Riley-Purgatory-Bluff Creek Watershed District

Board of Managers Workshop and Regular Meeting

Wednesday, October 4, 2017
5:30pm Board Workshop
7:00pm Regular Board Meeting
DISTRICT OFFICE
18681 Lake Drive East
Chanhassen

Agenda

1. Call to Order

2. **5:30pm Board workshop:**
   a. 10 year plan
   b. Permit Modification Discussion

3. **7:00pm Approval of the Agenda** (Additions/Corrections/Deletion) **Action**

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** **Action**
   Board of Manager Meeting, September 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. Authorize solicitation of bids for Scenic Heights Forest Restoration
   d. Approve commitment letter with Redpath Company
   e. Approve Permit 2016-043: Bongards Redevelopment permit modifications with staff recommendations

f. Approve Permit 2017-001: Kopesky 2nd Addition permit modifications with staff recommendations
g. Approve Permit 2017-039: Mission Hills Senior Living 3rd permit review period extension
h. Approve Permit 2017-063: Clear Springs Elementary 2018 Gymnasium Addition with staff recommendations.
i. Approve Permit 2017-064: Scenic Heights Elementary School Forest Restoration with staff recommendations.

7. Citizen Advisory Committee **Information**
   a. Governor's 25 by 25

8. Action Items **Action**
   a. Accept August Treasurer's Report
   b. Approve Paying of the Bills
   c. Approve Delegation Authority for Permit Transfers
   d. Approve release of plan amendments for Lotus Internal Control Treatment, and Rice Marsh Lake Internal Control Treatment.
   e. CAC Appointment Process
   f. MAWD
      i. Resolution request
      ii. Nine Mile Chloride Resolution Support

9. Discussion Items **Information**

   a. Upcoming Meeting

10. Upcoming Events **Information**

- Cycle the Creek, October 7, 10 am - noon. 18681 Lake Drive East, Chanhassen.
- Citizen Advisory Committee monthly meeting, October 16, 6:30pm, 18681 Lake Drive East, Chanhassen
- Board Workshop and Regular Meeting, November 4, 5:30 pm, 18681 Lake Drive East, Chanhassen
- Minnesota Annual Water District Annual Meeting, November 29- December 1, Arrowwood Resort, Alexandria

MEETING MINUTES

Riley-Purgatory-Bluff Creek Watershed District

September 6, 2017, Board of Managers Plan Workshop and Monthly Meeting

PRESENT:

Managers:	Richard Chadwick, Secretary	
	Jill Crafton, Treasurer	
	Dorothy Pedersen, Vice President	
	Dick Ward	
	Leslie Yetka, President	
Staff:	Claire Bleser, District Administrator	
	Zach Dickhausen, Water Resources Technician	
	Terry Jeffery, Project and Permit Coordinator	
	Michelle Jordan, Community Outreach Coordinator	
	Josh Maxwell, Water Resources Coordinator	
	Louis Smith, Attorney (Smith Partners)	
	Scott Sobiech, Engineer (Barr Engineering Company)	
Other attendees:	Tom Bakritges, Homestead Partners/JMS Custom Homes	Della Kolpin, Mesaba Capital Dev.
	Paul Bourgeoise, Minnetonka School District	Matt Lindon, CAC
	Paul Bulger, CAC	Sharon McCotter, CAC
	Eric Eckman, WSB	David Ziegler, CAC
	Larry Koch, Chanhassen Resident	

1. Monthly Board Meeting Call to Order

Acting President Yetka called to order the Wednesday, September 6, 2017, Board of Managers Monthly Meeting at 7:09 p.m. in the District Office, 18681 Lake Drive East, Chanhassen, MN 55317. She noted that prior to this meeting the District held a Plan Workshop to discuss governance of watershed districts. Acting President Yetka noted that former Board President Perry Forster and former Board Secretary Mary Bisek served their final meeting as managers last month. Acting President Yetka introduced and welcomed new managers Dorothy Pedersen and Dick Ward, who will take the oath of office tonight to become official managers on the watershed's board.

2. Oath of Office

Attorney Smith led Dorothy Pedersen and Dick Ward through the Oath of Office. The Board welcomed new managers Pedersen and Ward.

3. Approval of the Agenda

Acting President Yetka requested the addition of an action item regarding the annual waiver of limits on tort liability through the League of Minnesota Cities Insurance Trust. She said the item will be agenda item 11f. She requested adding agenda item 11g for the Board to decide if and in what manner the Board members will continue to attend CAC meetings. Manager Chadwick requested moving item 9a – Accept Staff Report - off of the Consent Agenda to Discussion Item 12b. Attorney Smith noted that he can pull items off of the Consent Agenda when the Board reaches the Consent Agenda.

Manager Pedersen moved to approve the agenda as amended. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

4. Election of Officers

Acting President Yetka announced that with the change in Board members, which included the departure of two Board officers, the Board will elect new officers tonight.

Manager Crafton nominated Leslie Yetka as president. Manager Pedersen seconded the motion. Upon a vote, the motion carried 5-0.

Manager Crafton nominated Dorothy Pedersen as vice president. Manager Ward seconded the motion. Upon a vote, the motion carried 5-0.

Manager Crafton nominated Richard Chadwick as Secretary. Manager Pedersen seconded the motion. Upon a vote, the motion carried 5-0.

President Yetka noted that there is a vacancy to be filled in the Personnel and Governance Committee. Manager Crafton nominated Manager Pedersen. Manager Chadwick seconded the motion. Upon a vote, the motion carried 5-0.

5. Public Hearing on Proposed RPBCWD 2018 Budget

Administrator Bleser passed around paper copies of the proposed 2018 budget table. She announced that the total proposed 2018 levy is $3,420, 000. She explained that the proposed tax levy results in a tax equivalent of $124.41 for a $500,000 property, compared to $104 for the same property in 2017 for the 2017 tax levy of $2,859,000.

Administrator Bleser displayed a PowerPoint slide with a pie diagram of the proposed 2018 budget broken into categories of AIS, Cost-share/grants, Education and Outreach, Monitoring, Planning & Administration, Projects Research Studies, Permitting. Manager Chadwick recommended staff add the category percentages to the pie chart.

Administrator Bleser went through the proposed budget table, noting that it estimates $20,000 in 2018 revenue from permitting and explaining that grants applied for are not included as revenue. She noted that Lake Vegetation is a new line item on the table. She said that Lake Vegetation contains the individual projects that apply herbicide to invaders. After going through the table's line items, she explained that for the proposed 2018 levy, $2.6 million would come from Hennepin County and $800,000 would come from Carver County. She announced that on November 1 the District would hold its public hearing as mandated by the Truth in Taxation legislation.

President Yetka opened the public hearing on the proposed RPBCWD 2018 Budget.

Mr. Larry Koch of Bighorn Drive, Chanhassen, noted that the proposed budget table consolidated some line items that were previously separate line items. He said he thinks it is better to have specific line items and budgets for each specific item such as for AIS, how many dollars will go to Chanhassen and how many dollars will go to Eden Prairie. Mr. Koch requested that such a level of detail get included in the budget detail/explanation document. He commented that he thinks it would be helpful to be able to see everything that the District is going to spend by project because it helps to be able to put everything in perspective. Mr. Koch said it also allows everyone to be cognizant of where the District is going. Mr. Koch recommended that before the District designates budgets for wetland management and ground water conservation the District should determine how it will spend funds on these items. He also recommended that the Budget information include a recap of the District's multi-year projects.

Mr. Paul Bulger of Southlawn Road, Eden Prairie and CAC member remarked that line item 12 - the 10-year Watershed Management Plan - seems extremely low and he recommends increasing that number substantially. He said that for line items 13 (AIS Inspection and Early Response), 22 (Plant Restoration), and 28 (Lake Vegetation Implementation Plan) the information given is unclear because budgets for projects within the line items are lumped together. Mr. Bulger stated that the District owes it to the public to make expenditures clear. He questioned the 2018 proposed budget of $115,000 for Education and Outreach when the District hasn't even come close to spending its Education and Outreach budget in previous years. Mr. Bulger said that the District owes it to the public to explain why the District is only spending a fraction of its Education and Outreach budget each year but continues to budget the same amount or even increase that budget. Mr. Bulger commented that the Duck Lake watershed load project is associated with phosphorous reduction but he doesn't understand how the project will reduce phosphorous.

Mr. Matt Lindon, Eden Prairie Resident and CAC member, brought up the Governor's 25x25, or 25% by 2025, initiative. He suggested that the District consider how it will move in the same direction as the initiative. Mr. Lindon suggested the District shouldconsider how it could address water impairments and how the District will quantify restoration so that the District is moving in the same direction as the Governor's initiative.

Laurie Susla, Chanhassen Resident, agreed with Mr. Lindon that it is a good idea to incorporate the Governor's initiative in the District's 10-year plan. She commented that the pie chart that was displayed in the PowerPoint presentation was confusing and seemed disproportionate. Ms. Susla pointed out that the budget table indicates that the 2016 actual for line 13 – AIS inspection and early response was higher than the $11,563.71 listed because the District paid more than that amount in funds to the cities of Chanhassen and Eden Prairie. She suggested that the budget table include a column indicated the expected expenditure at year end for each line item. Ms. Susla asked the Board to look at the amount of funds it has sitting in its reserves and to consider how the District could use those funds to meet its proposed 2018 budget without increasing the tax levy. She also asked the Board to consider what percent of its proposed budget is planned to be spent of water quality improvements, which she considers the core of the District's purpose. She said that she would like to see the District increase the percent of annual budget spent on water quality projects.

President Yetka called for additional comments. Upon hearing none, she asked for a motion to close the public hearing. Manager Ward moved to close the public hearing. Manager Pedersen seconded the motion. Upon a vote, the motion carried 5-0.

Administrator Bleser addressed questions and comments presented in the public hearing. The managers discussed the proposed budget and provided comments to Administrator Bleser such as the suggestion that a column be

added to the budget table to include the projected year-end number for the budget items and add more detail to the budget description to identify specific items in budget lines.

President Yetka read aloud Resolution 2017-06 to Adopt 2018 Budget. Manager Pedersen moved to adopt Resolution 2017-06. Manager Crafton seconded the motion.

Upon a roll call vote, the motion carried 4-1 [Manager Chadwick voted against motion].

Manager	Aye	Nay	Abstain	Absent
Chadwick		X		
Crafton	X			
Pedersen	X			
Ward	X			
Yetka	X			

President Yetka read aloud Resolution 2017-07 to Adopt 2018 Metropolitan Surface Water Management Act Levy. Manager Ward moved to adopt Resolution 2017-07. Manager Crafton seconded the motion. Manager Chadwick commented that he feels that the assessment is more than necessary.

Upon a roll call vote, the motion carried 4-1 [Manager Chadwick voted against motion].

Manager	Aye	Nay	Abstain	Absent
Chadwick		X		
Crafton	X			
Pedersen	X			
Ward	X			
Yetka	X			

6. Public Hearing and Ordering Scenic Heights School Forest Restoration Project 2017-08

Administrator Bleser provided an overview of the project, describing the location, partners, ecosystem, project goals, timeline, estimated total cost of $260,000, and funding sources besides the District including $50,000 from Hennepin County and $45,000 from the Minnetonka School District.

President Yetka opened the public hearing on the Scenic Heights Restoration Project. She called for comments. Upon hearing none, she called for a motion to close the public hearing. Manager Ward moved to close the public hearing. Manager Pedersen seconded the motion. Upon a vote, the motion carried 5-0.

President Yetka read aloud Resolution 2017-08 Ordering the Scenic Heights Elementary School Forest Restoration and Water Quality Improvement Project. Manager Pedersen moved to adopt Resolution 2017-08. Manager Crafton seconded the motion. There was a short discussion. Manager Chadwick commented that he sees this project as involving primarily upland forest and while it has some water quality and volume indications, he thinks the District is exceeding its prerogatives by going into forest. He said he thinks that the District could contribute as a minor partner in the project but coming in as the primary fund source exceeds the prerogatives of the watershed. There was further discussion.

Upon a roll call vote, the motion carried 4-1 [Manager Chadwick voted against motion].

Manager	Aye	Nay	Abstain	Absent
Chadwick		X		
Crafton	X			
Pedersen	X			
Ward	X			
Yetka	X			

7. Matters of General Public Interest

President Yetka opened the floor for matters of general public interest.

Mr. Paul Bulger congratulated the District on the Scenic Heights project and encouraged the Board to pursue more projects of this kind. He asked the Board why the District did not hold a public meeting about the proposed Boundary Change. Attorney Smith informed him of the state's process regarding boundary changes and let him know that the Minnesota Board of Water and Soil Resources would hold the public hearing on the proposed boundary change.

Ms. Laurie Susla asked if the District has a policy or guideline about how much money it can hold in reserve. Administrator Bleser replied that there is information in the District's Governance Manual. President Yetka asked how much of the $4.5 million currently in reserve is earmarked. Administrator Bleser said $1.8 million plus this year's budget plus the multi-year projects as listed on the Treasurer's Report.

Mr. Koch, in response to earlier discussion that reserve funds are important for the District in the event of government shutdown, asked if in the case of a government shutdown how much money does the District get from the state in any one year. He commented that all of the facts and numbers about this this topic need to be known and real numbers need to be discussed instead of hypothetical numbers.

President Yetka directed staff to look at the District's reserve policy in the Governance Manual and to bring the topic back to the Board as needed.

8. Reading and Approval of Minutes

a. July 17, 2017, RPBCWD Board of Managers Special Meeting

Administrator Bleser noted a correction to be made to indicate that the meeting ended at 9:12 p.m. instead of 4:12 p.m. as listed in the minutes. Manager Crafton moved to approve the minutes as amended. Manager Yetka seconded the motion. Upon a 2-1 vote, the motion did not carry [Manager Chadwick voted against the motion; Managers Petersen and Ward abstained from vote because they had not attended the meeting].

Attorney Smith described the process the Board is required to follow and did follow regarding reporting on its closed meetings. He informed the Board that it could take action to suspend its Bylaws for the purposes of taking action on an item.

Manager Crafton moved to suspend the Bylaws. Manager Pedersen seconded the motion. Upon a vote, the motion carried 4-1 [Manager Chadwick voted against the motion].

Manager Ward moved to approve the July 17, 2017, meeting minutes as amended. Manager Crafton seconded the motion. Upon a vote, the motion carried 4-1 [Manager Chadwick voted against the motion].

b. August 2, 2017, RPBCWD Board of Managers Plan Workshop and Monthly Meeting

President Yetka noted that she attended the meeting but is not listed as being present at it. Attorney Smith requested an edit on page 5 under 10d to replace the phrase "modify the District's rules" with "provide."

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

9. Consent Agenda

Manager Chadwick requested the removal of Consent Agenda item a. Accept Staff Report. President Yetka noted a potential conflict of interest for her with item j. Authorize Administrator to Execute with Freshwater Society to Participate in the Master Water Stewards Program. She explained that she is employed at Freshwater Society and she added the item to the agenda as 11i. President Yetka read aloud the Consent Agenda items: b. Accept Engineer's Report (with attached inspection report); c. Approve Permit 2017-052: Old Excelsior Senior Living with staff recommendations; d. Approve Permit 2017-053: Minnetonka Mastercraft with staff recommendations; e. Approve Permit 2017-055: Scenic Heights Elementary 2018 Building Additions with staff recommendations; f. Approve Permit 2017-056: Covington Road Culvert Replacement with staff recommendations; g. Approve Permit 2017-057: Eden Prairie Center Retaining Wall with staff recommendations; h. Approve permit 2017-023: Eden Prairie Assembly of God permit modification with staff recommendations; i. Approve 2nd Review Extension Period for Permit 2017-039: Mission Hills Senior Living; k Approve staff recommendations for cost-share applications for ki. 7300 Laredo Drive, Chanhassen (lake buffer, homeowner); kii. Frontier Trail, Chanhassen (lake buffer, homeowner), kiii. 7205 Frontier Trail, Chanhassen (lake buffer, homeowners assoc.)

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

10. Citizen Advisory Committee (CAC)

Mr. Ziegler, recently appointed CAC President, reported that the CAC encourages the District to host a 25 x 25 meeting and that the CAC is considering adding a workshop to its next meeting to discuss ways that the CAC could help with hosting such a meeting. He stated that the CAC supported the direction of the proposed 2018 budget as presented to the CAC by Terry Jeffery. Mr. Ziegler raised the CAC's idea of conducting a wetland tour in the spring. He said that such a tour would require staff time and that Mr. Jeffery had said that he could probably help with the tour. Mr. Ziegler noted that the CAC would need to know the District's wetland goals. He introduced CAC member and Speakers Bureau Subcommittee member Matt Lindon to talk about the CAC's initiative of developing a RPBCWD Speaker's Bureau. Mr. Lindon reviewed the subcommittee's proposal to develop a District Speaker's Bureau including talking about the objectives and the types of presentations.

Ms. Jordan updated the group about with information about possibly hosting 25 x 25 meeting and talked about possible formats and dates, including the CAC meeting date of September 25. She added that comments collected at such a meeting need to be submitted by October 5.

The Board indicated its support for hosting a 25 x 25 meeting and moving forward with plans for the Speaker's Bureau. Manager Chadwick asked that staff and Board member involvement in the Speaker's Bureau remain strictly in oversight capacity. Ms. Jordan agreed but noted that the process will need to make sure that speaker requests go through staff and that presentation materials are approved by staff. There was a short discussion about a speaker's bureau budget.

11. Action Items

a. Permit 2017-047: Fawn Hill Subdivision – Consider Variance Request and Permit with Staff Recommendations

Engineer Sobiech explained that the permit application is for an 11.6-acres 10-lot single family home subdivision in Chanhassen with an existing high-value wetland on the western portion of the property. He reported on infiltration designed to be installed onsite and explained that additionally the applicant plans to use an existing storm water pond that is partially on and partially off the property. Engineer Sobiech went through his review of the permit application, noting that the development proposes to add an additional acre of impervious surface and describing the District's rules triggered. Engineer Sobiech also noted that all of the buffer for the site will be 60 feet wide and the buffer will be required to be recorded on the declaration.

Engineer Sobiech talked about the applicant's plans to utilize the storm water pond that is partially on the site and partially on the adjacent site, which the applicant developed prior to the District's rules taking effect. Engineer Sobiech reported that the applicant's variance request asks the District to measure the rate control criteria at the outlet from the pond rather than the parcel boundary, which bisects the pond.

Engineer Sobiech noted that if the District approves the variance request the applicant will meet the District's rate control criteria. Engineer Sobiech provided more details on the Engineer's review. He said that the Engineer recommends approval with the condition that the permit applicant provides documentation of authorization from the drainage and utility easement holder, which is the City of Chanhassen, to use the facility and the maintenance instrument enforceable by the Watershed District for the storm water facility that is located off their site. Engineer Sobiech said that also the applicant that submitted the draft maintenance declaration and the draft permit application for review was H.P. Holdings

LLC; however, in the draft declaration provided, it is indicated that the declarant will be H.P.H. Fawn Hill LLC rather than the applicant. He said that because the entity in the declaration is different than the permit applicant and H.P.H. Fawn Hill LLC will be taking ownership over that property after closing in the middle of September, the Engineer recommends that if the Board approves the variance and permit the Board should allow the permit to be permitted to the property owner H.P.H. Fawn Hill LLC.

There was a long discussion about the draft declaration and the maintenance of the storm water pond.

Mr. Tom Bakritges of Homestead Partners/JMS Custom Homes, the developer and builder of the site being discussed, provided details about the project and responded to questions.

Manager Chadwick moved to approve the variance based on the findings presented by the Engineer and with the Engineer's conditions and recommendations. Manager Crafton seconded the motion.

There was a lot of manager discussion.

Upon a vote, the motion carries 3-2 [Managers Ward and Pedersen voted against the motion].

Manager Chadwick move to approve permit 2017-047 with staff recommendations. Manager Crafton seconded the motion. Upon a vote, the motion carries 3-2 [Managers Ward and Pedersen voted against the motion].

b. Permit 2017-034: Park Road Improvements and Riley Creek Crossing Replacement – Consider Variance Request and Permit with Staff Recommendation

Engineer Sobiech stated that this permit application is from the City of Chanhassen. He described the project, which is a mill and overlay project between Audubon Road and Powers Boulevard in Chanhassen and a replacement of a creek crossing at the Riley Creek crossing. Engineer Sobiech summarized his review of the application. He noted that the applicant has a variance request and proposes to grade a portion of the streambank at a slope steeper than 3:1, which doesn't meet the District's requirements. He said that the proposed grade is to match the existing grade and to minimize disturbance on the site and maintain vegetation and existing trees.

Engineer Sobiech responded to questions.

Manager Ward moved to approve the variance based on the findings presented by the Engineer and with staff recommendations. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

Manager Pedersen moved to approve Permit 2017-034 Park Road Improvements and Riley Creek Crossing Replacement. Manager Chadwick seconded the motion. Upon a vote, the motion carried 5-0.

c. Accept July Treasurer's Report

Manager Crafton moved to accept the Treasurer's Report as presented. Manager Pedersen seconded the motion. Manager Crafton stated that she and the Administrator each reviewed the report in accordance with the District's controls and procedures. Upon a vote, the motion carried 5-0. Mr. Koch asked to comment. President Yetka asked him to submit his comments to the Board in writing due to the time of night and the length of the meeting.

d. Approve Paying of Bills

Manager Crafton moved to pay the bills. Manager Pedersen seconded the motion. Upon a vote, the motion carried 5-0.

e. Adopt Resolution 2017-09: Petitioning Boundary Change

Administrator Bleser summarized the steps the District, Nine Mile Creek Watershed District, Minnehaha Creek Watershed District, and the Lower Minnesota River Watershed District have gone through to-date regarding moving forward in the process to petition changes of boundaries. She explained that the next step is for the Board to adopt Resolution 2017-09 to petition the Minnesota Board of Waters and Soil to change the boundaries.

Manager Crafton moved to adopt Resolution 2017-09 Resolution to Petition Changes of Boundary Between Riley Purgatory Bluff Creek Watershed District, Nine Mile Creek Watershed District, Minnehaha Creek Watershed District, and Lower Minnesota River Watershed District. Manager Ward seconded the motion.

Upon a roll call vote, the motion carried 5-0.

Manager	Aye	Nay	Abstain	Absent
Chadwick	X			
Crafton	X			
Pedersen	X			
Ward	X			
Yetka	X			

f. Action on Monetary Limits on Tort Liability through LMCIT

Attorney Smith said that annually the District needs to inform the League of Minnesota Cities Insurance Trust (LMCIT) whether the District will or will not waive monetary limits on its tort liability. He stated that in the past the District has elected not to waive the monetary limits.

Manager Chadwick moved that the District not waive the monetary limits on its tort liability through the LMCIT. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0.

g. Board Managers' Attendance at CAC Meetings

President Yetka noted that the Board's recent practice has been that managers on a rotating basis attend the CAC meetings to listen. She said that with the new make-up of the Board, the Board should determine if it will continue this practice.

Manager Crafton moved that the Board continue the practice. Manager Pedersen seconded the motion. Manager Chadwick added the friendly amendment that the managers attend on a rotating basis as convenient. Upon a vote, the motion carried 5-0.

h. Staff Report

Manager Chadwick provided comments on changes he would like to see in the format and content of the staff report.

i. Authorize the Administrator to Execute with the Freshwater Society to Participate in the Master Water Stewards Program

President Yetka recused herself from presiding over or participating in this action item because she is employed with the Freshwater Society. Manager Pedersen assumed the Acting President role. Administrator Bleser provided details about the program and contract. She stated that the District's funding of this item is not to exceed $1,500.

Manager Crafton authorized the Administrator to enter into contract with the Freshwater Society for sponsoring residents in the program at a total cost not to exceed $1,500. Manager Ward seconded the motion. Upon a vote, the motion carried 5-0.

12. Discussion Items

a. Upcoming Meetings

President Yetka announced that the CAC meeting will be held on September 25 and that the Board's next workshop and monthly meeting will be held October 4 at 5:30 p.m. and 7:00 p.m., respectively.

13. Upcoming Events

- Citizen Advisory Committee, Monday, September 25, 6:30 p.m., District Office, 18681 Lake Drive East, Chanhassen
- Metro Children's Water Festival, September 27, 9:00 a.m. – 3:00 p.m., Minnesota State Fairgrounds
- Governor's 25 x 25 town hall meetings for the Twin Cities Metro Area, 6:30-8:30 p.m. (www.eqb.state.mn.us/townhalls):
    - September 27 in Minneapolis
    - October 4 in Burnsville
    - October 5 in Stillwater
- Board of Managers Workshop and Regular Monthly Meeting, Wednesday, October 4, 5:30 p.m., District Office, 18681 Lake Drive East, Chanhassen
- Cycle the Creek, Saturday, October 7, 10 a.m. – noon, District Office, 18681 Lake Drive East, Chanhassen

14. Adjourn

Manager Pedersen moved to adjourn the meeting of the Board of Managers. Manager Crafton seconded the motion. Upon a vote, the motion carried 5-0. The meeting adjourned at 10:41 p.m.

Respectfully submitted,

_____

Richard Chadwick, Secretary

RPBCWD Staff Report

October 4, 2017

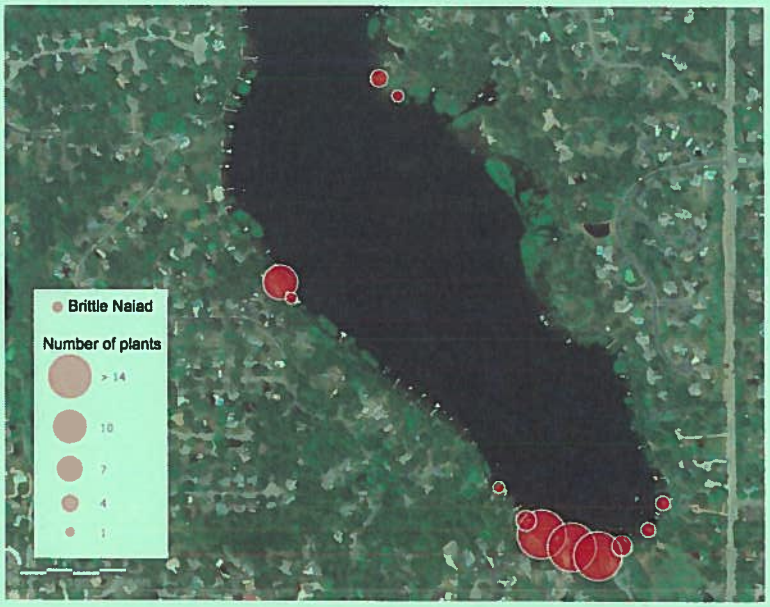
Administrative

10-Year Plan

Staff met with both the CAC and TAC to discuss the draft 10-year plan. Both the TAC and CAC provided suggestions and comments. In overall, the feedback was positive of the work that was done. Further details are listed under the TAC and CAC sections.

Aquatic Invasive Species

Brittle Naiad was discovered by staff during an AIS boat launch scan this month on Lotus Lake. Upon further investigation of the south end of the lake, staff discovered it was more widespread than initially expected with numerous large adult plants spread along both shorelines on either side of the boat launch (hypothesized introduction point). Staff is working with MNDNR to determine next course of action.



Budget
Next Budget meeting will be Nov 1, 2017.

Data Request
We received 3 data requests. Two of the three pertained to 10-year plan materials. One of which could not be satisfied as it requested for materials not yet produced by the District. We are working with the requester on this request and clarifying to them how data requests work. The last request was for a copy of the presentation from Counsel Smith at our September workshop.

Grants
BWSR has requested further information for the closure of two of our grants. We have responded and we are awaiting to see if further information will need to be required. The District still has two active grant projects: the MPCA Community Resiliency and the Lake Susan Park Pond Grants.

Permitting
Please find below permits that were issued administratively in September.

2016-043 Bongard's Permit Extension	permit extension
2017-065 4818 Ridge Rd	single family home
2017-061 735 Pleasant View Rd	single family home
2017-062 7236 Ticonderoga Trail	grading and turf establishment
2017-066 691 Carver Beach Road	single family home

Citizens Advisory Committee

September meeting
The Citizens Advisory Committee met Monday, September 25th for their regular monthly meeting. Administrator Bleser gave a brief presentation on the 10-Year Plan, and then there was discussion. Minutes are included in the board packet. The meeting was preceded by a Community Water Meeting, as a part of the governor's 25x25 initiative (see details below).

Technical Advisory Committee

Administrator Bleser, Staff Jeffery and District Engineer Sobiech met with members of our Technical Advisory Committee to discuss the 10 year plan draft. Members present included: Steve Christopher from BWSR, Rod Rue, Dave Modrow and Leslie Stovring from Eden Prairie, Vanessa Strong and Paul Oehme from Chanhassen, Bob Bean from Deephaven, William Alms from Shorewood, Tom Dietrich from Minnetonka, Jennie Scancke from MNDNR, and Mike Wanous from Carver County Soil, Water and Conservation District. Administrator Bleser did a brief presentation. The members were then asked to provide feedbacks on the plan.

High level comments included:

- Highlight collaboration
- Clarify role on ditches
- Define sustainability and impervious

- What role will the watershed district with WRAPS/TMDL?
- Clarify multi-year funds

There were some conversation in regards to our rules specifically tied to efficiencies as well as linear project. Staff will be discussing the rules with the TAC at our next TAC meeting in november. Meeting notes are included at the end of this report.

Programs and Projects

District-Wide

Cost-share program

Staff conducted site visits of previous year's cost-share grants. Recipients were invited to be present during the inspections to ask questions and receive feedback, and many did so. (Below: Seversen Raingardens, a 2015 project).

Several of this year's grants have already been completed. Staff conducted a site visit to a commercial facility interested in the program. Several potential projects were preliminarily identified and staff are working to explore these with the business.

MPCA Community Resiliency Grant

No new updates.

Total Maximum Daily Load

No additional updates.

Data Collection (J. Maxwell)

Rice Marsh Aeration

Staff is beginning the process to prepare for our winter aeration program of Rice Marsh Lake. This includes applying to MNDNR for the aeration permit as well as the public notice requirements.

Summer Field Season
Staff met with Barr Engineering at the beginning of August to launch a data collection platform for use in the field with an Ipad. The program allows all sonde data collected to be entered into it and sent immediately to the database. This will cut down on staff/volunteer time spent entering data. Data collected will still be QC'd before being finalized. A new version that addressed issues staff had with the last version will be tested out soon.

Along with regular lake and creek monitoring, lake level sensors were checked in September and all were all working well. The rain triggered auto sampling unit north of Rice Marsh Lake has just recently stopped recording water velocity which had previously been working well. It is still recording water levels in which velocities can be calculated from, but staff will probably need to send the unit in for repair. The Riley Creek - Hwy 101 unit is working great. The spent lime treatment system monitoring equipment has been working well. We did have our batteries go dead for a time in August and were replaced. Early nutrient data suggests it is working, however the water level in the unit remains relatively stable which makes it difficult to capture storm event flushes. As of now the District is collecting grab samples once a week to ensure the unit is functioning well.

Carp Management
The floating trap net was pulled this month after being deployed since April 11th to capture fish for education and outreach events and gauge carp movement. The first carp was captured in the net on April 21st and the kill count finished near around 160 common carp. 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 this spring we did have 300-500 fish trapped between the fish barrier and the net however the net became overcome during 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 tracked carp movement via telemetry this past spring, but were not able to get out last month. Staff did find two carp in the Purgatory Creek trap net that had been tagged last year, but 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.

Staff has been busy this month setting small mesh fyke nets and conducting electrofishing surveys. All water bodies have had nets set and pulled these past two months. The Upper Purgatory Creek Recreational Area (UPCRA) nets will be pulled after the staff report is published, so no summary is available. A total of three juvenile carp were captured in the Lower Purgatory Creek Recreational Area (LPCRA). This suggests some recruitment (reproduction) occurred, but remained very limited suggesting limited growth in the common carp population

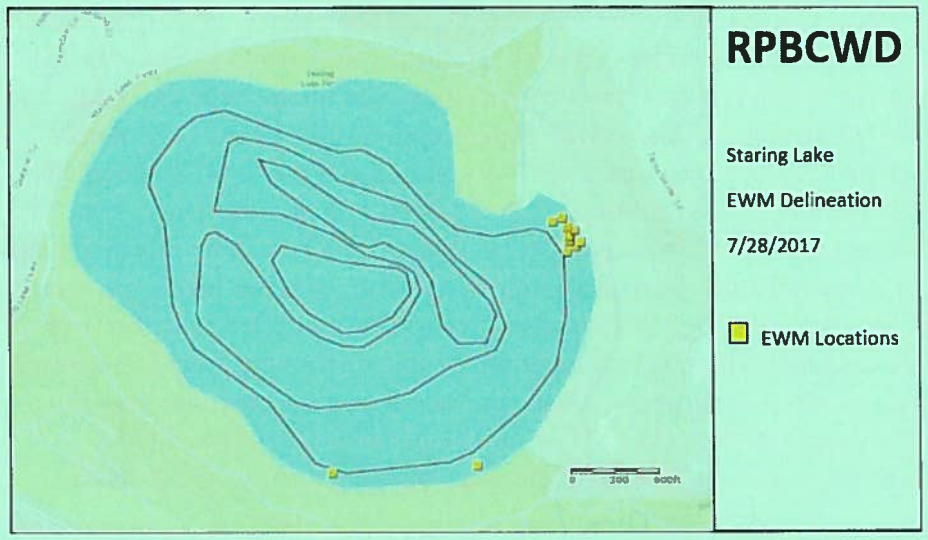
can be attributed to 2017. Staff also captured over 980 bluegill sunfish in the LPCRA, suggesting that the previous winters have not lead to winter kills. This high number of bluegills can help explain the limited recruitment numbers of common carp as they feed on the eggs. All lakes have had at least one electrofishing transect conducted with the exception of LPCRA. Lake Ann, Susan, and Lotus have each had two electrofishing surveys conducted. Only high numbers of adult carp via electrofishing were captured on Staring Lake, UPCRA, and Lake Susan Park Pond. On Staring, staff conducted 5-20 minute transects (as opposed to 3) which yielded 29 carp. Bluegill numbers were down dramatically from 2016 numbers, however water levels were very low and the nets were not optimally fishing. Unfortunately, when staff sampled Lake Susan Park Pond (33min) 23 carp were captured which is very high. Fish must be moving from Lake Susan into the pond which may be easier to then remove them. In Lake Susan we captured very few fish. Fyke netting yielded no young of the year (YOY) carp suggesting very limited to no recruitment. Staff will work this next month to complete electrofishing surveys on all lakes (3/lake).

Staring Lake – Eurasian Watermilfoil 2017

Treatment History
Eurasian watermilfoil (Myriophyllum spicatum, EWM) was found growing in Staring Lake by staff from the University of Minnesota in 2015. The Riley Purgatory Bluff Creek Watershed District with guidance from Freshwater Scientific Services (FWSS), then developed and executed a Rapid Response Plan on October 2, 2015. The majority of the EWM plants found were hand-pulled which was followed by an herbicide treatment. The treatment was a granular 3,5,6-trichloro-2-pyridinyloxyacetic acid (Renovate OTF) applied at a maximum rate of 67.5 pounds per acre foot in 3 treatment areas totaling 9.1 acres. In 2016 an additional four visual scans were completed and multiple plants were found after each scan. Again, plants were hand pulled and another herbicide treatment was applied totaling 6.5 acres.

On July 28th, 2017, staff conducted another EWM scan and found multiple plants (Figure 1). All attached plants were found in the northeast corner of the lake near the outlet of Purgatory Creek. Staff removed multiple plants however staff did not have enough time to remove all plants as there was a very large cluster of plants (n=20) near the center of the plants located in Figure 1. During the last fall visual scan in 2016, staff did find most of the plants in this location and removed them. Staff did locate 2 plants on the south-east corner of the lake however they were complete plants (including roots) that were free floating. Staff removed these plants. As part of the continuation of the rapid response plan, the District treated two acres in the northeast corner of Staring Lake with an herbicide to prevent further spread of the invasive plant.

Figure 1 Map showing the location of EWM found during the July 28t, 2017 scan on Staring Lake.



September 7th, 2017 Visual Scan

On september 7th 2017 staff Maxwell and Dickhausen conducted another partial scan of Staring Lake and found numerous plants along the west side of the lake (Figure 2). Exactly 151 plants were removed. Staff will conduct another scan in October.

Figure 2. Map showing the location of EWM found during the September 7th, 2017 scan on Staring Lake.

Creek Restoration Action Strategy

Staff will be replacing "lost" bank pins at our regular stream monitoring sites with an additional placement of pins on the south side of Silver Lake to assess erosion rates. Regular creek assessments may resume by the end of this month.

Barr Engineering and District staff have completed an updated edition of the CRAS (located on website) and have been working 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 stream section data.

University of Minnesota Grant

18 September 2017

Ray Newman, University of Minnesota, with input from TJ Ostendorf

Riley Purgatory Bluff Creek Watershed District (RPBCWD) Aquatic Plant progress report for September 2017.

Lake Riley was sampled in early September. Although the data have not yet been entered or analyzed, overall frequency of occurrence and species richness was lower than in 2016. Coontail was most frequent but at lower densities than previous years and Eurasian watermilfoil was found at only 7 sites and at very low abundance. The herbicide treatments appear to have been very effective at reducing both curlyleaf pondweed and Eurasian watermilfoil. Water clarity was low (1.6m) and it is not clear if this was related to the reduced plant abundance or if the reduced plant abundance was related to the poorer water clarity. Milfoil samples were processed for genetic analysis and will be incorporated into an LCCMR hybrid watermilfoil study.

Plans for the rest of September include sample processing and data entry and turion surveys in early October

WOMP Station - Metropolitan Council

No new information. Staff have visited the WOMP stations twice this month and have been using the Met Council's new procedures.

Volunteering

Volunteers have contributed over 60 hours to district projects and programs to date. This does not include work done on their own time, like cleaning up trash, or participating in the Adopt a Dock program.

Service Learners

This semester, we will have 6 service learners from the University of Minnesota. Five of them have already begun their service learning. Last week alone, they have already volunteered more than 30 hours. Service learners have been active in the field from setting nets out all the way monitoring our waters.

Plant Surveys

Please find appended to the end of this report plant survey results.

Spring Crest Pond
No new updates.

Education and Outreach (M. Jordan)

25x25 Community Water Meeting
In collaboration with the Lower Minnesota River Watershed District, the District hosted a Community Water Meeting, part of the Governor Dayton's 25x25 initiative. As stated on the initiative's website, to goal is to: "spur collaboration and action to improve Minnesota's water quality 25 percent by 2025. Without additional action, the quality of Minnesota's waters is expected to improve only 6 to 8 percent by 2034. Governor Dayton wants to hear from Minnesotans and will host a series of Town Halls over the summer and fall. In addition, he is calling on Minnesotans and civic organizations to organize their own Community Water Meetings this summer to provide further feedback and ideas." 16 community members participated and helped to generate answers to three questions posed by the governor. The notes from the meeting are included at the end of the staff report.

Adopt a Dock Program
Volunteers continue to check their plates. No invasive mussels have been found. Volunteers will soon begin bringing in their plates for the year.

AIS Jr Inspector
The program was used during the Children's Water Festival, with almost 150 students participating in learning about aquatic invasive species. Carver County WMO has also started doing a similar activity with one of their boats and hosted a second station at the festival. Total outreach of this program is roughly 300 kids.

Annual Communication
This year's annual communication will be a wall calendar with photos highlighting the District's many resources. Work has begun on compiling the calendar. The trail map that was printed with last year's communication is almost out of print and a new print run will be ordered soon.

Cycle the Creek
Staff have been getting everything set for the event on Saturday, October 7th. The route will be highlighting portions of Riley Creek and the lakes it connects. There are a few openings left for those interested in this relaxed, family-friendly bicycle tour of Riley Creek.

Earth Day Mini Grants
No new updates.

Year end gathering and volunteer celebration
Work is beginning on planning a year-end gathering and volunteer celebration. Save the date for Thursday, December 14th. We will celebrate the good work of the last year, the last 10-Year Plan, and the volunteers who have done so much to further the District's work of protecting, managing, and restoring the water resources in our community.

Lakes and Creeks Water Quality Report
Over 800 printed fact sheets have been distributed.

Master Water Stewards Program
Four applicants have been accepted for the Fall 2017 cohort. An additional two applicants are being considered. The first class for this new cohort will be October 10th. One of this year's steward teams completed their project: a system to collect rainwater off of a gazebo and use it to water their shoreline buffer. This is a great example of small-scale residential reuse (photo below).

Master Water Stewards continue to actively work toward their volunteer hours, doing important work to help protect clean water. Staff often get photos from them "out in the field". Below are just a few.

(Trash pulled from Duck Lake by David)

(Duane cleaning out stormdrains)

Staring Outdoor Center
Staff will be returning to the Staring Outdoor Center to again support their water studies programing with 4th graders on October 2nd.

Website & Newsletter
Staff continue to work in the website update.

Winter & Turf Maintenance Training
A winter Road and Parking Lots workshop will be held on November 9th.

Bluff Creek One Water

Chanhassen High School

Staff Jeffery and Jennifer Koehler of Barr discussed with the Chanhassen High School cost savings with district representatives. The specific items discussed included using telemetry rather than wired connections, using prefabricated housing for the UV treatment facility rather than a larger shed that would need to be designed specific to the UV treatment unit and other specifications, the location of the pump and treatment unit, and other miscellaneous items. The school was generally receptive to the idea but requested additional information. The District is preparing this information for the school district's review.

Bluff Creek Tributary Restoration

Staff Jeffery, Administrator Bleser, District Engineer Sobiech met with the design team to discuss 60% design as well as logistics for the project. We will be meeting with the City of Chanhassen next.

Riley Creek One Water

Lake Susan Park Pond

Staff continues to work with the design team and the city through the design process. On September 21st, staff assisted Barr Engineering in surveying the area around the south and east sides of Lake Susan Park Pond, as well as the stretch of Riley Creek that runs adjacent to the pond.

Riley Creek

The Design team is continuing to work on the restoration.

Lake Riley CLP Treatment

No new updates.

Lake Riley Water Quality Project (Alum)

No new updates.

Lake Susan CLP Treatment

No new updates.

Purgatory Creek One Water

Fire Station 2

Staff continues to work with the City of Eden Prairie and SRF on educational signage for the site. Project for the cistern is planned to begin next week.

Purgatory Recreational Area Berm

No new updates

Purgatory Creek at 101
No new updates

Mitchell Lake Plant Management
No new updates

Red Rock Lake Plant Management
No new updates

Scenic Heights School Forest
The temporary sign for the trail entrance has been printed and is being installed.

Staring Lake Plant Management
No new updates.

Professional Workgroups and Continuing Education

AWRA
Administrator Bleser was invited to present in plenary lightning talk at the American Water Resources Association in addition to her presentation. The presentation will be a brief overview of her presentation.

University of Minnesota Wetland Delineation Certification Program
The week of September 11th through September 15th, Staff Dickhausen attended a five-day wetland delineation course held in Little Falls, MN. The course, a part of the University of Minnesota's Wetland Delineator Certification Program, hosted and taught by The University of Minnesota, Board of Water and Soil Resources and U.S. Army Corps of Engineers, covered the essential knowledge and skills needed to pass the wetland delineation certification exam and effectively identify and delineate wetlands in Minnesota. Supplemented with in-depth lectures covering necessary information needed to become certified, staff Dickhausen received hands-on experience carrying out actual wetland delineations along side experienced delineators/instructors.

BWSR Academy
Staff Dickhausen and staff Jordan will be attending this year's Board of Soil and Water Resources Academy.

Water Resources Conference
Staff Jeffery will be attending the Water Resources Conference.

fixmylake.com
15771 Creekside Lane
Osseo, MN 55369
james@freshwatersci.com
(651) 336-8696

2017 Aquatic Plant Survey: Lake Ann

(WBIC# 10-0012-00)

Surveyed August 2, 2017

Surveying, Analysis, and Reporting by:

James A. Johnson – Freshwater Scientific Services, LLC

Certified Lake Manager
www.NALMS.org

Prepared for Riley Purgatory Bluff Creek Watershed District – September 2017

Survey & Analysis Methods

Point-Intercept Survey

Freshwater Scientific Services, LLC surveyed the aquatic plant community of Lake Ann (Carver Co., MN) on August 2, 2017 using the point-intercept survey method described by Madsen (1999). This survey was based upon 366 sample points arranged in a uniform grid (50-m spacing) across the entire lake (Figures 1 and 2).

At each designated sample location, we collected plants using a double-headed, 14-tine rake on a rope. For each rake sample, we dragged the rake over the lake bottom for approximately 5 ft before retrieving. Retrieved plants were piled on top of the rake head and assigned density scores from 1 to 4 based upon rake head coverage (Figure 3) for each individual species and for all plants collectively.

We calculated the littoral frequency (≤15 ft, % occurrence) and littoral mean plant abundance (density score) for each encountered plant species, as well as bay-wide and littoral community metrics (Tables 1 and 2). Plant species that were observed growing within 10 ft of a sample point but not retrieved on the rake were given a rating of zero for that location. These "zero" species were noted as being present, but these "zero" ratings were excluded from calculations of plant community metrics and statistics (not treated as denoting presence). At each location, we also documented water depth and overall plant height.

Figure 1. Sampled points for Lake Ann in 2017; area >15 ft deep is shaded.

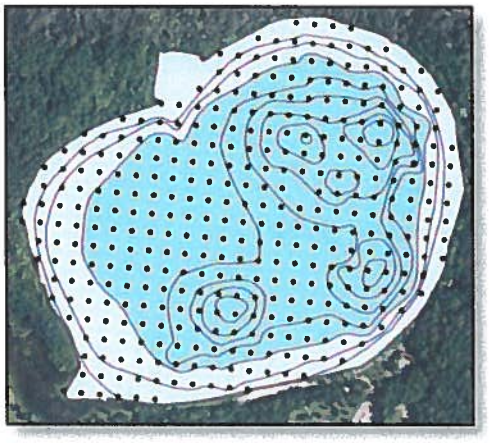
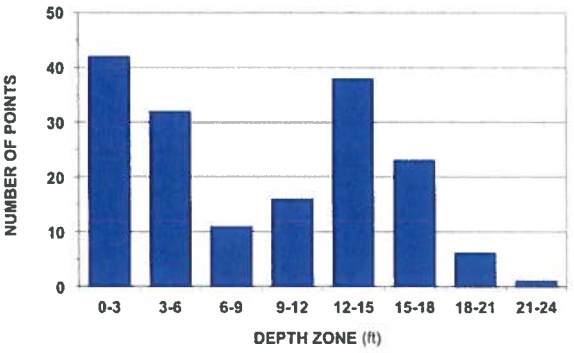


Figure 2. Sampling effort (number of locations sampled) within successive 3-ft depth zones. (Lake Ann, 2017)



Results

Statistical Summary of Aquatic Plant Community in Lake Ann

Table 1. Littoral frequency (% occurrence) and abundance (mean density score) of plant species found during the 2017 survey of Lake Ann. % Occurrence and mean density (0-4 scale) were calculated using all littoral points (water depth ≤15 ft). "P" denotes taxa that were observed growing but not retreived in any rake samples.

