 16131

04/07/17 CITY SUBMITTAL

06/05/17 SW2.3WATERSHED RESUBMITTAL

06/05/17

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

COPYRIGHT 2017 CIVIL SITE GROUP INC.

Matthew R. Pavek
LICENSE NO.
763-213-3944
952-250-2003

ATTACHMENT A: SITE SPECIFIC SWPPP DOCUMENT

ATTACHMENT B: SITE SPECIFIC SWPPP DOCUMENT
Riley Purgatory Bluff Creek Watershed District Permit Application Review

**Permit No:** 2017-044

**Received complete:** June 20, 2017

**Applicant:** Eric and Katie Toft

**Consultant:** Natural Environments Corp. – Attn: Terry Sanders

**Project:** Toft Shoreline Naturalization – The applicant is removing an existing seawall, concrete boat ramp, and turf grass along Mitchell Lake and replacing with a combination of revetment techniques including riprap, coir logs, and native plantings.

**Location:** 17064 Weston Bay Road, Eden Prairie, MN

**Reviewer:** Terry Jeffery, Permit Coordinator

**Rules: Applicable rules checked**

<table>
<thead>
<tr>
<th>Rule</th>
<th>Issue</th>
<th>Conforms to RBPCWD Rules?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Floodplain Management</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Shoreline/Streambank Stabilization</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Permit Fee</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Financial Assurance</td>
<td>See Comment</td>
<td>The financial assurance has been calculated at $12,110.</td>
</tr>
</tbody>
</table>
**Project Description**

The applicants propose to remove an existing sea wall, approximately 85 feet in length, a gravel walk path along the shoreline, and a concrete boat launch along the shoreline of Mitchell Lake (a public water body) as part of a larger effort to reestablish a natural shoreline. The applicants own 210 feet of shoreline, of which 110 feet is hard-armored under existing conditions. The remaining 100 feet is maintained as bluegrass lawn to the water’s edge. The shoreline will be stabilized with a combination of revetment (restoration and stabilization) techniques including riprap, coir logs, and native buffer plantings from the top of bluff to the shoreline. The applicants are also placing a sandblanket on the shoreline. The project disturbances less than 5,000 square feet and 50 cubic yards of material so it does not trigger Rule C. The absence of riparian wetlands or creek on or adjacent to the property precludes the application of Rule D. The project site information is summarized below:

Exhibits:

   a. G000 – Cover Sheet
   b. L000 – Existing Conditions, Removals & Erosion Control Plan
   c. L100 – Site Plan
   d. L200 – Planting Plan
   e. L300 – Site Sections

**Rule Specific Permit Conditions**

**Rule B: Floodplain Management**

Because the project proposes to place fill, in the form of riprap, below the OHW of Mitchell Lake, the project must conform to the requirements in the RPBCWD Floodplain Management rule (Rule B, Subsection 2.1).

The applicant is proposing to provide compensatory storage through the removal of an existing concrete boat launch, the removal of a gravel walkway, and regrading from the OHW to the 100-year elevation in preparation for the buffer planting. The riprap constitutes 206 cubic feet of fill. The removal of the boat ramp below the 100-year flood elevation provides 153 cubic feet of compensatory storage and the grading of the shoreline will provide an additional 86 cubic feet of compensatory storage with the removal of that portion of the gravel walkway below the 100-year flood elevation, complying with paragraph 3.2 of the rule.

No structures will be constructed or reconstructed under the proposed scope of work, surface flows will not be altered, and there is no watercourse present on or adjacent to the project property, so the criteria in paragraphs 3.1, 3.3 and 3.4 do impose not requirements on the project. Plans for the project...
include steps that will be taken to minimization of potential transfer of aquatic invasive species to the
greatest extent possible.

The proposed activities will meet the criteria in Rule B, subsection 3.

Rule F: Shoreline and Streambank Stabilization

Because the project proposes to modify and stabilize 210 feet of shoreline of Mitchell Lake (110 feet of
riprap and 100 feet of naturalization/biological stabilization), the project must conform to the
requirements in the RPBCWD Shoreline and Streambank Stabilization rule (Rule F, Subsection 2).