PLANT TAXA	COMMON NAME	% Occurrence	Littoral Density
ALL TAXA (combined)		**64**	**1.9**
SUBMERSED TAXA			
Ceratophyllum demersum	Coontail	61	1.3
Potamogeton zosteriformis	Flat-stem pondweed	55	0.8
Myriophyllum sibiricum	Northern watermilfoil	7	0.1
*Myriophyllum spicatum**	Eurasian watermilfoil	4	0.0
Potamogeton illinoensis	Illinois pondweed	4	0.1
Najas guadalupensis	Southern naiad	3	<0.1
Chara sp.	Muskgrass	3	<0.1
Stuckenia pectinata	Sago pondweed	3	<0.1
Vallisneria americana	Wild celery	2	<0.1
Heteranthera dubia	Water stargrass	1	<0.1
Potamogeton foliosus	Leafy pondweed	1	<0.1
Potamogeton nodosus	Long-leaf pondweed	1	<0.1
Utricularia vulgaris	Common bladderwort	1	<0.1
*Najas minor**	Brittle naiad	P	–
*Potamogeton crispus**	Curly-leaf pondweed	P	–
FLOATING/EMERGENT TAXA			
Nymphaea odorata	White waterlily	26	0.3
Nuphar variegata	Bull-head pond-lily	14	0.1
Lemna trisulca	Star duckweed	3	<0.1
Potamogeton natans	Floating-leaf pondweed	3	<0.1
Sagittaria sp.	Arrowhead	3	<0.1
Schoenoplectus acutus	Hardstem bulrush	2	<0.1
Iris versicolor	Northern blue flag	P	–
Typha sp.	Cattail	P	–

* Aquatic invasive plant

Table 2. Summary of plant community metrics for the 2017 survey conducted on Lake Ann

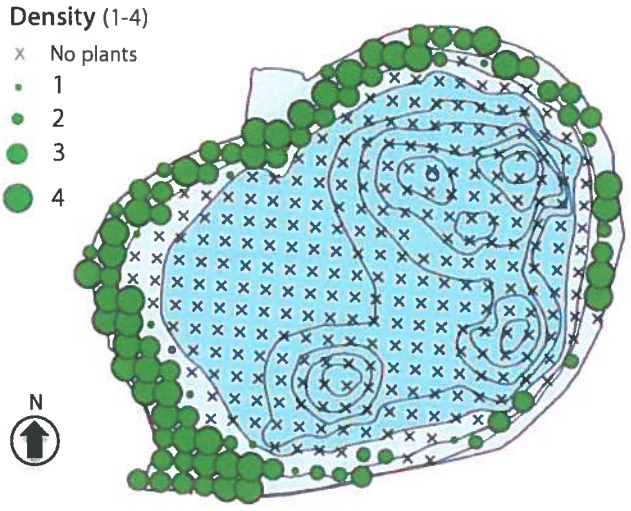
SURVEY RESULTS	2017
LAKE-WIDE METRICS	
Lake Area (acres)	114
Total Points Sampled	171
% Lake Vegetated	28%
% Lake with Veg. to Surface	16%
Max Depth of Growth (95%)	10.7 ft
# Native Taxa	20
# Non-Native Taxa	3
LITTORAL METRICS (≤15 ft)	
Littoral Area (acres)	48
Littoral Points Sampled	148
% Littoral Points Vegetated	64%
Mean Littoral Plant Height (ft)	1.5 ft
% of Max Littoral Biovolume	34%
Mean Native Taxa / Point	1.9
Simpson's Diversity	0.80
Floristic Quality (FQI)	22.5
AMCI Score	50

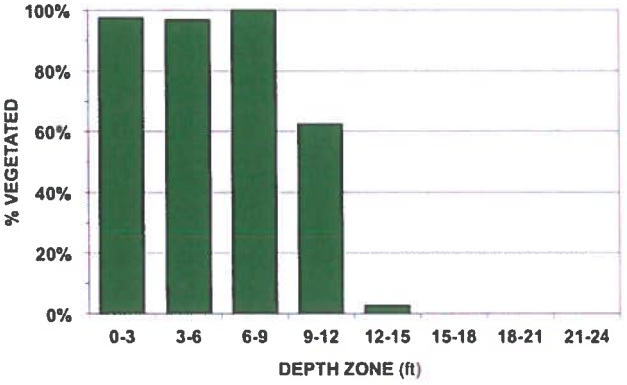
Figure 3. Rake density scores used to assess plant abundance during point-intercept surveys

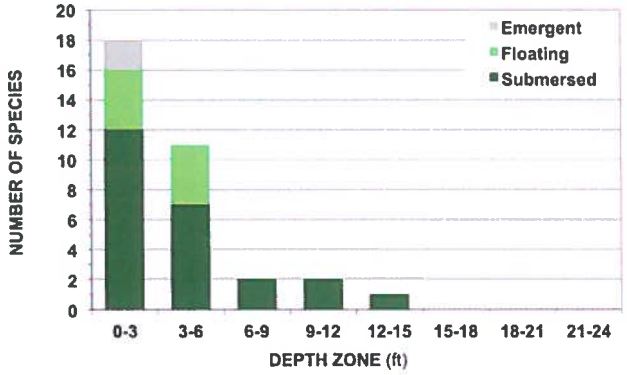
Density Score	Rake Coverage	Description
1		Only a few plants retrieved
2		Full length of rake head covered, but tines only partially covered
3		Plants completely cover the rake head and tines
4		Enough plants to cover rake head and tines multiple times

Lake Ann – Aquatic Plant Community

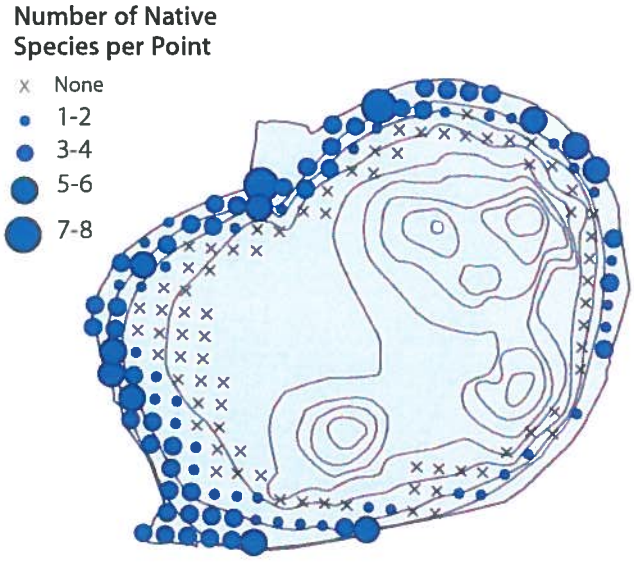
All Vegetation







Native Plant Diversity



Surveyed: August 2, 2017
Methods: Rake, Sonar, Depth Rod
Surveyor: JA Johnson

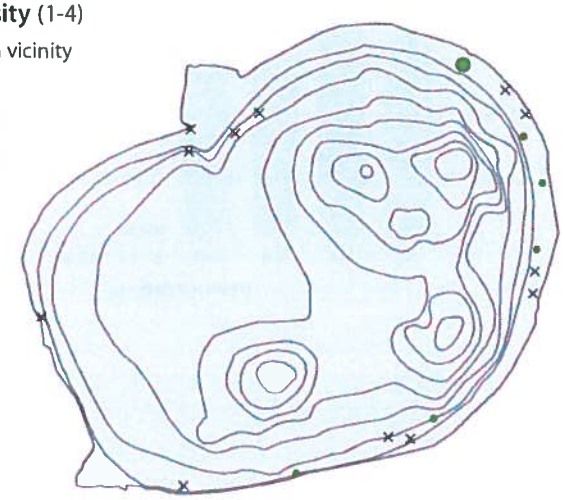
NALMS Certified Lake Manager
www.NALMS.org

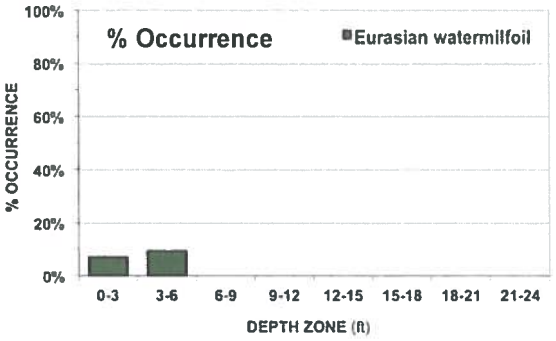
Lake Ann – Invasive Aquatic Plants

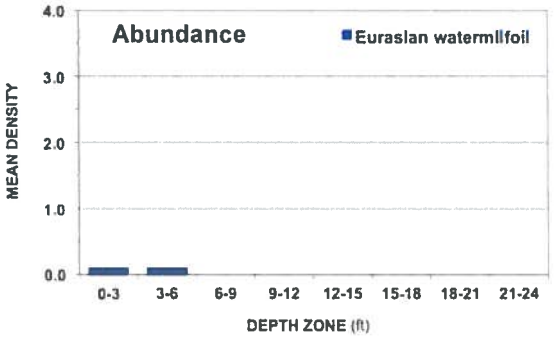
Eurasian Watermilfoil

Density (1-4)

- x In vicinity
- 1
- 2
- 3
- 4



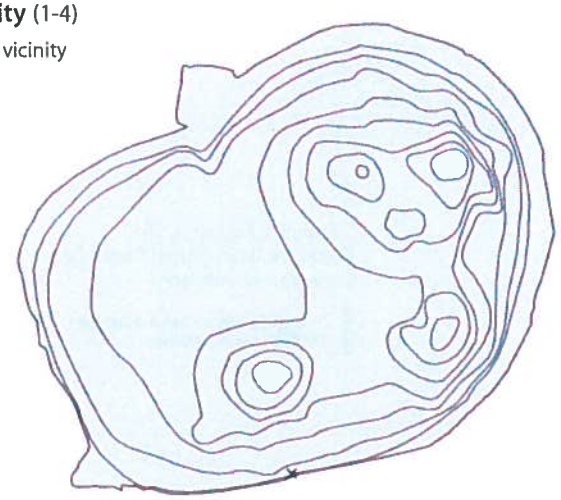




Curlyleaf Pondweed (post-senescence)

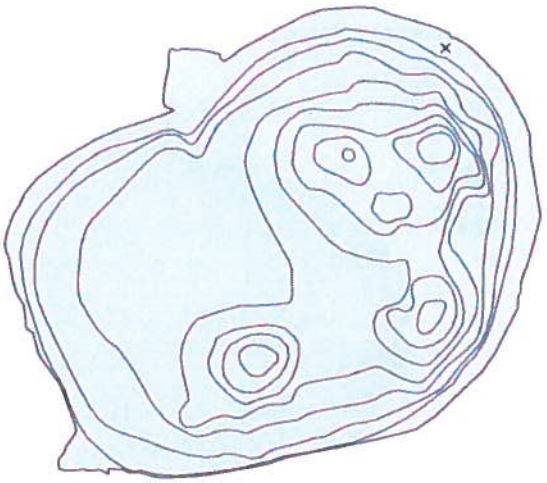
Density (1-4)

- x In vicinity
- 1
- 2
- 3
- 4



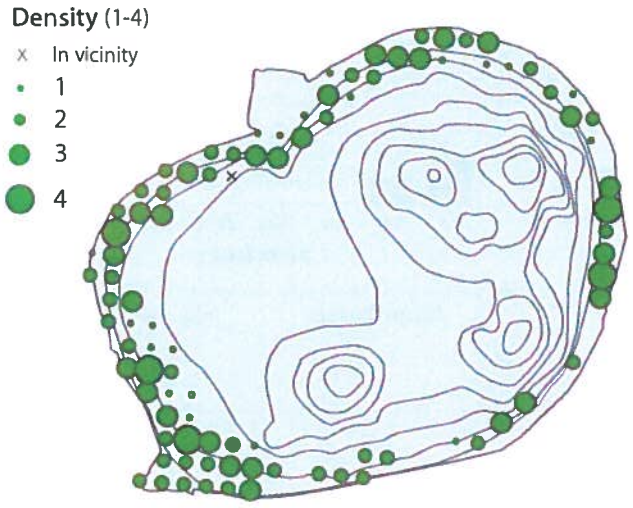
Brittle Naiad

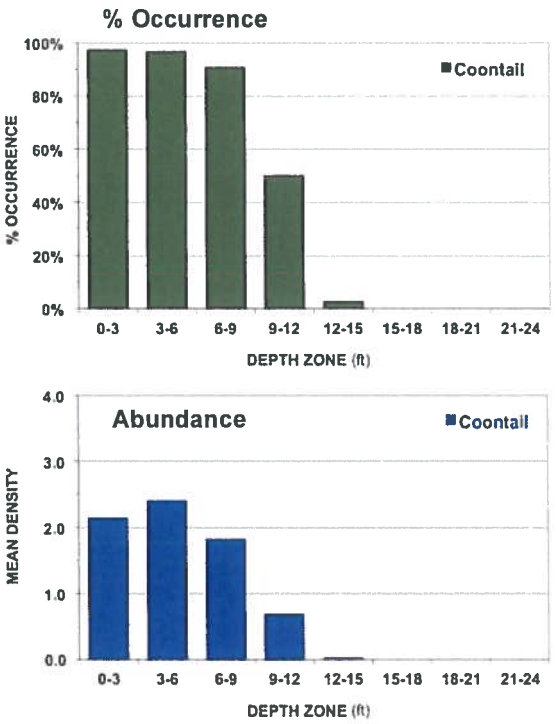
(New Infestation 2017)



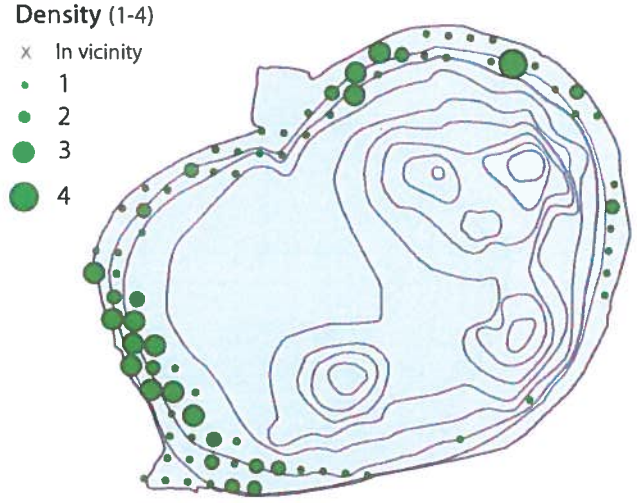
Lake Ann – Native Submersed Aquatic Plants

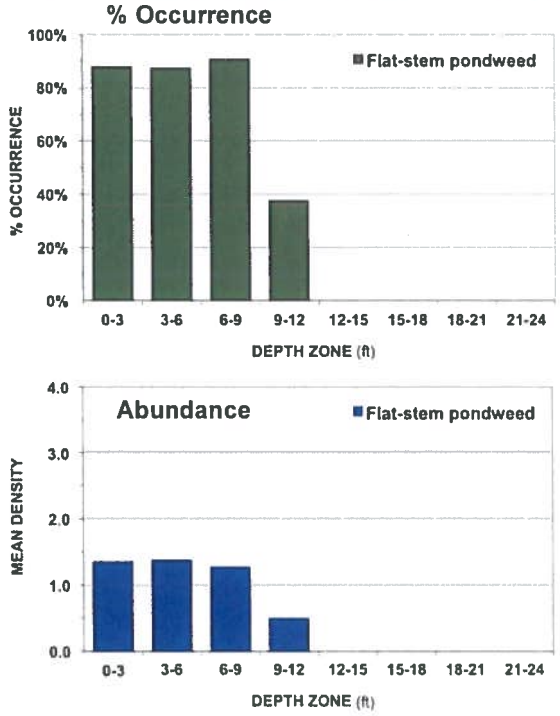
Coontail





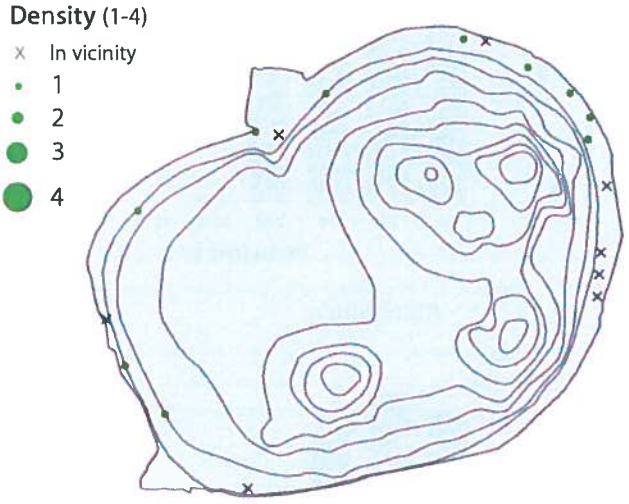
Flat-Stem Pondweed

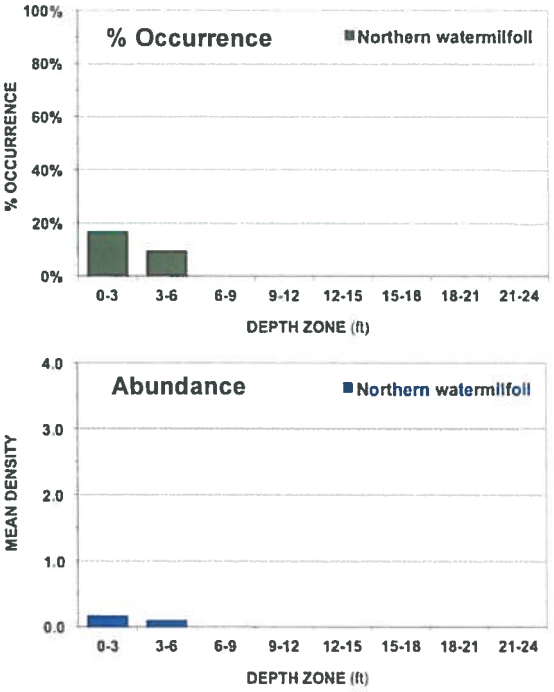




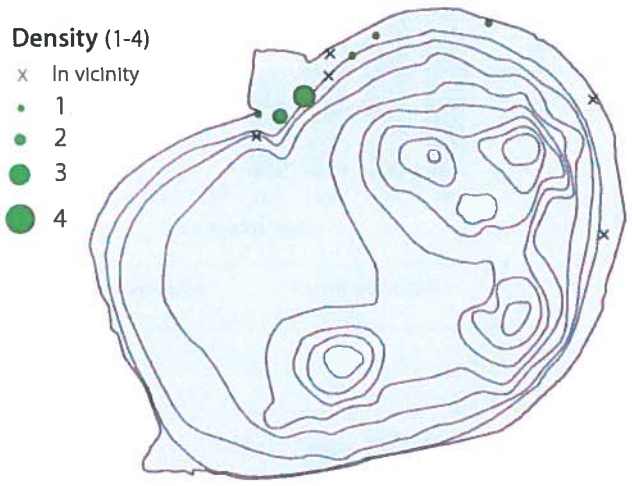
Lake Ann – Native Submersed Aquatic Plants

Northern Watermilfoil

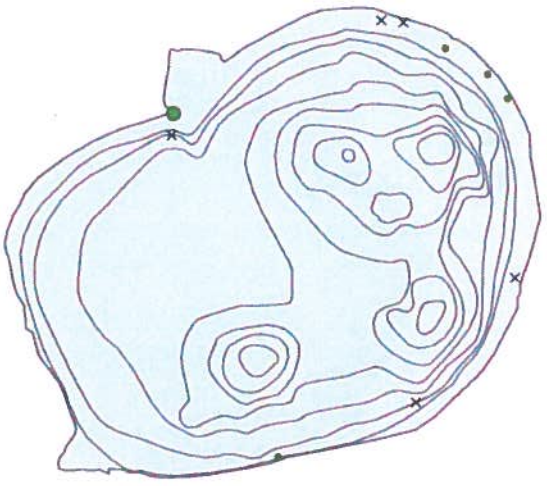




Illinois Pondweed

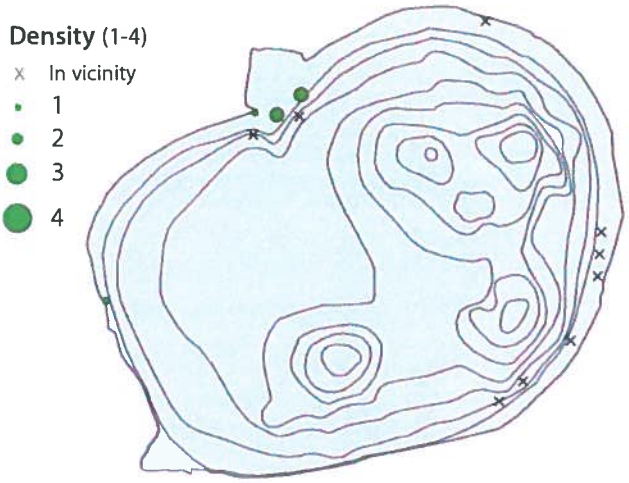


Southern Naiad

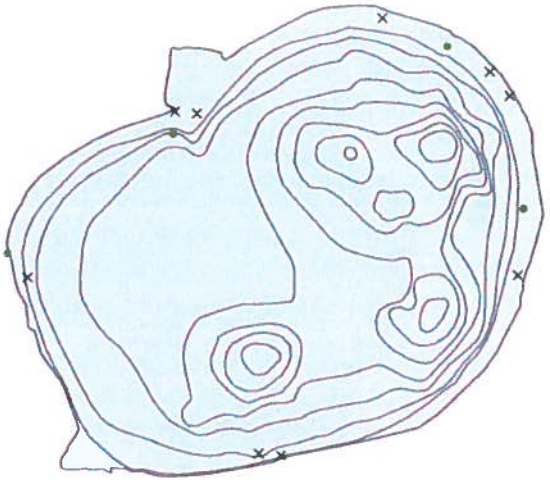


Lake Ann – Native Submersed Aquatic Plants

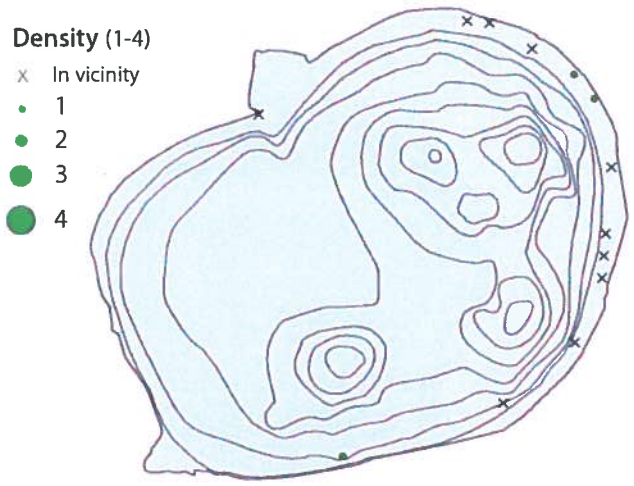
Muskgrass (Chara)



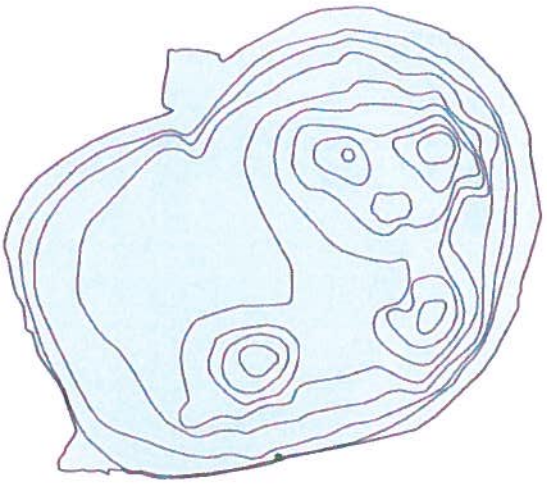
Sago Pondweed



Wild Celery

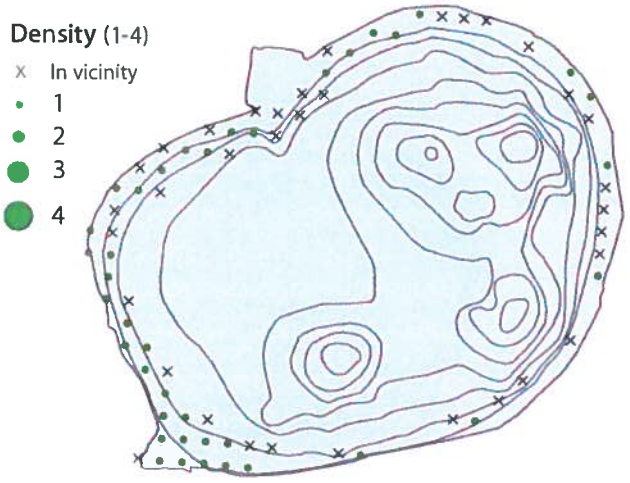


Water Stargrass

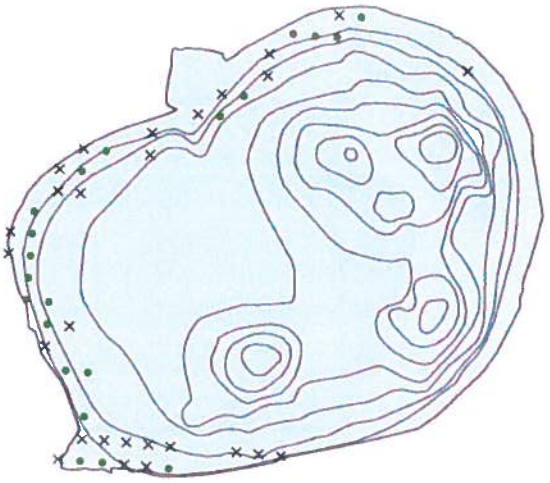


Lake Ann – Native Floating & Emergent Aquatic Plants

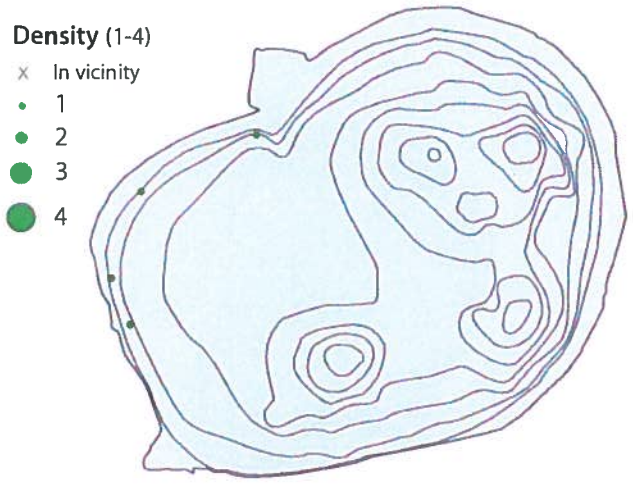
White Waterlily



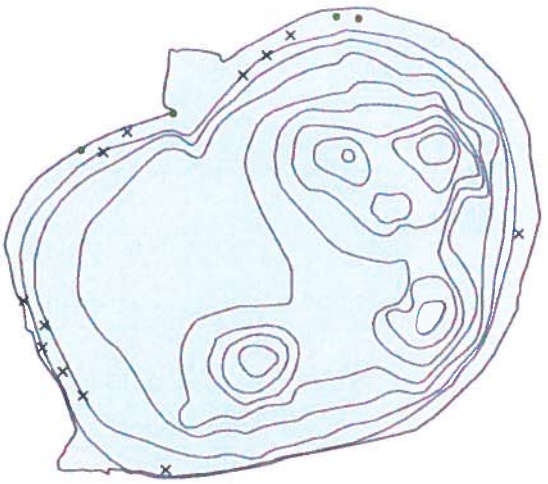
Bull-Head Pond-Lily



Floating-Leaf Pondweed

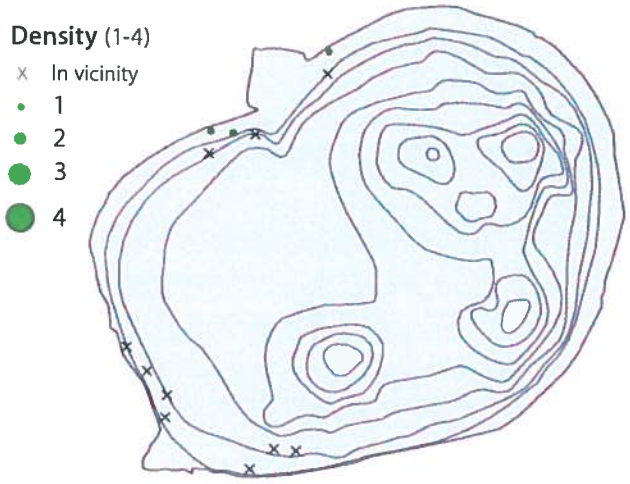


Arrowhead

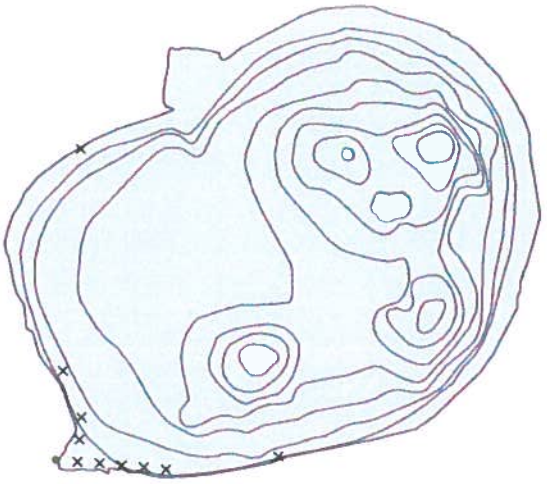


Lake Ann – Native Floating & Emergent Aquatic Plants

Hard-Stem Bulrush



Cattail



References

Madsen JD. 1999. Point intercept and line intercept methods for aquatic plant management. APCRT Technical Notes Collection. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Nichols SA, Weber S, Shaw B. 2000. A proposed aquatic plant community biotic index for Wisconsin Lakes. Env Manage 26: 491-502.

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2017 Aquatic Plant Survey: Duck Lake

(WBIC# 27-0069-00)

Surveyed August 1, 2017

Surveying, Analysis, and Reporting by:

James A. Johnson – Freshwater Scientific Services, LLC

NALMS Certified Lake Manager
www.NALMS.org

Prepared for Riley Purgatory Bluff Creek Watershed District – September 2017

Survey & Analysis Methods

Point-Intercept Survey

Freshwater Scientific Services, LLC surveyed the aquatic plant community of Duck Lake (Hennepin Co., MN) on August 1, 2017 using the point-intercept survey method described by Madsen (1999). This survey was based upon 67 sample points arranged in a uniform grid (50-m spacing) across the entire lake (Figures 1 and 2).

At each designated sample location, we collected plants using a 14-tine rake on an extendable pole. For each rake sample, we dragged the rake over the lake bottom for approximately 5 ft before retrieving. Retrieved plants were piled on top of the rake head and assigned density scores from 1 to 4 based upon rake head coverage (Figure 3) for each individual species and for all plants collectively.

We calculated the littoral frequency (≤15 ft, % occurrence) and littoral mean plant abundance (density score) for each encountered plant species, as well as bay-wide and littoral community metrics (Tables 1 and 2). Plant species that were observed growing within 10 ft of a sample point but not retrieved on the rake were given a rating of zero for that location. These "zero" species were noted as being present, but these "zero" ratings were excluded from calculations of plant community metrics and statistics (not treated as denoting presence). At each location, we also documented water depth and overall plant height.

Figure 1. Duck Lake sample points for 2017

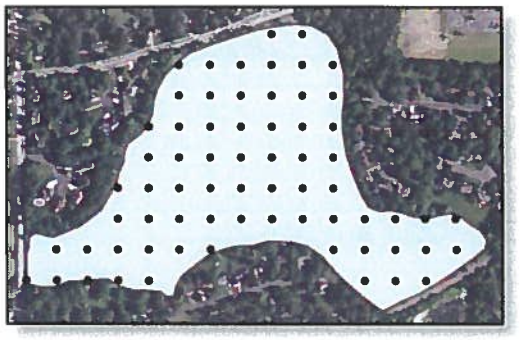
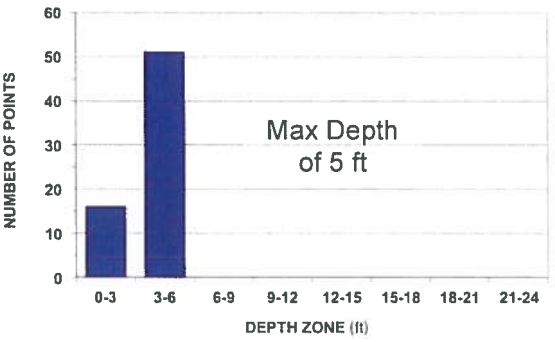


Figure 2. Sampling effort (number of locations sampled) within successive 3-ft depth zones. (Duck Lake, 2017)



Results

Statistical Summary of Aquatic Plant Community in Duck Lake

Table 1. Littoral frequency (% occurrence) and abundance (mean density score) of plant species found during the 2017 survey of Duck Lake. % Occurrence and mean density (0-4 scale) were calculated using all littoral points (water depth ≤15 ft). "P" denotes taxa that were observed growing but not retreived in any rake samples.

PLANT TAXA	COMMON NAME	% Occurrence	Littoral Density
ALL TAXA (combined)		**100**	**3.7**
SUBMERSED TAXA			
Ceratophyllum demersum	Coontail	99	3.5
Elodea canadensis	Canadian waterweed	42	0.5
Chara sp.	Muskgrass	10	0.1
Potamogeton zosteriformis	Flat-stem pondweed	6	0.1
Heteranthera dubia	Water stargrass	4	0.1
Stuckenia pectinata	Sago pondweed	4	<0.1
Potamogeton pusillus	Small pondweed	1	<0.1
FLOATING/EMERGENT TAXA			
Spirodela polyrhiza	Common watermeal	9	0.1
Lemna minor	Small duckweed	6	0.1
Lemna trisulca	Large Duckweed	4	<0.1
Wolffia columbiana	Star duckweed	3	<0.1
Typha sp.	White waterlily	P	–

Table 2. Summary of plant community metrics for the 2017 survey conducted on Duck Lake

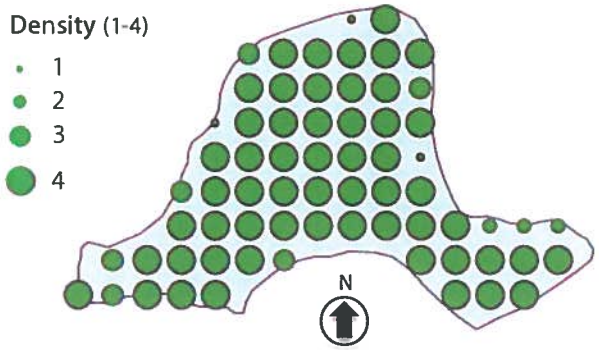
SURVEY RESULTS	2017
LAKE-WIDE METRICS	
Lake Area (acres)	41
Total Points Sampled	67
% Lake Vegetated	100%
% Lake with Veg. to Surface	11%
Max Depth of Growth (95%)	4.2 ft
# Native Taxa	14
# Non-Native Taxa	0
LITTORAL METRICS (≤15 ft)	
Littoral Area (acres)	41
Littoral Points Sampled	67
% Littoral Points Vegetated	100%
Mean Littoral Plant Height (ft)	2.6 ft
% of Max Littoral Biovolume	66%
Mean Native Taxa / Point	1.9
Simpson's Diversity	0.67
Floristic Quality (FQI)	14.1
AMCI Score	42

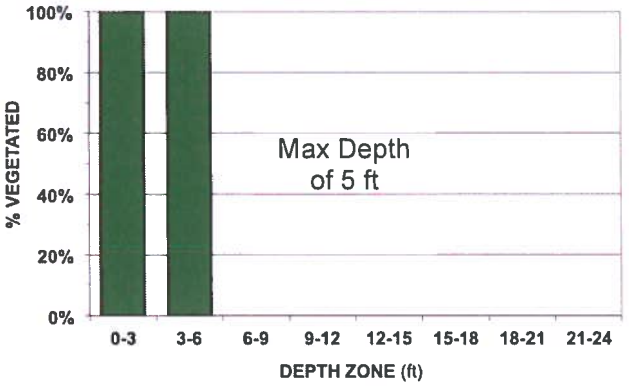
Figure 3. Rake density scores used to assess plant abundance during point-intercept surveys

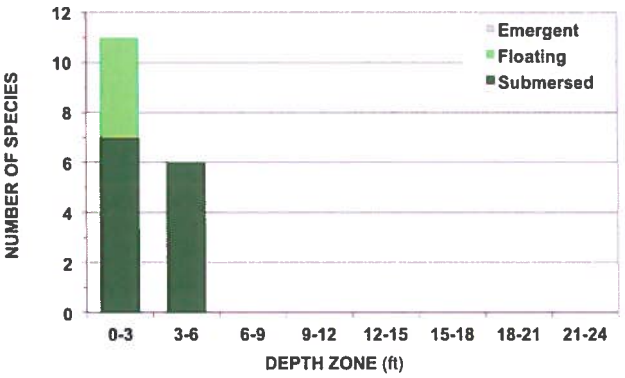
Density Score	Rake Coverage	Description
1		Only a few plants retrieved
2		Full length of rake head covered, but tines only partially covered
3		Plants completely cover the rake head and tines
4		Enough plants to cover rake head and tines multiple times

Duck Lake – Aquatic Plant Community

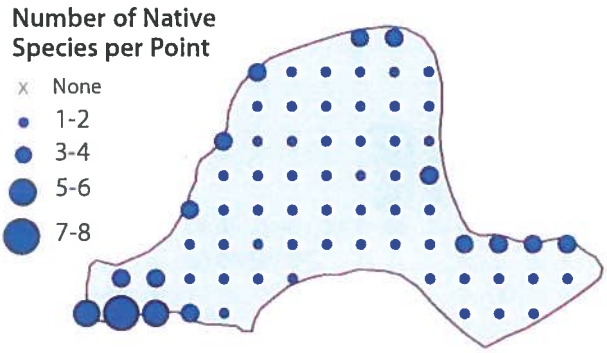
All Vegetation







Native Plant Diversity

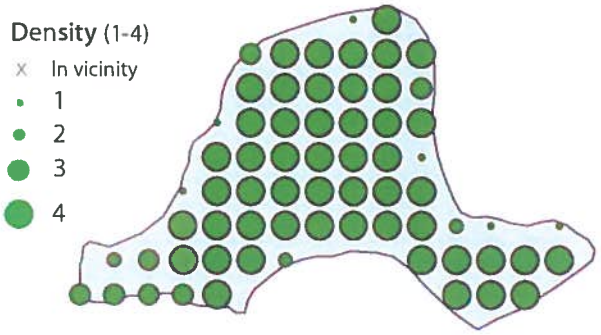


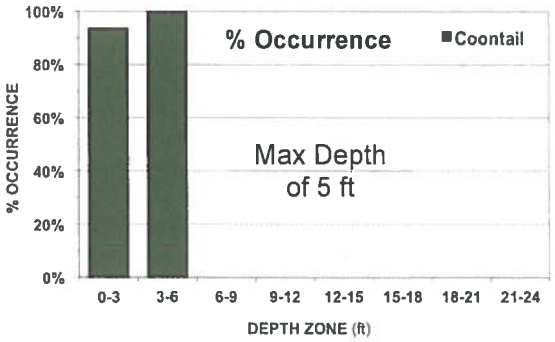
Surveyed: August 1, 2017
Methods: Rake, Sonar, Depth Rod
Surveyor: JA Johnson

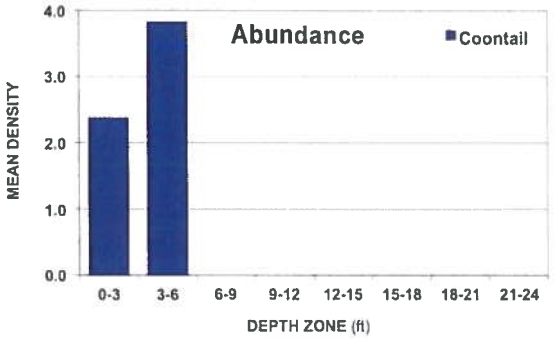
Certified Lake Manager
www.NALMS.org

Duck Lake – Native Submersed Aquatic Plants

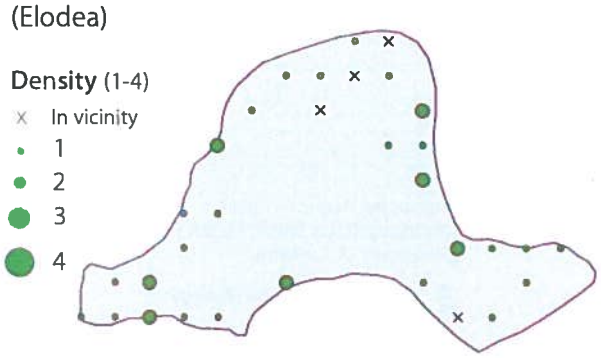
Coontail

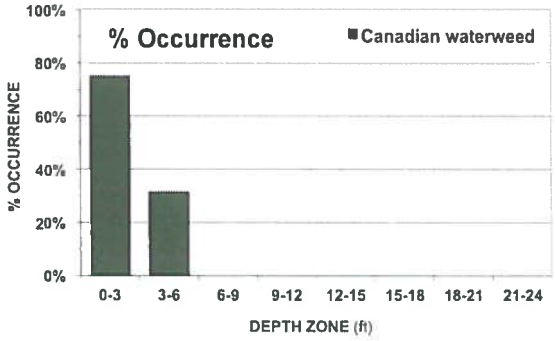


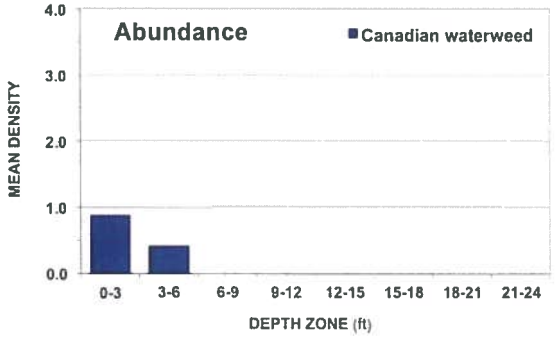




Canadian Waterweed
(Elodea)

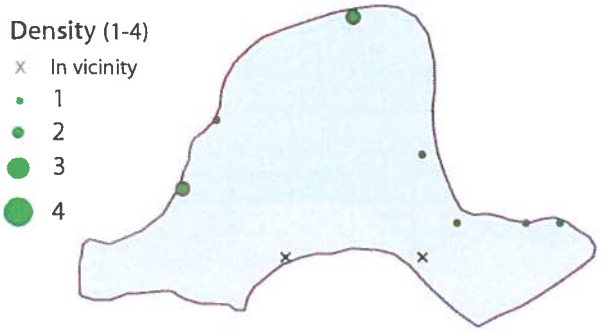


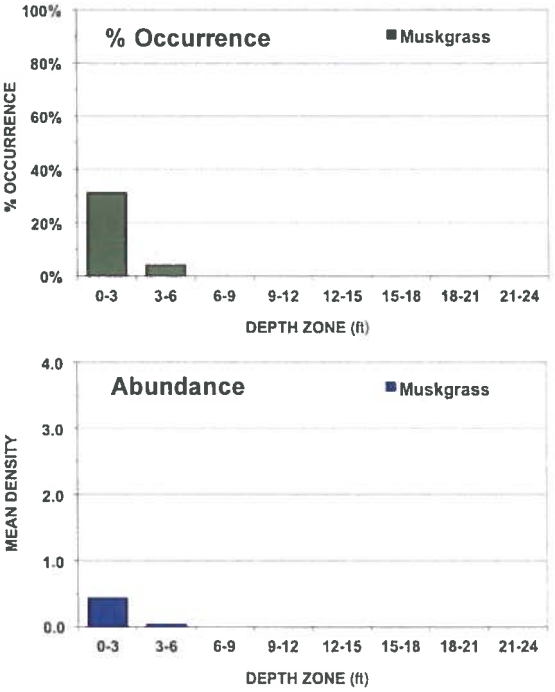




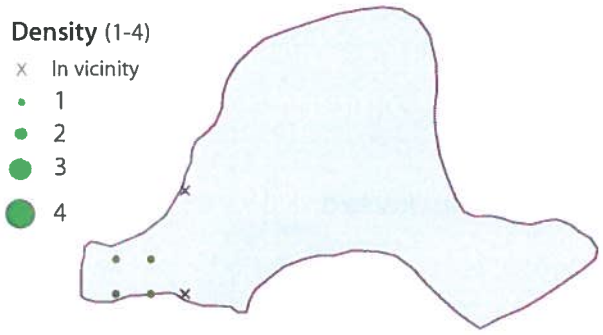
Duck Lake – Native Submersed Aquatic Plants

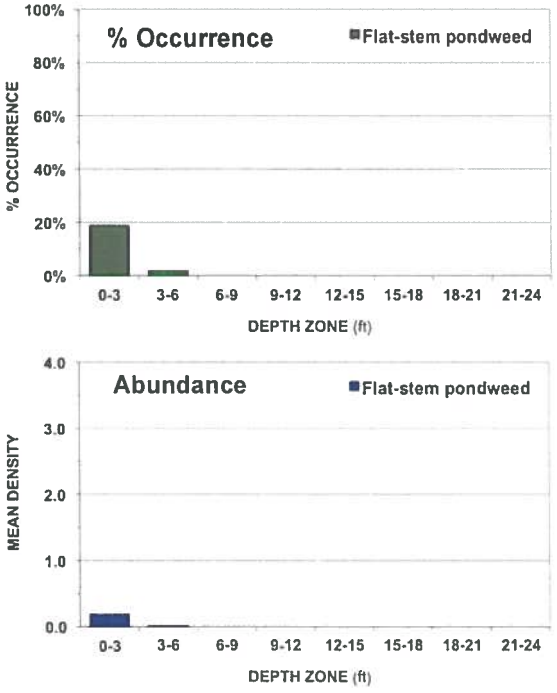
Muskgrass (Chara)





Flat-Stem Pondweed

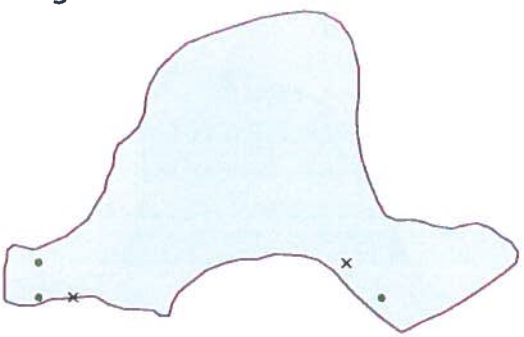




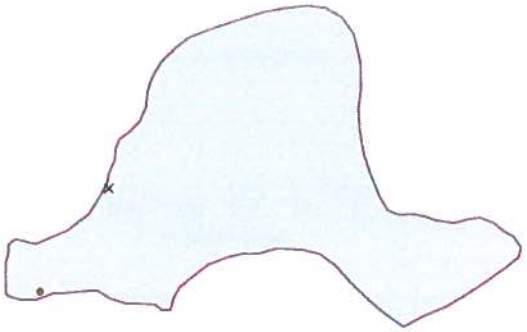
Duck Lake – Native Submersed Aquatic Plants

Water Stargrass

Sago Pondweed



Small Pondweed

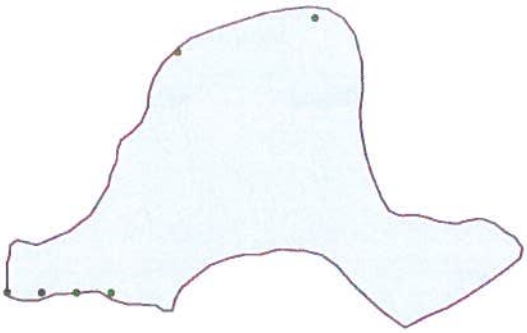


Density (1-4)

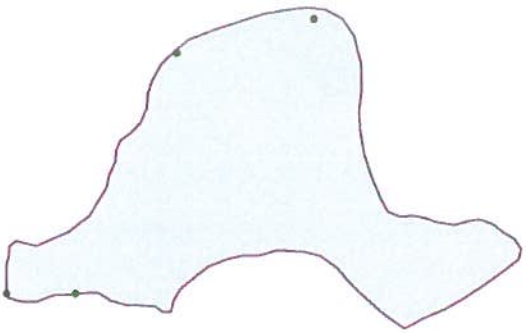
- In vicinity
- 1
- 2
- 3
- 4

Duck Lake – Native Free-Floating Aquatic Plants

Giant Duckweed

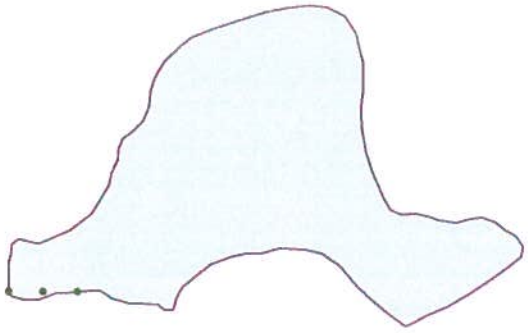


Small Duckweed

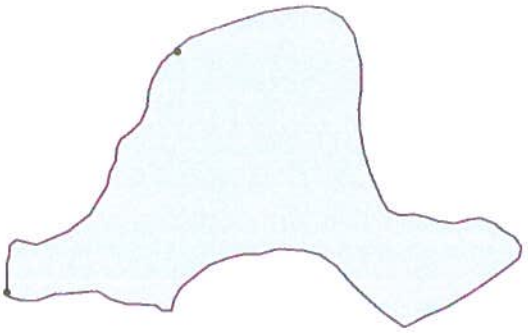


Duck Lake – Native Free-Floating Aquatic Plants

Star Duckweed

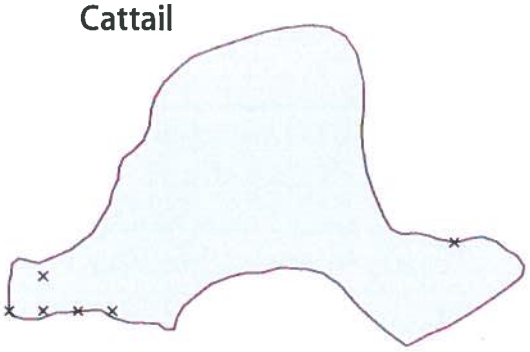


Common Watermeal



Duck Lake – Emergent Aquatic Plants

Cattail



References

Madsen JD. 1999. Point intercept and line intercept methods for aquatic plant management. APCRT Technical Notes Collection. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

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2017 Aquatic Plant Survey: Lotus Lake

(WBIC# 10-0006-00)

Surveyed July 31, 2017

Surveying, Analysis, and Reporting by:

James A. Johnson – Freshwater Scientific Services, LLC

Certified Lake Manager
www.NALMS.org

Prepared for Riley Purgatory Bluff Creek Watershed District – September 2017

Survey & Analysis Methods

Point-Intercept Survey

Freshwater Scientific Services, LLC surveyed the aquatic plant community of Lotus Lake (Carver Co., MN) on July 31, 2017 using the point-intercept survey method described by Madsen (1999). This survey incorporated assessments at 239 sample points arranged in a uniform grid (50-m spacing) across the entire lake (Figures 1 and 2).

At each designated sample location, we collected plants using a double-headed, 14-tine rake on a rope. For each rake sample, we dragged the rake over the lake bottom for approximately 5 ft before retrieving. Retrieved plants were piled on top of the rake head and assigned density scores from 1 to 4 based upon rake head coverage (Figure 3) for each individual species and for all plants collectively.

We calculated the littoral frequency (≤15 ft, % occurrence) and littoral mean plant abundance (density score) for each encountered plant species, as well as bay-wide and littoral community metrics (Tables 1 and 2). Plant species that were observed growing within 10 ft of a sample point but not retrieved on the rake were given a rating of zero for that location. These "zero" species were noted as being present, but these "zero" ratings were excluded from calculations of plant community metrics and statistics (not treated as denoting presence). At each location, we also documented water depth and overall plant height.

Figure 1. Sampled points for Lotus Lake in 2017

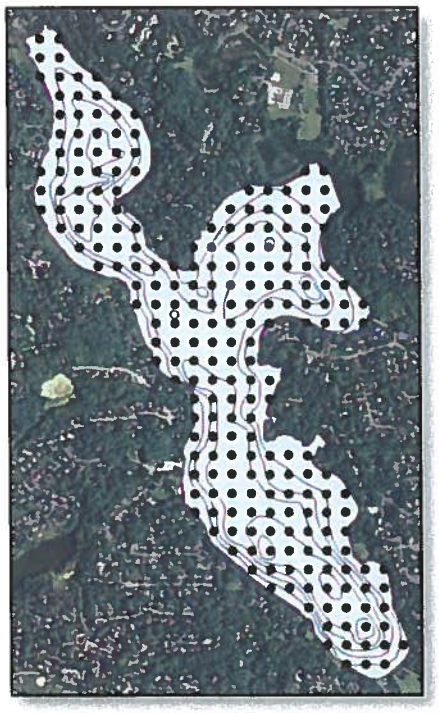
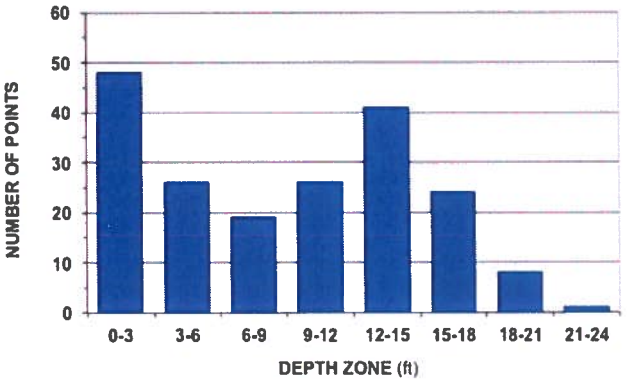


Figure 2. Sampling effort (number of locations sampled) within successive 3-ft depth zones. (Lotus Lake, 2017)



Results

Statistical Summary of Aquatic Plant Community in Lotus Lake

Table 1. Littoral frequency (% occurrence) and abundance (mean density score) of plant species found during the 2017 survey of Lotus Lake. % Occurrence and mean density (0-4 scale) were calculated using all littoral points (water depth ≤15 ft). "P" denotes taxa that were observed growing but not retreived in any rake samples.

PLANT TAXA	COMMON NAME	% Occurrence	Littoral Density
ALL TAXA (combined)		**48**	**1.2**
SUBMERSED TAXA			
Ceratophyllum demersum	Coontail	43	0.8
Myriophyllum spicatum	Eurasian watermilfoil	13	0.2
Najas flexilis	Slender naiad	4	<0.1
Chara sp.	Muskgrass	3	<0.1
Heteranthera dubia	Water stargrass	3	<0.1
Stuckenia pectinata	Sago pondweed	2	<0.1
Eleocharis acicularis	Needle spikerush	1	<0.1
Potamogeton nodosus	Long-leaf pondweed	1	<0.1
Potamogeton pusillus	Small pondweed	1	<0.1
FLOATING/EMERGENT TAXA			
Nymphaea odorata	White waterlily	19	0.2
Nuphar variegata	Bull-head pond-lily	9	0.1
Lemna minor	Small duckweed	5	0.1
Nelumbo lutea	American lotus	4	<0.1
Wolffia columbiana	Common watermeal	4	<0.1
Typha sp.	Cattail	2	<0.1
Schoenoplectus acutus	Hardstem bulrush	1	<0.1
Lythrum salicaria	Purple loosestrife	P	–
Phragmites australis	Common reed	P	–

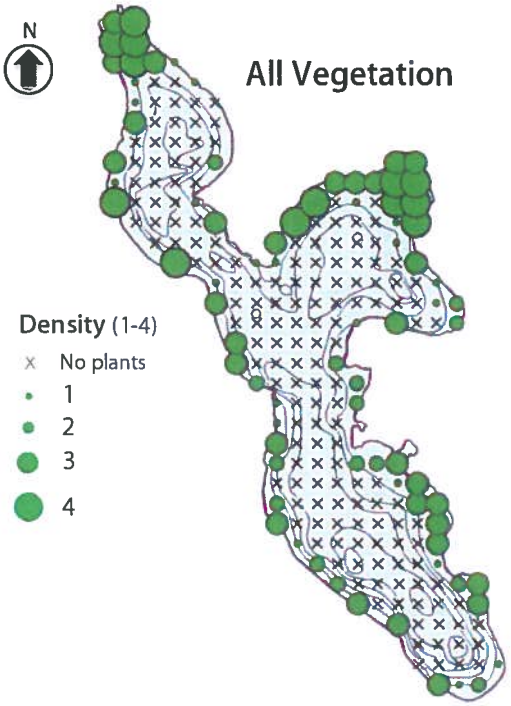
Table 2. Summary of plant community metrics for the 2017 survey conducted on Lotus Lake

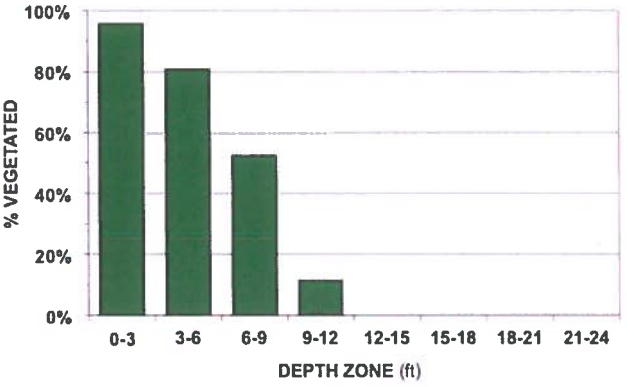
SURVEY RESULTS	2017
LAKE-WIDE METRICS	
Lake Area (acres)	245
Total Points Sampled	194
% Lake Vegetated	41%
% Lake with Veg. to Surface	19%
Max Depth of Growth (95%)	8.2 ft
# Native Taxa	16
# Non-Native Taxa	2
LITTORAL METRICS (≤15 ft)	
Littoral Area (acres)	169
Littoral Points Sampled	166
% Littoral Points Vegetated	48%
Mean Littoral Plant Height (ft)	1.0 ft
% of Max Littoral Biovolume	26%
Mean Native Taxa / Point	1.0
Simpson's Diversity	0.81
Floristic Quality (FQI)	17.2
AMCI Score	38

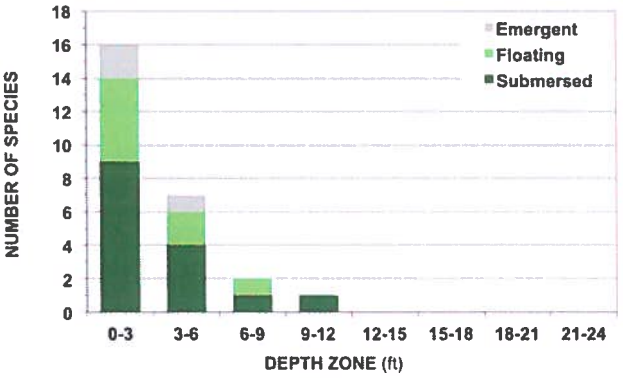
Figure 3. Rake density scores used to assess plant abundance during point-intercept surveys

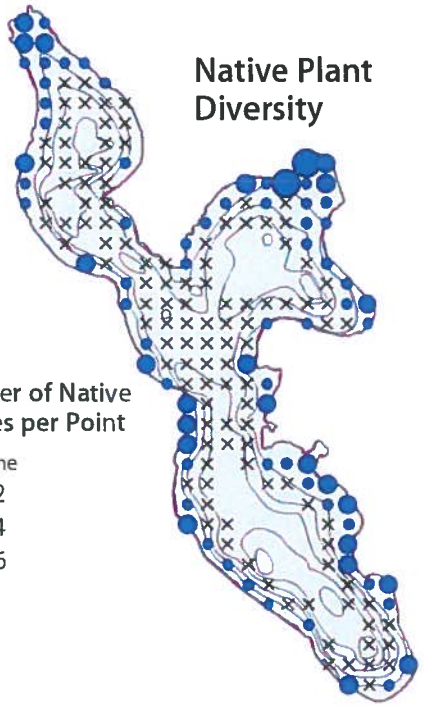
Density Score	Rake Coverage	Description
1		Only a few plants retrieved
2		Full length of rake head covered, but tines only partially covered
3		Plants completely cover the rake head and tines
4		Enough plants to cover rake head and tines multiple times

Lotus Lake – Aquatic Plant Community





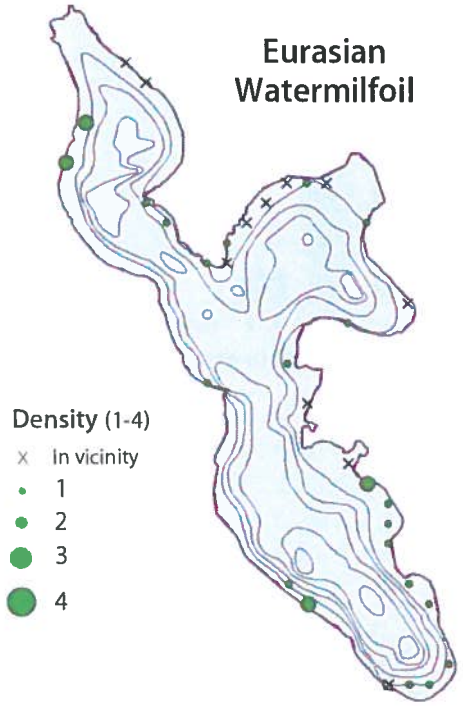


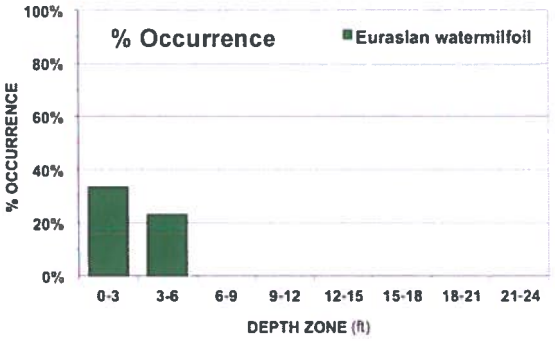


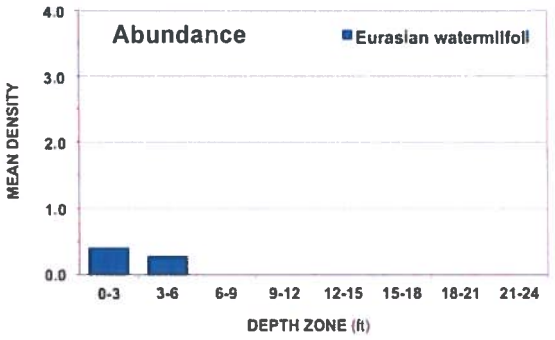
Surveyed: July 31, 2017
Methods: Rake, Sonar, Depth Rod
Surveyor: JA Johnson

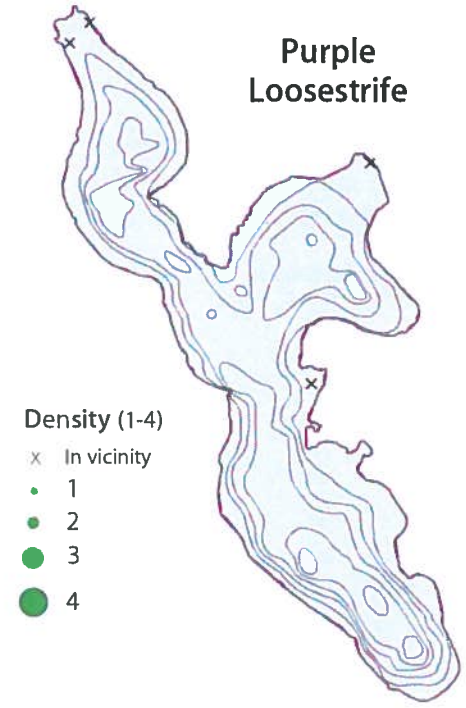
Certified Lake Manager
www.NALMS.org

Lotus Lake – Invasive Aquatic Plants

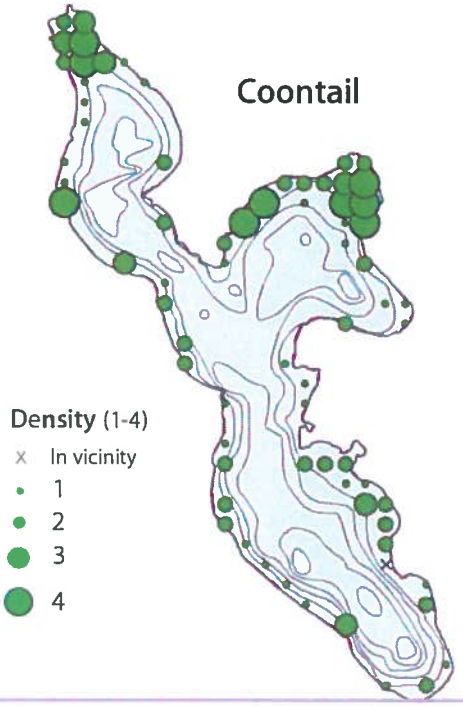


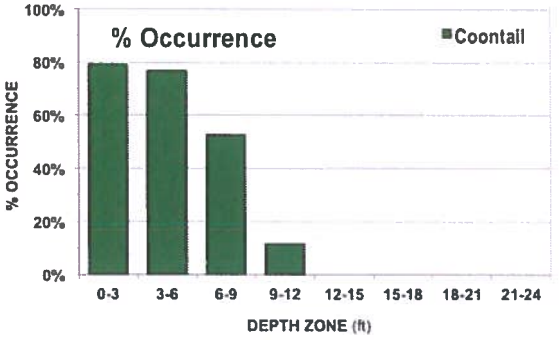


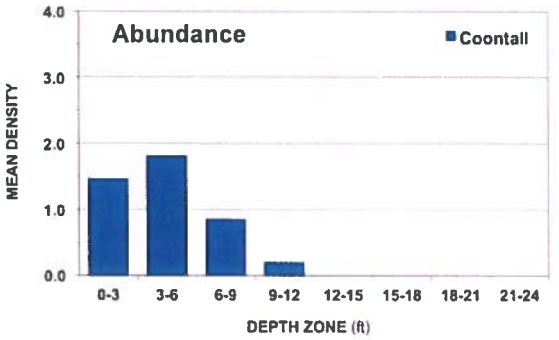


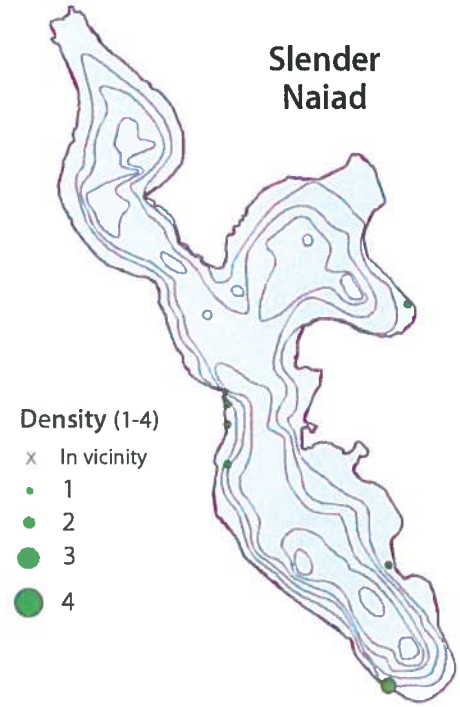


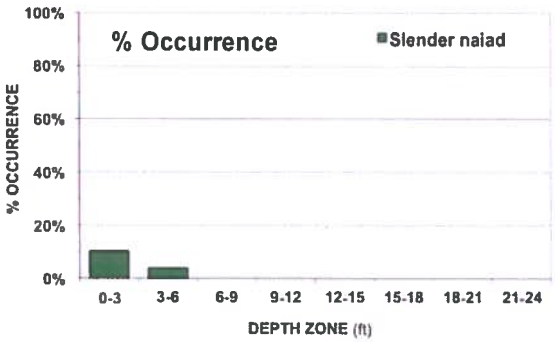
Lotus Lake – Native Submersed Aquatic Plants

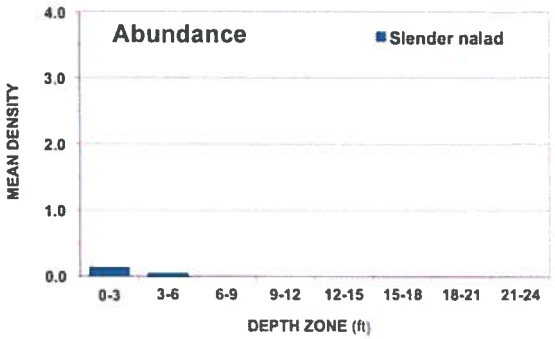




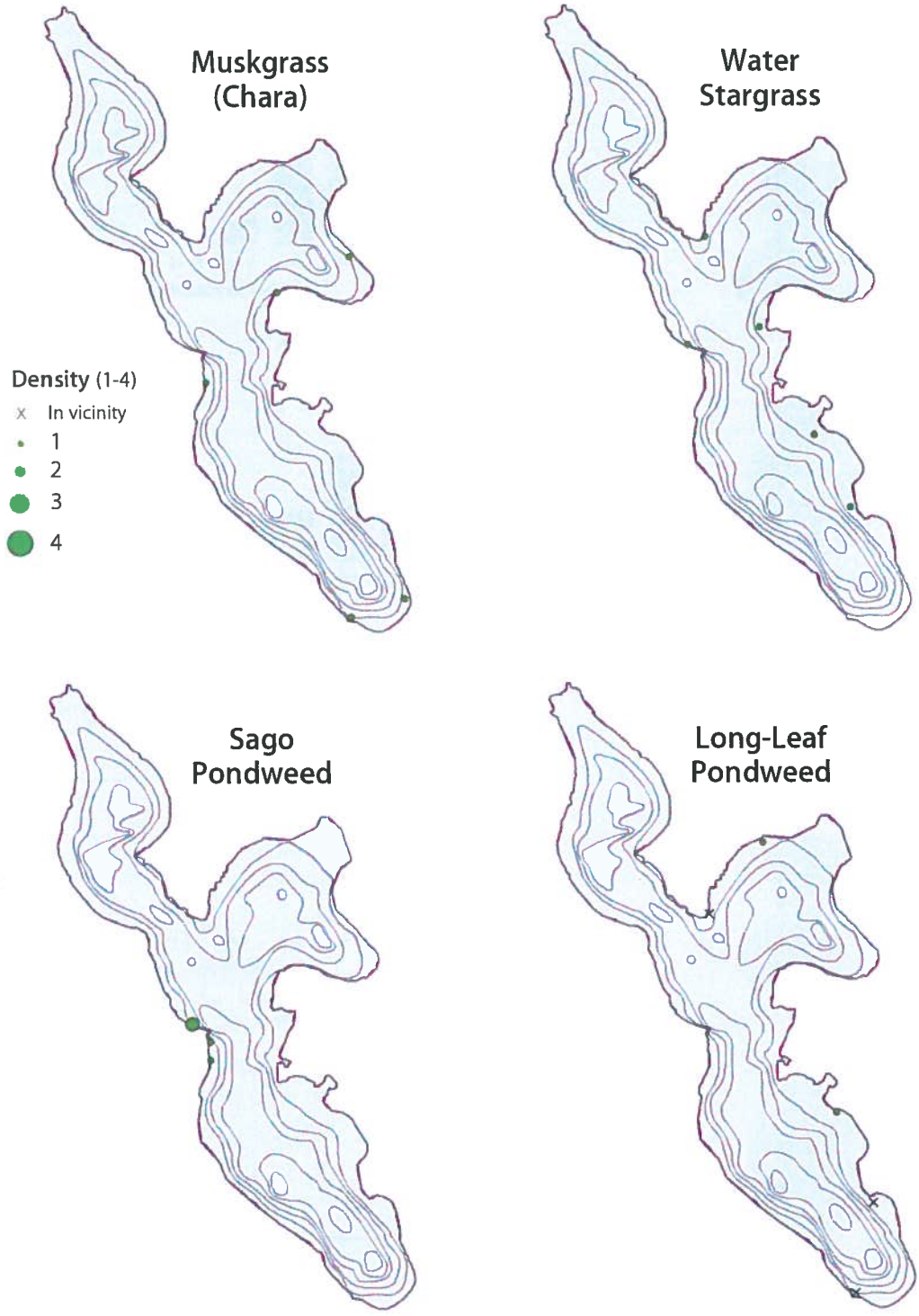




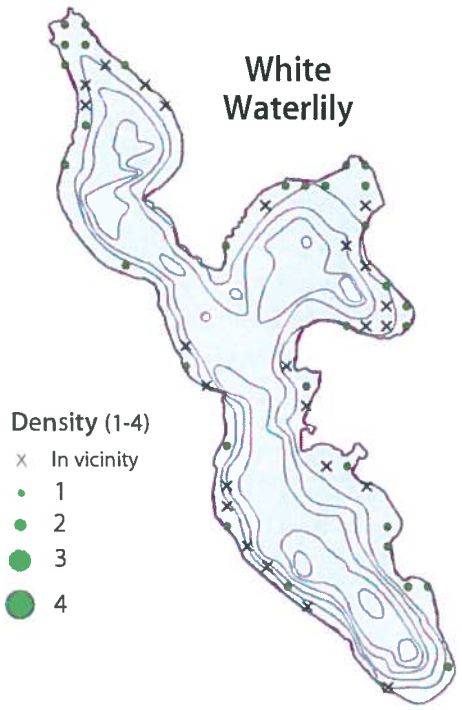


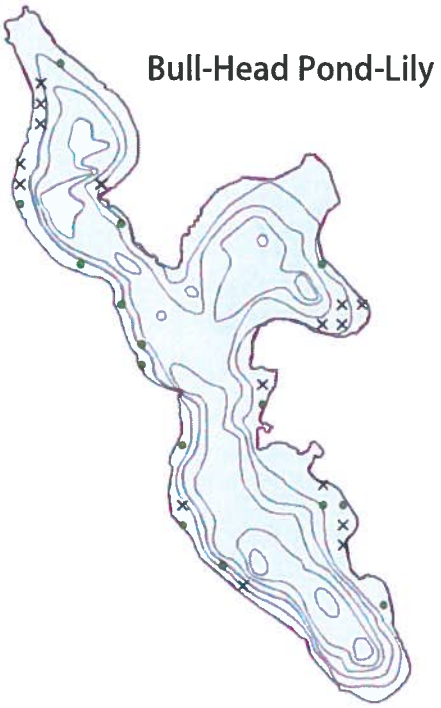


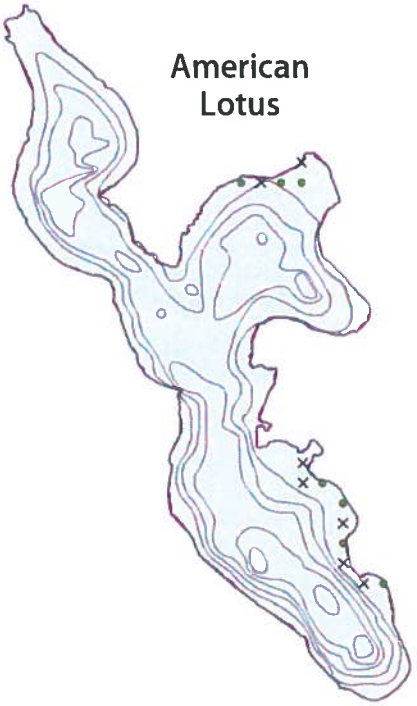
Lotus Lake – Native Submersed Aquatic Plants



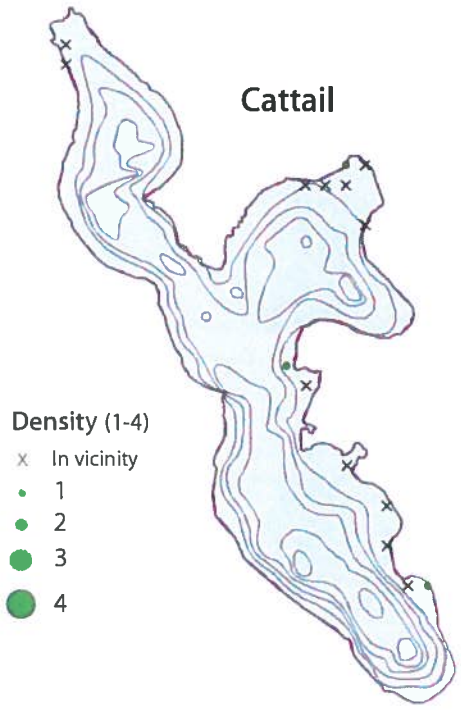
Lotus Lake – Native Floating Aquatic Plants

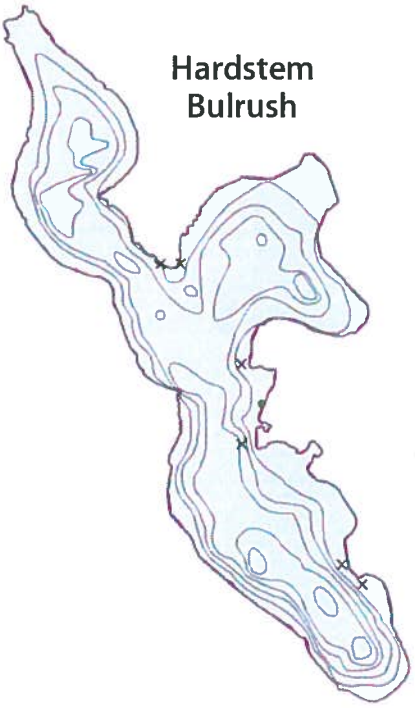


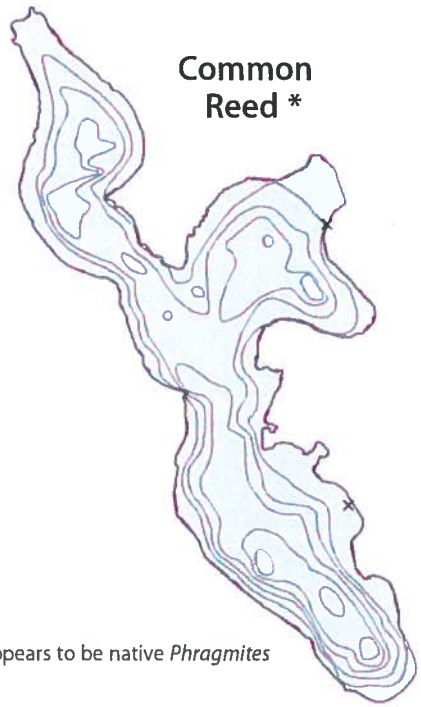




Lotus Lake – Native Emergent Aquatic Plants







* Appears to be native *Phragmites*

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Madsen JD. 1999. Point intercept and line intercept methods for aquatic plant management. APCRT Technical Notes Collection. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Nichols SA, Weber S, Shaw B. 2000. A proposed aquatic plant community biotic index for Wisconsin Lakes. Env Manage 26: 491-502.

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2017 Aquatic Plant Survey: Rice Marsh

(WBIC# 10-0001-00)

Surveyed August 7, 2017

Surveying, Analysis, and Reporting by:

James A. Johnson – Freshwater Scientific Services, LLC

NALMS Certified Lake Manager
www.NALMS.org

Prepared for Riley Purgatory Bluff Creek Watershed District – September 2017

Survey & Analysis Methods

Point-Intercept Survey

Freshwater Scientific Services, LLC surveyed the aquatic plant community of Rice Marsh (Carver Co., MN) on August 7, 2017 using the point-intercept survey method described by Madsen (1999). This survey was based upon 135 sample points arranged in a uniform grid (50-m spacing) across the entire lake (Figures 1 and 2).

At each designated sample location, we collected plants using a 14-tine rake on an extendable pole. For each rake sample, we dragged the rake over the lake bottom for approximately 5 ft before retrieving. Retrieved plants were piled on top of the rake head and assigned density scores from 1 to 4 based upon rake head coverage (Figure 3) for each individual species and for all plants collectively.

We calculated the littoral frequency (≤15 ft, % occurrence) and littoral mean plant abundance (density score) for each encountered plant species, as well as bay-wide and littoral community metrics (Tables 1 and 2). Plant species that were observed growing within 10 ft of a sample point but not retrieved on the rake were given a rating of zero for that location. These "zero" species were noted as being present, but these "zero" ratings were excluded from calculations of plant community metrics and statistics (not treated as denoting presence). At each location, we also documented water depth and overall plant height.

Figure 1. Rice Marsh sample points for 2017

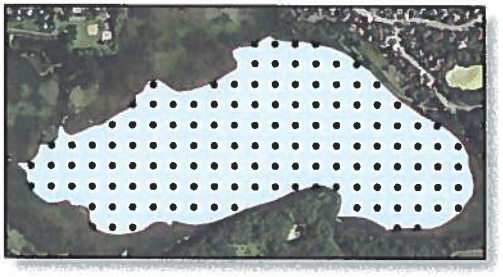
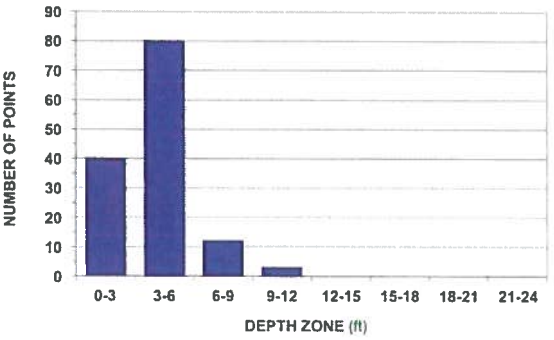


Figure 2. Sampling effort (number of locations sampled) within successive 3-ft depth zones. (Rice Marsh, 2017)



Results

Statistical Summary of Aquatic Plant Community in Rice Marsh

Table 1. Littoral frequency (% occurrence) and abundance (mean density score) of plant species found during the 2017 survey of Rice Marsh. % Occurrence and mean density (0-4 scale) were calculated using all littoral points (water depth ≤15 ft). "P" denotes taxa that were observed growing but not retreived in any rake samples.

PLANT TAXA	COMMON NAME	% Occurrence	Littoral Density
ALL TAXA (combined)		**100**	**3.3**
SUBMERSED TAXA			
Ceratophyllum demersum	Coontail	99	2.8
Potamogeton zosteriformis	Flat-stem pondweed	74	1.0
Potamogeton foliosus	Leafy pondweed	14	0.1
Stuckenia pectinata	Sago pondweed	9	0.1
Elodea canadensis	Canadian waterweed	7	0.1
*Potamogeton crispus**	Curly-leaf pondweed	4	0.1
Heteranthera dubia	Water stargrass	4	0.1
Chara sp.	Muskgrass	2	<0.1
Najas flexilis	Slender naiad	1	<0.1
FLOATING/EMERGENT TAXA			
Wolffia columbiana	Common watermeal	81	0.8
Lemna minor	Small duckweed	63	0.6
Spirodela polyrhiza	Large Duckweed	53	0.5
Lemna trisulca	Star duckweed	47	0.5
Nymphaea odorata	White waterlily	43	0.4
*Lythrum salicaria**	Purple loosestrife	P	–
Typha sp.	Cattail	P	–

* Aquatic invasive plant

Table 2. Summary of plant community metrics for the 2017 survey conducted on Rice Marsh

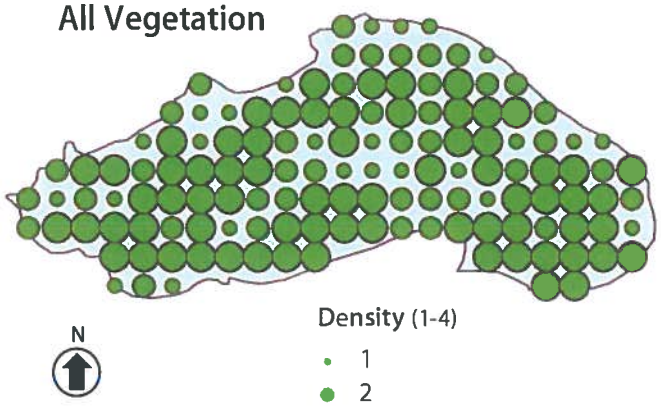
SURVEY RESULTS	2017
LAKE-WIDE METRICS	
Lake Area (acres)	83
Total Points Sampled	135
% Lake Vegetated	100%
% Lake with Veg. to Surface	62%
Max Depth of Growth (95%)	7.2 ft
# Native Taxa	14
# Non-Native Taxa	2
LITTORAL METRICS (≤15 ft)	
Littoral Area (acres)	83
Littoral Points Sampled	135
% Littoral Points Vegetated	100%
Mean Littoral Plant Height (ft)	3.4 ft
% of Max Littoral Biovolume	86%
Mean Native Taxa / Point	5.0
Simpson's Diversity	0.87
Floristic Quality (FQI)	15.0
AMCI Score	50

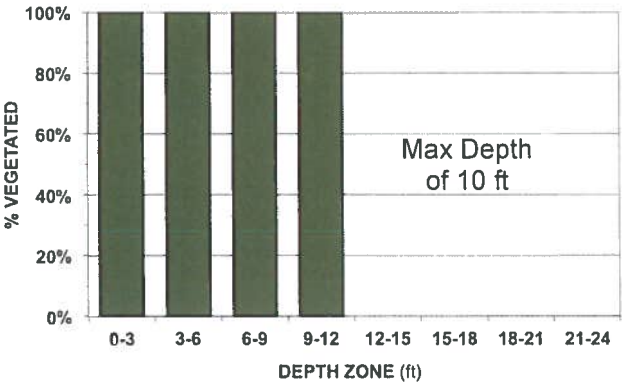
Figure 3. Rake density scores used to assess plant abundance during point-intercept surveys

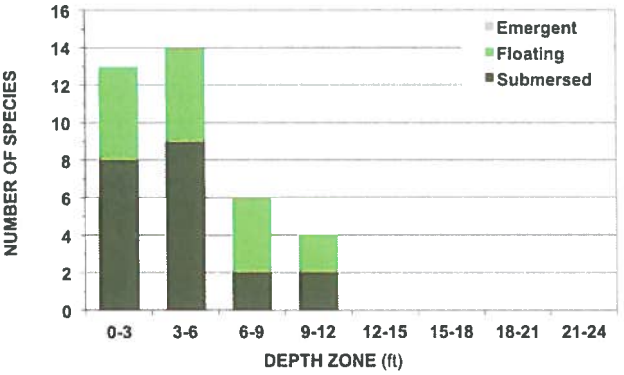
Density Score	Rake Coverage	Description
1		Only a few plants retrieved
2		Full length of rake head covered, but tines only partially covered
3		Plants completely cover the rake head and tines
4		Enough plants to cover rake head and tines multiple times

Rice Marsh – Aquatic Plant Community

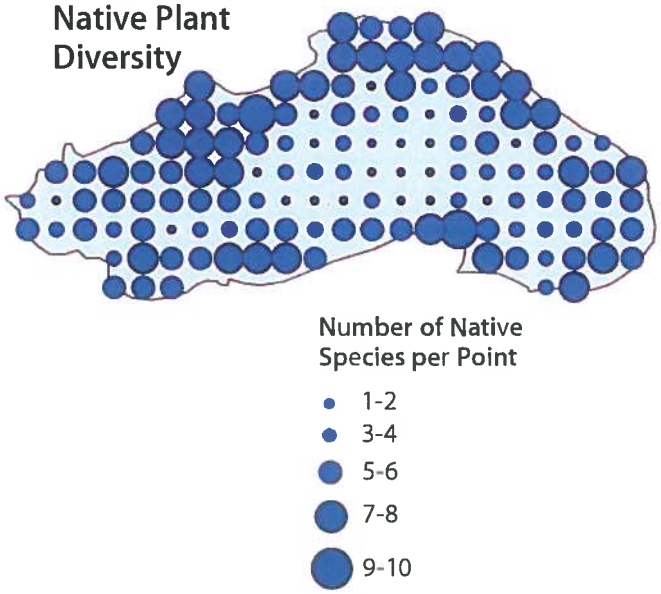
All Vegetation







Native Plant Diversity



Surveyed: August 7, 2017
Methods: Rake, Sonar, Depth Rod
Surveyor: JA Johnson

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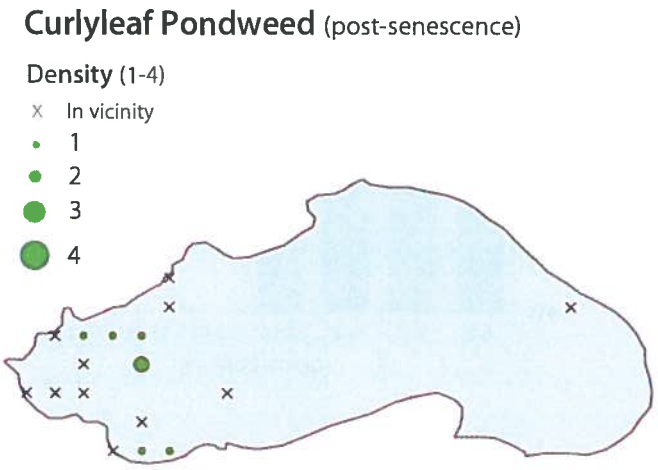
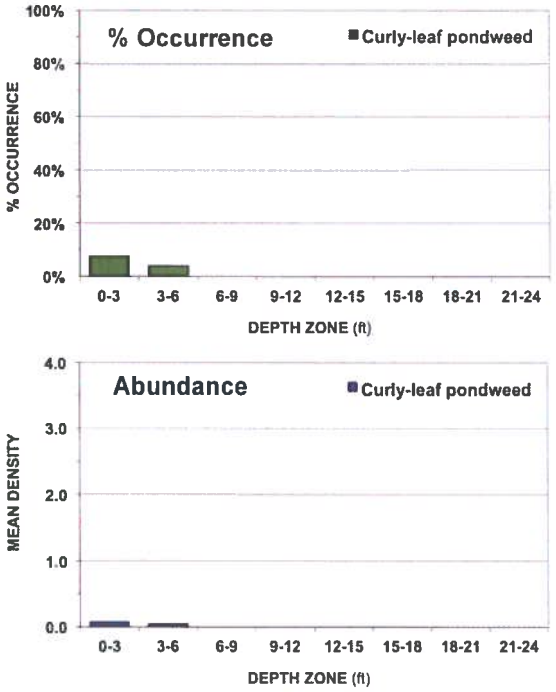
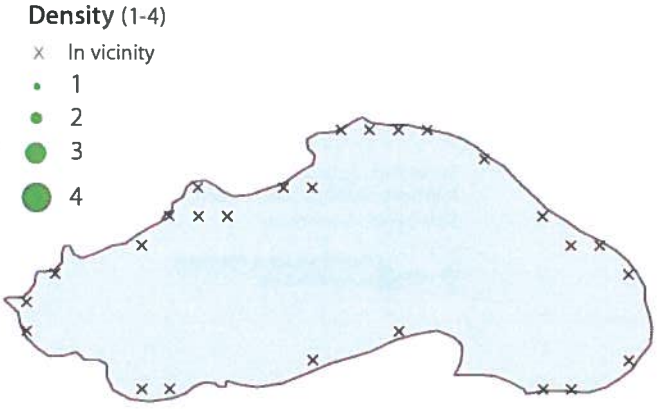
Rice Marsh – Invasive Aquatic Plants

Curlyleaf Pondweed (post-senescence)



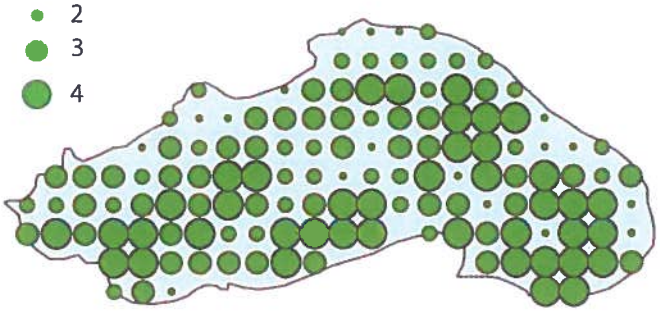


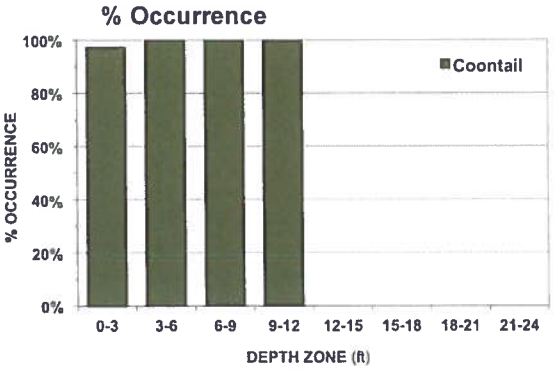
Purple Loosestrife (on shore)