The plans prepared by Natural Environments Corporation show removal of existing hardcover including
an existing seawall and concrete boat launch, location of sediment control best management practices
both prior to removals and after removals, location of riprap, location of coir logs, location of buffer
plantings, and location of sand blanket. As to the ‘need’ criterion in 3.1 of the rule, no erosion or threat
of erosion is present, nor is the existing shoreline degraded, so there is no need to address existing or
threatened risks. Further analysis of the project under this criterion is provided under the Rule K
exception analysis below. Paragraph 3.2 sequencing is addressed under the exception framework below
as well.

The design is consistent with Rule F, §3.3. Only native plants are being used for the stabilization and the
riprap is sized appropriately for the conditions. The riprap will be hand-placed and extend only to the
OHW and extend no more than six (6) feet waterward. The design calls for a transitional crushed rock
layer with geotextile and will be free of foreign materials such as clay or debris.

The design calls for the removal of an existing retaining wall below the OHW of Mitchell Lake. Rule F,
§3.4 specifically prohibits retaining walls below the OHW in most circumstances.

The sand blanket will be placed in the location of the former boat launch and the proposed design is
consistent with Rule F, §3.5. No emergent vegetation will be disturbed or buried due to the placement
of the sand blanket or the riprap. The sand blanket will be 50 feet in width and will extend waterward
10 feet from the OHW for Mitchell Lake. These dimensions are consistent with the Rule F, §3.5. In
addition, the sand will be washed and free of contaminants as required by Rule F, §3.5.a.

Plans for the project include steps that will be taken to minimization of potential transfer of aquatic
invasive species to the greatest extent possible, consistent with subsection 3.6 of Rule F.
**SECTION: EXISTING SHORELINE**

**Figure 1.** Cross-Section of existing shoreline conditions showing stepped retaining wall, vertical face below OHW, and gravel along the shoreline.

**SECTION: PROPOSED SHORELINE**

**Figure 2.** Proposed cross-sectional view of stabilized shoreline and associated buffer.

**Rule G: Waterbody Crossings and Structures**

Because the project proposes to remove an existing concrete boat launch (structure) which lies within the bed and banks of Mitchell Lake, it must comply with the criteria in Rule G.

The removal of the seawall and boat launch, as well as the naturalization of the remainder of the shoreline will benefit water quality in Mitchell Lake (by reducing erosive forces) and improve habitat, serving both public benefit and RPBCWD policy. The project complies with criterion 3.1a in Rule G.
Subsections 3.6 and 3.7 provide criteria relevant to removal of structures from water bodies. The removal of the boat launch will restore the lake bed to a best approximation of the conditions which existed prior to the placement of the launch. Given the launch was not placed by the applicant, nor does the district have access to any topographic data prior to the launch placement, the applicant is proposing to match the lake bed on either side of the launch. (Rule G, §3.6.a) The proposed plan is to remove the launch in its entirety (Rule G, §3.6.b) and does not involve the removal of a water-level control structure (Rule G paragraph 3.6c).

As to subsection 3.7, all work will begin and finish in July of 2017. The submitted plans include a phased erosion prevention and sediment control plan consistent with Rule G and standard engineering practices. The plans also indicate steps to be taken to avoid the transfer of aquatic invasive species.

No crossing or structure will remain in place at the Tofts’ shoreline such as would require maintenance under section 5 of the rule. The specific determination of the managers to refrain from requiring maintenance for shoreline or streambank stabilizations under Rule F preempts any finding that the maintenance requirements in Rule G compel required approval and recording of a maintenance plan for the shoreline stabilization techniques proposed here.