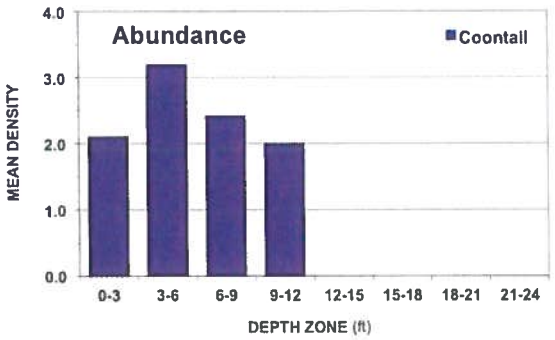


Rice Marsh – Native Submersed Aquatic Plants

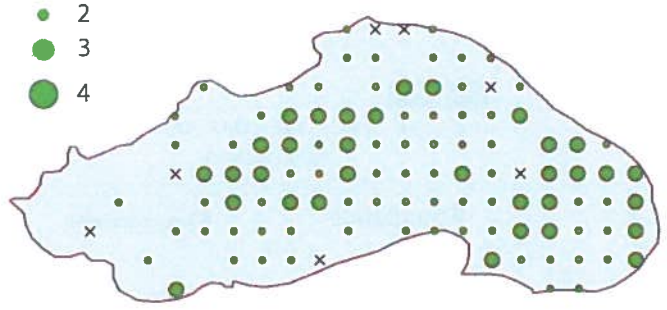
Coontail

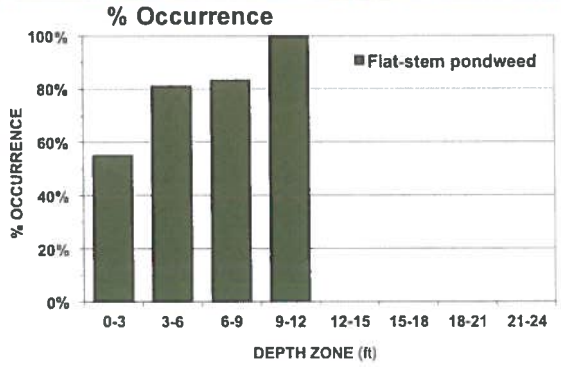


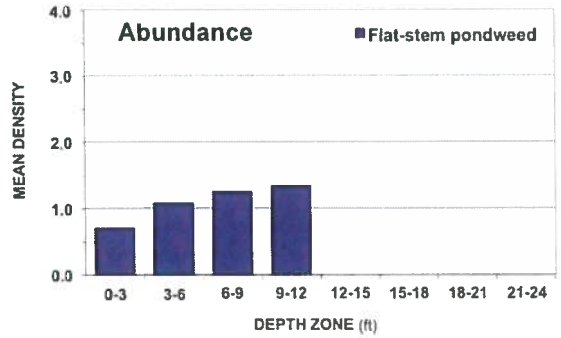




Flat-Stem Pondweed

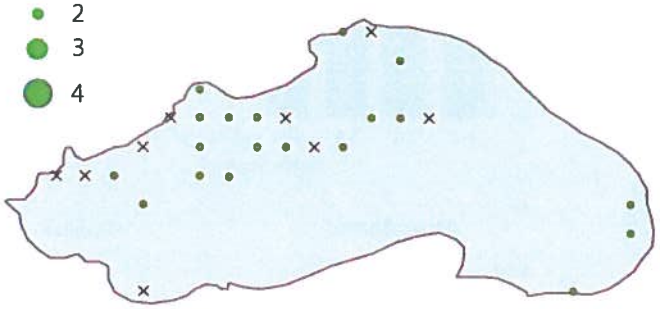


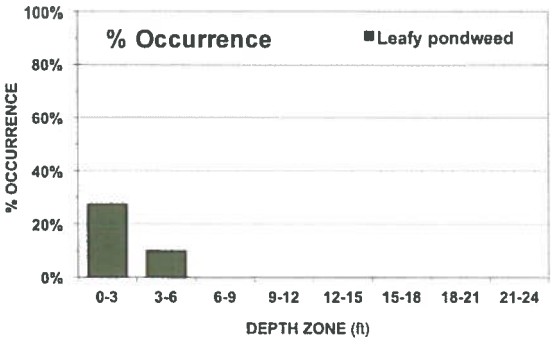


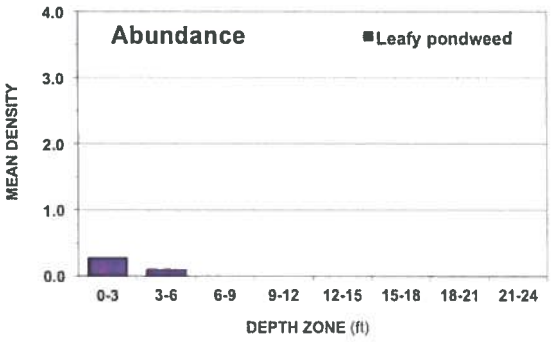


Rice Marsh – Native Submersed Aquatic Plants

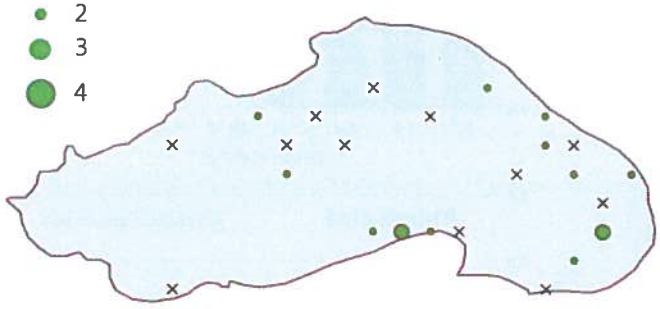
Leafy Pondweed

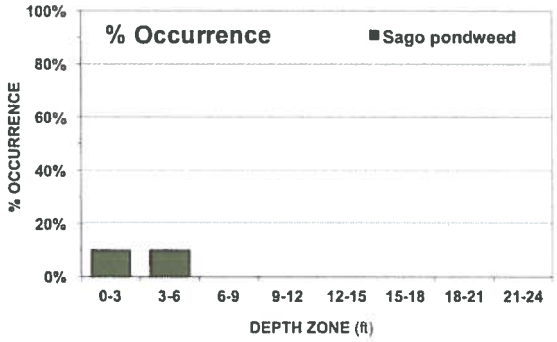


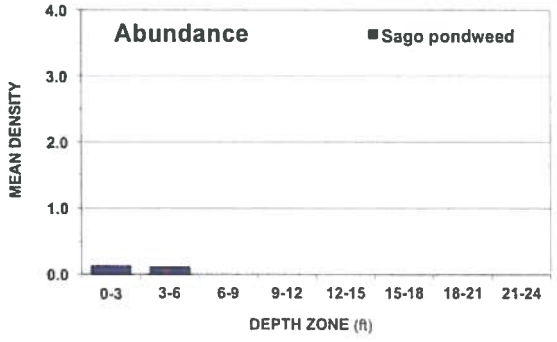




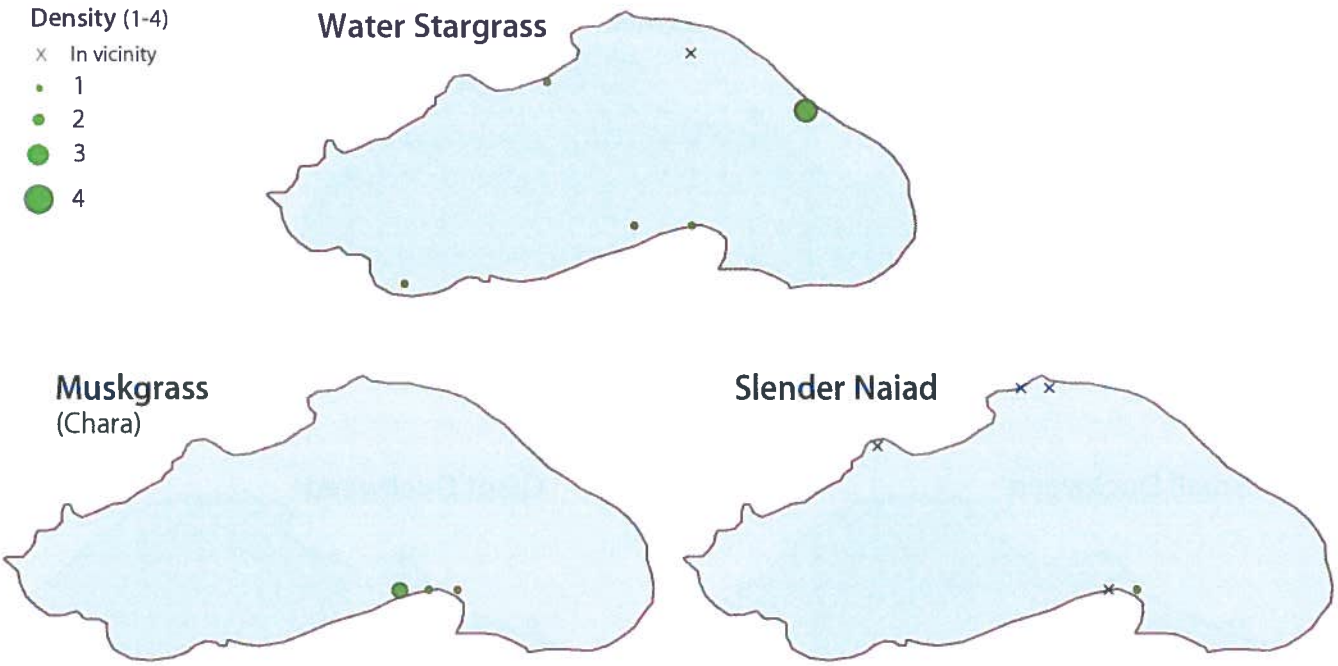
Sago Pondweed



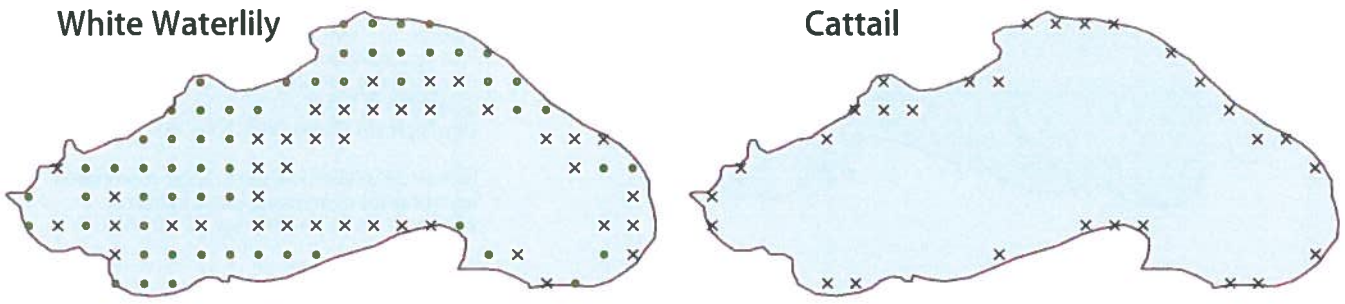




Rice Marsh – Native Submersed Aquatic Plants



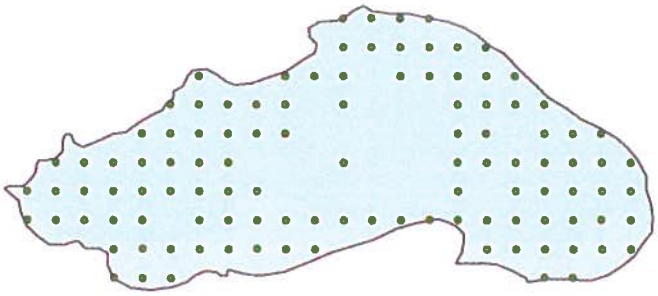
Rice Marsh – Native Floating & Emergent Plants



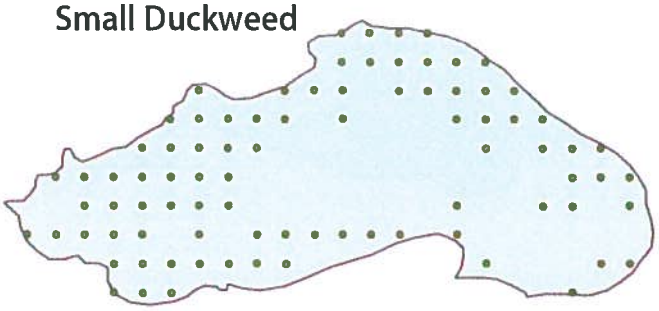
Rice Marsh – Native Free-Floating Aquatic Plants

Density (1-4)
- x In vicinity
- 1
- 2
- 3
- 4

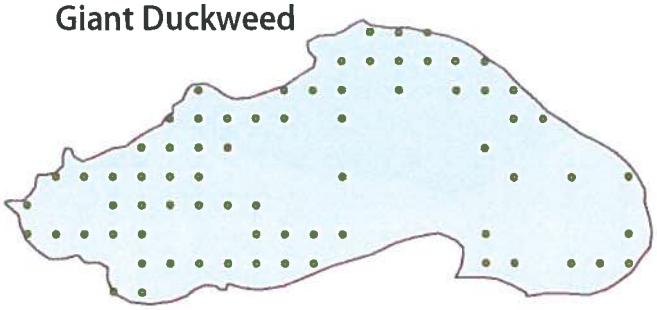
Common Watermeal



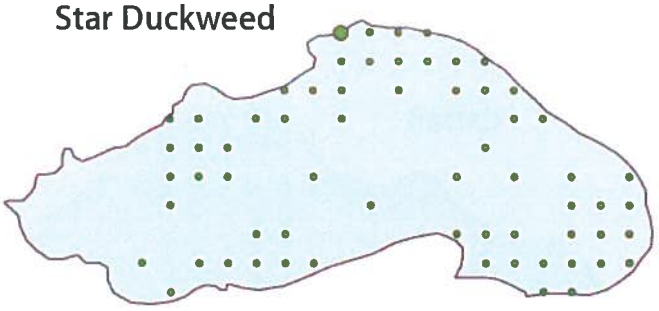
Small Duckweed



Giant Duckweed



Star Duckweed



References

Madsen JD. 1999. Point intercept and line intercept methods for aquatic plant management. APCRT Technical Notes Collection. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

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2017 Aquatic Plant Survey: Silver Lake

(WBIC# 27-0136-00)

Surveyed August 4, 2017

Surveying, Analysis, and Reporting by:

James A. Johnson – Freshwater Scientific Services, LLC

NALMS Certified Lake Manager
www.NALMS.org

Prepared for Riley Purgatory Bluff Creek Watershed District – September 2017

Survey & Analysis Methods

Point-Intercept Survey

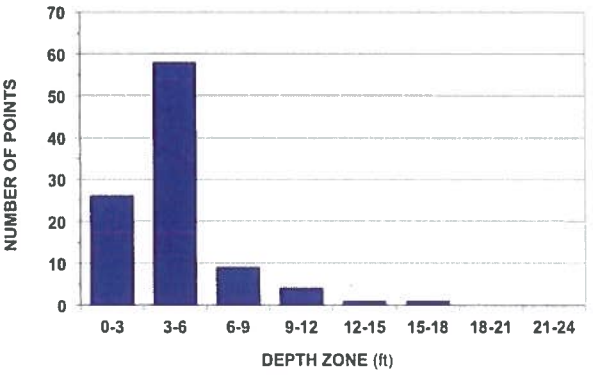
Freshwater Scientific Services, LLC surveyed the aquatic plant community of Silver Lake (Hennepin Co., MN) on August 4, 2017 using the point-intercept survey method described by Madsen (1999). This survey incorporated assessments at 113 sample points arranged in a uniform grid (50-m spacing) across the entire lake (Figures 1 and 2).

At each designated sample location, we collected plants using a 14-tine rake on an extendable pole. For each rake sample, we dragged the rake over the lake bottom for approximately 5 ft before retrieving. Retrieved plants were piled on top of the rake head and assigned density scores from 1 to 4 based upon rake head coverage (Figure 3) for each individual species and for all plants collectively.

We calculated the littoral frequency (≤15 ft, % occurrence) and littoral mean plant abundance (density score) for each encountered plant species, as well as bay-wide and littoral community metrics (Tables 1 and 2). Plant species that were observed growing within 10 ft of a sample point but not retrieved on the rake were given a rating of zero for that location. These "zero" species were noted as being present, but these "zero" ratings were excluded from calculations of plant community metrics and statistics (not treated as denoting presence). At each location, we also documented water depth and overall plant height.

Figure 1. Sampled points for Silver Lake in 2017

Figure 2. Sampling effort (number of locations sampled) within successive 3-ft depth zones. (Silver Lake, 2017)



Results

Statistical Summary of Aquatic Plant Community in Silver Lake

Table 1. Littoral frequency (% occurrence) and abundance (mean density score) of plant species found during the 2017 survey of Silver Lake. % Occurrence and mean density (0-4 scale) were calculated using all littoral points (water depth ≤15 ft). "P" denotes taxa that were observed growing but not retreived in any rake samples.

PLANT TAXA	COMMON NAME	% Occurrence	Littoral Density
ALL TAXA (combined)		**96**	**3.2**
SUBMERSED TAXA			
Ceratophyllum demersum	Coontail	93	2.4
Elodea canadensis	Canadian waterweed	60	1.2
Potamogeton zosteriformis	Flat-stem pondweed	59	0.6
Stuckenia pectinata	Sago pondweed	8	0.1
Potamogeton foliosus	Leafy pondweed	4	<0.1
Aquatic Moss	Aquatic moss	2	<0.1
Najas flexilis	Slender naiad	2	<0.1
Utricularia vulgaris	Common bladderwort	2	<0.1
*Potamogeton crispus**	Curly-leaf pondweed	1	<0.1
FLOATING/EMERGENT TAXA			
Nymphaea odorata	White waterlily	51	0.5
Lemna trisulca	Star duckweed	49	0.5
Spirodela polyrhiza	Large Duckweed	36	0.4
Lemna minor	Small duckweed	12	0.1
Zizania palustris	Northern wild rice	3	<0.1
Typha sp.	Cattail	1	<0.1
*Lythrum salicaria**	Purple loosestrife	P	–
Phragmites australis†	Common reed	P	–

* Aquatic invasive plant
† Appears to be native *Phragmites*

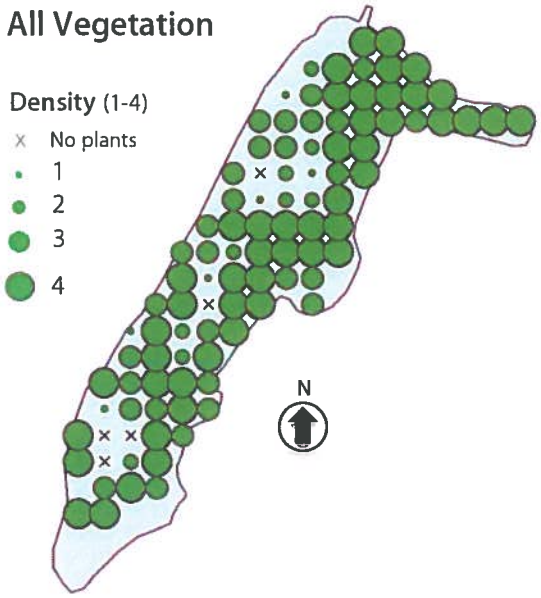
Table 2. Summary of plant community metrics for the 2017 survey conducted on Silver Lake

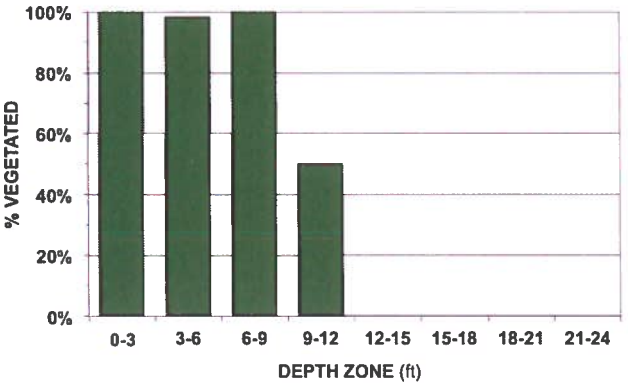
SURVEY RESULTS	2017
LAKE-WIDE METRICS	
Lake Area (acres)	62
Total Points Sampled	99
% Lake Vegetated	96%
% Lake with Veg. to Surface	58%
Max Depth of Growth (95%)	6.7 ft
# Native Taxa	15
# Non-Native Taxa	2
LITTORAL METRICS (≤15 ft)	
Littoral Area (acres)	62
Littoral Points Sampled	98
% Littoral Points Vegetated	96%
Mean Littoral Plant Height (ft)	3.3 ft
% of Max Littoral Biovolume	77%
Mean Native Taxa / Point	3.8
Simpson's Diversity	0.85
Floristic Quality (FQI)	15.8
AMCI Score	49

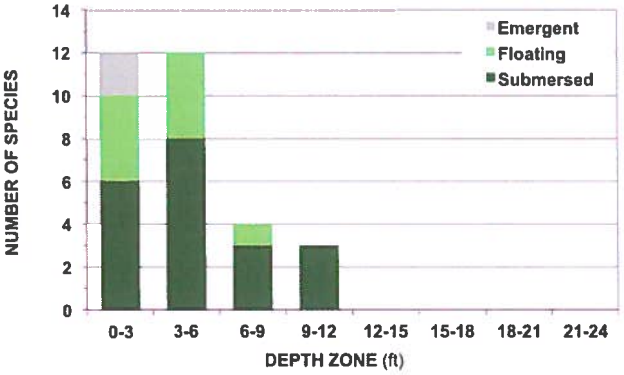
Figure 3. Rake density scores used to assess plant abundance during point-intercept surveys

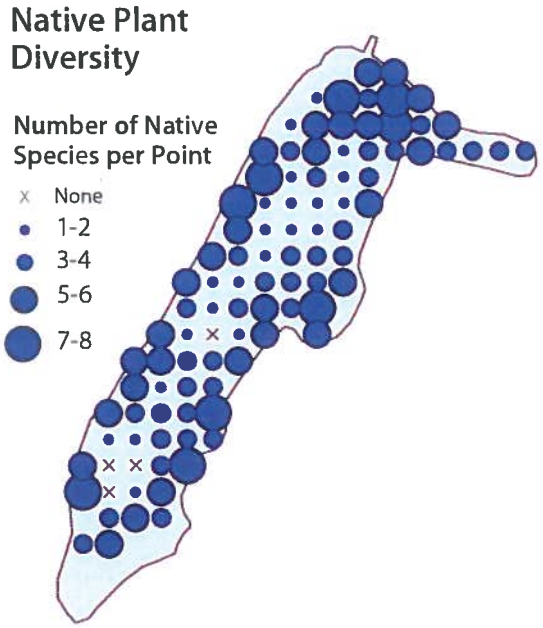
Density Score	Rake Coverage	Description
1		Only a few plants retrieved
2		Full length of rake head covered, but tines only partially covered
3		Plants completely cover the rake head and tines
4		Enough plants to cover rake head and tines multiple times

Silver Lake – Aquatic Plant Community





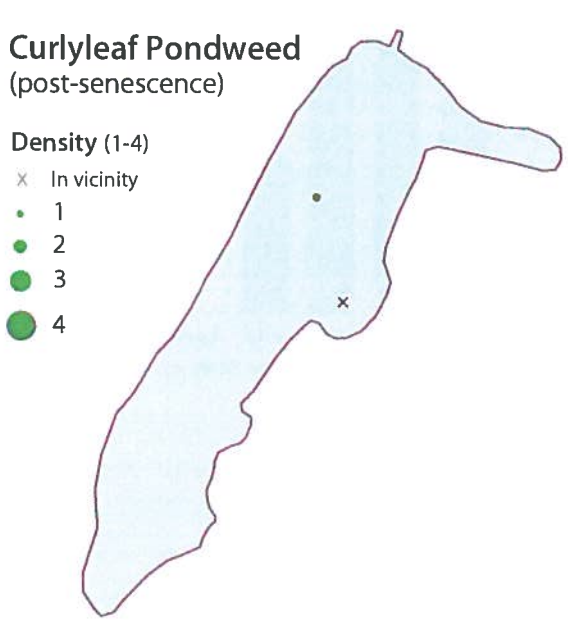


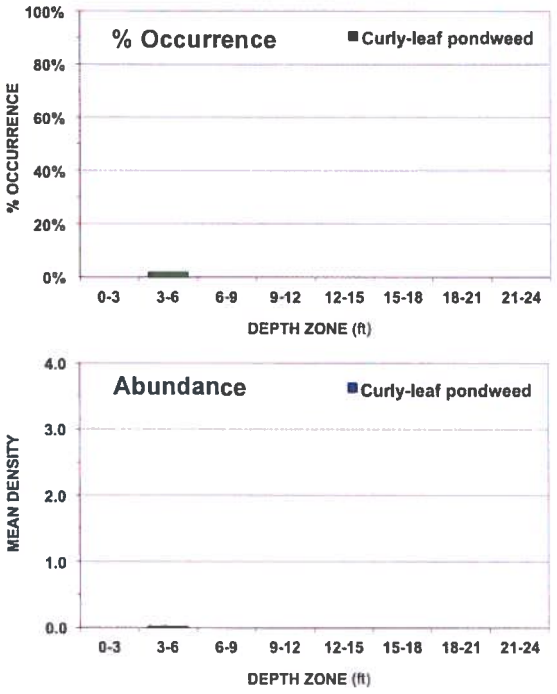


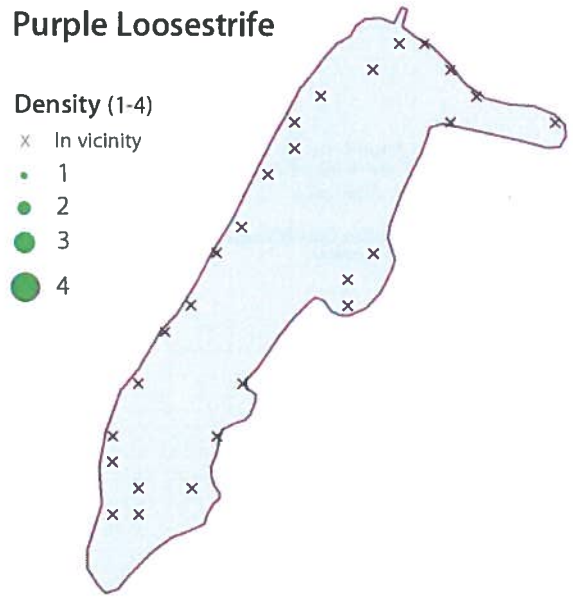
Surveyed: August 4, 2017
Methods: Rake, Sonar, Depth Rod
Surveyor: JA Johnson

NALMS Certified Lake Manager
www.NALMS.org

Silver Lake – Invasive Aquatic Plants

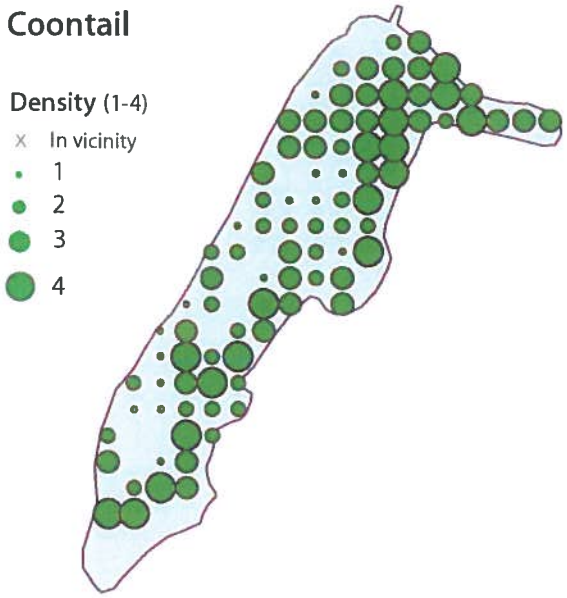


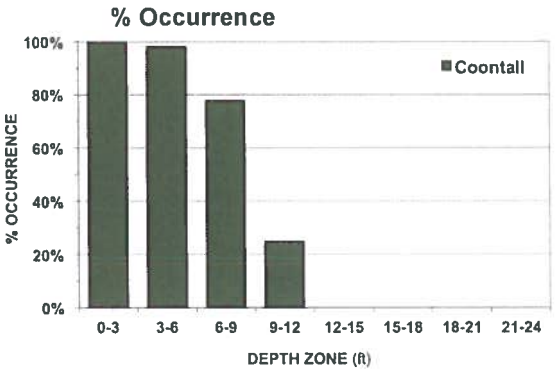


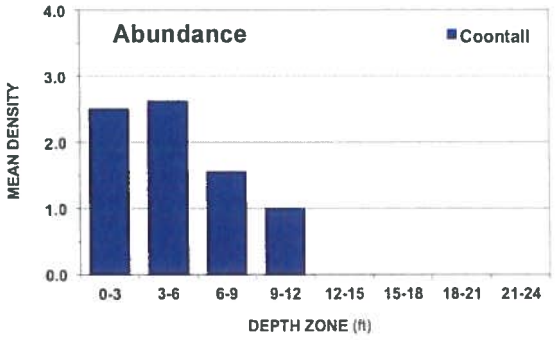


Silver Lake – Native Submersed Aquatic Plants

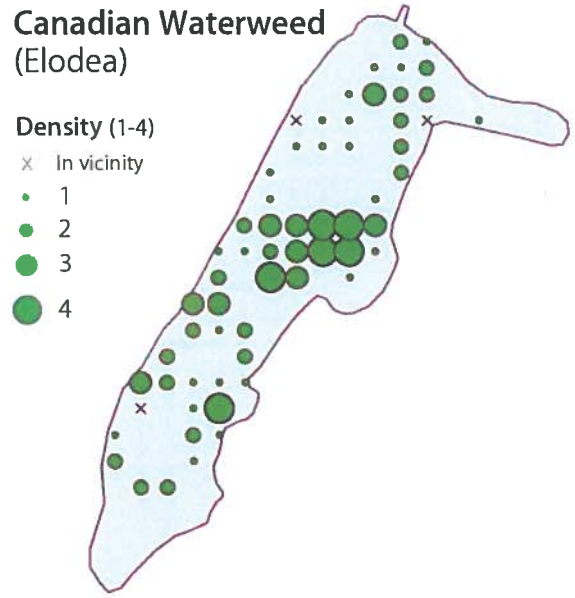
Coontail

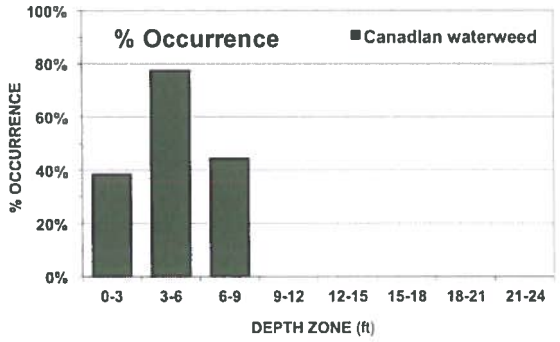


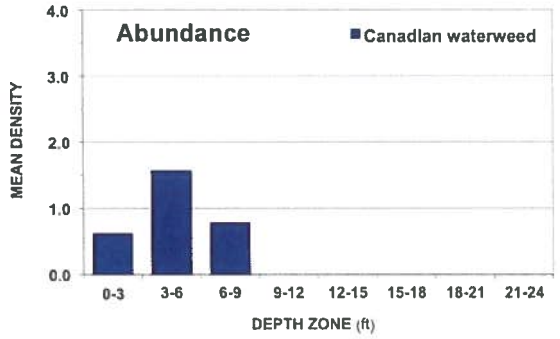




Canadian Waterweed (Elodea)

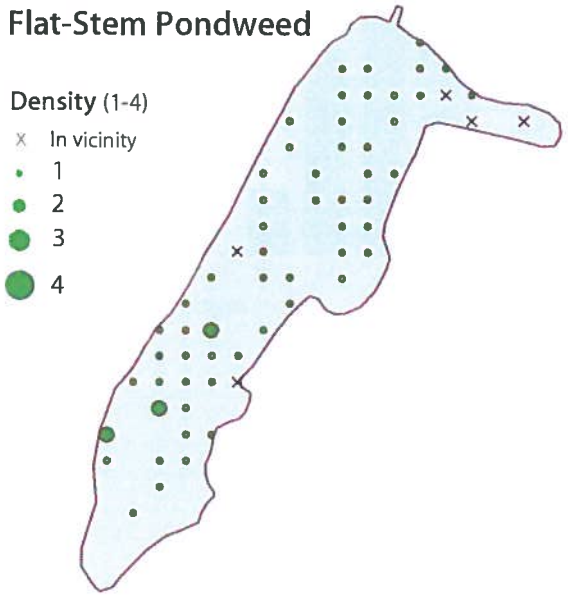


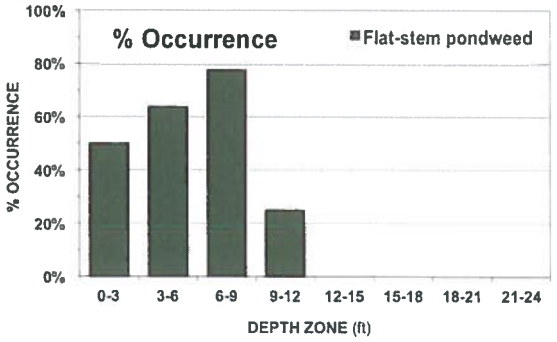


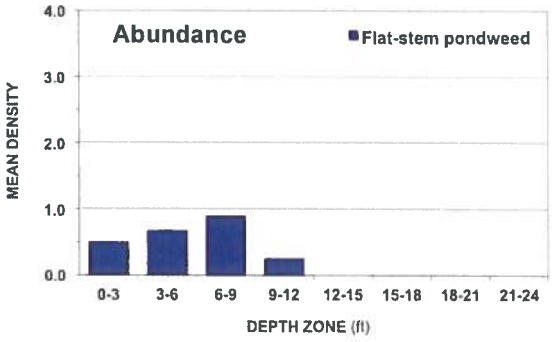


Silver Lake – Native Submersed Aquatic Plants

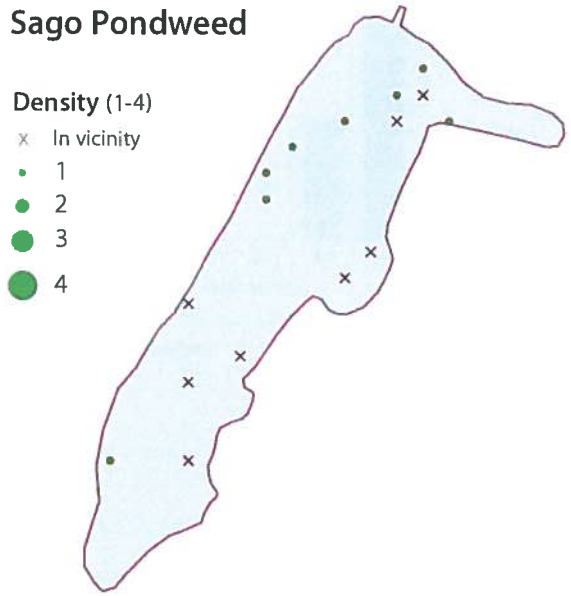
Flat-Stem Pondweed

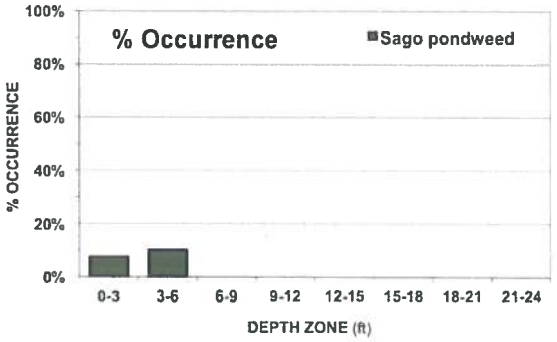


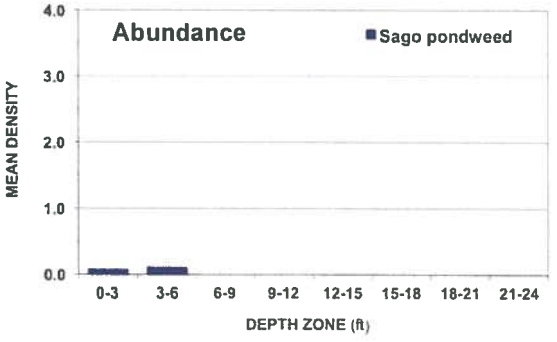




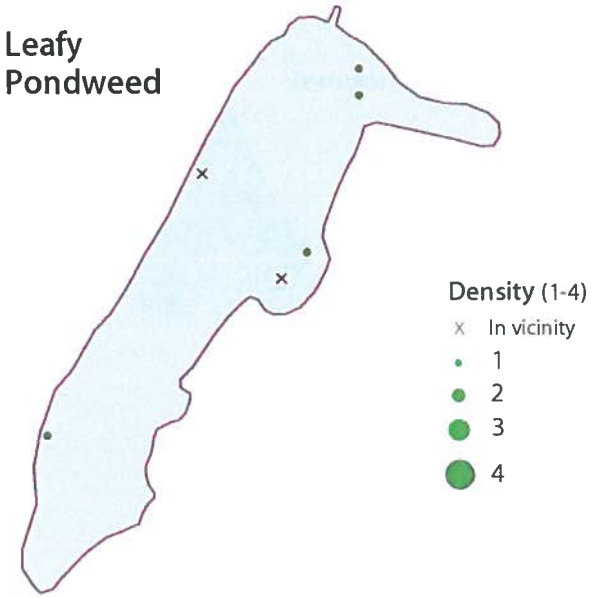
Sago Pondweed

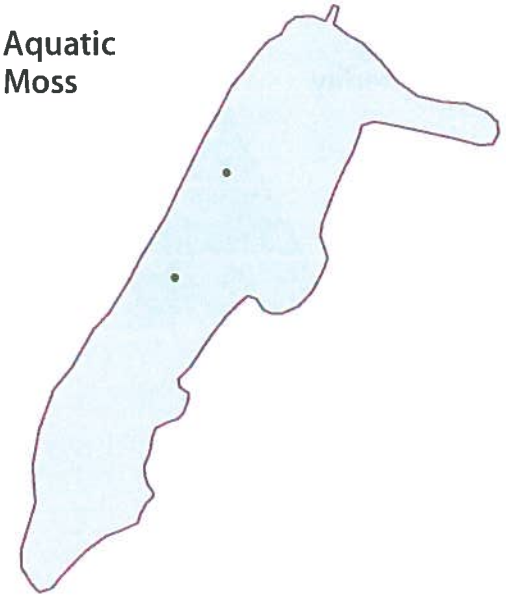


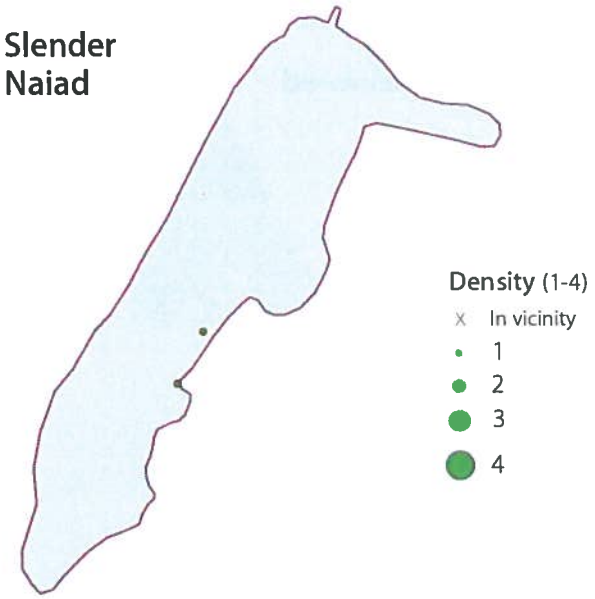


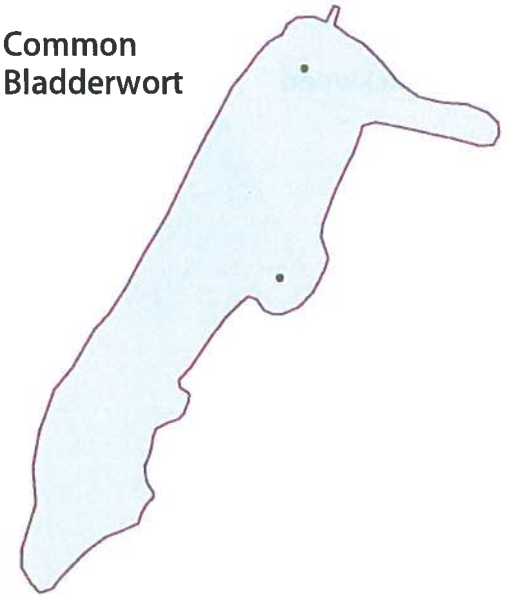


Silver Lake – Native Submersed Aquatic Plants



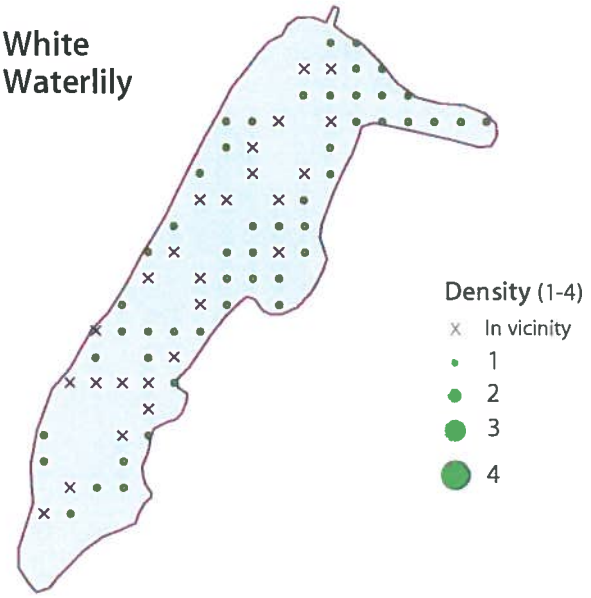




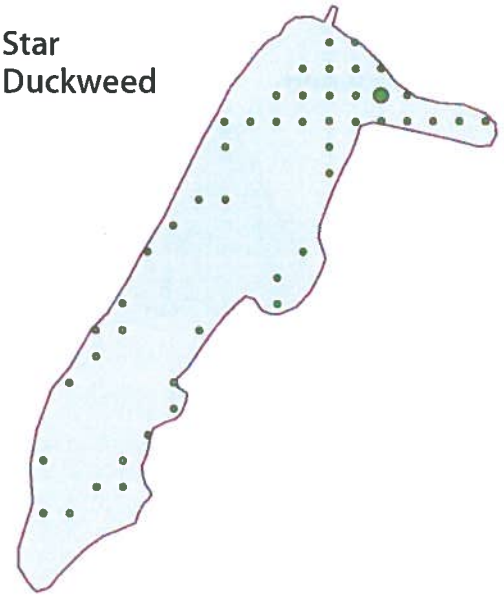


Silver Lake – Native Floating Aquatic Plants

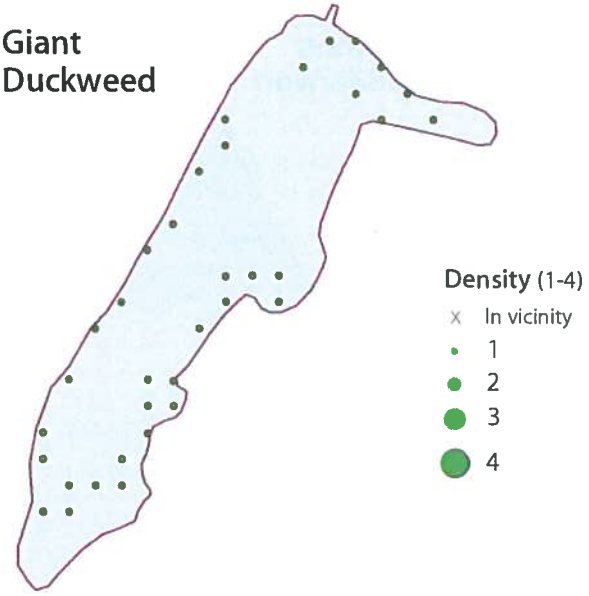
White Waterlily



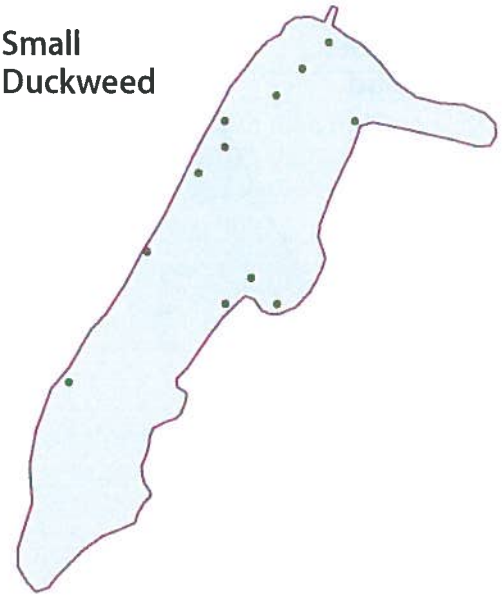
Star Duckweed



Giant Duckweed

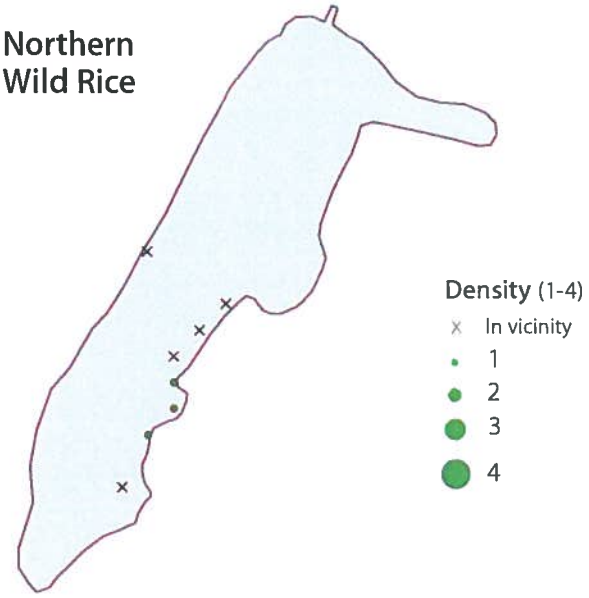


Small Duckweed

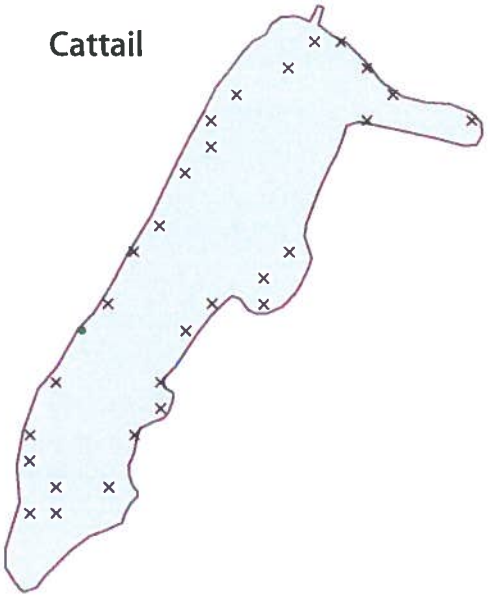


Silver Lake – Native Emergent Aquatic Plants

Northern Wild Rice

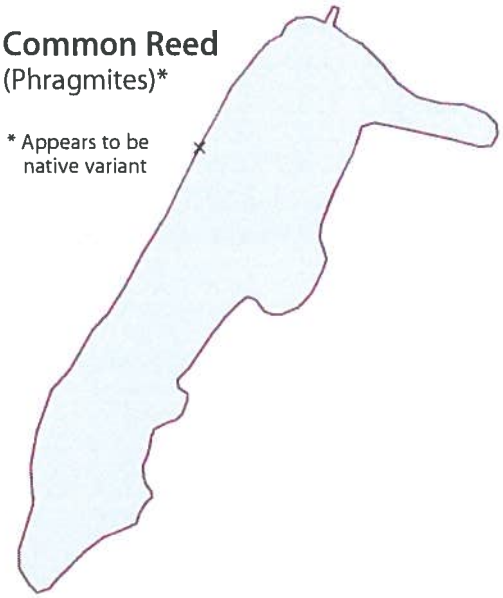


Cattail



Common Reed (Phragmites)*

* Appears to be native variant



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Madsen JD. 1999. Point intercept and line intercept methods for aquatic plant management. APCRT Technical Notes Collection. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Nichols SA, Weber S, Shaw B. 2000. A proposed aquatic plant community biotic index for Wisconsin Lakes. Env Manage 26: 491-502.

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Technical Advisory Committee (TAC) Meeting Notes
Discuss Internal Draft of RPBCWD 10-Yr Watershed Management Plan

date:September 27, 2017
time: 10:30-11:30
location: 18681 Lake Dr E, Chanhassen, MN 55317 (RPBCWD offices)

meeting attendees

Claire Bleser (RPBCWD), Terry Jeffery (RPBCWD), Scott Sobiech (RPBCWD/Barr), Dave Modrow (Eden Prairie), Rod Rue (Eden Prairie), Leslie Stovring (Eden Prairie), Paul Oehme (Chanhassen), Vanesaa Strong (Chanhassen), Steve Segar (Bloomington), Bob Bean (Deephaven), Mike Wanous (Carver County), Tom Dietrich (Minnetonka), Jennie Skancke (MnDNR), Bill Alms (Shorewood), Steve Christopher (BWSR)

item description

A Overview Plan Presention

B Feedback on Internal Draft of 10-year Plan

1. VS –
    a. Are the appendices still coming or were they missed in PDF.
    b. CB – Appendices are being compiled and will be made available to TAC, One of the appendices will include a draft report card which will likely be given to board next week
2. JS –
    a. Complimentary on prioritization scheme and would like to see others implement something similar
    b. Highlight collaboration with other more
    c. What is the value of a wetlands vs lakes vs streams. Appear to all be same value
3. LS –
    a. Plan is more visual which is good
    b. Shallow lake forum – only one mention. Might consider describing how it evolved
    c. Need more on how working with cities, the district is not working in a vacuum
4. MW –
    a. Ditch Authority
    b. Clarify RPBCWD role / plan forward
    c. No ditches in Caver County
    d. Consider adding a brief description of the capital projects rather than the general description, maybe a 1-page fact sheet or summary

i. RR – Agreed with this and added that the dots on the BMP Map make it difficult to determine the exact location of the proposed project

5. SS –
   a. Wondered what the scoring means in Table 9-1.
   b. Consider adding a footnote
6. TD –
   a. Will there be a definitions section?
   b. What is sustainability?
      i. Appears to have different meanings in various part of the Plan
      ii. Consider explaining
7. VS –
   a. Strive for Plan consistency with other watershed districts, Cited 103B.2???
      i. Example: Define impervious surface consistent with other
      ii. Work towards more consistency to make it easier for cities with multiple WDs
   b. CB – Discussed rules process of coordination through the TAC. Also described uniqueness of each district may result in need for differences
   c. JS – suggested consideration of using statute definitions where possible
   d. SC – BWSR encourages coordination
8. SC –
   a. Might want to clarify why RPBCWD projects received higher scores than the project identified in the Bluff Creek TMDL (Table 6.2). He has heard MPCA ask for explanation at other WD meetings
9. BB –
   a. No discussion on WRAPS, TMDL credits in watershed sections (6.0, 7.0 or 8.0) and very limited description elsewhere in Plan
      i. Needs more info
      ii. What is WD role?
      iii. Is WD looking to take the lead role in tracking?
      iv. Consider policy or agreement with MS4s on how waste load allocations will be handled (MOUs, JPAs, etc).
10. TD –
    a. There could be a lot of value in the watershed district getting together to interface with MPCA (group with other WDs as united front)
11. BB –
    a. Cost share section could use more description (what is the guidance, is it changing, what qualifies, etc)
    b. CB - Program in already in place
12. RR –
    a. Why are some program dollars flat over 10 years
    b. Add more explanation of repairs and maintenance funds (i.e., what qualifies and who can utilize funds)
       i. CB: existing infrastructure, District project, conveyance
    c. MW – Consider increasing $$ for repairs and maintenance because District will

be building more BMPs

d. Why is PCRA berm is not shown in Table 9.1
e. CB: Already levied funds that it will be a multiyear fund

13. VS –
    a. Consider adding pollinator initiative not mentioned
    b. Why does benefits volume only consider impervious area runoff
    c. What if prairie restoration or removing impervious surface→ No credit?
    d. BA – What about longer events for volume control – how is that considered
14. SS –
    a. Confusion with regulatory,
    b. Will roles or process be changing? Does Section 9.4 change status of what is currently done?
        i. CB – no, this are the same as current. The section is intended to describe the current process
15. TD –
    a. Regulatory efficiencies
    b. Allow for joint financial assurance and maintenance
    c. Minnetonka is having difficulty achieve abstraction requirements for linear projects. That portion of the rules should be reviewed
16. Next Tac meeting set for November 8 – RPBCWD Rules update

C Next TAC meeting : November 8 – RPBCWD Rules update

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Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers and District Administrator
From: Barr Engineering Co.
Subject: Engineer's Report Summarizing September 2017 Activities for October 4, 2017, Board Meeting
Date: September 28, 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 September 2017.

General Services

a. Met with Administrator Bleser and Permit Coordinator Jeffery on September 12th to discuss general maintenance agreement between the District and city of Chanhassen.

b. Assisted Administrator Bleser with preparing a presentation for the September 25th Citizen Advisory Committee (CAC) and participated in the CAC meeting to discuss the CAC comments on the internal draft of the District's 10-year plan update.

c. Participated in the September 27th Technical Advisory Committee (TAC) meeting to discuss the TAC comments on the internal draft of the District's 10-year plan update.

d. Participated in a September 25th and 26th meetings with Administrator Bleser and Permit Coordinator Jeffery to discuss status of various capital projects and comments received at CAC meeting.

e. Participated in September 6, 2017 regular Board meeting and workshop.

f. Prepared Engineer's Report for engineering services performed during September 2017.

g. Prepared several GIS data requests for updated website.

h. Regular and frequent communication and coordination with Administrator Bleser discussing status of various task orders, Board workshops, October meeting agenda, preparation for CAC and TAC meetings, and miscellaneous questions.

i. Project management, webmap data management, and overall coordination of active task orders.

Permitting Program

a. *Permit 2016*-017: Southwest Green Line LRT Extension: This project involves the construction of a light rail transit line between Eden Prairie and downtown Minneapolis. The portion of the project within the RPBCWD jurisdiction includes approximately 1.5 miles of proposed rail track and two stations. The project adds approximately 5 acres of impervious surface within the RPBCWD. Stormwater BMPs designed for compliance with RPBCWD rules include pervious pavement, infiltration basins, wetland buffers, vegetated swales, and

detention ponds. The project triggers RPBCWD Rules B, C, D, E, G, and J. Application was conditionally approved at the January 2017 Board meeting. Reviewed real estate information and several versions of a draft maintenance agreements, including buffer and stormwater exhibits.

b. *Permit 2016-032: County Road 61:* This project includes reconstructing County State Aid Highway 61 from Highway 101 to Charlson Road. The roadway will be converted from a two-lane urban and rural roadway to a three-lane urban roadway with a sidewalk along the west side and a trail along the east side. Only a portion of this project is in RPBCWD. This project triggers RPBCWD Rules B, C, D, G, J and K. The permit was conditionally approved in November 2016. Met with applicant on September 12th to discuss potential permit modification to include revised pond layout to accommodate Eden Prairie Road realignment.

c. *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. Reviewed applicant's request for a permit modification to increase the building expansion by 400 square feet and modify the stormwater management facility. Provided review comments to the applicant's engineer. Drafted permit modification review report for Manager consideration at the October 4, 2017 regular meeting.

d. *Permit 2017-001*: Kopesky 2nd Addition: This project involves construction of an 8-lot single family home subdivision at 18340 82nd Street in Eden Prairie. The project will trigger Rules B, C, D, and J. The project was conditional approval at May 3rd meeting. Drafted permit modification review report for Manager consideration at the October 4, 2017 regular meeting.

e. *Permit 2017-023:* Eden Prairie Assembly of God: This project involves construction of a 14,794 square foot building addition and an infiltration basin followed by a grassed swale to provide storm water quantity, volume and quality control. The project will trigger Rules C and J. Reviewed the applicant request for modification at the end of August. Notified applicant of conditional approval of modification request, drafted permit form, and responded to questions from applicant about conditions of approval.

f. *Permit 2017-034*: Park Road: This project involves mill and overlay of Park Road in Chanhassen and the replacement of the Riley Creek culvert crossing. Notified applicate of conditional approval, reviewed draft maintenance agreement, and drafted permit form.

g. *Permit 2017-047:* Fawn Hill: This project involves construction of an approximately 5.4 acre, 10 lot residential development in Chanhassen. The project will trigger Rules C, D, and J. the application was considered complete on August 4th. Notified applicant of conditional approval and drafted permit form. Worked with applicant and city of Chanhassen on maintenance declaration and maintenance agreement respectively.

h. *Permit 2017-053*: Mastercraft Boats: This project involves demolition of an existing building and the construction of a new building, including bituminous parking improvements. The project also involves the construction of an underground infiltration basin in Minnetonka. The project will trigger Rules C and J. Notified applicant of conditional approval.

i. *Permit 2017-057*: EP Center Retaining Wall Rehabilitation: This project involves the replacement of the existing retaining wall, concrete sidewalk, and associated grading and

drainage for the new retaining wall along the southwest side of the Target store. The project will trigger Rules C and G. Notified applicant of conditional approval.

j. Performed erosion control inspections of active sites during the week of September 19th (see attached inspection report).

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

Data Management/Sampling/Equipment Assistance

a. Refined database and beta user interface to collect field and stream data with a hand-held electronic device (i.e. I-Pad, Smartphone, etc.) from the field.

b. Uploaded and verified 18 laboratory reports to EQuIS.

c. Created tables for Barr team of all Riley Lake analytical data.

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.

c. Re-install DTS-12 turbidity sensor.

Purgatory Creek Monitoring Station at Valley View Rd

a. Downloaded and reviewed data.

b. Storm event sampling – set station for sampling.

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

a. Finished a draft memorandum to document construction and as-built conditions

b. Had communications with the city of Minnetonka regarding plantings as the City completed their first annual inspection of the project.

Task Order 12: Downtown Chanhassen BMP Retrofit Assessment

a. Project is complete and the clean water fund accelerated grant will be closed out.

Task Order 13b: Lake Susan Watershed Treatment and Stormwater Reuse Enhancements Design and Construction Administration

a. Design kick-off meeting (#2) at RPBCWD office attended by Barr (Katie Wolohan and Scott Sobiech) and RPBCWD (Claire Bleser, Terry Jeffery, and Josh Maxwell) to discuss project preferences, education and outreach, water quality sampling, permitting, and communications/project execution preferences.

b. Coordination and completion of site topographic and utility survey.

c. Drafted wetland delineation report. The development of the wetland delineation report was not anticipated in the original scope/budget as communications with the city of Chanhassen suggested it was a pond and would not be regulated under the wetland conservation act (WCA). However, additional review of historic information indicates the pond was excavated in a historic wetland and will likely be regulated as a water of the U.S. by the USACE and possible by the city under WCA.

d. Initial design planning, information requests to the City of Chanhassen, etc.

Task Order 14b: Lower Riley Creek Final Design

a. Continued 60% design, including determination of stable channel parameters and modeling potential designs to ensure erosive forces and shear stresses in the channel and overbanks will be properly reduced.

Task Order 16: Watershed Management Plan Refresh

a. Revised internal draft plan based on Manager feedback and compiled PDF for distribution to the TAC and CAC.

b. Continued work on appendix information.

c. Participated in September 25th CAC meeting to collect CAC feedback on the internal draft.

d. Participated in a September 27th TAC meeting to collect CAC feedback on the internal draft

e. In the next month, Barr will work with Administrator to incorporate comments from CAC and TAC.

Task Order 19: Chanhassen High School Stormwater Reuse Design

a. Participated in a conference call with Michael McLaughlin (ISD 112) and Terry Jeffery to discuss the suggestions from the value engineering discussion. Provided some follow-up on water treatment location/shelter and the radio controlled valve) items.

b. Over the next several months additional coordination with ISD 112 on shelter materials, design and location as well as some minor design revisions based on value engineering discussions.

Task Order 20: Hyland Lake UAA Update

a. Completed initial draft of the report and provided to Administrator for review.

b. Revised executive summary based on Administrator review comments. Awaiting Administrator review comments on remainder of draft report.

Task Order 21: Bluff Creek Feasibility Study

a. Continued 60% design, including preliminary grading and in-stream structure design and developed preliminary plan set/

b. Completed existing and proposed conditions hydraulic modeling and analysis complete. Proposed conditions modeling is based on preliminary grading and evaluates erosive forces and shear stresses in the channel and overbanks to ensure they will be properly reduced.

c. Completed the wetland delineation and began the wetland delineation report. A field review by regulators will be scheduled for some time in October.

d. Began the Phase I environmental assessment and will be complete in October.

e. Began the Cultural and Historical assessment and will also be completed in October.

f. Met with Administrator Bleser and Project Manager Jeffery to discuss 60% design.

Task Order 22: Groundwater Assessment

a. No activity this period. Waiting Board and Administrator feedback on draft report.

Task Order 23: Scenic Heights School Forest Restoration

a. Assisted District legal Counsel with developing a draft cooperative agreement at the Administrators request.

b. Continued working to finalize design on the forest restoration plans and specifications in preparation for bidding.

c. Prepared application and supporting information for the RPBCWD permit.

d. Completed a wetland delineation report and MnRAM for a wetland on the site. During initial planning and discussions with the City it was believed that the wetland was a pond constructed in upland areas. The City informed the District that the wetland would be regulated under the wetland conservation act (WCA).

Task Order 24: Preliminary Engineering Study for Silver Lake Water Quality Treatment Project

a. Barr internal design kick-off meeting to discuss project background, initial tasks, and questions from the team.

b. Started process of identifying BMPs that could fit the site.

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engineering and environmental consultants

BARR

To: RPBCWD Board of Managers

From: Dave Melmer

Subject: September 19, 2017—Erosion Inspection

Date: September 28, 2017

Project: 23/27-0053.14 PRMT 9016

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 September 19, 2017.

Site Inspections

2015-005	**CSAH 101 Mntka**	**2017-09-20**
	Construction complete site wide. List and photos of temporary BMP's that can be removed was made. Site representative will be notified and supplied with list. Site wide inspection was made.	
2015-008	**3520 Meadow Lane**	**2017-09-20**
	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. Some landscaping observed on north side. (September-2017)	
2015-010	**Children's Learning Adventure**	**2017-09-19**
	Building construction complete. Inlet protection has been removed. Landscaping is complete. Sod was installed and application of spray tac to exposed soils. Vegetation growing thru mats and in spray-tac'd areas. Pond slope to west has failed-- causing slope erosion to pond downstream. Site representative was notified of Corrective Action--has been repaired and improved. Some silt fences have been removed. One section of silt fence still in place and sand bags at north outlet still in place. Site representative was notified that silt fence and sand bags have been removed. Erosion mats installed on east and west side of rip-rap do not have vegetation growing to date. These two areas were recently spray tac'd--no vegetation growing to date. Photo taken.	
2015-016	**Blossom Hill**	**2017-09-18**
	Construction on home site at NE corner continues. BMP' look good look ok for unsold lots. House construction on south lot complete. Slight tracking to street observed.	

2015-035	**LaMettry's Chanhassen**	**2017-09-19**
	Building construction continues on south site. Parking lot on north lot has been paved. North slope grading and landscaping complete....swale BMP' look good- north slope has erosion control mat over entire area-vegetation established. BMP's are good. Slight tracking on south site. (September-2017)	
2015-036	**Saville West Subdivision**	**2017-09-20**
	Construction has begun at 5320 Spring Ln. House site. Rock entrance installed. Silt fence perimeter control in place. BMP's look good.	
2015-038	**Improvements to Field 8 at Miller Park**	**2017-09-19**
	BMP's look good. Site construction complete. Soils have been covered---vegetation is growing. All BMP's have been removed with exception of bio-logs at infiltration area. (September)	
2015-048	**Pagel II Ice Facility Addition**	**2017-09-19**
	Construction of building foundation/walls complete. Silt fences in place. Parking lot paved and staging area dismantled. Site BMP's look good. Site grading complete. Slope on south side of building --has erosion mats installed and silt fences at toe of slope- vegetation is established. Catch basin protection installed. Upper area graded and BMP's removed. (September-2017)	
2015-050	**Arbor Glen Chanhassen**	**2017-09-19**
	Perimeter control (silt fence) installed. Heavy equipment onsite and earthwork/grading underway. East entrance being installed--no rock to date. BMP's look good.	
2015-053	**RBSC Chanhassen LLC**	**2017-09-19**
	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. (September)	
2015-056	**Oster Property**	**2017-09-19**
	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 (grass) still sparse in areas. (September-2017). Homeowner is getting bids for final landscaping.	

2015-058	**Prairie Center Clinic Addition**	**2017-09-18**
	Construction complete on building. Some BMP's have been removed for landscaping. Vegetation growing in some areas. Parking lot top coat complete. Landscaping and seeding complete. BMP's are still in place. (September/2017)	
2016-004	**Round Lake Park Improvements**	**2017-09-19**
	BMP's look good. Site construction complete--parking lot/lots-curb gutter and asphalt has been installed. (November-2016). Asphalt top coat complete. Vegetation is growing. All temporary BMP's have been removed with exception of BMP's at infiltration areas and silt fence on east side. Infiltration basins have been graded spray-tac'd.	
2016-006	**Soccer Field 10 at Miller Park**	**2017-09-19**
	BMP's look good. Site construction complete. Vegetation established. Site is stable. BMP's still in place--silt fences and one catch basin. (September)	
2016-012	**Minnetonka HS Parking Additions**	**2017-09-19**
	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. Vegetation mat has been installed over bare area--no growth to date.	
2016-015	**18321 Heathcote Lane**	**2017-09-20**
	Silt fences installed/in good condition. Rock/gravel entrance is good. BMP's look good. House construction continues. (September -2017)	
2016-021	**Cedar Hills Park**	**2017-09-19**
	Construction continues. Curb and gutter installed for parking lot. Silt fences have been installed. Work near creek is complete-foot bridge installed. BMP's look good. Final grading and seeding underway.	
2016-025	**18374 Heathcote Lane**	**2017-09-20**
	Construction of additions complete. Driveway installed and landscaping complete. Site is stable. All temporary BMP's have been removed. This will be last field inspection for this permit.	

2016-026	**Foxwood Development**	**2017-09-19**
	Multiple house construction has begun-BMP's look good- silt fences and rock entrances installed/ good perimeter control. Sidewalk installation completed. Silt fences have been installed on unsold lots. Catch basin protection installed. Street clean up underway during inspection. Bare soils have been spray-tac'd.	
2016-030	**IDI Distribution Building Expansion**	**2017-09-19**
	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 again in August-2107. Catch basin protection at Basin east southeast of entrance has been installed. Stockpiles of dirt have been removed--silt fences still in place. Boulders onsite for installation. Site grading /earthwork still underway. BMP's look good. (September-2107)	
2016-036	**Collegeview Drive Sidewalk**	**2017-09-18**
	All construction is complete. Vegetation is established. All temporary BMP's have been removed. This will be last the last field inspection for this permit.	
2016-037	**Prestige Day Care**	**2017-09-18**
	Construction continues. Perimeter control silt fence in place, Rock entrance installed. Catch basin protection installed-as requested. Site looks good. September -2107	
2016-038	**Optum Technology Drive Improvements**	**2017-09-18**
	BMP's installed and are good. Vegetation is growing-sparse in some areas. Some sparse areas have additional matting installed. September -2017.	
2016-039	**Powers Ridge Senior Apartments**	**2017-09-19**
	Construction continues. BMP's are good. Parking lot base and curb/gutter installation underway. Tracking to street--bobcat with brush and basket onsite for daily cleanup. (September)	

2016-040	**18995 Minnetonka Blvd** Open CA(s): No erosion protection on north and northeast location of site-- bare soils susceptible to erosion. Deadline: 10/15/2017 Construction of house continues. Silt fence in place. Slopes with vegetation mats have growth. Southwest corner has more BMP's to control sediment erosion. BMP's installed are adequate. Earthwork near front has been completed--straw mats onsite for coverage. Northeast corner of site needs erosion protection. Site representative was notified.	**2017-09-20**
2016-041	**Chanhassen West Water Treatment Plant** Silt fences installed on site. Construction continues. Rock entrance good. BMP's look good. Street cleanup conducted regularly.	**2017-09-19**
2016-042	**18663 St. Mellion Place--Eden Prairie (Bear Path)** Construction continues. BMP's are good. Silt fence in one small area is at 40% of height. Will continue to monitor some erosion on hill is causing silt fence to fill. Secondary silt fence installed on hillside. Drainage from downspout rerouted. Minor erosion is still occurring and is currently being stopped by silt fences.	**2017-09-19**
2016-044	**Dell Rd & Riley Creek Repair Project** Vegetation was growing appears to have died off. Rip-rap was recently installed at dirt road edge to control erosion from road. Photo taken. Additional erosion prevention from road needs to be addressed. More rock installed along flow path and silt deposit at beehive catch basin removed. Representative was contacted.	**2017-09-18**
2016-045	**MCES Blue Lake Interceptor Rehab** Construction continues. Silt fences installed/bio-logs in place. Rock entrance installed. Minor tracking street observed.	**2017-09-19**
2016-047	**9507 Sky Lane Eden Prairie** Construction continues. Silt fences down in some areas but secondary containment is good. Catch basin protection at road needs to be maintained --it's not installed-- just laying over CB. (street side CB). Catch basin between properties has been protected. Runoff from bare soils going around and offsite from this property-- south property is landscaped. Minor tracking to street. Site representative was notified.	**2017-09-19**

2016-FT02	**Mitchell and McCoy Lake Outlet Sediment Removal**	**2017-09-19**
	Site construction complete. Bio-log still in place. Vegetation established. (September)	
2017-002	**7012 Dakota Ave**	**2017-09-19**
	Open CA(s): BMP's installed. Bio-logs on SE side have been removed and will need to be reinstalled. Site representative was notified. Deadline: 10/1/2017	
	BMP's installed. Bio-log perimeter installed. Bio-logs on SE side may need another layer--will monitor. New house construction continues. Site in good condition. Logs on SE side have been removed and will need to be reinstalled. Site representative was notified.	
2017-003	**18761 Heathcote Dr Building Addition**	**2017-09-20**
	House construction continues. BMP's are adequate for stockpile-silt fence would've been best--bio-logs are working. Minor tracking to street observed. Pool installation complete. Additional silt fence installed and working good. Landscaping underway. Bio-logs may have to be doubled up soon. Will notify site representative. Additional bio-logs have been installed in some areas. Landscaping underway.--sod installation scheduled for 9/22.	
2017-004	**9627 Sky Lane Eden Prairie**	**2017-09-19**
	Construction complete. Landscaping complete. Site is stable. All temporary BMP's have been removed. This will be last field inspection for this permit.	
2017-005	**9527 Sky Lane Eden Prairie**	**2017-09-19**
	Construction complete. Landscaping complete. Site is stable. All temporary BMP's have been removed. This will be last field inspection for this permit.	
2017-008	**Prairie Meadows Site Renovation**	**2017-09-18**
	Construction continues. BMP's in place. Site looks good. Some minor tracking to street- catch basin protection is installed. East site access has BMP's installed.	
2017-009	**Emerson Chanhassen East Renovation**	**2017-09-19**
	Construction continues. BMP's installed. Rock entrance in place. (September)	

2017-010	**Riley Lake Park Renovations** BMP's installed and look good. Parking lot and boat ramp construction complete. Grading and spray-tac completed in some areas.	**2017-09-19**
2017-011	**Galpin Blvd Watermain Improvements** Construction complete. Soils covered with erosion control mats-some growth observed to date. Silt fences still installed in some areas.	**2017-09-19**
2017-012	**9667 Sky Lane** Construction complete. Landscaping complete. Site is stable. All temporary BMP's have been removed. This will be last field inspection for this permit.	**2017-09-19**
2017-015	**9995 Lawson Lane** Construction complete. Landscaping and sod installed. Site is stable. BMP's in place are undeveloped lot. This will be last field inspection for this permit.	**2017-09-18**
2017-018	**Bloomington 2017-102 Street Maint** Construction underway. Final topcoat is being laid today. BMP's in place.	**2017-09-18**
2017-019	**Bloomington 2017-110 Trail Improvements** Construction complete. Site is stable. Vegetation established. All temporary BMP's have been removed. This will be last field inspection for this permit.	**2017-09-18**
2017-021	**8544 Ellet Circle** BMP's removed. Construction complete. Landscaping complete except west side. (September)	**2017-09-19**
2017-025	**735 Pleasantview Road** Construction continues. BMP's installed. Bio-logs for perimeter control--adequate. Some landscaping underway. Silt fence has been installed for perimeter control. (September-2017)	**2017-09-19**
2017-026	**6135 Ridge Road** Site has been cleared and surveyed. BMP's installed --silt fence for erosion perimeter control. No additional activity to date.	**2017-09-19**

2017-027	**7500 Chanhassen Road**	**2017-09-19**
	Construction well underway. Silt fences and bio-logs installed. Erosion on west side went offsite-- cleanup up and more logs installed. This area could use more protection and log should be staked in at this site. Representative will be notify to reinforce this area. Additional silt fence and biology installed - additional BMP's look good. (September)	
2017-029	**Tweet Pediatric Dentistry**	**2017-09-19**
	Construction continues. BMP's are installed and good. Slight tracking offsite. Catch basin protection installed in this area. Infiltration areas installed. Parking lot grading and curb/gutter installation underway.	
2017-032	**11193 Bluestem Lane**	**2017-09-18**
	Survey markers observed. Eroded area is fenced off. No construction observed to date. Walked entire construction area marked on I-pad.	
2017-034	**Park Road Overlay Chanhassen**	**2017-09-19**
	Work has begun at creek crossing and Park Rd. BMP's installed.	
2017-036	**Minnetonka HS Upper Field Access Road**	**2017-09-19**
	Construction continues. Erosion on slope north of retaining wall has overtopped bio-logs. Representative was notified. Parking lot has tracking. Corrective Action items have been addressed. Construction complete. Vegetation has sprouted.	
2017-038	**West Park**	**2017-09-19**
	Construction has begun. Earthwork/grading underway. Rock entrance installed on south side. Perimeter control installed. Catch basin protection installed. BMP's look good. No rock entrance installed at west entrance to date. Minor tracking observed. Street sweeper onsite.	
2017-044	**17064 Weston Bay Road**	**2017-09-19**
	Construction has started. BMP's on lake side installed and look good. No catch basin protection installed near construction entrance. No rock/wood chip entrance installed. Site representative was notified. Corrective Action items have been addressed. Site looks good.	

2017-047	**Fawn Hill**	**2017-09-19**
	Site has been brushed and cleared. No BMP's installed to date.	
2017-056	**Covington Rd Culvert Replacement**	**2017-09-19**
	Site has been surveyed. No construction to date.	

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.

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BARR

Memorandum

To: Riley-Purgatory-Bluff Creek Watershed District Board of Managers
From: Barr Engineering
Subject: Scenic Heights Elementary School Forest Restoration – Request Board Authorization to Solicit Bids for Construction
Date: 10/4/2017
Project: 23/27-0053.14 024
c: Claire Bleser – RPBCWD Administrator

In 2016, the RPBCWD staff began coordinating discussions around the restoration of the 7 acre school learning forest at Scenic Heights Elementary in Minnetonka. Through a coalition of partners including Three Rivers Parks District, ISD 276, school teachers and administrators, DNR, and Minnetonka Parks and Recreation, the restoration goals for the School Forest were developed. The parcel is used as an outdoor learning facility for hundreds of school children throughout Minnetonka and several neighboring cities. A small portion of Purgatory Park (approx. 1 acre), is being included in the project to create a contiguous restoration area that will connect the nearby Purgatory Creek ecological corridor. The project proposes to remove woody and herbaceous invasive species, stabilize an eroded channel, create a wetland buffer around an existing pond, and establish native plant communities. The project also includes the design of interpretive signage to be installed in the school forest and in adjacent Purgatory Park to help residents understand the value of native plant community restorations, buffers, and the role of the District in protecting valuable water resources. In the fall of 2016 RPBCWD staff secured a $50,000 grant from Hennepin County and the RPBCWD Board of Managers authorized final design and preparation of construction documents. ISD 276 has also agreed to provide $45,000 in funding for the project.

The engineer's opinion of probable construction cost based on the 100 percent design is $215,000. The opinion of probable cost provided is made on the basis of Barr Engineering's experience and qualifications and represents our best judgment as experienced and qualified professionals familiar with the project. Because we have no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor's methods of determining prices, or over competitive bidding or market conditions, Barr Engineering cannot and does not guarantee that proposals, bids, or actual costs will not vary from the opinion of probable cost presented.

It is requested that the RPBCWD Board of Managers authorize Barr Engineering Co. to solicit of bids for the removal of invasive species and restoration of the native ecological communities, pending review of the final contract documents by the RPBCWD legal counsel and execution of the joint cooperative agreement with the city of Minnetonka Parks and Recreation and ISD 276. If the Board of Managers authorizes solicitation of bids, the following is the tentative schedule for the project:

- Advertisement to bid submitted - October 5, 2017
- Bid opening – October 26, 2017
- Bidder recommendation to RPBCWD Managers for consideration at November 1, 2017 meeting
- Notice of Award – November 3, 2017
- Notice to Proceed – Mid-November 2017
- Intital Invasive Species Removal – Winter 2017-2018
- Native Species Seeding and Planting, Buffer Restoration – Spring 2018
- On-going Site Management and Native Establishment – Spring 2018 – Fall 2020

Attachments

- Specifications Table of Contents
- Drawings (100% draft) for the Scenic Heights School Forest Restoration Project

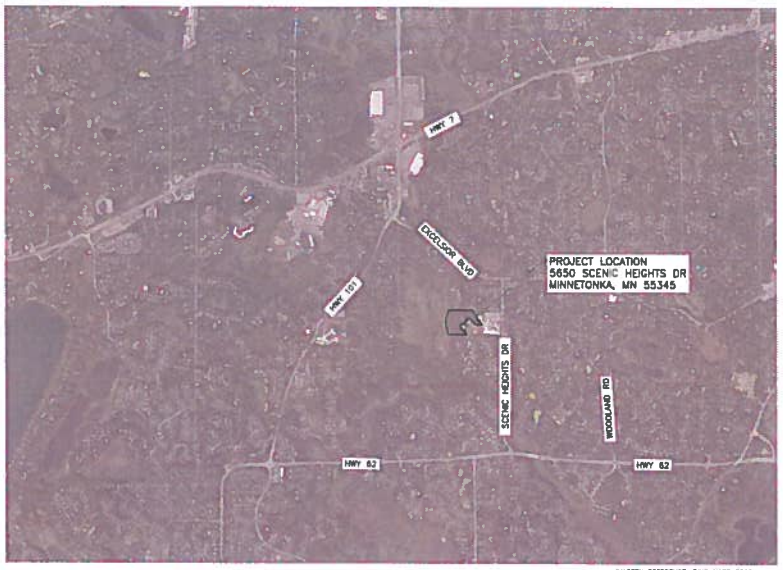
CONTRACT DOCUMENTS

SCENIC HEIGHTS ELEMENTARY SCHOOL FOREST RESTORATION
RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
MINNETONKA, MINNESOTA

TABLE OF CONTENTS

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT



IMAGERY REFERENCE: BING MAPS 2018

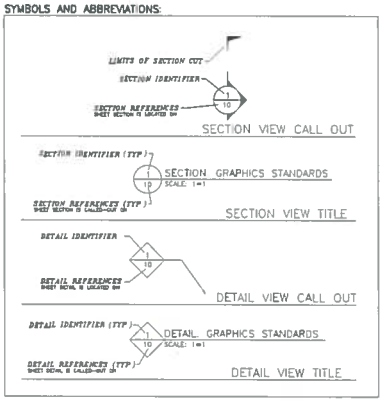
1 PLAN: LOCATION MAP
NOT TO SCALE

SHEET INDEX:

DWG	SHEET NAME
G-01	SHEET INDEX & LOCATION MAP
G-02	EROSION CONTROL NOTES
C-01	EXISTING CONDITIONS, SITE ACCESS, & STAGING AREAS
C-02	SITE ACCESS, EROSION CONTROL, & REMOVALS
C-03	ROCK RIFFLE DETAIL & CHANNEL ALIGNMENT
C-04	EROSION CONTROL & PLANTING DETAILS
L-01	SEEDING AND PLANTING PLAN
L-02	SEED MIXES AND PLANT LISTS

GOPHER STATE ONE CALL.
CALL BEFORE YOU DIG
1-800-252-1166

SYMBOLS AND ABBREVIATIONS:



CONTACTS:

PROJECT MANAGER	WATERSHED DISTRICT CONTACT	SCHOOL CONTACTS	CITY OF MINNETONKA CONTACTS
MATT KUMKA LANDSCAPE ARCHITECT BARR ENGINEERING CO. 4700 WEST 77TH STREET MINNEAPOLIS, MN 55435 O: 952-832-2849 MKUMKA@BARR.COM	CLAIRE BLESER DISTRICT ADMINISTRATOR 14500 MARTIN DRIVE, SUITE 1500 EDEN PRAIRIE, MN 55344 952-607-6512 CBLESER@BSLAWD.ORG	DAWN CHRYSTESEN SCHOOL FOREST COORDINATOR 5650 SCENIC HEIGHTS DR MINNETONKA, MN 55345 DAWN.CHRYSTESEN@MINNETONKASCHOOLS.ORG	JO COLLERAN NATURAL RESOURCES MANAGER 11522 MINNETONKA BOULEVARD MINNETONKA, MN 55305 952-988-8415 JCOLLERAN@MINNETONKA.COM

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: MATTHEW E. KUMKA

SIGNATURE

DATE: 08/31/2017 LICENSE #: 53874

RELEASED TO/FOR

A	B	C	0	1	2	3

DATE RELEASED

BARR

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Scale	AS SHOWN
Date	8/31/2017
Drawn	HNH/KWB
Checked	MES-2
Designed	HNH
Technical	MES-2

RILEY-PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

SHEET INDEX
& LOCATION MAP

BARR PROJECT No.: 23270053.14
CLIENT PROJECT No.:
DWG No.: G-01
REV No.: 0

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

MINNETONKA, MINNESOTA

1 EROSION AND SEDIMENT CONTROL PLAN
SCENIC HEIGHTS SCHOOL FOREST RESTORATION

PROJECT DESCRIPTION:
The project Work involves the removal of invasive species, restoration of native plant communities, replacement of a collapsed flared end section and restoration of the outlet channel into a nearby pond. The sites will be graded and restored by seeding, planting and mulching. Erosion prevention measures shall be implemented to prevent sediment from being transported off site.

The anticipated total area of soil disturbance is approximately 8 630 square feet.
The anticipated total area of net new or reconstructed impervious surfaces is 0 square feet.
The anticipated total area of net reduction of impervious surfaces is approximately 0 square feet.

FIGURES:
Locations and types of temporary erosion prevention and sediment control BMP's are these sheets

(1 C-01) (1 C-02)

STORMWATER DISCHARGE DESIGN REQUIREMENTS
The following sizing criteria apply to the design of stormwater treatment facilities. N/A indicates not applicable or not constructed as part of this project.

1 Temporary Sedimentation Basins: Not required as disturbed drainage area is less than 5 acres
2 Permanent Wet Sedimentation Basins: N/A
3 Permanent Infiltration/Filtration: N/A
4 Permanent Regional Ponds: N/A

SEQUENCE OF CONSTRUCTION
The following sequence describes, in general, the work on the site

1 CONTRACTOR shall verify that all permits have been obtained and/or obtain the necessary permits
2 CONTRACTOR shall perform site inspections, record keeping and record retention in accordance with all permits
3 CONTRACTOR shall install all perimeter and down-gradient erosion control and sediment control best-management-practices (BMP's); construction entrances prior to site grading, excavation, stockpiling or disturbing existing vegetative cover
4 CONTRACTOR shall identify and mark desirable plants to be protected throughout the project.
5 CONTRACTOR shall perform woody invasive plant removal
6 CONTRACTOR shall install all native seedings and establishment.
7 CONTRACTOR shall perform herbaceous invasive plant management
8 CONTRACTOR shall perform site grading, excavation, stockpiling work for the flared end replacement and channel restoration
9 CONTRACTOR shall install, inspect, monitor and maintain temporary and permanent erosion control BMPs as shown on plans, continuously during the work
10 CONTRACTOR shall stabilize all exposed soils within 7 days of vegetation disturbance during the growing season.
11 CONTRACTOR shall replace or repair erosion control and sediment control BMP's that are not functioning properly.
12 CONTRACTOR shall regularly inspect site restoration activities for permanent vegetative establishment throughout the contract period.
13 CONTRACTOR shall NOT remove sediment control devices without Riley Purgatory Bluff Creek Watershed District (RPBCWD) approval or until RPBCWD has issued a certificate of completion.

CONSTRUCTION ACTIVITY FIELD REQUIREMENTS:

A All field requirements shall be performed in accordance with the requirements of the NPDES Permit and Stormwater Pollution Prevention Plan (SWPPP) (no SWPPP required for this project) and RPBCWD Erosion and Sediment Control Rules
1 The CONTRACTOR must implement the Erosion and Sediment Control Plan and provide BMPs as operated in an appropriate and functional manner.
2 The CONTRACTOR shall respond to changing site conditions and implement/supplement erosion prevention and sediment control measures utilized to provide adequate protection of disturbed soils and adequate prevention of sediment transport off-site At a minimum, the following storm water pollution prevention construction activity field requirements shall be furnished by the CONTRACTOR.

B EROSION PREVENTION PRACTICES
CONTRACTOR shall be responsible for the following erosion prevention practices:
1 The CONTRACTOR shall attempt to phase all work to minimize erosion and maintain vegetative cover to the extent possible The location of areas not to be disturbed must be delineated on the site before construction begins
2 All exposed soils must be stabilized no later than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased, including stockpiles with significant silt, clay or organic components.