**Rule K: Variances and Exceptions**

The project is being undertaken by the property owner to naturalize the shoreline, most notably through removal of the existing seawall (which generally would be expected to increase erosive force of wind and wave action on other shorelines on the lake) and removal of a gravel walkway that is below the 100-year flood elevation (i.e., susceptible to contributing pollutants to the lake). The ‘need’ criterion in Rule F paragraph 3.1 ensures that hard armoring of shoreline does not take place unless there is a demonstrated erosion or threat of erosion that must be addressed. Similarly, the sequencing required under subsection 3.2 ensures that riprap and other hard-armoring techniques are used only when necessary to prevent erosion.

The removal will result in an unstable sheer vertical face fully exposed to wave action and ice movement. Although the fetch at this location is not particularly long, the somewhat flat face of the shoreline left by removing the seawall and thereby exposed soils will be susceptible to erosion and sloughing. The placement of coir logs or planting of live stakes will be insufficient to address erosive forces and gravity acting on the exposed soil face which will be in a nearly perpetual state of saturation. It is therefore necessary to stabilize the 85 feet of shoreline where the seawall was with riprap.

As to the subsection 3.2 sequencing analysis for the remaining 110 feet of the shoreline, the applicants are proposing biological stabilization techniques. Staff’s assessment of conditions at this location support a determination that biological stabilization techniques are necessary and sufficient to establish a stabile shoreline that will not be subject to erosion such as would later require hard-armoring.
Even though buffer is not required on lakes under RPBCWD rules, in addition to the shoreline stabilization discussed above, the applicants are proposing 8 to 10 feet of buffer plantings above the shoreline stabilization work proposed. In addition, the applicant will be planting no-mow fescue grasses from the edge of the buffer to the shoulder of the bluff and aside from a mowed path to the dock, will be left unmanicured to act as an additional 60± feet of buffer.

Staff determines and the engineer concurs that the project as a whole provides better natural resources protection and enhancement than would be achieved by the applicants’ leaving the existing hard armored shoreline in place, supporting a determination by the board of managers to approve the permit, notwithstanding the technical noncompliance with subsections 3.1 and 3.2 of Rule F discussed above.

In addition, because the project being undertaken solely for purposes of naturalization of the shoreline, consistent with RPBCWD policy, staff recommends waiver of permit fees.

**Rule L: Permit Fee:**

Fees for the project are:

Rule B, F & G .......................................................................................................................................... $0*

**Rule M: Financial Assurance:**

Rules F: Shoreline Restoration 85 L.F. x $100/L.F.=$8,500

Contingency (10%) .................................................................................................................................. $850

Administration (30%) ........................................................................................................................... $2,805

Total Financial Assurance ................................................................................................................ $12,110

* Please see analysis and recommendation under Rule K: Variances and Exceptions

The area where land disturbance and earthwork will take place is the most easterly 110 feet. In this location, the applicant will be removing the seawall and the concrete boat launch. Of these 110 feet only the first 85 feet will result in the placement of riprap below the OHW of Lake Mitchell. Staff is recommending that financial assurance be required only for these 85 feet of shoreline being riprapped. Beyond the previously discussed easterly 110 feet, the remaining 100 feet of shoreline will not be graded but rather will have coir logs placed at shoreline and staked in with native plants above. Staff feels that the risk that sediment will be introduced to the lake in this area, even during the establishment of native vegetation, is reduced from the current condition.

**Applicable General Requirements:**

1. The RPBCWD Administrator shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.

3. Return or allowed expiration of any remaining surety and permit close out is dependent on the permit holder site inspection by District staff verifying that the project was constructed as approved by the Managers and in conformance with the RPBCWD rules and regulations.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.

2. The project conforms to Rule B and Rule G requirements; an exception analysis has been provided regarding Rule F compliance.

3. Under Minnesota Department of Natural Resources general permit no. 2015-1192, approval of work under RPBCWD rules F and G constitutes approval under applicable DNR work in waters rules. Compliance with conditions on approval and payment of applicable fees, if any, are necessary to benefit from general permit approval and the responsibility of the applicants.