C SEDIMENT CONTROL PRACTICES
CONTRACTOR shall be responsible for the following sediment control practices:
1 CONTRACTOR must install all down-gradient perimeter controls before any up gradient disturbance begins CONTRACTOR shall maintain perimeter controls until final stabilization
2 CONTRACTOR shall provide grading and BMP installation to limit all slopes of 3H:1V or steeper to an unbroken length of 75 feet or less.
3 Timing and installation of sediment control devices can be adjusted by CONTRACTOR to accommodate short-term activities such as clearing and grubbing or vehicle passage. Any short-term activity must be completed as quickly as possible and the sediment control practices must be installed immediately after the activity is completed and in all cases prior to the next precipitation event.
4 If present, all storm sewer inlets and outlets shall be protected by CONTRACTOR with appropriate BMP's during the work Those practices shall remain in place until the potential sources for discharging sediment to inlets have been stabilized by CONTRACTOR.
5 Temporary soil stockpiles must have silt fence or other effective sediment controls Soil Stockpiles shall not be placed within surface waters or storm-water conveyances CONTRACTOR shall install silt fence protection around the limits of all temporary soil stockpile areas. All soil stockpiles that remain undisturbed for a period greater than one month shall be protected by CONTRACTOR with cover of mulch, erosion control mats, or plastic sheeting
6 CONTRACTOR shall implement measures to control vehicle tracking off site Rock construction entrances or equivalent system must be installed by CONTRACTOR to minimize tracking from site
7 CONTRACTOR shall provide temporary sedimentation basins as required by the Permit (not required for this project)

D DEWATERING AND BASIN DRAINING
CONTRACTOR shall be responsible for the following dewatering requirements
1 CONTRACTOR's dewatering activities that have sediment-laden discharge must discharge into a temporary or permanent sedimentation basin where possible, otherwise it must be discharged through some form of best management practice (BMP) by CONTRACTOR to limit sediment from leaving the site Prior to discharge, the CONTRACTOR shall perform a visual test to ensure adequate treatment is obtained in the basin or BMP and apply additional treatment as required to ensure adequate treatment. The discharge must be dispersed over an accepted energy dissipation measure and not adversely affect the receiving water or downstream landowners or wetlands

E INSPECTIONS AND MAINTENANCE
CONTRACTOR shall be responsible for performing the following inspections and maintenance
1 When inspections find erosion prevention and sediment control BMP's that are nonfunctional, all nonfunctional BMP's must be repaired, replaced or supplemented with functional BMP's within 24 hours after discovery or otherwise in accordance with the NPDES Permit requirements (required by RPBWD erosion and sediment control rules).
2 The CONTRACTOR must routinely inspect the site once every 7 days during active construction and within 24 hours after a rainfall event greater than 0 5 inches in 24 hours.
3 All inspections and maintenance conducted during construction must be recorded in writing by CONTRACTOR and retained with the Erosion and Sediment Control Plan by CONTRACTOR. Maintenance must be completed by CONTRACTOR in conformance with NPDES SWPPP permit requirements. CONTRACTOR's records must include
   a Date and time of inspections
   b Name of person conducting inspection.
   c. Finding of inspection including corrective action
   d Details of corrective action (note Time Party completing maintenance)
   e Date and amount of rainfall greater than 0.5 inches in 24 hours
   f. Documentation of changes to Erosion and Sediment Control Plan.
4 In areas of project where final stabilization is complete inspections can be reduced to once a month. Those areas shall be inspected by CONTRACTOR for maximum period of 12 non-winter months and within 24 hours of first spring runoff or prior to resuming construction following any winter stoppage, whichever first.
5 All erosion control measures must be installed and maintained by CONTRACTOR according to the details included in the construction documents and in accordance with the product manufacturer's recommendations.
6 All silt must be removed from silt fence by CONTRACTOR when it reaches a height equal to one-half of the height of the silt fence CONTRACTOR shall repair or replace silt fences that is nonfunctional within 24 hours of discovery
7 Temporary and permanent sedimentation basins must be cleaned and sediment removed by CONTRACTOR once the sediment collected reaches one half the storage volume within 72 hours of discovery, or as soon as field conditions allow.
8 All sediment deposits within surface waters or stormwater conveyances must be removed and restabilized by CONTRACTOR within 7 days of discovery, including bottles and storm sewer sediment deposits The CONTRACTOR shall be responsible for obtaining ALL permits required, if necessary, for such sediment removal
9 CONTRACTOR shall be responsible for keeping existing paved surfaces clean of sediment. Construction entrances shall be checked daily by CONTRACTOR If the entrance becomes inundated with sediment, the entrances will be cleaned or replaced as appropriate by CONTRACTOR. Streets leading to and from the construction entrance shall be checked daily by CONTRACTOR for evidence of off-site sediment tracking onto paved surfaces. These areas will be swept clean of any tracked materials by CONTRACTOR as soon as possible and within 24 hours of discovery CONTRACTOR shall extend sweeping to the extremity of any sediment tracking that occurs off site

F POLLUTION PREVENTION MEASURES
CONTRACTOR shall be responsible for implementing the following pollution management measures on the site
1 Solid waste collected sediment, asphalt, concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements
2. Hazardous materials oil, gasoline, paint and any hazardous substances must be stored in appropriate containers, including secondary containment to prevent spills, leaks or other discharges. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must comply with MPCA regulations
3 A defined area of the site must be designated for use as a wash area for trucks and other equipment. No engine degreasing allowed on site
4 Concrete washout containment shall be provided on site. The containment method must be leak-proof with an impermeable liner. Or alternatively, concrete washout shall be performed at the concrete mix plant instead of on-site

RECORD RETENTION
– The CONTRACTOR shall keep appropriate records of inspections and maintenance of erosion prevention and sediment control measures, precipitation and all other records required by the Erosion and Sediment Control Plan during the duration of the Work

– The Erosion and Sediment Control Plan, all changes to it, and inspections and maintenance records must be kept at the site during construction by the permittee who has operational control of the portion of the site CONTRACTOR and OWNER must keep the Erosion and Sediment Control Plan on file for three years after the submittal of the notice of termination, including the records of all inspection and maintenance conducted during construction

CERTIFICATE OF COMPLETION
– Permittee must request a Certificate of Completion from RPBWD before any erosion and sediment controls can be removed This request shall be made upon Final Stabilization of the project site

– Final stabilization can be achieved in the following way:
1 All soil disturbing activities are complete and a uniform perennial vegetative cover with a density of 70% over the entire pervious surface has been achieved, including stabilization of all ditches and swales
2 Removal of all temporary synthetic and structural BMPs. BMPs designed to decompose on site may be left in place if indicated by the plan.
3 Removal of sediments from storm water conveyances and permanent water quality basins

CHANGES TO EROSION AND SEDIMENT CONTROL PLAN
– The Permittee must amend the Erosion and Sediment Control Plan as necessary to include additional requirements, Such as additional or modified BMPs, Designed to correct problems identified or address situations whenever:
1 There is a change in design, construction, operation or maintenance
2. Weather or seasonal conditions that have significant effect on discharge Inspection is required within 24 hours of a rainfall event greater than one-half inch.
3 Inspection or investigation by site operators, local, state or federal officials indicate the Erosion and Sediment Control Plan is not effective
4 The Erosion and Sediment Control Plan is not consistent with the terms and conditions of the permit

EROSION AND SEDIMENT CONTROL PLAN CERTIFICATION
– This Erosion and Sediment Control Plan was prepared by

PREPARED BY
Heather N Hdavely
Water Resources Specialist
Barr Engineering Company
hhdavely@barr com
952-842-3613

CERTIFICATION
Minnesota NPDES Construction Stormwater Training
March 25, 2016

RESPONSIBLE PERSONS.
– Below is a list of people responsible for the project who are knowledgeable and experienced in the application of erosion prevention and sediment control BMPs. They shall oversee the implementation of the Erosion and Sediment Control Plan, inspection, and maintenance of erosion prevention, and sediment control BMPs before and during construction

Responsible persons

RESPONSIBLE PERSONS IS PENDING CONTRACTOR SELECTION

CONTRACTOR	OWNER'S REPRESENTATIVE
(insert CONTRACTOR)	Matthew E. Kumka
"	Landscape Architect
"	Barr Engineering Company
"	mkumka@barr com
"	952-832-2849
Phone	
Fax	
(insert CONTRACTOR)	
On-Site Representative	
"	
"	
"	
Phone:	
Fax	
Contractor	
Vice President	Superintendent
General Foreman	Site Foreman

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION

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

PRINTED NAME Matthew E Kumka
SIGNATURE
DATE 10/6/2017 LICENSE # 53974

CLIENT
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CONSTRUCTION
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www.barr.com

Scale	AS SHOWN
Date	8/21/2017
Drawn	HNH
Checked	MEK2
Designed	HNH
Approved	MEK2

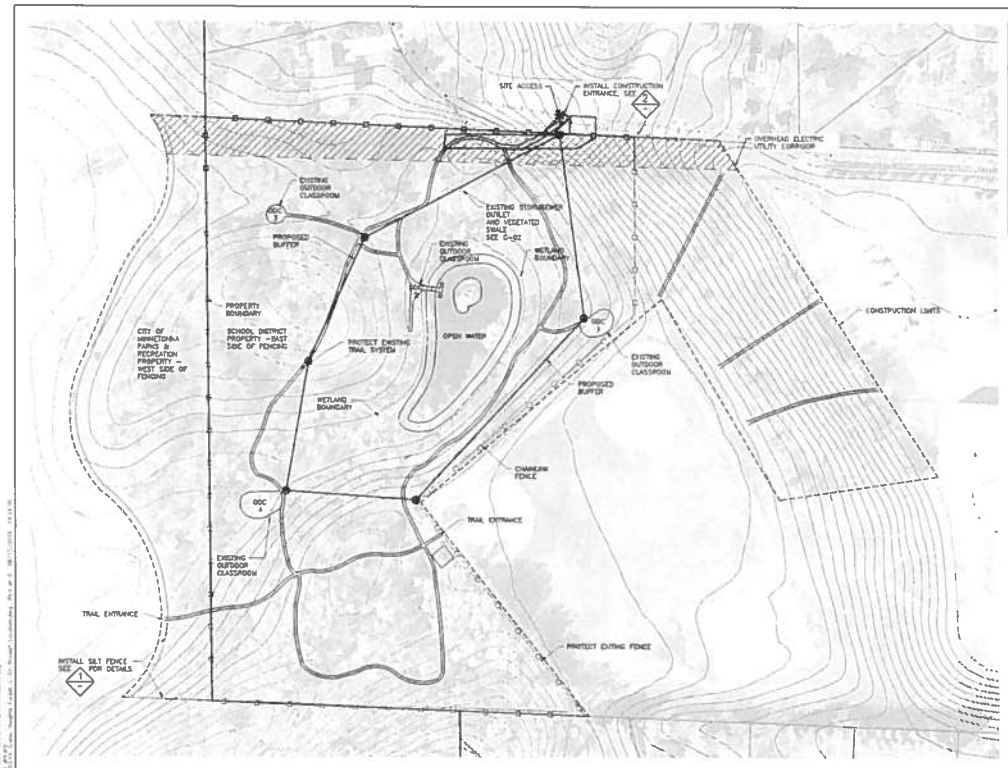
RILEY–PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

EROSION & SEDIMENT CONTROL PLAN

BARR PROJECT No. 23270053.14
CLIENT PROJECT No

DWG No. C-02
REV No 0



LEGEND

- SILT FENCE
- EXISTING TRAIL SYSTEM
- SITE ACCESS
- BUFFER EDUCATION SIGNAGE

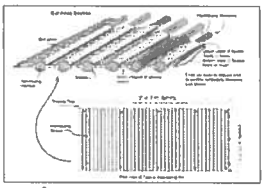
WETLAND BUFFER INFORMATION

RPBCWD
WETLAND VALUE HIGH
REQUIRED WIDTH AVERAGE WIDTH 60
MINIMUM WIDTH 30'

WETLAND PERIMETER 699 FT

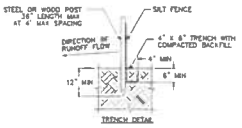
AT 60' AVERAGE WIDTH BUFFER AREA 71,586 SQFT

PROPOSED BUFFER AREA 79,890 SQFT
AVERAGE WIDTH 80 FT
MINIMUM WIDTH 35 FT



2 DETAIL: CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:
1. INSTALL ACES WOO MAT PER MANUFACTURER'S INSTRUCTIONS
2. REMOVE TRACKED SEDIMENTS FROM PAVED SURFACES WITHIN 24 HOURS OF DEPOSITION, PICK UP OR VACUUM SWEEPER REQUIRED
3. REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL PP 3-69 TO 3-73, NRHOST EROSION CONTROL HANDBOOK
4. A TOTAL OF 1 CONSTRUCTION ENTRANCE TO BE INSTALLED



3 DETAIL: SILT FENCE
NOT TO SCALE

NOTES
1. SILT FENCE SHALL BE INSTALLED AGAINST ADJACENT PAVEMENT FACES
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY, REQUIRED WHEN 1/3 FULL WITHIN 24 HOURS OF DISCOVERY
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND BE PERMANENTLY STABILIZED
4. REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL, NRHOST EROSION CONTROL HANDBOOK
5. USE HI-FLOW FILTER FABRIC, 200 GAL PER MINUTE PER SQUARE FOOT

1 PLAN: EXISTING CONDITIONS, SITE ACCESS & EROSION CONTROL
0 50 100
SCALE IN FEET

GOPHER STATE ONE CALL
CALL BEFORE YOU DIG
1-800-252-1166

ISSUED FOR BID

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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.
PRINTED NAME MATTHEW E. HARRA
SIGNATURE
DATE 10/6/2017 LICENSE # 53374

CLIENT
CITY
CONSTRUCTION
RELEASED TO/FOR
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DATE RELEASED

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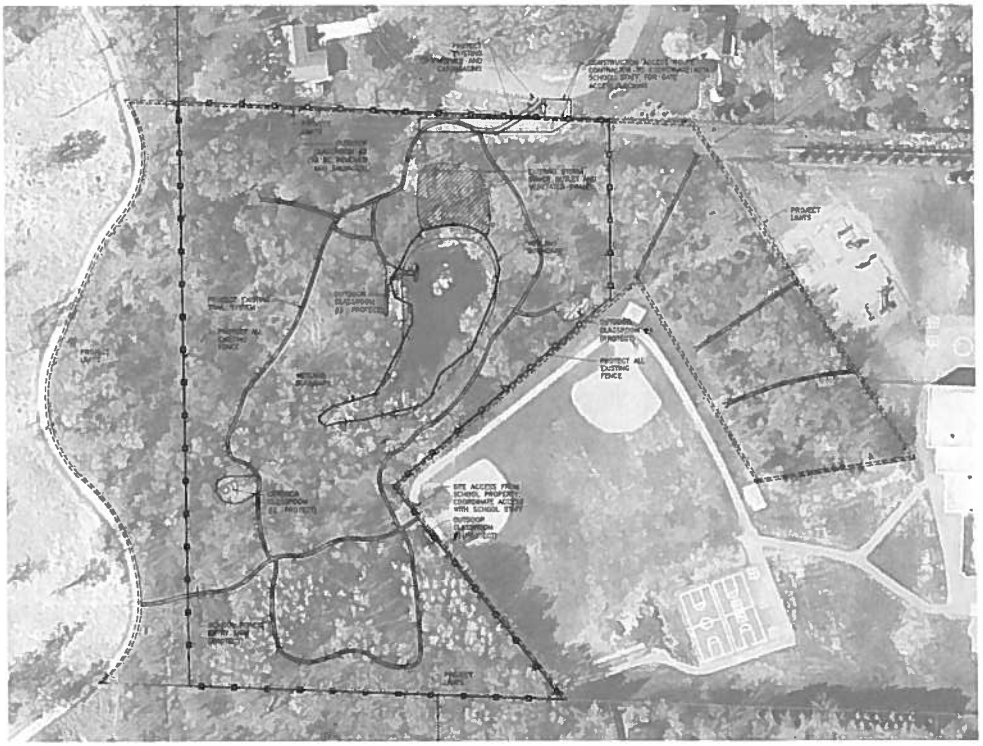
Scale	AS SHOWN
Date	6/18/2017
Drawn	MHH
Checked	MEH2
Designed	BARR
Approved	MEH2

RILEY-PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

EXISTING CONDITIONS, SITE ACCESS & STAGING AREAS

BARR PROJECT No.
23270053.14
CLIENT PROJECT No.
DWG No. C-01
REV No. 0



PLAN: EROSION CONTROL & REMOVALS

0 50 100

SCALE IN FEET

GOPHER STATE ONE CALL
CALL BEFORE YOU DIG
1-800-252-1166

SITE AMENITY REMOVAL NOTES:

1. BENCHES AND MISCELLANEOUS SIGNAGE ARE LOCATED IN VARIOUS LOCATIONS THROUGHOUT THE PROJECT AREA. THEY ARE TO BE PROTECTED IN ALL LOCATIONS
2. OUTDOOR CLASSROOMS TO BE PROTECTED OR TO BE REMOVED AND SALVAGED HAVE BEEN LISTED ON THIS PLAN SHEET. SALVAGE AND STOCKPILING OF THE MATERIALS FROM THE OUTDOOR CLASSROOMS REMOVED SHALL BE STORED ON SITE IN AN APPROVED LOCATION UNTIL REINSTALLATION BY OTHERS.
3. ADOPT-A-PLOTS ARE LOCATED THROUGHOUT THE PROJECT SITE IN VARIOUS LOCATIONS
4. ADOPT-A-PLOT SIGNS ARE TO BE REMOVED AND DISPOSED OF OFFSITE.

SITE ACCESS NOTES:

4. ALL SITE ACCESS SHALL BE GRANTED OFF OF NANTUCKET AVENUE OR THE EASTERN SCHOOL FOREST ENTRANCE NEAR OUTDOOR CLASSROOM #1. THE CONTRACTOR SHALL NOT ACCESS OR OTHERWISE IMPACT PURGATORY PARK, INCLUDING THE TRAILS FOR ANY REASON AS SHOWN ON C-03
5. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE OR DISTURBANCE TO ANY SCHOOL OR CITY PROPERTY OUTSIDE OF THE PROJECT BOUNDARY. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER
6. STAGING AREA WILL BE CONFINED TO CONSTRUCTION ACCESS LOCATION

LEGEND

- SILT FENCE
- EXISTING TRAIL SYSTEM
- PROJECT LIMITS

ISSUED FOR BID

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PRINTED NAME MATTHEW E. KUSKA

SIGNATURE

DATE 10/3/2017 LICENSE # 53974

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Minneapolis, Minnesota

Scale	AS SHOWN
Date	9/25/2017
Designed	MHH/RWB
Drawn	MEK2
Designed	BARR
Approved	MEK2

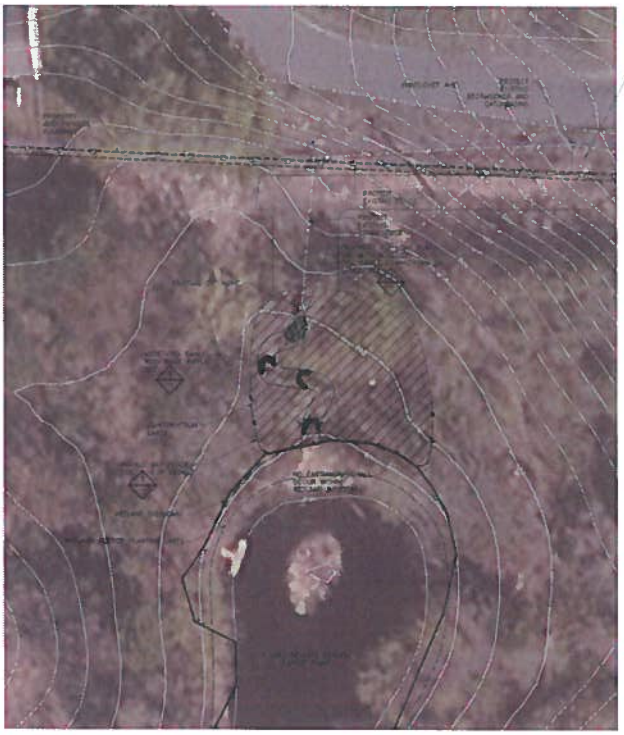
RILEY–PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

SITE ACCESS, EROSION CONTROL & REMOVALS

BARR PROJECT No.
23270053.14
CLIENT PROJECT No.

DWG No. C-02
REV No. 0



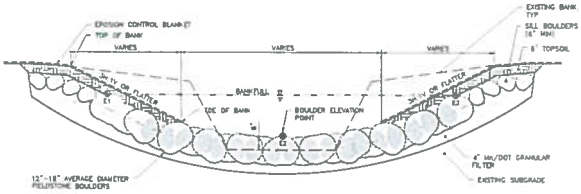
CONSTRUCTION ACCESS ROUTE
CONTRACTOR TO COORDINATE WITH SCHOOL STAFF FOR GATE ACCESS/LOCKING

1 PLAN: STORM SEWER FES & DITCH ALIGNMENT

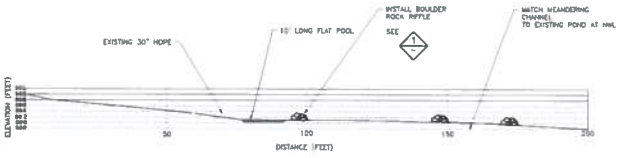
0 20 40

SCALE IN FEET

GOPHER STATE ONE CALL
CALL BEFORE YOU DIG
1-800-252-1166



1 DETAIL: ROCK RIFFLE
NOT TO SCALE



4 PROFILE: STORM SEWER FES & DITCH ALIGNMENT
NOT TO SCALE

N

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NO	BY	CHK	APP	DATE	REVISION DESCRIPTION

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PRINTED NAME MATTHEW J. KUBALA

SIGNATURE

DATE 10/3/2017 LICENSE # 53474

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Minneapolis, Minnesota
Ph 1-800-632-2277

Issue	AS SHOWN
Date	9/25/2017
Drawn	HHH/MWB
Checked	MEK2
Designed	BARR
Approved	MEK2

RILEY PURGATORY
BLUFF CREEK WATERSHED DISTRICT

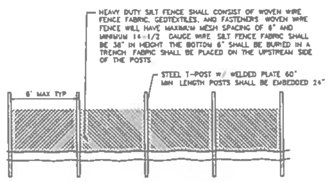
SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

ROCK RIFFLE DETAIL
& CHANNEL ALIGNMENT

BARR PROJECT No. 23270053.14
CLIENT PROJECT No.

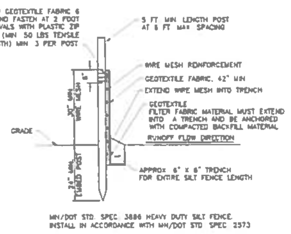
DWG No. C-03

REV No. 0



NOTE:
1. MN/DOT STD. SPEC. 3886 HEAVY DUTY SILT FENCE. INSTALL IN ACCORDANCE WITH MN/DOT STD. SPEC. 2573
2. CONTRACTOR SHALL REMOVE ALL SILT FENCE AND SEDIMENT FOLLOWING CONSTRUCTION AND SOIL STABILIZATION

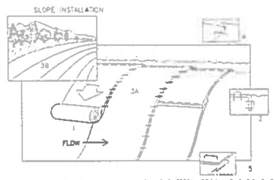
DOWNSTREAM VIEW



MN/DOT STD. SPEC. 3886 HEAVY DUTY SILT FENCE. INSTALL IN ACCORDANCE WITH MN/DOT STD. SPEC. 2573

SECTION VIEW

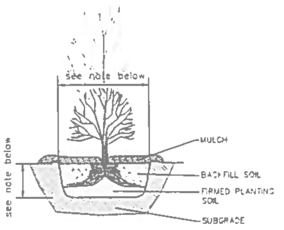
DETAIL 1: HEAVY DUTY SILT FENCE
NOT TO SCALE



NOTE: REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP WITH THE UPHILL BLANKET ON TOP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.

DETAIL 2: TEMPORARY EROSION CONTROL BLANKET
NOT TO SCALE



PROVIDE AND INSTALL PLANT MATERIAL THAT MEET SPECIFICATIONS.

SOAK ROOTS IN WATER MINIMUM OF ONE HOUR PRIOR TO PLANTING.

PLANTING HOLE DIMENSIONS:
8' TALL TREE: MIN. 54" WIDE, MIN. 14" DEEP
18" TALL SHRUB: MIN. 30" WIDE, MIN. 9" DEEP

SCARIFY SIDES AND BOTTOM OF PLANTING HOLE PRIOR TO PLANTING.

TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT AT SAME DEPTH AS IT WAS GROWN IN NURSERY.

SET PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL. DO NOT LEAVE PLANT IN PLANTING HOLE UNCOVERED. LIGHTLY FIRM SOIL TO MAINTAIN PLUMB POSITION.

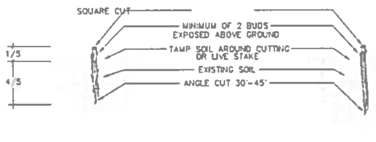
APPLY WATER TO SETTLE PLANTS AND FILL VOIDS THEN CONSTRUCT 3" DEPTH WATERING BASIN.

WATER THOROUGHLY WITHIN 2 HOURS (1ST WATERING).

PLACE 4" DEPTH SHREDDED HARDWOOD MULCH WITHIN 48 HOURS OF THE SECOND WATERING.

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS OR SPECIFICATIONS, THE SPECIFICATION SHALL GOVERN.

DETAIL 3: BARE ROOT TREE AND SHRUBS STOCK PLANTING
NOT TO SCALE



LIVE CUTTING

LIVE STAKE

DETAIL 4: LIVE CUTTING OR LIVE STAKE
NOT TO SCALE

ISSUED FOR BID

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION

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Scale	AS SHOWN
Date	6/23/2017
Drawn	HNH
Checked	MEK2
Designed	BARR
Approved	MEK2

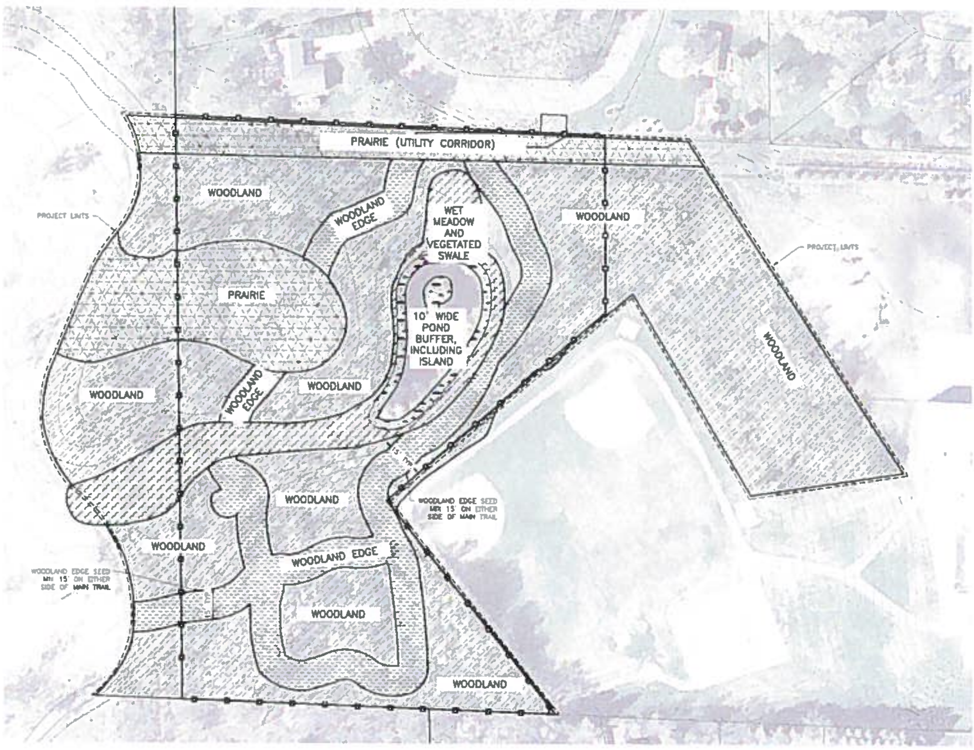
RILEY–PURGATORY BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

EROSION CONTROL AND PLANTING DETAILS

BARR PROJECT No. 23270053.14

DWG No. C-04 REV No. 0



PLAN: PLANTING PLAN

0 50 100 SCALE IN FEET

LEGEND

SEED MIXES

- WOODLAND (203,500 SQFT) Custom Mix
- WET MEADOW (27,500 SQFT) MnDOT 33-261
- PRAIRIE (55,000 SQFT) MnDOT 35-221
- WOODLAND EDGE (51,000 SQFT) MnDOT 36-711
- EXISTING FENCE

GOPHER STATE ONE CALL CALL BEFORE YOU DIG 1-800-252-1166

PLANTING NOTES

1. CONTRACTOR SHALL COORDINATE LAYOUT OF ALL PLANTS WITH DIRECTION OF LANDSCAPE ARCHITECT IN THE FIELD
2. TREES AND SHRUBS ARE TO BE PLANTED AND MULCHED FIRST THEN SEEDING AND HYDROMULCHING IS TO OCCUR
3. PLUGS ARE TO BE FURNISHED BY CONTRACTOR AND INSTALLED BY VOLUNTEERS ORGANIZED BY OWNER, ON A DATE TO BE AGREED UPON IN SEPTEMBER 2018
4. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS OR SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN

SEEDING NOTES

1. ANY GRASS OR WEEDS WITHIN SEEDING AREAS SHALL BE SPRAYED WITH HERBICIDE 14 DAYS PRIOR TO TILLING.
2. ALL HERBICIDE APPLICATION SHALL BE APPLIED BY A LICENSED APPLICATOR WITHIN THE STATE OF MINNESOTA.
3. AFTER SEEDING, TYPE 8 MULCH MATERIAL SHALL BE DISC-ANCHORED OVER ENTIRE SEEDING AREA IN ACCORDANCE WITH MN/DOT STANDARD SPECIFICATION 3882
4. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS, OR SPECIFICATIONS

SEEDING ESTABLISHMENT NOTES

1. SEEDING AREAS SHALL BE FREE OF DEAD OR DYING PATCHES LARGER THAN TEN SQUARE FOOT FOR ENTIRETY OF THE TWO YEAR WARRANTY OF PLANTING WORK. SEE SPECIFICATION 32-93-00 HERBACEOUS PLANT ESTABLISHMENT FOR MORE INFORMATION.
2. CONTRACTOR WILL BE RESPONSIBLE FOR WATERING (REGARDLESS OF NOTIFICATION) DURING ENTIRE TWO YEAR WARRANTY PERIOD. WATERING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT
3. ONCE A MONTH (MAY THROUGH OCTOBER) DURING MAINTENANCE PERIOD CONTRACTOR SHALL INSPECT FOR INVASIVE WEED ENCROACHMENT, DEAD PLANTS AND EROSION PROBLEMS AS PER SPECIFICATION 32-93-00
4. UPON DISCOVERY OF INVASIVE SPECIES DURING SCHEDULED INSPECTIONS CONDUCT HERBICIDE AND/OR MANUAL TREATMENTS FOR WEED CONTROL.

ISSUED FOR BID

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION

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

PRINTED NAME MATTHEW E. KUMKA

SIGNATURE

DATE 10/8/2017 LICENSE # 53274

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Scale	AS SHOWN
Date	8/23/2017
Drawn	BHO
Checked	MEK
Designed	FJR
Approved	MEK2

RILEY-PURGATORY BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

SEEDING AND PLANTING PLAN PLAN

BARR PROJECT No. 23270053.14

CLIENT PROJECT No.

DWG No. L-01

REV No. 0

WET MEADOW SEED MIX (MnDOT 34-261)

Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PRAIRIE SEED MIX (MnDOT 35-221)

Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WOODLAND EDGE SEED MIX (MnDOT 36-711)

Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CUSTOM WOODLAND SEED MIX

Common Name	Scientific Name	Rate	% of Mix
[illegible]	[illegible]	[illegible]	[illegible]

POND BUFFER AND VEGETATED SWALE PLANTING LIST

Common Name	Latin Name	Quantity	Spacing	Size
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PLUGS FOR VOLUNTEER PLANTINGS, SEPTEMBER 2018 (FURNISHED, INSTALLED BY OTHERS)

Common Name	Scientific Name	Quantity	Spacing	Size
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NO	BY	CHK	APP	DATE	REVISION DESCRIPTION

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

PRINTED NAME MATTHEW E. KUMKA

SIGNATURE

DATE LICENSE # 53874

CLIENT / BID / CONSTRUCTION

RELEASED TO/FOR — A B C D 1 2 3 — DATE RELEASED

BARR

Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com

Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277

Scale	AS SHOWN
Date	10/06/2017
Drawn	BMD
Checked	MEK
Designed	FJR
Approved	MEK2

RILEY-PURGATORY BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

SEED MIXES AND PLANTS LISTS

BARR PROJECT No. 23270053.14

CLIENT PROJECT No.

DWG. No. L-02 — REV No. 0

REDPATH AND COMPANY

September 13, 2017

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

We are pleased to confirm our understanding of the services we are to provide the Riley Purgatory Bluff Creek Watershed District for the year ended December 31, 2017. The scope of services includes the following:

- We will audit the financial statements of the governmental activities and each major fund, including the related notes to the financial statements, which collectively comprise the basic financial statements of Riley Purgatory Bluff Creek Watershed District as of and for the year ended December 31, 2017. Accounting standards generally accepted in the United States of America provide for certain required supplementary information (RSI), such as budgetary comparison schedules, to supplement the Riley Purgatory Bluff Creek Watershed District's basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. As part of our engagement, we will apply certain limited procedures to the Riley Purgatory Bluff Creek Watershed District's RSI in accordance with auditing standards generally accepted in the United States of America. These limited procedures will consist of inquiries of management regarding the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We will not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance. The following RSI is required by U.S. generally accepted accounting principles and will be subjected to certain limited procedures, but will not be audited:

  - Budgetary Comparison Schedule
  - Schedule of Proportionate Share of Net Pension Liability
  - Schedule of Pension Contributions

The following other information accompanying the financial statements will not be subjected to the auditing procedures applied in our audit of the financial statements, and our auditor's report will not provide an opinion or any assurance on that other information:

- Introductory section
- Other information section

- State Legal Compliance Audit
- Presentation of audit results at Board meeting (if requested)

Other Services

As part of this engagement we will also provide the following nonaudit services:

- Preparation, copying and binding of the Annual Financial Report.
- Assistance with GASB 68 workpaper preparation (Accounting and Financial Reporting for Pensions)

Audit Objectives

The objective of our audit is the expression of opinions as to whether your financial statements are fairly presented, in all material respects, in conformity with generally accepted accounting principles. Our audit will be conducted in accordance with auditing standards generally accepted in the United States of America and the minimum procedures for auditors as prescribed by M.S. 6.65, and will include tests of the accounting records and other procedures we consider necessary to enable us to express such opinions. We will issue a written report upon completion of our audit of Riley Purgatory Bluff Creek Watershed District's financial statements. Our report will be addressed to the Honorable Managers of the Riley Purgatory Bluff Creek Watershed District. We cannot provide assurance that unmodified opinions will be expressed. Circumstances may arise in which it is necessary for us to modify our opinions or add emphasis-of-matter or other-matter paragraphs. If our opinions are other than unmodified, we will discuss the reasons with you in advance. If, for any reason, we are unable to complete the audit, or are unable to form or have not formed opinions, we may decline to express opinions or may withdraw from this engagement.

Audit Procedures – General

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements. We will plan and perform the audit to obtain reasonable assurance about

whether the financial statements are free of material misstatement, whether from (1) errors, (2) fraudulent financial reporting, (3) misappropriation of assets, or (4) violations of laws or governmental regulations that are attributable to the entity or to acts by management or employees acting on behalf of the entity.

Because of the inherent limitations of an audit, combined with the inherent limitations of internal control, and because we will not perform a detailed examination of all transactions, there is a risk that material misstatements may exist and not be detected by us, even though the audit is properly planned and performed in accordance with U.S. generally accepted auditing standards. In addition, an audit is not designed to detect immaterial misstatements, or violations of laws or governmental regulations that do not have a direct and material effect on the financial statements. However, we will inform the appropriate level of management of any material errors, fraudulent financial reporting, or misappropriation of assets that come to our attention. We will also inform the appropriate level of management of any violations of laws or governmental regulations that come to our attention, unless clearly inconsequential. Our responsibility as auditors is limited to the period covered by our audit and does not extend to any later periods for which we are not engaged as auditors.

Our procedures will include tests of documentary evidence supporting the transactions recorded in the accounts, and may include direct confirmation of receivables and certain other assets and liabilities by correspondence with selected individuals, funding sources, creditors, and financial institutions. We may request written representations from your attorneys as part of the engagement, and they may bill you for responding to this inquiry. At the conclusion of our audit, we will require certain written representations from you about the financial statements and related matters.

Audit Procedures – Internal Controls

Our audit will include obtaining an understanding of the entity and its environment, including internal control, sufficient to assess the risks of material misstatement of the financial statements and to design the nature, timing, and extent of further audit procedures. An audit is not designed to provide assurance on internal control or to identify deficiencies in internal control. However, during the audit, we will communicate to management and those charged with governance internal control related matters that are required to be communicated under AICPA professional standards.

Audit Procedures – Compliance

As part of obtaining reasonable assurance about whether the financial statements are free of material misstatement, we will perform tests of the Riley Purgatory Bluff Creek Watershed District's compliance with the provisions of applicable laws, regulations, contracts, and agreements. However, the objective of our audit will not be to provide an opinion on overall compliance and we will not express such an opinion.

The Minnesota Legal Compliance Audit Guide for Political Subdivisions requires that we test whether the auditee has complied with certain provisions of Minnesota Statutes. Our audit will include such test of the accounting records and other procedures as we consider necessary in the circumstances.

Other Services

We will also assist in preparing the financial statements of Riley Purgatory Bluff Creek Watershed District in conformity with U.S. generally accepted accounting principles and assist with the preparation of workpapers relating to GASB 68 (pensions) based on information provided by you and provided by PERA. We will perform the services in accordance with applicable professional standards. The other services are limited to the financial statement services and GASB 68 workpaper assistance previously defined. We, in our sole professional judgement, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities.

Management Responsibilities

Management is responsible for designing, implementing, and maintaining effective internal controls, including monitoring ongoing activities; for the selection and application of accounting principles; and for the preparation and fair presentation of the financial statements in conformity with U.S. generally accepted accounting principles.

Management is also responsible for making all financial records and related information available to us and for the accuracy and completeness of that information. You are also responsible for providing us with (1) access to all information of which you are aware that is relevant to the preparation and fair presentation of the financial statements, (2) additional information that we may request for the purpose of the audit, and (3) unrestricted access to persons within the government from whom we determine it necessary to obtain audit evidence.

Your responsibilities include adjusting the financial statements to correct material misstatements and confirming to us in the management representation letter that the effects of any uncorrected misstatements aggregated by us during the current engagement and pertaining to the latest period presented are immaterial, both individually and in the aggregate, to the financial statements taken as a whole.

You are responsible for the design and implementation of programs and controls to prevent and detect fraud, and for informing us about all known or suspected fraud affecting the government involving (1) management, (2) employees who have significant roles in internal control, and (3) others where the fraud could have a material effect on the financial statements. Your responsibilities include informing us of your knowledge of any allegations of fraud or suspected fraud affecting the government received in communications from employees, former

employees, regulators, or others. In addition, you are responsible for identifying and ensuring that the entity complies with applicable laws and regulations.

You agree to assume all management responsibilities for financial statement preparation services and any other nonattest services we provide; oversee the services by designating an individual, preferably from senior management, with suitable skill, knowledge, or experience; evaluate the adequacy and results of the services; and accept responsibility for them.

With regard to the electronic dissemination of audited financial statements, including financial statements published electronically on your website, you understand that electronic sites are a means to distribute information and, therefore, we are not required to read the information contained in these sites or to consider the consistency of other information in the electronic site with the original document.

Audit Administration, Fees and Other

We may from time to time, and depending on the circumstances, use third-party service providers in serving your account. We may share confidential information about you with these service providers, but remain committed to maintaining the confidentiality and security of your information. Accordingly, we maintain internal policies, procedures, and safeguards to protect the confidentiality of your personal information. In addition, we will secure confidentiality agreements with all service providers to maintain the confidentiality of your information and we will take reasonable precautions to determine that they have appropriate procedures in place to prevent the unauthorized release of your confidential information to others. In the event that we are unable to secure an appropriate confidentiality agreement, you will be asked to provide your consent prior to the sharing of your confidential information with the third-party service provider. Furthermore, we will remain responsible for the work provided by any such third-party service providers.

We understand that your employees will prepare all cash or other confirmations we request, and will locate any documents selected by us for testing.

Unless additional work is requested, or circumstances require additional work, we agree that our estimated basic audit fee for these services, including expenses (such as report reproduction, postage, etc.), will be $13,900. We also agree that the basic fee for assistance with GASB 68 workpaper preparation will be $530. Courier and confirmation fees are not included in the basic audit fee. Our invoices for these fees will be rendered each month as work progresses and are payable on presentation. In accordance with our firm policies, work may be suspended if your account becomes 120 days or more overdue and may not resumed until your account is paid in full. If we elect to terminate our services for nonpayment, our engagement will be deemed to have been completed upon written notification of termination, even if we have not completed our reports. You are obligated to compensate us for all time expended and to reimburse us for all

out-of-pocket costs through the date of termination. The above fee is based on anticipated cooperation from your personnel, completion of workpapers per the client to prepare list by your personnel, and the assumption that unexpected circumstances will not be encountered during the audit. If significant additional time is necessary due to a change in scope of services or delays in receiving audit information requests, we will discuss it with you and arrive at a new fee estimate. Examples of an increase in the scope of service include additional audit procedures resulting from certain accounting issues or events, new contractual agreements, new accounting and auditing standards, legal requirements for new bond issues, if there is an indication of misappropriation or misuse of public funds, or difficulties encountered due to lack of accounting records, incomplete records, inaccurate records or turnover in Riley Purgatory Bluff Creek Watershed District's staff.

We appreciate the opportunity to be of service to the Riley Purgatory Bluff Creek Watershed District and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you agree with the terms of our engagement as described in this letter, please sign the enclosed copy and return it to us.

Sincerely,

REDPATH AND COMPANY, LTD.

Peggy A. Moeller

Peggy A. Moeller, CPA

PAM:aer

Response

This letter correctly sets forth the understanding of the Riley Purgatory Bluff Creek Watershed District:

Management signature:	Governance (Board) signature:
By:_____	By:_____
Title:_____	Title:_____
Date:_____	Date:_____

Nonaudit Services

The employee(s) assigned to oversee the nonaudit services is as follows:

Employee (name and title):_____

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

14500 Martin Drive | Suite 1500
Eden Prairie, MN 55344
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2016-043

Original Application: Conditionally approved at December 7, 2016

Modification Received complete: October 14, 2016

Applicant: Bongards - Chris Freeman

Consultant: Mitchell Cookas, Solution Blue, Inc.

Project: Bongards Creamery Expansion – Construction of an 8,000 square foot building expansion, parking lot addition, and associated site infrastructure. An underground infiltration/detention system will provide storm water quantity, volume and quality control.

Location: 8330 Commerce Drive, Chanhassen, MN

Reviewer: Scott Sobiech P.E., Barr Engineering

Rules: Applicable rules checked

	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal		Rule K: Variances and Exceptions
	Rule F: Shoreline/Streambank Stabilization	X	Rule L: Permit Fees
	Rule G: Waterbody Crossings	X	Rule M: Financial Assurances

Rule Conformance Summary

Rule	Issue		Conforms to RBPCWD Rules?	Comments
C	**Erosion Control Plan**		Yes	
J	**Stormwater Management**	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See Rule Specific Permit Condition J1.
L	**Permit Fee**		Yes	$1,500 was received on October 14, 2016.
M	**Financial Assurance**		Yes	The financial assurance of $59,200 was received by the District.

Project Description

In December 2016, RPBCWD approved permit 2016-043. The application proposed construction of a 6,650 square foot building expansion and the addition of 32 parking stalls. The project included an underground infiltration/detention system to provide storm water quantity, volume and quality control. The applicant fulfilled the conditions for issuance of the permit and construction started in December 2016. A permit extension was issued on September 5, 2017 extending the permit term to December 7, 2018.

The current requested permit modification revises the proposed design by increasing the size of the proposed building expansion from 6,650 square feet to 7,050 square feet, reducing the propose parking expansion area by one stall, and making small adjustments to sidewalk areas. Of the 400 square feet of additional building, only 100 square feet is new proposed impervious area. The remaining 300 square feet is an expansion over an existing loading dock area. The elimination of one parking stall offsets the 100 square feet is new proposed impervious area associated with the building expansion, thus resulting in the same new imperious area for the requested modification as the original submittal. The footprint of the proposed underground infiltration/detention system will be increase to provide the required storm water quantity, volume and quality control for the additional new and reconstructed impervious area. The following permit review reanalyzed the entire proposed project because of the revised grading and increased BMP footprint. Only limited comparison with the prior review report is provided where needed to provide context for prior approval.

The project site information is summarized below:

	Original Project	Modification Request
Total Site Area (acres)	1.81	1.81
Existing Site Impervious (acres)	0.64	0.64
New (Increase) in Site Impervious Area (acres)	0.32 (49.7% increase)	0.32 (49.7% increase)
Disturbed impervious surface	0.02 (2.7% Disturbance)	0.035 (5.5% Disturbance)
Proposed condition Site Impervious (acres)	0.96	0.96
Total Disturbed Area (acres)	0.53	0.61

Exhibits for Modification Request:

1. Revised design Plan Sheets (Sheets C1-C5 and L1) dated September 7, 2017.

2. Stormwater Management Plan and Report, including Geotechnical Exploration and Engineering Review memo, dated August 29, 2017 (revised September 20, 2017).
3. P8 water quality models received September 7, 2017.

Rule Specific Permit Conditions

Rule C: Erosion and Sediment Control

Because the project will alter 0.61 acres 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 Solution Blue, Inc. 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. John Carlson of Hammers Construction is responsible for erosion control at the site. The proposed project conforms to RPBCWD Rule C requirements.

Rule J: Stormwater Management

Because the project will alter 0.61 acres of surface area, approval under the RPBCWD Stormwater Management Rule is required. The proposed land-disturbing activities will increase the imperviousness of the entire site by 49.7% (i.e., an increase of less than 50 percent), and disturb 5.5% of the existing impervious area (i.e., less than 50 percent of the existing impervious area), therefore under the paragraph 2.3 redevelopment framework, the RPBCWD stormwater management criteria apply only to the new and disturbed impervious surface on the site.

The developer is proposing an underground infiltration/detention 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. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
North	1.7	1.3	3.5	2.6	7.0	5.3	0.1	0.1
South	0.6	0.5	1.3	0.9	2.5	1.9	0.1	0.1
Northwest	3.4	2.7	5.4	4.7	9.0	7.9	0.2	0.2

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from new and disturbed impervious surface of the parcel. An abstraction volume of 1,418 cubic feet is required from the 15,472 square feet of new and reconstructed impervious on the project. The Applicant proposed an underground infiltration/detention system. The drawing provided by the Applicant indicates pretreatment of runoff will be provided by sump manholes (Rule J, subsection 3.1.b.i).

Soil borings performed by Northern Technologies LLC show that soils in the project area are sandy lean clay; the MN Stormwater Manual indicates an infiltration rate of 0.06 inches per hour for the sandy lean clay is appropriate. Soil borings performed by Northern Technologies LLC show groundwater at elevation 929.5 feet. This indicates that groundwater is at least 3 feet below the bottom of the infiltration/detention system (Rule J, Subsection 3.1.b.ii). An abstraction volume of 1,430 cubic feet is provided by the proposed underground infiltration/detention system.

The table below summarizes the volume abstraction on the site.

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
1.1	1,418	1.11	1,430

The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.b.

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 an infiltration/detention system to

achieve the required TP and TSS removals and submitted a P8 model to estimate the TP and TSS removals.

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)[1]	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	282	254 (90%)	307 (>100%)[2]
Total Phosphorus (TP)	0.91	0.55 (60%)	0.92 (>100%)[2]

[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

[2]The TSS and TP removal is higher than required removal because the infiltration/detention system treats a larger, undisturbed area of the existing parking lot.

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 structure and the adjacent stormwater management feature are summarized below.

Location Riparian to Stormwater Facility	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard (feet)
Building	942.8	937.89	4.91

Based on information reviewed, the proposed project conforms to 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. Because the applicant proposes to increase the footprint of the proposed underground infiltration/detention system as part of the modification request, the permit applicant must amend the previously approved maintenance and inspection declaration. 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.

Rule L: Permit Fee:

Fees for the project are:

Rule C & J $1,500

Rule M: Financial Assurance:

Rules C: Silt fence: 620 L.F. x $2.50/L.F. = ...$1,600

Restoration: 0.61 acres x $2,500/acre = ...$1,600

Rules J: Infiltration: 6,130 sq. ft. x $6.00/sq. ft. = ...$36,800

Contingency (10%) $4,000

Administration (30%) $13,200

Total Financial Assurance.....$57,200

The applicant fulfilled the original condition of approval by providing a financial assurance in the amount of $59,200. Therefore the submittal conforms to the financial assurance requirements.

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 conforms to Rule C and will conform to Rule J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

Approval, contingent upon:

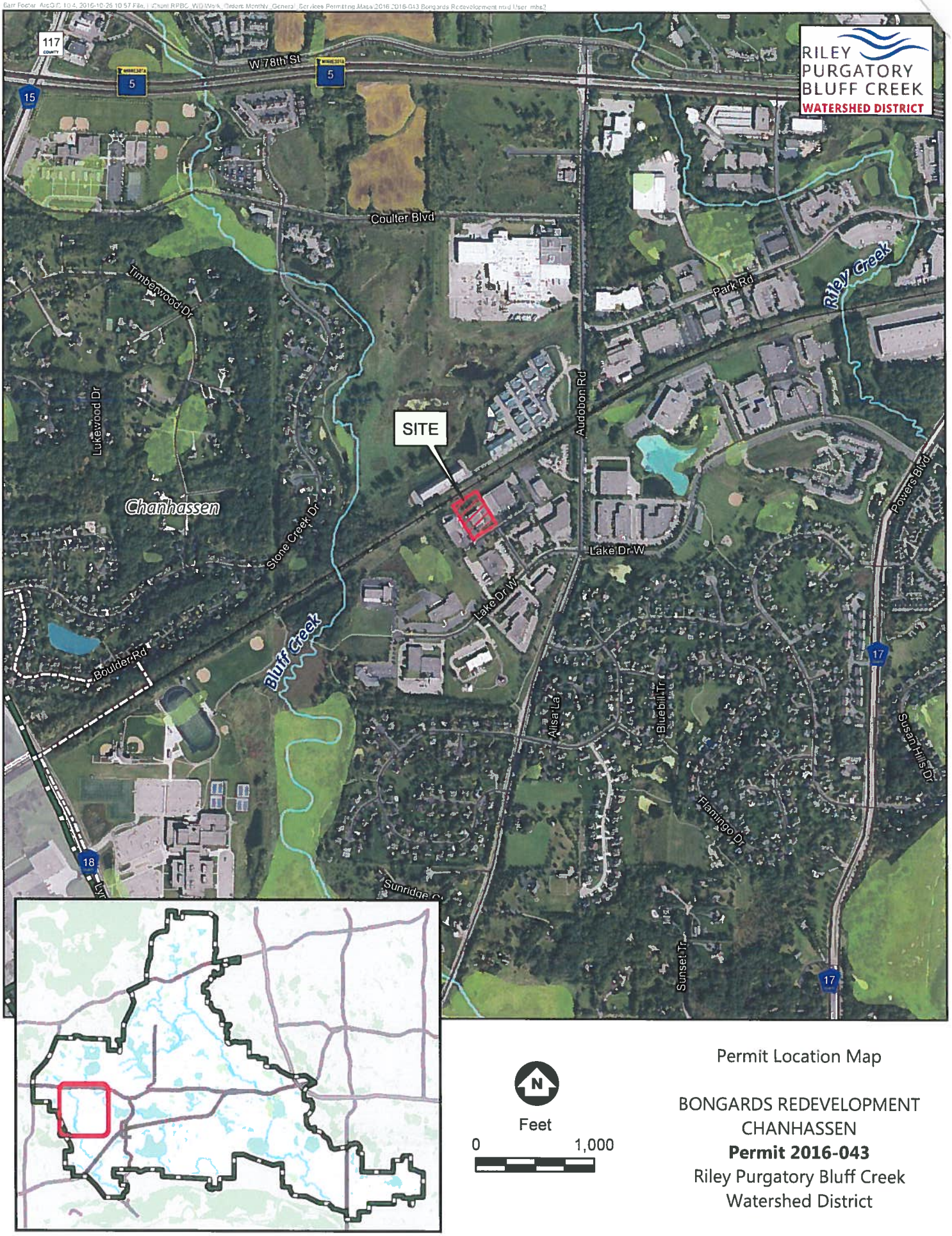
1. Continued compliance with General Requirements.
2. Submission of a receipt showing recordation of an amendment to the maintenance declaration for the revised storm water management facilities. A draft of the declaration must be approved by the District prior to recordation.

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.

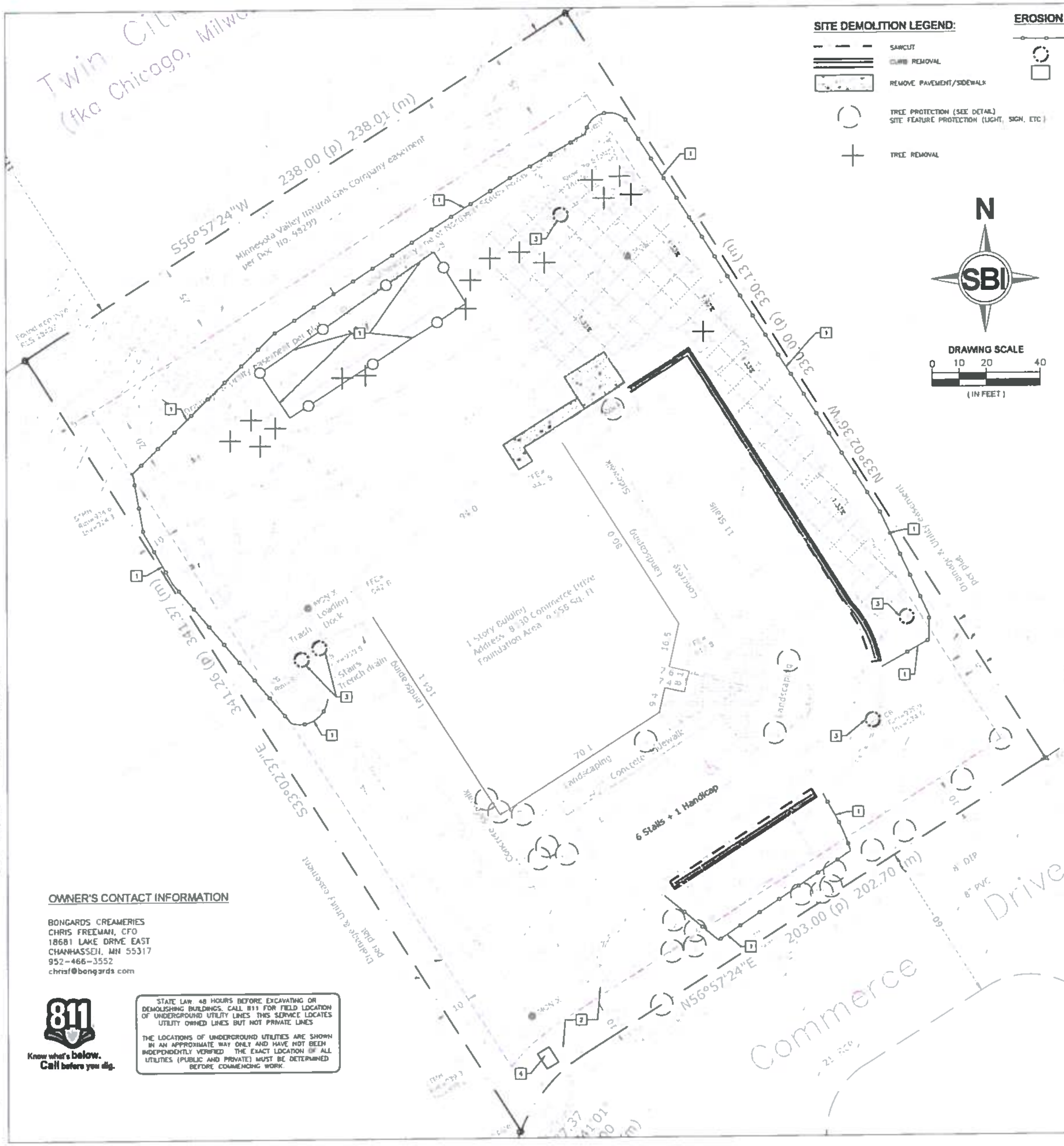
Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit modification for application No. 2016-043 with the conditions recommended by staff.



Permit Location Map

BONGARDS REDEVELOPMENT
CHANHASSEN
Permit 2016-043
Riley Purgatory Bluff Creek
Watershed District



SITE DEMOLITION LEGEND:

- SAWCUT
- CURB REMOVAL
- REMOVE PAVEMENT/SIDEWALK
- TREE PROTECTION (SEE DETAIL) SITE FEATURE PROTECTION (LIGHT, SIGN, ETC.)
- TREE REMOVAL

EROSION AND SEDIMENTATION CONTROL MEASURES:

- SILT FENCE (SEE DETAIL EROS-2)
- INLET PROTECTION (SEE DETAIL EROS-5)
- CONCRETE WASHOUT AREA (SEE DETAIL EROS-6)

KEY NOTES

1. SILT FENCE
2. CONSTRUCTION MUD MATS
3. INLET PROTECTION
4. CONCRETE WASHOUT
5. SOIL STOCKPILE AREA – PROVIDE SILT FENCE PERIMETER CONTROL AND TEMPORARY SEEDING IF UNDISTURBED LONGER THAN 10 DAYS

GENERAL SITE DEMOLITION AND CLEARING NOTES:

1. CONTRACTOR SHALL COORDINATE LIMITS OF REMOVALS WITH PROPOSED IMPROVEMENTS AND SHALL BE RESPONSIBLE FOR PROTECTING EXISTING SITE FEATURES (STRUCTURES, CURBS, WALKS, PAVEMENTS, UTILITIES, SIGNAGE, FENCES, ETC.) WHICH ARE TO REMAIN. REPAIR OR REPLACE, TO OWNER'S SATISFACTION, ANY DAMAGE TO EXISTING PROPERTY OR SITE FEATURES WHICH ARE TO REMAIN, AT NO ADDITIONAL COST.
2. COORDINATE DISRUPTION OF UTILITY SERVICES WITH THE OWNER'S PROJECT REPRESENTATIVE AND UTILITY OWNER, PUBLIC OR PRIVATE. CONTRACTOR TO PROVIDE TEMPORARY UTILITIES AS NECESSARY TO MAINTAIN BUILDING SERVICES.
3. THE OWNER'S ACTIVITIES MAY CONTINUE DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE SEQUENCE OF WORK WITH THE OWNER.
4. PRIOR TO START OF ANY WORK, ALL EROSION AND SEDIMENT CONTROL PROTECTION MEASURES SHALL BE IN PLACE. SEE EROSION CONTROL PLAN OR SWPPP FOR DETAILS.
5. CONTRACTOR SHALL PRESERVE ALL VEGETATION NOT TO BE REMOVED BY CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-SEEDING OR SODDING AREAS DISTURBED BY CONSTRUCTION.
6. CLEARLY IDENTIFY AND LABEL EACH TREE THAT IS TO REMAIN PRIOR TO STARTING SITE CLEARING. CONTACT OWNER'S PROJECT REPRESENTATIVE FOR SITE INSPECTION AFTER ALL "TO REMAIN" TREES HAVE BEEN IDENTIFIED. TREES THAT ARE TO BE PROTECTED SHALL HAVE TEMPORARY FENCING PLACED AT THE DRIP LINE AROUND EACH TREE.
7. STOCKPILE TOPSOIL FOR REUSE ON SITE. VERIFY THE STRIPPED TOPSOIL MEETS SPECIFICATIONS FOR THE PROPOSED USE. VERIFY THE AMOUNT OF TOPSOIL NEEDED AND REMOVE EXCESS FROM SITE.
8. ALL MATERIAL REMOVED SHALL BE DISPOSED OF OFF-SITE AND IN A LEGAL MANNER.
9. MATERIAL TO BE SALVAGED FOR REUSE BY OWNER SHALL BE REMOVED UNDAMAGED IN USABLE CONDITION. TEMPORARY PROTECTED STORAGE ON-SITE MAY BE REQUIRED.
10. ON-SITE BROKERAGE OF MATERIALS SALVAGED BY CONTRACTOR TO BE REMOVED IS NOT PERMITTED WITHOUT PRIOR OWNER APPROVAL.
11. LOCATION AND ELEVATIONS OF IMPROVEMENTS TO BE MET (OR AVOIDED) SHALL BE CONFIRMED BY THE CONTRACTOR THROUGH FIELD EXPLORATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPORT TO THE ENGINEER ANY DISCREPANCIES BETWEEN THEIR MEASUREMENTS AND THESE PLANS. CONTRACTOR SHALL ALSO MAKE EXPLORATION EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES. CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
12. ALL TREES TO BE REMOVED SHALL BE CLEARED OUTSIDE THE MIGRATORY BIRD NESTING SEASON OR AFTER CONDUCTING A NESTING BIRD SURVEY.
13. CONSULT WITH THE U.S. FISH AND WILDLIFE SERVICE REGARDING THE NORTHERN LONG-EARED BAT PRIOR TO CLEARING ANY TREES.

GENERAL PROJECT NOTES:

1. BIDDER WILL VISIT THE SITE TO UNDERSTAND THE SCOPE OF WORK. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ITEMS THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT, STUDYING THE TOPOGRAPHIC SURVEY, THOROUGHLY REVIEWING ALL PLANS AND REPORTS, AND ADDITIONAL INFORMATION REQUESTED FOR CLARIFICATION PRIOR TO BIDDING.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS PRIOR TO STARTING WORK.
3. EXISTING TOPOGRAPHIC AND BOUNDARY INFORMATION TAKEN FROM SURVEY BY HTPO DATED 2016. CONTACT ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED.
4. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING UTILITIES OR STRUCTURES LOCATED AT THE WORK SITE.
5. SEE GEOTECHNICAL REPORT COMPLETED BY NORTHERN TECHNOLOGIES DATED 10/10/2016 FOR SUBSURFACE INVESTIGATION INFORMATION AND LOCATION OF SOIL BORINGS. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF THE REPORT DURING BIDDING.
6. PROVIDE AND MAINTAIN TRAFFIC CONTROL DEVICES WHERE NECESSARY. PLACEMENT OF THESE DEVICES SHALL BE APPROVED BY THE CITY AND ENGINEER PRIOR TO PLACEMENT.
7. CONTRACTOR SHALL MAINTAIN FULL ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION AND TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES.
8. ALL CONSTRUCTION WORK SHALL BE COMPLETED WITHIN CITY APPROVED WORKING HOURS.
9. INSTALL CONTROL FENCING AND BARRICADING AS NECESSARY TO PROTECT THE PUBLIC.
10. SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED THROUGH SOIL AMENDMENT AND/OR RIPPING TO A DEPTH OF 18 INCHES WHILE TAKING CARE TO AVOID UTILITIES, TREE ROOTS AND OTHER EXISTING VEGETATION PRIOR TO FINAL VEGETATION OR OTHER STABILIZATION.

GENERAL EROSION AND SEDIMENTATION CONTROL NOTES:

1. INSTALL TEMPORARY EROSION CONTROL DEVICES AT THE LOCATIONS SHOWN ON THE PLANS PRIOR TO BEGINNING LAND DISTURBING ACTIVITIES.
2. MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. INSPECT ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ON A WEEKLY BASIS AND DURING RAINFALL EVENTS. REMOVE ACCUMULATED SEDIMENT DEPOSITS FROM EROSION AND SEDIMENT CONTROL DEVICES AND DOWNSTREAM DRAINAGE SYSTEMS AS NEEDED. DO NOT ALLOW SEDIMENT TO ACCUMULATE TO A DEPTH OF MORE THAN ONE-THIRD OF THE CAPACITY OF THE DEVICE. REPLACE DETERIORATED OR DAMAGED EROSION CONTROL DEVICES WITHIN 24 HOURS.
3. THE PERMITTEE MUST, AT A MINIMUM, INSPECT, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE AND AT LEAST WEEKLY UNTIL LAND-DISTURBING ACTIVITY HAS CEASED. THEREAFTER, THE PERMITTEE MUST PERFORM THESE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED.
4. PROVIDE ADDITIONAL EROSION CONTROL, WHICH MAY NOT BE SHOWN ON THE DRAWINGS, CONSISTENT WITH THE MEANS, METHODS AND SEQUENCE OF CONSTRUCTION IN ACCORDANCE WITH PERMIT REQUIREMENTS AND AUTHORITIES HAVING JURISDICTION.
5. REMOVE ALL SOILS AND SEDIMENTS TRACKED OR OTHERWISE DEPOSITED ONTO PAVEMENT AREAS. REMOVAL SHALL BE ON A DAILY BASIS THROUGHOUT THE DURATION OF THE CONSTRUCTION.
6. STABILIZE ALL AREAS WHICH HAVE BEEN FINISH-GRADED, AND ALL DISTURBED AREAS IN WHICH GRADING OR CONSTRUCTION OPERATIONS ARE NOT ACTIVELY UNDERWAY, AGAINST EROSION DUE TO RAIN, WIND AND RUNNING WATER WITHIN 7 DAYS. REPAIR ERODED AREAS IMMEDIATELY.
7. LOCATE SOIL OR DIRT STOCKPILES CONTAINING MORE THAN 10 CUBIC YARDS OF MATERIAL WITH A DOWNSLOPE DRAINAGE LENGTH OF NO LESS THAN 25 FEET FROM THE TOE OF THE PILE TO A ROADWAY OR DRAINAGE CHANNEL. IF REMAINING FOR MORE THAN SEVEN DAYS, STABILIZE THE STOCKPILES BY MULCHING, VEGETATIVE COVER, TARPS, OR OTHER MEANS. CONTROL EROSION FROM ALL STOCKPILES BY PLACING SILT FENCE BARRIERS AROUND THE PILES.
8. PERFORM ALL EROSION CONTROL PRACTICES AND SEQUENCE CONSTRUCTION IN ACCORDANCE WITH THE METHODS OUTLINED IN THE BEST MANAGEMENT PRACTICES HANDBOOK "PROTECTING WATER QUALITY IN URBAN AREAS," PUBLISHED BY THE MINNESOTA POLLUTION CONTROL AGENCY.
9. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER THE ADJACENT FINAL SURFACES ARE PERMANENTLY ESTABLISHED. COORDINATE REMOVAL WITH PERMANENT RESTORATION OF ALL AREAS OCCUPIED BY TEMPORARY DEVICES.
10. PHASED CONSTRUCTION SHALL BE USED TO THE EXTENT PRACTICAL OR AS INDICATED ON THE PLANS TO MINIMIZE EXPOSED SOILS.
11. EROSION CONTROL PLAN, RAINFALL, AND POST RAINFALL INSPECTION REPORTS TO BE KEPT IN THE ON-SITE JOB TRAILER.
12. CONTRACTOR SHALL MAINTAIN ROCK ENTRANCE(S) DURING CONSTRUCTION.
13. ALL STORM SEWER CATCH BASINS TO BE PROTECTED FROM SEDIMENT DEPOSITION WITH AN APPROVED INLET PROTECTION DEVICE. CONTRACTOR SHALL CLEAN STORM SEWER SYSTEM OF SEDIMENT AND DEBRIS PRIOR TO COMPLETION.

OWNER'S CONTACT INFORMATION

BONGARDS CREAMERIES
CHRIS FREEMAN, CFO
18681 LAKE DRIVE EAST
CHANHASSEN, MN 55317
952-466-3552
chrisf@bongards.com

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REVISIONS BY

REVISIONS	BY
WATERSHED CMMTS	12 02 2016
PROOF OF PARKING	08 30 2017
BIDPERMIT SET	09 07 2017

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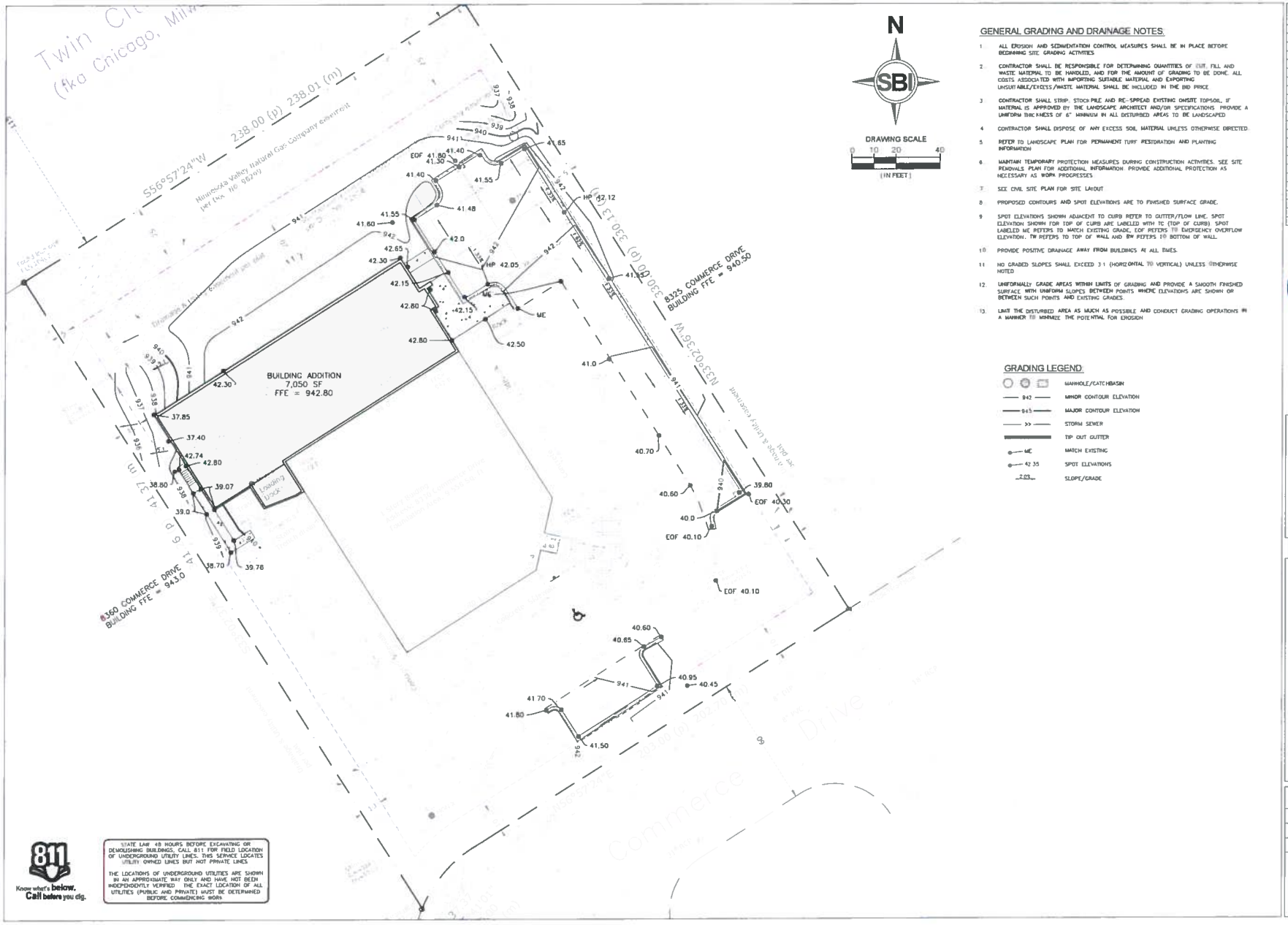
STEVEN E. GEBAUER
DATE SEPT 07, 2017 REG. NO. 47314

SITE DEMOLITION AND EROSION CONTROL PLAN

BUILDING AND PARKING EXPANSION
BONGARDS CREAMERY
8330 COMMERCE DRIVE
CHANHASSEN, MINNESOTA

DRAWN BY: SEG
CHECKED BY: MJC
DATE: 09.07.2017
JOB NO: 160802
SHEET
C1



GENERAL GRADING AND DRAINAGE NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE BEFORE BEGINNING SITE GRADING ACTIVITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITIES OF CUT, FILL AND WASTE MATERIAL TO BE HANDLED, AND FOR THE AMOUNT OF GRADING TO BE DONE. ALL COSTS ASSOCIATED WITH IMPORTING SUITABLE MATERIAL AND EXPORTING UNSUITABLE/EXCESS/WASTE MATERIAL SHALL BE INCLUDED IN THE BID PRICE.
3. CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD EXISTING ONSITE TOPSOIL, IF MATERIAL IS APPROVED BY THE LANDSCAPE ARCHITECT AND/OR SPECIFICATIONS. PROVIDE A UNIFORM THICKNESS OF 6" MINIMUM IN ALL DISTURBED AREAS TO BE LANDSCAPED.
4. CONTRACTOR SHALL DISPOSE OF ANY EXCESS SOIL MATERIAL UNLESS OTHERWISE DIRECTED.
5. REFER TO LANDSCAPE PLAN FOR PERMANENT TURF RESTORATION AND PLANTING INFORMATION.
6. MAINTAIN TEMPORARY PROTECTION MEASURES DURING CONSTRUCTION ACTIVITIES. SEE SITE REMOVALS PLAN FOR ADDITIONAL INFORMATION. PROVIDE ADDITIONAL PROTECTION AS NECESSARY AS WORK PROGRESSES.
7. SEE CIVIL SITE PLAN FOR SITE LAYOUT.
8. PROPOSED CONTOURS AND SPOT ELEVATIONS ARE TO FINISHED SURFACE GRADE.
9. SPOT ELEVATIONS SHOWN ADJACENT TO CURB REFER TO GUTTER/FLOW LINE. SPOT ELEVATION SHOWN FOR TOP OF CURB ARE LABELED WITH TC (TOP OF CURB). SPOT LABELED ME REFERS TO MATCH EXISTING GRADE. EOF REFERS TO EMERGENCY OVERFLOW ELEVATION. TW REFERS TO TOP OF WALL AND BW REFERS TO BOTTOM OF WALL.
10. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AT ALL TIMES.
11. NO GRADED SLOPES SHALL EXCEED 3:1 (HORIZONTAL TO VERTICAL) UNLESS OTHERWISE NOTED.
12. UNIFORMALLY GRADE AREAS WITHIN LIMITS OF GRADING AND PROVIDE A SMOOTH FINISHED SURFACE WITH UNIFORM SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN OR BETWEEN SUCH POINTS AND EXISTING GRADES.
13. LIMIT THE DISTURBED AREA AS MUCH AS POSSIBLE AND CONDUCT GRADING OPERATIONS IN A MANNER TO MINIMIZE THE POTENTIAL FOR EROSION.

GRADING LEGEND

- MANHOLE/CATCHBASIN
- 942 — MINOR CONTOUR ELEVATION
- 945 — MAJOR CONTOUR ELEVATION
- >> — STORM SEWER
- TIP OUT GUTTER
- ME — MATCH EXISTING
- 42.35 — SPOT ELEVATIONS
- 2.0% — SLOPE/GRADE

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REVISIONS	BY
WATERSHED COMMTS	12 02 2016
PROOF OF PARKING	08 30 2017
BIDPERMIT SET	09 07 2017

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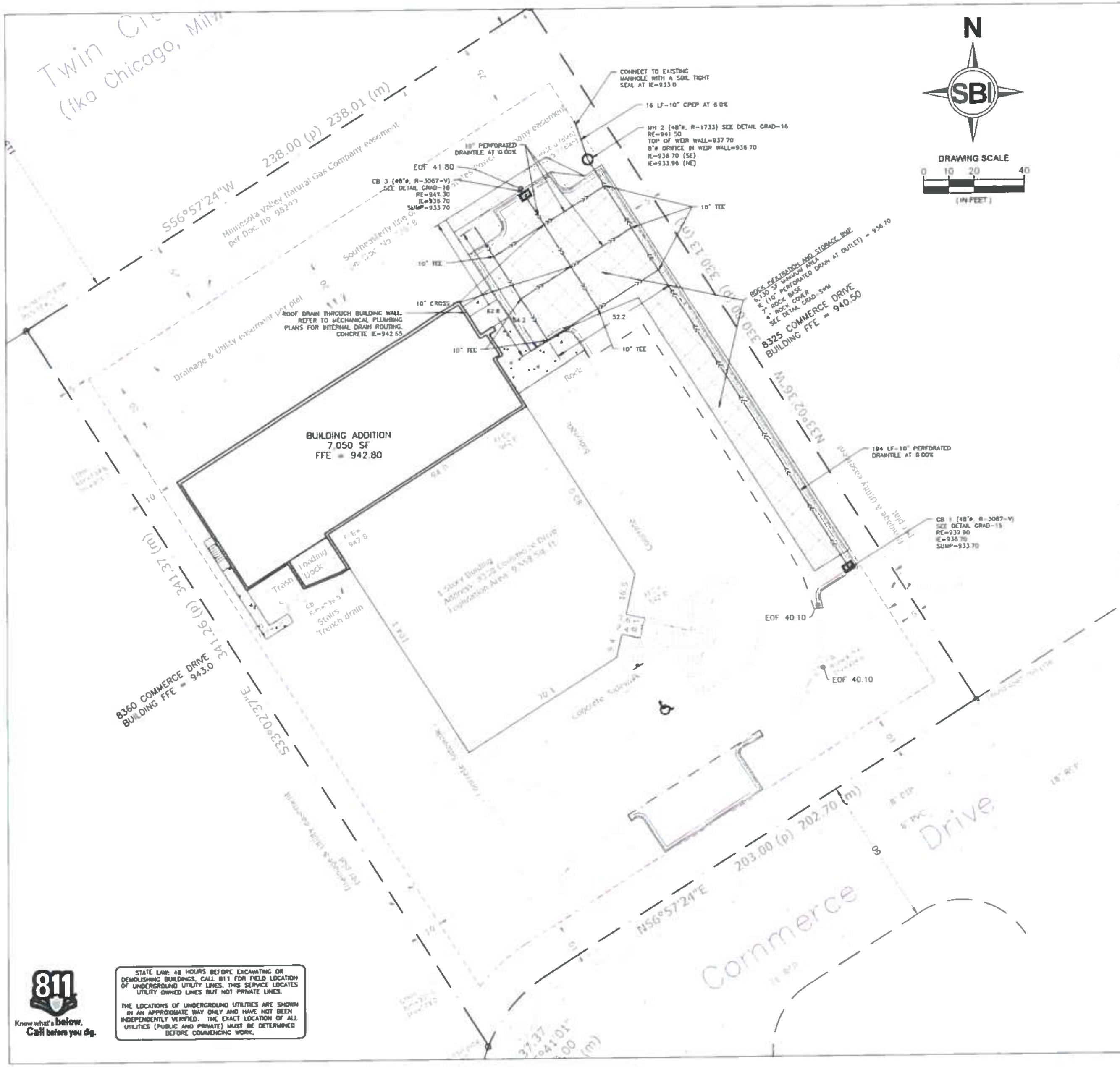
STEVEN E. DEBAUER

DATE: SEPT 07 2017 REG. NO. 43316

SITE GRADING PLAN

BUILDING AND PARKING EXPANSION
BONGARDS CREAMERY
8330 COMMERCE DRIVE
CHANHASSEN, MINNESOTA

DRAWN BY	BEB
CHECKED BY	MGC
DATE	09.07.2017
JOB NO	160902
SHEET	C3



N

DRAWING SCALE

0 10 20 40

(IN FEET)

SITE UTILITY LEGEND:

○ ⊘ ▭	MANHOLE/CATCHBASIN (SEE DETAILS)
——— >> ———	STORM SEWER
▭	STORM WATER MANAGEMENT BMP (SEE DETAIL)

GENERAL UTILITY NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH UTILITY PROVIDERS FOR REMOVAL AND/OR RELOCATION OF EXISTING UTILITIES AFFECTED BY SITE IMPROVEMENTS, INCLUDING PORTIONS OF WORK WHICH MAY BE PERFORMED BY UTILITY COMPANY'S FORCES. ALL PERMITS, APPLICATIONS, FEES AND CHARGES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
2. UTILITY DISCONNECTIONS, REMOVALS AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE PROJECT PHASING TO ENSURE NEEDED SERVICES ARE MAINTAINED TO ALL BUILDING FACILITIES.
3. REFER TO SITE DEMOLITION PLAN FOR LIMITS OF UTILITY PIPE REMOVALS.
4. PRIOR TO CONSTRUCTION OF PROPOSED BUILDING UTILITY SERVICES, VERIFY PIPE SIZES, LOCATIONS AND ELEVATIONS WITH MECHANICAL PLANS. COORDINATE CONSTRUCTION AND CONNECTIONS WITH MECHANICAL CONTRACTORS.
5. THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITIES FOR CONNECTION TO PUBLIC WATER, SANITARY SEWER AND STORM SEWER UTILITIES AND WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING PROVIDING AN APPROVED TRAFFIC CONTROL PLAN AS NECESSARY.
6. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR UTILITY CONNECTIONS AND UTILITIES SHALL BE INSPECTED AND APPROVED BY THE CITY. THE CITY SHALL BE NOTIFIED 48-HOURS PRIOR TO COMMENCING WITH THE UTILITY CONSTRUCTION OR ANY REQUIRED TESTING. CONTRACTOR SHALL NOT OPERATE, INTERFERE WITH, CONNECT ANY PIPE OR HOSE TO, OR TAP ANY WATER MAIN BELONGING TO THE CITY UNLESS DULY AUTHORIZED TO DO SO BY THE CITY. ANY ADVERSE CONSEQUENCES OF SCHEDULED OR UNSCHEDULED DISRUPTIONS OF SERVICE TO THE PUBLIC ARE TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. WATERMAIN SHALL BE INSTALLED AT LEAST 10 FEET HORIZONTALLY FROM ANY MANHOLE, CATCHBASIN, STORM SEWER, SANITARY SEWER, DRAINTILE OR OTHER POTENTIAL SOURCE OF CONTAMINATION. THIS ISOLATION DISTANCE SHALL BE MEASURED FROM THE OUTER EDGE OF THE PIPE TO THE OUTER EDGE OF THE CONTAMINATION SOURCE.
8. SHOULD WATER SERVICE CONFLICT WITH OTHER UTILITIES, DEFLECT WATER SERVICE DOWN TO PROVIDE A MINIMUM VERTICAL CLEARANCE OF 18 INCHES BETWEEN BOTTOM OF UTILITY PIPE AND TOP OF WATERMAIN. CENTER SECTION OF WATERMAIN PIPE AT CROSSING TO PROVIDE MAXIMUM DISTANCE OF JOINTS FROM SEWER CROSSING. FOLLOW TEN STATE STANDARDS, CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) AND MINNESOTA DEPARTMENT OF HEALTH STANDARDS FOR UTILITY CROSSINGS. REFER TO DETAIL UTIL-10 FOR DETAILS.
9. CONTRACTOR TO ADJUST ALL EXISTING AND PROPOSED GATE VALVES AND MANHOLES TO BE FLUSH WITH FINAL GRADE.
10. THE CONTRACTOR SHALL CLEAN ALL SURFACE FLOW CHANNELS, PIPES AND STRUCTURES AFTER FINAL SURFACES ARE ESTABLISHED AND PRIOR TO PROJECT CLOSEOUT.
11. STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE (CLASS 5 FOR PIPE DIAMETERS 18" AND SMALLER, CLASS 3 FOR PIPE DIAMETERS 21" AND LARGER UNLESS OTHERWISE NOTED) WITH R-4 GASKETS, OR HDPE STORM SEWER PIPE IF ALLOWED BY THE CITY. HDPE STORM PIPE SHALL MEET REQUIREMENTS OF AASHTO M294, TYPE S WITH WATERTIGHT CONNECTIONS AND BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S INSTALLATION GUIDELINES. ROOF DRAIN LEADERS SHALL BE PVC, SCHEDULE 40.
12. ALL SEWER CONSTRUCTION TO COMPLY WITH CITY ENGINEERING DESIGN STANDARDS.
13. REFER TO ARCHITECTURAL AND MECHANICAL PLANS FOR ROOF DRAINS, FOUNDATION PERIMETER DRAINTILE AND FITTINGS/CONNECTIONS.

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REVISIONS	BY
WATERSHED CMMTS	12.02.2018
PROOF OF PARKING	08.30.2017
BIO/PERMIT SET	08.07.2017

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STEVEN E. GEBAUER
DATE SEPT 07, 2017 REG. NO. 47514

SITE UTILITY PLAN

BUILDING AND PARKING EXPANSION
BONGARDS CREAMERY
8330 COMMERCE DRIVE
CHANHASSEN, MINNESOTA

DRAWN BY	SEG
CHECKED BY	MOC
DATE	08.07.2017
JOB NO	160002
SHEET	C4

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-001

Originally application: Conditionally approved at May 3, 2016

Modification request received complete: September 25, 2017

Applicant: Kopesky & Associates

Consultant: Charles Howley, HTPO

Project: Kopesky 2nd Addition – Construction of an 8-lot single family home subdivision. Two biofiltration basins with elevated underdrains and two underground rock trenches will provide storm water quantity, volume and quality control.

Location: 18340 82nd Street, Eden Prairie, MN

Reviewer: Scott Sobiech, Barr Engineering

Rules: Applicable rules checked

X	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
X	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal	X	Rule K: Variances and Exceptions
	Rule F: Shoreline/Streambank Stabilization	X	Rule L: Permit Fees
	Rule G: Waterbody Crossings	X	Rule M: Financial Assurances

Rule Conformance Summary

Rule	Issue		Conforms to RBPCWD Rules?	Comments
B	**Floodplain Management and Drainage Alterations**		**Yes**	
C	**Erosion Control Plan**		Yes	
D	**Wetland and Creek Buffers**		**See Comment**	**See Rule Specific Permit Condition D1-D2.**
J	**Stormwater Management**	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See Rule Specific Permit Condition J1-J2.
L	**Permit Fee**		**Yes**	**$2,250 was received on January 18, 2017.**
M	**Financial Assurance**		See Comment	The financial assurance has been calculated at $87,100.

Project Description

In May 2017, RPBCWD conditionally approved permit 2017-001.The project proposes the subdivision of the parcel into 8 single family lots and one outlot, construction of 8 single family homes, and construction of a cul-de-sac extension of existing Dove Court. There is a wetland on the northern portion of the site. The project stormwater management plan includes two biofiltration basins with elevated underdrains and two underground rock trenches, with a sump manhole for pretreatment.

Among the conditions of the May approval, the applicant was required to provide a draft maintenance declaration covering all stormwater facilities and wetland buffer area, then record the declaration after approval of the District. The requested permit modification is to allow the city of Eden Prairie to assume some of the maintenance obligations under an agreement with the District: the wetland buffer on Outlot A, the proposed biofiltration basin on Outlot A, the biofiltration basin on Block 1 lots 3 and 4, and the pretreatment sump manhole in the right of way (items shown in red on the attached drawing; Exhibit A-Public). (Outlot A and the right of way will be dedicated to the city, while a drainage and utility easement will be dedicated over the portions of lots 3 and 4 where the stormwater management facilities are located.) The applicant proposes to reduce the scope of the declaration to cover only the portion of the wetland buffer on Lot 1 and the underground rock trenches on Lots 1 and 5 (items with green callouts on the attached drawing; Exhibit A-Public). The applicant has provided a maintenance agreement drafted by the city of Eden Prairie, along with the necessary exhibit, and a draft maintenance declaration to be recorded on lots 1 and 5. Because approval of the permit was conditioned on the applicant's drafting and recording a maintenance declaration for all the stormwater facilities and buffers on the proposed project the applicant is requesting this modification. The applicant is not proposing to change any of the project elements conditionally approved in May 2017. Only limited comparison with the prior review report is provided where needed to provide context for prior approval.

The project site information is summarized below (no changes from conditional approval):

1. Total Site Area: 4.1 acres
2. Existing Site Impervious Area: 0.0 acres
3. New (Increase) in Site Impervious Area: 0.834 acres (36,329 square feet) (100% increase in site impervious area)
4. Total Disturbed Area: 3.0 acres

Exhibits:

1. Permit report 2017-001, dated April 21, 2017.
2. Draft maintenance declaration received September 25, 2017 with associated Exhibit A (revision received September 26, 2017)
3. Draft maintenance agreement with city of Eden Prairie received September 25, 2017 with associated Exhibit A

Rule Specific Permit Conditions

Rule B: Floodplain Management and Drainage Alterations

Because the proposed construction involves the placement of 190 cubic yards of fill below the 100-year flood elevation of the wetland (896.93), the project activities must conform to the RPBCWD's Floodplain Management and Drainage Alterations rule (Rule B).

The applicant is not proposing to change any of the project elements conditionally approved as compliant with applicable requirements at the May 2017 meeting. (Please see attached report.) The proposed project conforms to the RPBCWD Rule B requirements.

Rule C: Erosion and Sediment Control

Because the project will alter 3.0 acres (130,680 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 applicant is not proposing to change any of the project elements conditionally approved as compliant with applicable requirements at the May 2017 meeting and fulfilled the relevant condition on approval by providing Charlie Howley of HTPO as the individual responsible for erosion and sediment control at the site. (Please see attached report.) The proposed project conforms to the RPBCWD Rule C requirements.

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 (fill will only be placed within the 100-year floodplain of the wetland, not within the delineated wetland boundary).

The applicant is not proposing to change any of the project elements conditionally approved in May 2017 as compliant with applicable requirements at the May 2017 meeting. (Please see attached report.) The applicant provided a draft maintenance declaration for the portion of the wetland buffer on Lot 1 and maintenance agreement covering the remainder of the wetland buffer (on Outlot A). Because the conditional approval required the applicant enter a maintenance declaration for the entire wetland buffer area the applicant submitted a request to modify the condition to allow the city of Eden Priarie to enter into a maintenance agreement with the District for the wetland buffer on Outlot A. Outlot A will be dedicated to the city during the final plat recording.

To conform to the RPBCWD Rule D the following revisions are needed:

D1. Buffer areas and maintenance requirements must be documented in a declaration for the wetland buffer on Lot 1 and recorded in the office of the county recorder or registrar, after approval of a draft by the RPBCWD.
D2. Buffer areas and maintenance requirements for the wetland buffer on Outlot A must be documented in an agreement with the city of Eden Prairie. In addition, documentation of the dedication of Outlot A to the city must be submitted to the District.

Rule J: Stormwater Management

Because the project will alter 3.0 acres (130,680 square feet) of land-surface area the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 apply to the entire project parcel because the project is a new development.

The developer is proposing construction of two biofiltration basins with elevated underdrains and two underground rock trenches to provide the rate control, volume abstraction and water quality management on the site. Vegetated filter strips and sump manholes will provide pretreatment for the two biofiltration basins with elevated underdrains and vegetated filter strips will provide pretreatment for the underground rock trenches.

Because the applicant is not proposing to change any of the project elements conditionally approved in May 2017 as compliant with applicable requirements at the May 2017 meeting. (Please see attached report.)

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 declaration for the underground rock trenches on Lots 1 and 5. Once approved by RPBCWD, the plan must be recorded on the deed in a form acceptable to the District.
J2. The Applicant provide to the District documentation of the dedication of Outlot A and a drainage and utility easement over the portions of lots 3 and 4 on which the stormwater facilities, as well as the right of way, to the city. A maintenance agreement enforceable by RPBCWD for the stormwater facilities on Outlot A, Lots 3 and 4 and in the right of way.

Rule L: Permit Fee:

Fees for the project are:

Rule B, C & J $2,250

Rule M: Financial Assurance:

Rules C: Silt fence: 1,207 L.F. x $2.50/L.F. =.....$3,100

Restoration: 3.0 acres x $2,500/acre =.....$7,500

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

Rules J: Infiltration: 7,542 S.F. x $6/S.F. = ...$45,300

Contingency (10%) $6,100

Administration (30%) $20,100

Total Financial Assurance.....$87,100

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 Rules 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 $87,100.

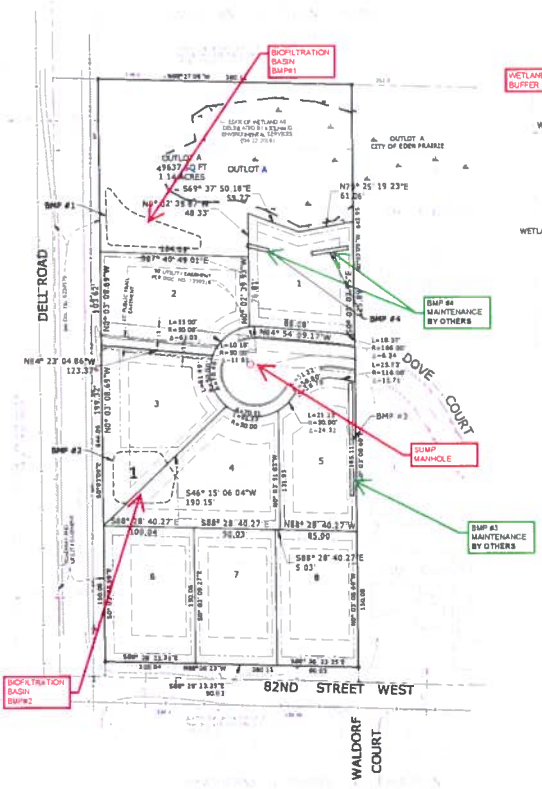
3. The Applicant provide to the District documentation of the dedication of Outlot A and a drainage and utility easement over the portions of lots 3 and 4 on which the stormwater facilities, as well as the right of way, to the city. A maintenance agreement enforceable by RPBCWD for the stormwater facilities on Outlot A, Lots 3 and 4 and in the right of way. The Applicant provide to the District a maintenance agreement enforceable by RPBCWD for the stormwater facilities on Outlot A, the right of way and Lots 3 and 4 and wetland buffer on Outlot A.
4. Receipt in recordation a maintenance declaration for the onsite stormwater management facilities on Lots 1 and 5 and wetland buffer on Lot 1. A draft must be approved by the District prior to recordation.

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

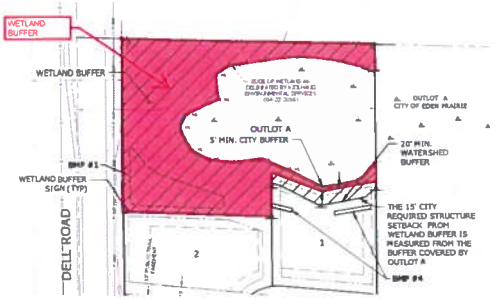
1. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, stormwater facilities conform to design specifications as approved by the District.
2. Single-family homes to be constructed on lots in the subdivision created under the terms of permit 2017-001, 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 modification for permit application No. 2017-001 with the conditions recommended by staff.



PROPOSED WETLAND BUFFER DETAIL



WETLAND CLASSIFICATION: MANAGE 2 WETLAND
REQUIRED WETLAND BUFFER STRIP MINIMUM WIDTH: 20 FT
REQUIRED WETLAND BUFFER STRIP MINIMUM AVERAGE WIDTH: 40 FT
PROPOSED WETLAND BUFFER LENGTH: 568 LF

BUFFER	CITY	WATERSHED
AREA [SF]	26,653	28,253
MIN. WIDTH [FT]	5	20
AVG. WIDTH [FT]	46.92	49.74

*THE ENTIRE WETLAND AND CITY BUFFER AREA IS DEDICATED TO THE CITY AS OUTLOT A

WETLAND BUFFER SIGN

EXISTING LEGAL DESCRIPTION:

THE WEST 330 FEET OF THE SOUTH HALF OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 18, TOWNSHIP 116, RANGE 22, EXCEPT THE SOUTH 1 ROD THEREOF, HENNEPIN COUNTY, MINNESOTA.

PROPOSED LEGAL DESCRIPTION:

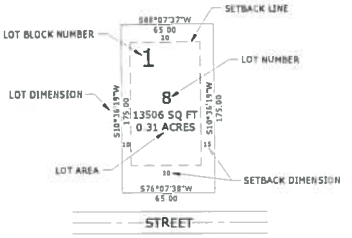
LOTS 1-8, BLOCK 1, KOPESKY 2ND ADDITION

SITE INFORMATION:

OVERALL SITE AREA:	180,347 SQUARE FEET (4.14 ACRES)
ZONING:	EXISTING - RURAL PROPOSED - PUD
GUIDED:	LOW DENSITY RESIDENTIAL
TOTAL SINGLE FAMILY LOTS:	8
LOT AREAS:	
LOT 1	13,516 SF (0.31 ACRES)
LOT 2	16,755 SF (0.38 ACRES)
LOT 3	16,679 SF (0.38 ACRES)
LOT 4	16,615 SF (0.38 ACRES)
LOT 5	13,569 SF (0.31 ACRES)
LOT 6	15,006 SF (0.34 ACRES)
LOT 7	13,506 SF (0.31 ACRES)
LOT 8	13,507 SF (0.31 ACRES)
AVERAGE DENSITY:	14,894 SF (0.34 ACRES) 2.92 UNITS/AC
OUTLOT A	47,797 SF (1.10 ACRES)
SETBACKS:	
FRONT YARD:	30 FEET OR 20 FEET (SEE PLAN)
REAR YARD:	20 FEET OR 15 FEET (SEE PLAN)
SIDE YARD:	TOTAL OF 25 FEET WITH A MIN. OF 10 FEET

PROPOSED TYPICAL DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:

BEING 5 FEET IN WIDTH AND ADJOINING LOT LINES, UNLESS OTHERWISE INDICATED, AND 10 FEET IN WIDTH UNLESS OTHERWISE INDICATED AND ADJOINING RIGHT-OF-WAY LINES, AS SHOWN ON THE PLAT.



Engineering · Surveying
Landscape Architecture
HANSEN THORP PELLINEN OLSON, INC.

PROJECT NO. 96.066.2
DRAWN BY ADC
DESIGN BY ADC
CHECKED BY CJH

DATE	ISSUES / REVISIONS
06/29/17	PERMIT SUBMITTAL

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
Charles J. Pawley
LIC. NO. 42728 DATE 06/29/17

STATE AID PROJECT NO.
STATE PROJECT NO.
COUNTY PROJECT NO.
CITY PROJECT NO.
CLIENT PROJECT NO.

DEVELOPMENT SITE PLAN
KOPESKY 2nd ADDITION
EDEN PRAIRIE, MINNESOTA

SHEET 3 OF 18 SHEETS

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-001

Received complete: January 18, 2017 (review timeline extended by Managers on 3/1/17)

Applicant: Kopesky & Associates

Consultant: Charles Howley, HTPO

Project: Kopesky 2nd Addition – Construction of an 8-lot single family home subdivision. Two biofiltration basins with elevated underdrains and two underground rock trenches will provide storm water quantity, volume and quality control.