Recommendation:

Approval, contingent upon:

1. Continued compliance with General Requirements.

2. Financial Assurance in the amount of $12,110.

3. That the permit fee be waived.

Board Action

It was moved by Manager _________________, seconded by Manager _________________ to approve permit application No. 2017-044 with the conditions recommended by staff.
Toft Residence
17064 Weston Bay Rd
Eden Prairie, MN 55437

Removals, SWP PLAN

L000

NOTES
FLOATING SILT CURTAIN AND SILT FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGH PROJECT COMPLETION. ALL TREES, SHRUBS/PLANTS ARE TO BE SAVED AND PROTECTED UNLESS OTHERWISE NOTED. CONSTRUCTION ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G., ZEBRA MUSSEL, EURASIAN WATERMILFOIL, ETC.) TO THE MAXIMUM EXTENT POSSIBLE.
NOTES

- Floating Silt Curtain and Silt Fence to be installed prior to construction within an extended through project completion.
- All trees, shrubs in scenic easement to be saved and protected unless otherwise noted.
- Trees and shrubs to be trimmed and pruned by Contractor after completion of construction.
- Construction activities must be conducted so as to minimize the potential transfer of aquatic invasive species (e.g., Zebra Mussel, Eurasian Watermilfoil, etc.) to the maximum extent possible.

SCALE: 1/8"=1'-0"
Riley Purgatory Bluff Creek Watershed District Financial Assurance Request Review

Permit No: 2015-016 (expired)
Received complete: July 12, 2017

Applicant: Pemtom Land Company, Dan Blake
Consultant: John Bender, Westwood Professional Services
Project: Blossom Hills
Reason: Letter of Credit Reduction
Reviewer: Terry Jeffery, RPBCWD Permit Coordinator

Requested LOC Reduction

Dan Blake of Pemtom Land Company has requested a reduction of the financial assurance required by RPBCWD for permit 2015-016. The table below lists the original financial assurance for this project under Rule M.

<table>
<thead>
<tr>
<th>Rule</th>
<th>ITEM</th>
<th>CALCULATION</th>
<th>AMOUNT</th>
</tr>
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<tbody>
<tr>
<td>C</td>
<td>Silt Fence/Curtain</td>
<td>2425 L.F. x $2.50/L.F.</td>
<td>$6,100</td>
</tr>
<tr>
<td>C</td>
<td>Inlet Protection</td>
<td>5 x $100/each</td>
<td>$500</td>
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<tr>
<td>C</td>
<td>Restoration</td>
<td>2.8 acres x $2,500/acre</td>
<td>$7,000</td>
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<tr>
<td>J</td>
<td>Infiltration</td>
<td>2,815 sq. ft. x $6/sq. ft.</td>
<td>$16,900</td>
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<td>Contingency (10%)</td>
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<tr>
<td></td>
<td>Total Financial Assurance</td>
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<td>$43,700</td>
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</table>

Project Status

The stormwater facility provided to meet the RPBCWD volume-control requirement for the 12-lot subdivision was constructed and an as-built survey was provided confirming construction according to plan. The permittee also provided infiltrimeter testing that shows the infiltration bench to be functioning per design. Vegetation has yet to be established on the infiltration bench, prompting the recommendation that RPBCWD retain $3,500 in financial assurance.

For information: The lots comprising the subdivision have all been sold. Because the permittee allowed the permit to expire prior to complete construction of the subdivision, construction of single-family homes on the lots will be subject to RPBCWD permitting requirements as may be applicable.
Recommendation:

Staff recommends reducing the letter of credit to $5,005 which is 50% of the restoration assurance plus 10% contingency and 30% administration. The following table indicates the recommended reduction and assurance to be retained.

<table>
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<tr>
<td></td>
<td>Total Financial Assurance</td>
<td></td>
<td>$43,700</td>
</tr>
</tbody>
</table>

The reduced financial assurance will be retained until staff confirms that vegetation on the infiltration bench has been established.

Board Action

It was moved by Manager ________________, seconded by Manager ________________ to approve reduction of the financial assurance for permit No. 2015-016 from $43,700 to $5,005.