Location: 18340 82nd Street, Eden Prairie, MN

Reviewer: Candice Kantor and Scott Sobiech, Barr Engineering

Rules: Applicable rules checked

X	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
X	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal	X	Rule K: Variances and Exceptions
	Rule F: Shoreline/Streambank Stabilization	X	Rule L: Permit Fees
	Rule G: Waterbody Crossings	X	Rule M: Financial Assurances

Rule Conformance Summary

Rule	Issue		Conforms to RBPCWD Rules?	Comments
B	**Floodplain Management and Drainage Alterations**		**Yes**	
C	**Erosion Control Plan**		See Comment	See Rule Specific Permit Condition C1.
D	**Wetland and Creek Buffers**		**See Comment**	**See Rule Specific Permit Condition D1.**
J	**Stormwater Management**	Rate	Yes	
		Volume	Yes	
		Water Quality	**Yes**	
		Low Floor Elev.	**Yes**	
		Maintenance	See Comment	See Rule Specific Permit Condition J1.
L	**Permit Fee**		Yes	$2,250 was received on January 18, 2017.
M	**Financial Assurance**		See Comment	The financial assurance has been calculated at $87,100.

Project Description

The project proposes the subdivision of the parcel into 8 single family lots and one outlot, construction of 8 single family homes, and construction of a cul-de-sac extension of existing Dove Court. An existing wetland is located on the northern portion of the site. The project includes two biofiltration basins with elevated underdrains and two underground rock trenches. The project site information is summarized below:

1. Total Site Area: 4.1 acres
2. Existing Site Impervious Area: 0.0 acres
3. New (Increase) in Site Impervious Area: 0.834 acres (36,329 square feet) (100% increase in site impervious area)
4. Total Disturbed Area: 3.0 acres

Exhibits:

1. Permit Application dated November 23, 2016.
2. Design Plan Sheets (Sheets 1-12) dated January 10, 2017 (received April 20, 2017).
3. Stormwater Management Design Memo dated January 10, 2017 (revised April 4, 2017).
4. HydroCAD Model in January 10, 2017 Stormwater Management Design Memo (revised April 20, 2017).
5. Report of Geotechnical Exploration and Review by American Engineering Testing, Inc. dated May 31, 2016.
6. Wetland Delineation Report by Kjolhaug Environmental Services Company, Inc. dated June 1, 2016 (includes MnRAM results dated May 4, 2016).
7. Existing Wetland Buffer Evaluation by Kjolhaug Environmental Services Company dated November 18, 2016.
8. P8 Model Output in January 10, 2017 Stormwater Management Design Memo.
9. P8 Model dated April 20, 2017
10. Minnesota Wetland Conservation Act Notice of Decision for Wetland Boundary and Type Determination dated July 8, 2016.
11. Minnesota Wetland Conservation Act Notice of Application for Wetland Exemption dated January 10, 2017.
12. Minnesota Wetland Conservation Act Notice of Decision for Wetland Exemption dated February 10, 2017.

Rule Specific Permit Conditions

Rule B: Floodplain Management and Drainage Alterations

Because the proposed construction involves the placement of 190 cubic yards of fill below the 100-year flood elevation of the wetland (896.93), the project activities must conform to the RPBCWD's Floodplain Management and Drainage Alterations rule (Rule B).

The proposed homes adjacent to the wetland will be constructed with low floor elevations of 903.0 or 902.7 thus providing the required two feet of freeboard above the 100-year flood elevation of the wetland complying with Rule B, Subsection 3.1. Paragraph 3.4 of the rule imposes no requirements on the project because no work in the floodplain of watercourses is proposed. The supporting materials demonstrate, and the RPBCWD Engineer concurs, that 190 cubic yards of fill will be placed and 210 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 the plan sheet 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 RPBCWD Rule B requirements

Rule C: Erosion and Sediment Control

Because the project will alter 3.0 acres (130,680 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 Hansen Thorp Pellinen Olson, Inc. 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 and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.

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 (fill will only be placed within the 100-year floodplain of the wetland, not within the delineated wetland boundary).

A June 1, 2016 wetland delineation for the site was included with the submittal. The MnRAM analysis dated May 4, 2016 indicates that the wetland onsite is a medium value wetland according to Appendix D1. Rule D, Subsection 3.1.a.iil 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 with an average width of 49.7 feet, minimum of 20 feet for the wetland which meet the average and minimum 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 the plan sheet indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) 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. Before any work subject to District permit requirements commences, buffer areas and maintenance requirements must be documented in a declaration and recorded in the office of the county recorder or registrar, after approval of a draft by the RPBCWD.

Rule J: Stormwater Management

Because the project will alter 3.0 acres (130,680 square feet) of land-surface area the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 apply to the entire project parcel because the project is a new development.

The developer is proposing construction of two biofiltration basins with elevated underdrains and two underground rock trenches to provide the rate control, volume abstraction and water quality management on the site. Vegetated filter strips and sump manholes will provide pretreatment for the two biofiltration basins with elevated underdrains and vegetated filter strips will provide pretreatment for the underground rock trenches.

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. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
North to Wetland	1.7	1.2	3.3	2.2	6.6	6.5	0.2	0.2
Dove Court (East)	1.1	0.7	2.0	1.2	3.9	2.4	0.2	0.1
Dell Road Storm Sewer	1.4	0.1	2.8	1.6	5.2	4.8	0.2	0.2
Dell Road Overland	0.3	0.2	0.6	0.5	1.1	1.0	0.0	0.0
82nd Street West Overland (South)	0.4	0.4	0.8	0.6	1.4	1.2	0.0	0.0

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 1,665 cubic feet is required from the 0.83 acres (36,329 square feet) of impervious area on the project for volume retention. The Applicant proposed two biofiltration basins with elevated underdrains with pretreatment of runoff provided by sump manholes and vegetated filter strips and two underground rock trenches with pretreatment of runoff provided by vegetated filter strips. The table below summarizes the volume abstraction on the site.

Soil borings performed by American Engineering Testing, Inc. show that soils in the project area are primarily clays; the MN Stormwater Manual indicates an infiltration rate of 0.06 inches per hour for such soils. The soil borings show no groundwater was observed to a boring elevation of 882.6 feet. Groundwater is at least 3 feet below the bottom of the proposed biofiltration basins with elevated underdrains and underground rock trenches (Rule J, Subsection 3.1.b.ii). The Engineer concurs that soil information, preservation of existing trees, and a wetland on the site show 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. The table below summarizes the volume abstraction on the site. Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.b.

Required Abstraction Depth (inches)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	0.66	2,011

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 biofiltration basins with elevated underdrains and two underground rock trenches to achieve the required TP and TSS removals and submitted a P8 model to estimate the TP and TSS removals.

Pollutant of Interest	Required Removal (%)	Estimated Removal (%)
Total Suspended Solids (TSS)	90	90
Total Phosphorus (TP)	60	77

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 feature are summarized below.

Location Riparian to Stormwater Facility	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard (feet)	Provided Distance Between Building and Adjacent Stormwater Feature (feet)	Required Separation to Groundwater based on Appendix J, Plot 1 (feet)	Provided Separation to Groundwater based on Appendix J, Plot 1 (feet)
Lot 1	902.7	896.93 (Wetland)	5.77			
Lot 1	902.7	897.13 (Rock Trench 4)	5.57			
Lot 2	903.0	901.0 (Biofiltration Basin 1)	2.0			
Lot 2	903.0	896.93 (Wetland)	6.07			
Lot 2	903.0	897.13 (Rock Trench 4)	5.87			
Lot 3	903.6	901.57 (Biofiltration Basin 2)	2.03			
Lot 4	903.6	901.57 (Biofiltration Basin 2)	2.03			
Lot 6	903.6	901.57 (Biofiltration Basin 2)	2.03			
Lot 7	904.5	901.57 (Biofiltration Basin 2)	2.93			
Lot 5	906.2	904.14 (Rock Trench 3)	2.06			
Lot 8	904.5	904.14 (Rock Trench 3)	Utilized Appendix J1	84	4	19

An analysis in accordance with Appendix J1 was completed for the proposed homes and adjacent stormwater feature when the low floor elevation of the proposed home was less than the 100-year event flood elevation of the adjacent stormwater feature.

The low floor elevation of the proposed homes at Lot 8 is less than the 100-year event flood elevation of underground rock trench 3. An analysis in accordance with Appendix J1 was completed for the home and rock trench 3. The actual distance between the home at Lot 8 and rock trench 3 is 84 feet; therefore, the required depth to groundwater at the home is 4 feet in order to be in compliance with Plot 1 in Appendix J1. The Applicant provided a soil boring that indicates the depth to groundwater at that location is 19 feet. The RPBCWD Engineer concurs that 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.

Rule L: Permit Fee:

Fees for the project are:

Rule B, C & J $2,250

Rule M: Financial Assurance:

Rules C: Silt fence: 1,207 L.F. x $2.50/L.F. = ... $3,100

Restoration: 3.0 acres x $2,500/acre = ... $7,500

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

Rules J: Infiltration: 7,542 S.F. x $6/S.F. = ... $45,300

Contingency (10%) $6,100

Administration (30%) $20,100

Total Financial Assurance $87,100

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 requirements.

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

Recommendation:

Approval, contingent upon:

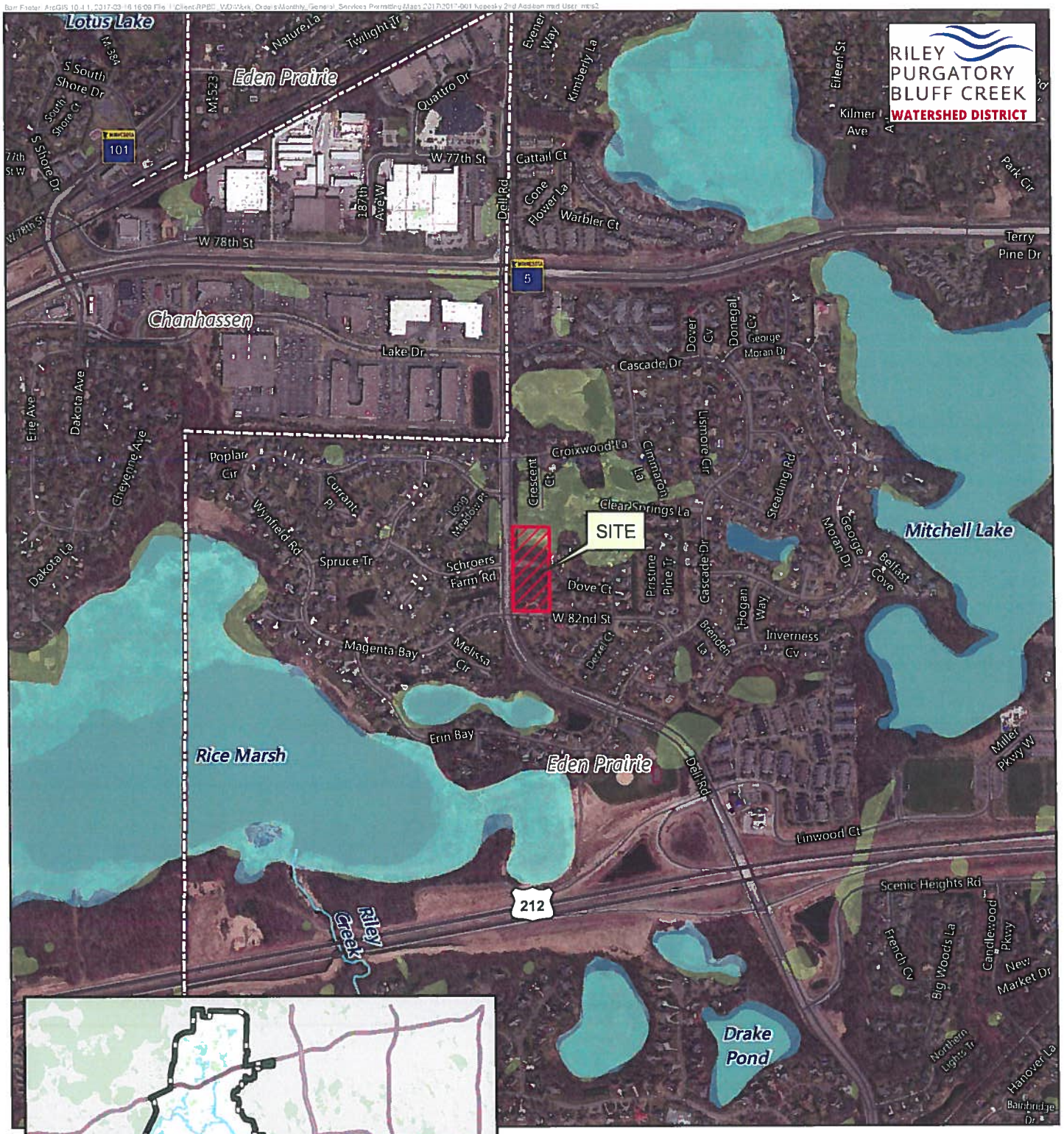
1. Continued compliance with General Requirements.
2. Financial Assurance in the amount of $87,100.
3. Submission of the name and contact information of the individual responsible for erosion and sediment control for the site.
4. Receipt in recordation a maintenance declaration for the stormwater management 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.
2. Single-family homes to be constructed on lots in the subdivision created under the terms of permit 2017-001, 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.

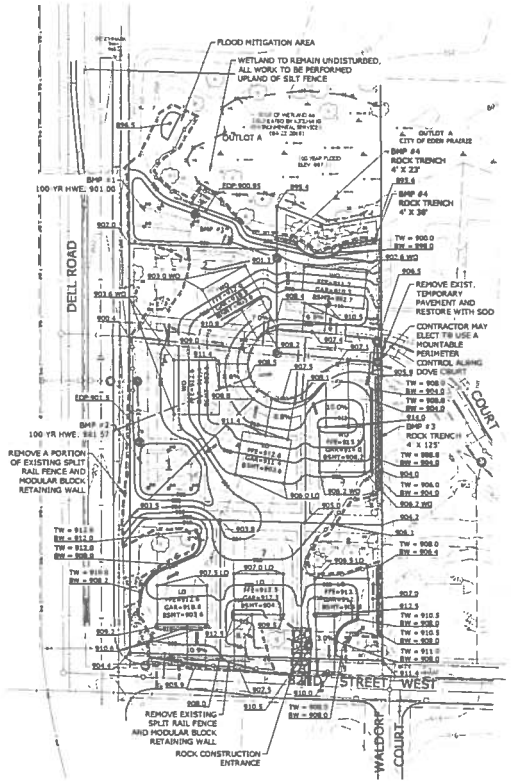
Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 2017-001 with the conditions recommended by staff.



Permit Location Map

KOPESKY 2ND ADDITION
18340 82ND STREET WEST
EDEN PRAIRIE
Permit 2017-001
Riley Purgatory Bluff Creek
Watershed District



LEGEND:

- 906 — PROPOSED CONTOUR
- 905.5 — PROPOSED SPOT ELEVATION
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE FLOW PATH
- SOIL BORING LOCATION
- LOC — PROPOSED LIMITS OF DISTURBANCE
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINTILE
- PROPOSED SILT FENCE
- INLET PROTECTION
- CLEAN OUT
- WO — WALK-OUT
- CO — CLEAN-OUT
- EOF — EMERGENCY OVER FLOW
- RETAINING WALL
- ROCK TRENCH

BENCHMARKS:

TOP NUT OF HYDRANT (TNH) AT THE INTERSECTION OF 82nd STREET WEST AND WALDORF COURT, ELEVATION = 914.5 (NAVD88), LOCATION SHOWN ON PLAN

TOP NUT OF HYDRANT (TNH) AT THE END OF DOVE COURT, ELEVATION = 908.6 (NAVD88), LOCATION SHOWN ON PLAN

TOP NUT OF HYDRANT (TNH) AT NORTH END OF PROPERTY AND DELL ROAD, ELEVATION = 903.3 (NAVD88), LOCATION SHOWN ON PLAN

EARTHWORK SUMMARY:

CUT: 6704 CY
FILL: 7152 CY

NET: 449 CY FILL

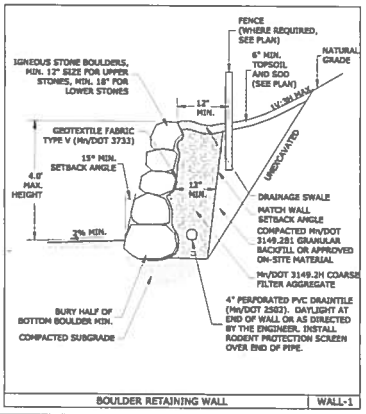
NOTE: GROSS NUMBERS INDICATED, NO ADJUSTMENTS DUE TO PAVEMENT OR SOIL SECTIONS INCLUDED.

FLOODPLAIN FILL VOLUME TABLE

ELEV.	FILL (CY)
897	190
TOTAL	190

COMPENSATORY STORAGE VOLUME TABLE

ELEV.	CUT (CY)
897	210
TOTAL	210



BOULDER RETAINING WALL | WALL-1

GENERAL NOTES:

1. SEE TREE PRESERVATION PLANS FOR SIGNIFICANT TREES (AS DEFINED BY CITY CODE) TO BE REMOVED AND PROTECTED.
2. CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES PRIOR TO COMMENCING CONSTRUCTION. ESC MEASURES SHALL BE INSPECTED DAILY DURING GRADING OPERATIONS AND WEEKLY UNTIL FINAL STABILIZATION IS COMPLETE. ESC MEASURES SHALL BE REPAIRED AS NEEDED OR AS DIRECTED BY THE ENGINEER. ESC MEASURES SHALL BE REMOVED FOLLOWING SITE STABILIZATION UPON APPROVAL OF THE ENGINEER.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND TOPOGRAPHY PRIOR TO COMMENCING GRADING OPERATIONS. IF DISCREPANCIES OCCUR BETWEEN PLANS AND ACTUAL SITE CONDITIONS, NOTIFY ENGINEER IMMEDIATELY.
4. PRIOR TO GRADING ACTIVITIES, TOPSOIL, ROOTS, AND OTHER ORGANIC MATERIAL SHALL BE COMPLETELY STRIPPED IN NEW PAVEMENT AREAS AND ONLY STRIPPED AS NEEDED IN GREENSPACE AREAS. EXISTING TOPSOIL SHALL BE STOCKPILED FOR REUSE.
5. SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED THROUGH SOIL AMENDMENT AND/OR RIPPING TO A DEPTH OF 18 INCHES WHILE TAKING CARE TO AVOID UTILITIES, TREE ROOTS AND OTHER EXISTING VEGETATION PRIOR TO FINAL RE-VEGETATION OR OTHER STABILIZATION.
6. SEE LANDSCAPE PLAN FOR TURF ESTABLISHMENT (6" MINIMUM TOPSOIL REQUIRED IN ALL GREENSPACE AREAS OUTSIDE OF BIOFILTRATION AREAS).
7. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING SURFACE DRAINAGE AT ALL TIMES DURING CONSTRUCTION.
8. CONTRACTOR SHALL TAKE SPECIAL CARE TO MINIMIZE COMPACTION IN PROPOSED GREENSPACE AREAS AND SHALL MINIMIZE THE DISTURBANCE INTENSITY AND DURATION OF GRADING ACTIVITIES BY PHASING THE WORK TO THE EXTENT PRACTICAL.
9. PROPOSED BIOFILTRATION AREAS SHALL NOT BE EXCAVATED TO FINAL GRADE UNTIL ALL UPLAND GRADING HAS BEEN COMPLETED AND STABILIZED.
10. BIOFILTRATION MEDIA SHALL BE MIXED AT THE LOCATION OF PRODUCTION AND NOT ONSITE. TESTING DATA OF THE MEDIA SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO DELIVERY OF MATERIAL TO THE SITE.
11. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 14 DAYS AFTER LAND DISTURBING WORK HAS BEEN COMPLETED OR SUSPENDED FOR A TIME GREATER THAN 48 HOURS.
12. ALL RIPRAP SHALL BE MINIMUM 6"Ø NATIVE FIELD STONE.
13. PAD GRADING SHOWN IS APPROXIMATE. FINAL LOT GRADING SHALL BE DETERMINED WITH BUILDING PERMITS.
14. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL EARTHWORK REQUIREMENTS.
15. CONSTRUCTION SITE WASTE MUST BE PROPERLY MANAGED, SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER AND SANITARY WASTER AT THE CONSTRUCTION SITE.
16. THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES (E.G. ZEBRA MUSSELS,EURASIAM WATERMILFOIL, ETC.) MUST BE MINIMALIZED TO THE MAXIMUM EXTENT POSSIBLE.
17. AREA OF LAND DISTURBANCE = 3.0 ACRES.

PRELIMINARY - NOT FOR CONSTRUCTION

N

Scale in feet
0 50 100 150

CALL BEFORE YOU DIG !
MINNESOTA LAW REQUIRES EXCAVATORS TO NOTIFY THE REGIONAL NOTIFICATION CENTER AT LEAST TWO (2) BUSINESS DAYS BUT NOT MORE THAN FOURTEEN (14) CALENDAR DAYS PRIOR TO EXCAVATION.
GOPHER STATE ONE CALL
www.gopherstateone.org
1-800-252-1166

HT Engineering · Surveying Landscape Architecture
HANSEN THORP PELLINEN OLSON, INC.

PROJECT NO.	96-066.2
DRAWN BY	JMS
DESIGN BY	ADC
CHECKED BY	CJH

DATE	ISSUES / REVISIONS
10/28/16	CITY SUBMITTAL
01/10/17	CITY/WATERSHED RESUBMITTAL
02/16/17	CITY/WATERSHED RESUBMITTAL
03/02/17	CITY/WATERSHED RESUBMITTAL
03/23/17	CITY RESUBMITTAL
03/31/17	CITY 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.

Charles J. Hawley
LIC. NO. 42728 DATE XX-XX-16

STATE AID PROJECT NO.	
STATE PROJECT NO.	
COUNTY PROJECT NO.	
CITY PROJECT NO.	
CLIENT PROJECT NO.	

GRADING AND EROSION CONTROL PLAN

KOPESKY 2nd ADDITION
EDEN PRAIRIE, MINNESOTA

SHEET 5 OF 13 SHEETS

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

18681 Lake Drive East
Chanhassen, MN 55318
952.807.6885
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-064

Received complete: September 27, 2017

Applicant: Claire Bleser, Riley-Purgatory-Bluff Creek Watershed District
Representative: Matthew Kumka, Barr Engineering Company
Project: Scenic Heights Elementary School – Forest Restoration Project
Location: 5650 Scenic Heights Drive, Minnetonka, Minnesota
Reviewer: Terry Jeffery, Permit Coordinator
Rules: Applicable rules checked

X	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
X	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal		Rule K: Variances and Exceptions
X	Rule F: Shoreline/Streambank Stabilization		Rule L: Permit Fees
	Rule G: Waterbody Crossings		Rule M: Financial Assurances

Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments
B	**Floodplain Management**	Yes	
C	**Erosion and Sediment Control**	Yes	
D	**Wetland and Creek Buffers**	Yes	
F	**Streambank Stabilization**	Yes	
J	**Stormwater Management**	Yes	
L	**Permit Fee**	Not Applicable	Governmental entity
M	**Financial Assurance**	Not Applicable	Governmental entity

Project Description

This project is to restore 7 acres of oak savanna and woodland in the Scenic Heights School Forest in Minnetonka. The primary goal is to increase biodiversity and plant community resilience by introducing additional native species and controlling invasive plants in the school forest. The project is being pursued by a partnership among Riley Purgatory Bluff Creek Watershed District (RPBCWD), City of Minnetonka Parks and Recreation, and Minnetonka School District 276. RPBCWD will be authorized to undertake the work on the city and school district property by a cooperative agreement between RPBCWD and each entity. This report analyzes the project as a whole, though compliance with RPBCWD regulatory requirements is achieved on each entity's property independently.

This proposed work will improve growing conditions for large native oaks, encourage native species recruitment and link the forest to the greater ecological corridor of Purgatory Park that extends along Purgatory Creek and down to the Minnesota River. The specific work proposed includes 4,200 square feet of grading to stabilize an eroded watercourse (which is entirely on the school property) with a more stable geometry and the installation of a combination of hard armoring (riprap) and bioengineering to stabilize the bank of the watercourse, rock riffles to slow flow rate through the watercourse, clearing of invasive species from approximately 2.86 acres, establishment of buffer around the onsite wetland, and the establishment of desirable understory vegetation upon removal of invasive species.

The project site information is summarized below:

1. Total Site Area: 17.52 acres (restoration area is approximately 7 acres)
2. Existing Site Impervious Area: 4.29 acres (0 acres within the restoration area)
3. New (Increase) in Site Impervious Area: 0 square feet (0% increase in site impervious area)
4. Disturbed Impervious Area: 0 square feet
5. Total Disturbed Area: 4,200 square feet for channel stabilization (approximately 2.86 acres of buckthorn removal)
6. Volume of Earth Moved: 80 cubic yards

Submitted Materials:

1. Permit Application dated August 23, 2017.
2. Project Description Memo dated June 29, 2015.
3. Design Plans dated August 31, 2017 (revised September 27, 2017).
4. Buffer Location Map September 27, 2017.
5. Cut and Fill Computations not dated, received September 27, 2017.
6. Draft Inspection and Maintenance Plan
7. HEC-RAS output and Shear Stress Calculations. Undated. Received September 27, 2017

Rule Specific Permit Conditions

Rule B: Floodplain Management and Drainage Alteration

Because the project will involve land-disturbing activities below the 100-year flood elevation of the watercourse on the school property to install the bank stabilization measures, flow-regulating practices and provision a more stable channel geometry, the project must conform to the requirements in the RPBCWD Floodplain Management and Drainage Alteration rule (Rule B, Subsection 2.1). No land-disturbing activities will take place below the 100-year flood elevation of the onsite wetland.

The proposed channel restoration conforms to Rule B, Subsections 3.1 and 3.4 because no buildings will be constructed or reconstructed as part of the project, and no surface will be paved as part of the project. The watercourse work will involve a total cut below the 100-year flood elevation of 700 cubic feet. The total fill below the 100-year flood elevation will be 6 cubic feet. The result is a net increase in storage below the 100-year elevation of 694 cubic feet. Therefore, the project conforms to the requirement in Rule B, Subsection 3.2, wherever fill is placed below the 100-year flood elevation of a waterbody, fully compensatory storage at the same elevation (+/- 1 foot) and within the floodplain of the same waterbody is provided.

The project is designed such that it will stabilize erosion within, and along the banks of the channel thus improving downstream water quality while not adversely affecting flood risk (Rule B, Subsection 3.3). This will be discussed in greater detail under Rule F of this report. The information on the plan sheets includes a note indicating 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 over 4,200 square feet of land for the channel stabilization and another 2.86 acres for clearing and grubbing of invasive species, the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1). The project contact responsible for implementation of the erosion and sediment control plan is Matt Kumka.

The erosion control plan prepared by Barr Engineering includes installation of silt fence, installation of a stabilized construction entrance, placement of a minimum of 6 inches of topsoil, and decompaction of areas compacted during construction. 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, F and J, Subsections 2.1 and 3.1a of Rule D require buffer adjacent to the delineated high value wetland on the school property with an average width of 60 feet and a minimum width of 30 feet from the delineated wetland boundary. Because the watercourse is not a Public Water nor is it located in a high-risk erosion area District rules do not require that the area buffered. The Applicant has provided a buffer that will be comprised of native vegetation, averaging sixty (60) feet in width around the jurisdictional wetland on the school property. This buffer will incidentally buffer the watercourse. This meets the requirements of Rule D, Subsection 3.1. Buffer markers will be located at inflection points in the buffer's upland edge and along the edge of the buffer at intervals of 200 feet or less conforming to Rule D, Subsection 3.3. Project plans include a note requiring construction activities to be undertaken in a manner that to minimizes the potential for transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible conforming to Rule D, Subsection 3.5.

The cooperative agreement with the school must provide for perpetual maintenance of the wetland buffer, once established.

Rule F: Shoreline and Streambank Stabilization

The proposed project includes grading and a combination of riprap and bioengineering technics to stabilize the bank of the watercourse, as well as the installation of flow-mitigating rock riffles in the bed of the watercourse. The stabilization work triggers RBCWD Rule F.

The streambank stabilization work is to prevent erosion and not for cosmetic purposes as demonstrated by the site photographs. The channel is deeply incised and is introducing sediment into the receiving wetland, establishing a need for the stabilization work as required by Rule F, Section 3.1. (The first-order watercourse on the school property is not a public water.)

HEC-RAS was used to estimate the erosion intensity of the flows in the channel. The modeling shows that proposed stabilization practices are consistent with sheer stresses at the location of the proposed stabilization: modeling indicates the average flow velocities and shear stress during the 100-year event are 4.1 feet per second (fps) and 0.6 pounds per square foot (PSF) respectively.

Peak velocities and shear stresses can be significantly higher than the computed average due to several variables, including locally steep channel slopes, sharp meander patterns, and localized obstructions (debris) that alter flow patterns. Barr used an extracted chart of known literature values and multiplied the average HEC-RAS shear stress value by 1.8 provides a reasonable estimate of the maximum shear stress in the tightest meander in the Scenic Heights Channel (0.6 lb/sq ft x 1.8 = 1.08 lb/sq ft). In the event the applicant's estimate of the ratio between the top width and radius of curvature is off and is instead somewhere between 1.75 and 2.5, then the shear stress multiplication factor would range

between 1.6 and 2.0 resulting in shear stress values of (0.96-1.2 lb/sq ft). These flow characteristics exceed the velocities and shear stress that can be sustained by the native soils in the area (3.0 fps and 0.26 psf respectively). These data show that a combination of bioengineering on the upper banks and rock riffles at three locations are adequate to achieve streambank stabilization along the channel. This analysis meets the sequencing requirements found in Rule F, section 3.2.

The project proposes the use of rock riffle having an average size of 12 inches, with a transition layer of granular bedding. The proposed stone sizing can withstand flow velocities and shear stress up to 8.5 fps and 4.0 psf respectively, which is consistent with the magnitude of erosion intensity expected at this location while providing for a factor of safety against peak velocities and shear stresses discussed above. This information is summarized in the table below.

	VELOCITY	SHEAR STRESS STRAIGHT CHANNEL	SHEAR STRESS AT MEANDERS
MODELED VALUES @ 100-YR FLOWS	4.1 feet per second	0.6 lbs per square foot	1.08 lbs per square foot (range of 1.6 – 2.0 PSF)
TOLERABLE VALUES OF NATIVE SOILS	3.0 feet per second	0.26 lbs per square foot	0.26 lbs per square foot
TOLERABLE VALUES OF TWELVE INCH STONE	8.5 feet per second	4.0 lbs per square foot	4.0 lbs per square foot

The placement of the rock riffles will conform to the natural alignment of the channel. This rock will not cover emergent vegetation and will not extend neither above the bank or two feet above the 100-year flood elevation. Side slopes are all shallower than 3:1. This design is compliant with the required design elements in Rule F, section 3.3.

Rule J: Stormwater Management

The project involves a land disturbance of more than 5,000 square feet that triggers the Stormwater Management rule (Rule J, Subsection 2.1). However, the project will not disturb or create any impervious surface; therefore, application of the criteria of Rule J, Subsection 3.1, results in no required stormwater management by the applicant.

Applicable General Requirements:

1. 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 proposed project conforms to Rules B, C, D, F and J.

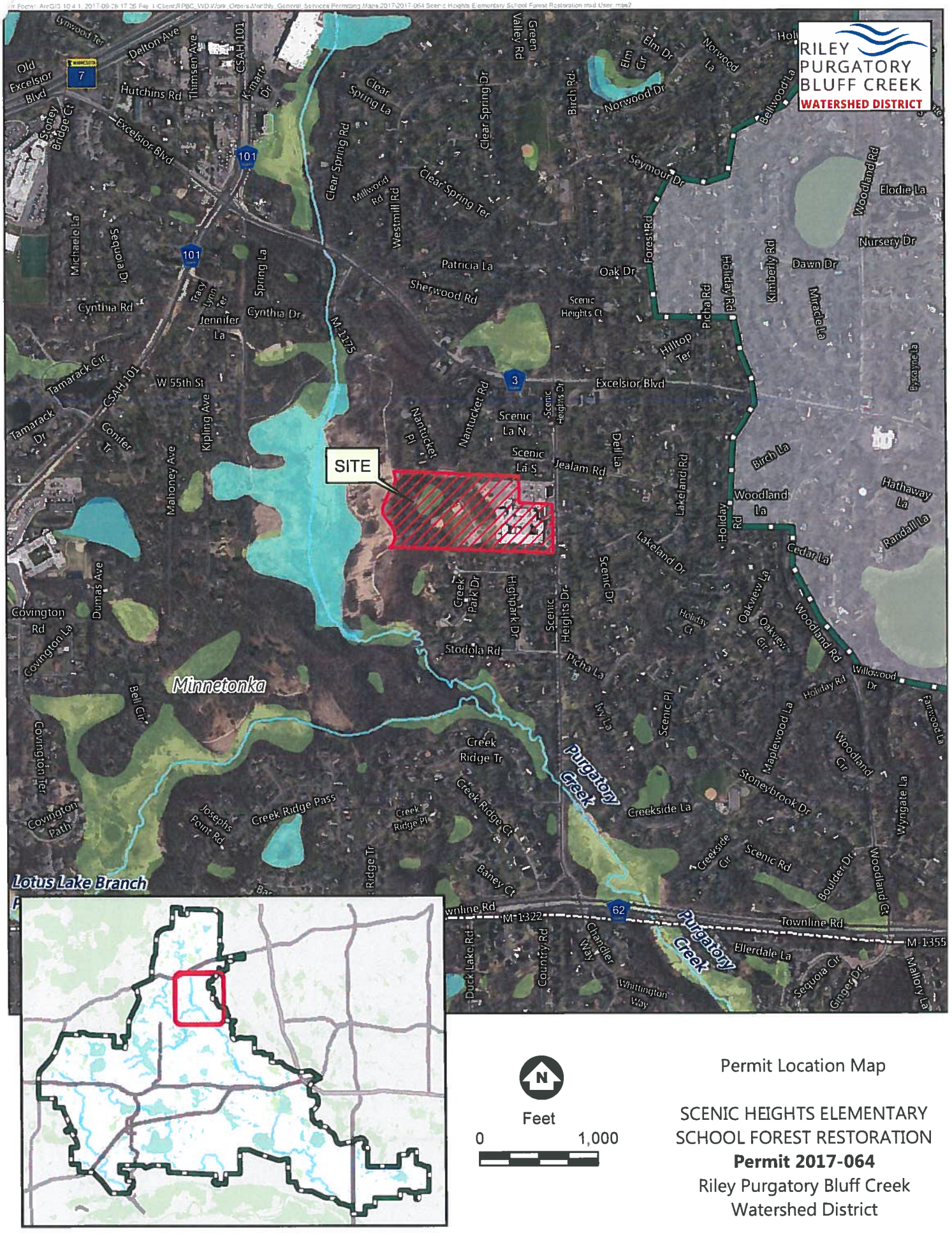
Recommendation:

Approval, contingent upon:

1. Continued compliance with General Requirements.
2. Submission of final, executed copies of cooperative agreements with the city and school district authorizing the District to apply on behalf of the City of Minnetonka and Minnetonka School District 276 and providing for maintenance of wetland buffer.

Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 2017-064 with the conditions recommended by staff.

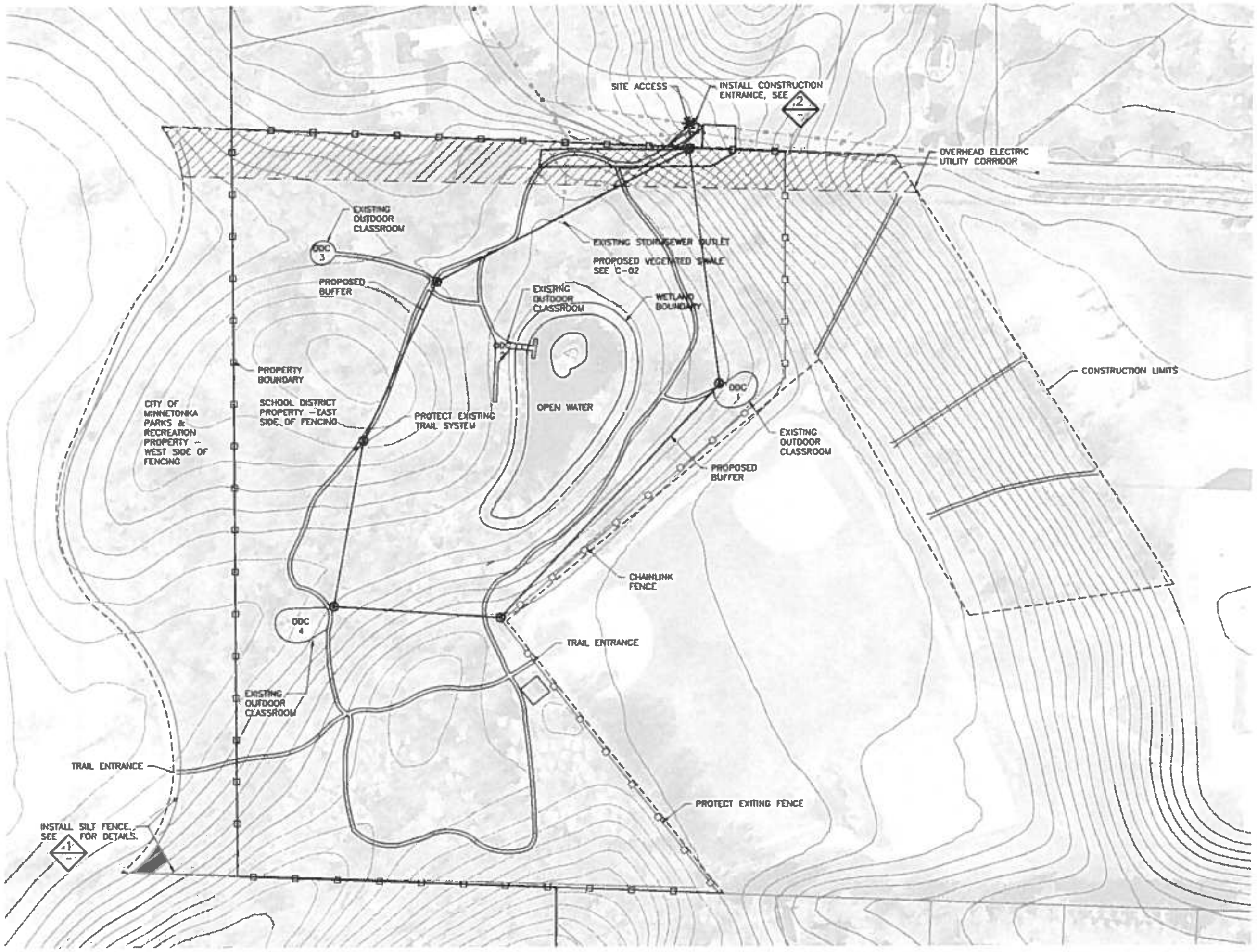


Permit Location Map

SCENIC HEIGHTS ELEMENTARY SCHOOL FOREST RESTORATION

Permit 2017-064

Riley Purgatory Bluff Creek Watershed District



1 PLAN: EXISTING CONDITIONS, SITE ACCESS & EROSION CONTROL

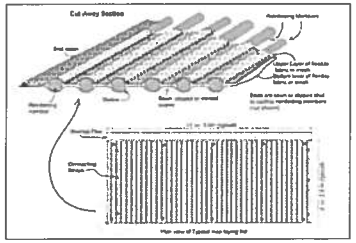
0 50 100 SCALE IN FEET

LEGEND

- SILT FENCE
- EXISTING TRAIL SYSTEM
- SITE ACCESS
- BUFFER EDUCATION SIGNAGE

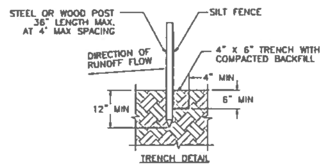
WETLAND BUFFER INFORMATION

RPBCWD
WETLAND VALUE: HIGH
REQUIRED WIDTH: AVERAGE WIDTH 60' MINIMUM WIDTH 30'
WETLAND PERIMETER: 699 FT
AT 60' AVERAGE WIDTH BUFFER AREA: 71,586 SQFT
PROPOSED BUFFER AREA 79,890 SQFT
AVERAGE WIDTH: 80 FT
MINIMUM WIDTH: 35 FT



2 DETAIL: CONSTRUCTION ENTRANCE
NOT TO SCALE

NOTES:
1. INSTALL ACES MUD MAT PER MANUFACTURER'S INSTRUCTIONS.
2. REMOVE TRACKED SEDIMENTS FROM PAVED SURFACES WITHIN 24 HOURS OF DEPOSITION, PICK UP OR VACUUM SWEEPER REQUIRED
3. REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL, PP. 3-69 TO 3-73, MNDOT EROSION CONTROL HANDBOOK
4. A TOTAL OF 1 CONSTRUCTION ENTRANCE TO BE INSTALLED



3 DETAIL: SILT FENCE
NOT TO SCALE

NOTES:
1. SILT FENCE SHALL BE INSTALLED AGAINST ADJACENT PAVEMENT EDGES.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. REQUIRED WHEN 1/3 FULL WITHIN 24 HOURS OF DISCOVERY.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND BE PERMANENTLY STABILIZED.
4. REFERENCES: MINNESOTA URBAN SMALL SITES BMP MANUAL, MNDOT EROSION CONTROL HANDBOOK
5. USE HI-FLOW FILTER FABRIC, 200 GAL. PER MINUTE PER SQUARE FOOT

GOPHER STATE ONE CALL
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1-800-252-1166

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION

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.
PRINTED NAME MATTHEW C. KUMKA
SIGNATURE
DATE 10/8/2017 LICENSE # 53874

CLIENT / BID / CONSTRUCTION — RELEASED TO/FOR — A B C 0 1 2 3 — DATE RELEASED

BARR
Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com
Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277

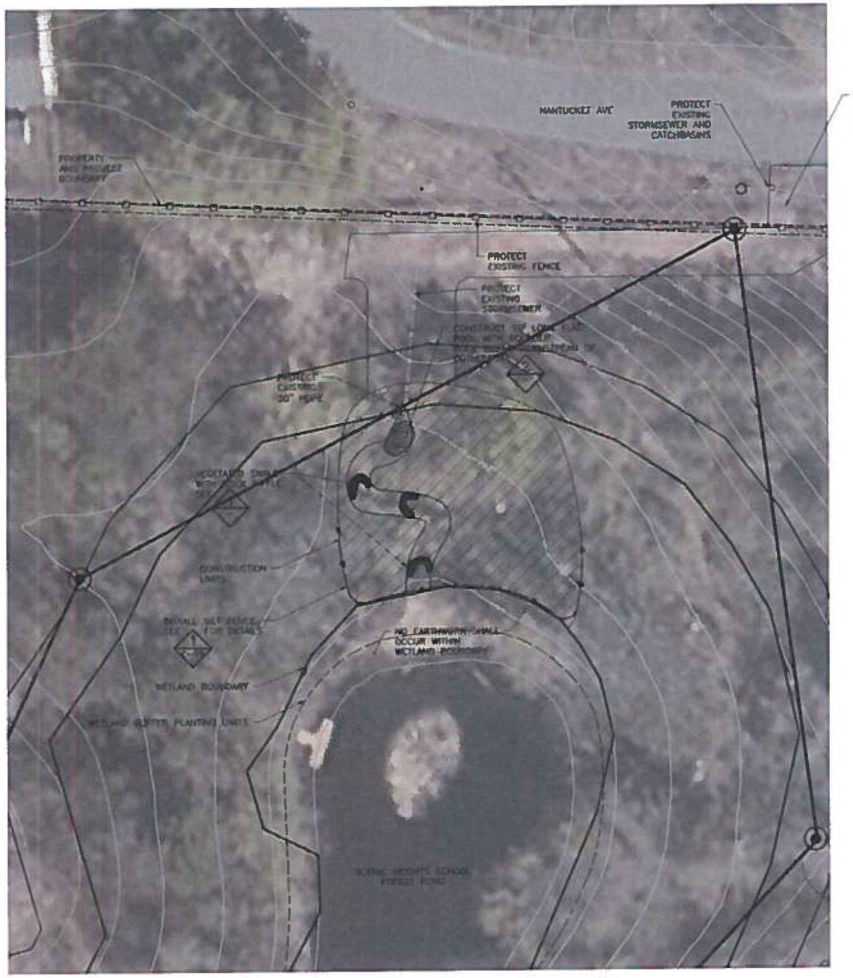
Scale	AS SHOWN
Date	4/18/2017
Drawn	HNH
Checked	MEK2
Designed	BARR
Approved	MEK2

RILEY-PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

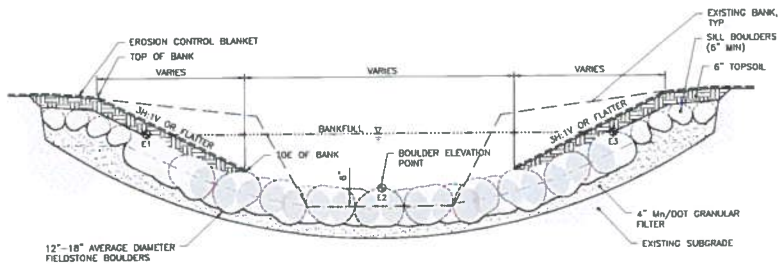
EXISTING CONDITIONS, SITE ACCESS & STAGING AREAS

BARR PROJECT No. 23270053.14
CLIENT PROJECT No.
DWG. No. C-01
REV. No. 0

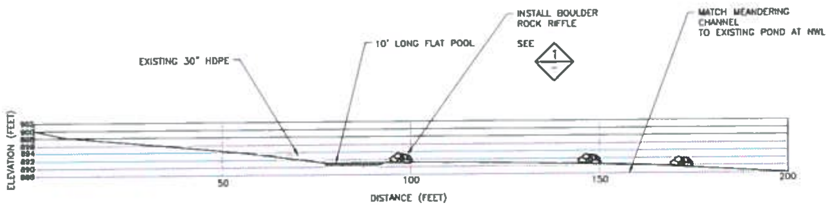


1 PLAN: STORM SEWER FES & DITCH ALIGNMENT

0 20 40 SCALE IN FEET



1 DETAIL: ROCK RIFFLE
NOT TO SCALE



2 PROFILE: STORM SEWER FES & DITCH ALIGNMENT
NOT TO SCALE

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION

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.
PRINTED NAME MATTHEW E. KUMKA
SIGNATURE
DATE 10/6/2017 LICENSE # 53874

RELEASED TO/FOR: CLIENT / BID / CONSTRUCTION — A B C 0 1 2 3 — DATE RELEASED

BARR
Project Office: BARR ENGINEERING CO. 4300 MARKETPOINTE DRIVE Suite 200 MINNEAPOLIS, MN 55435 Ph: 1-800-632-2277 Fax: (952) 832-2601 www.barr.com
Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277

Scale	AS SHOWN
Date	9/25/2017
Drawn	HNH/WMB
Checked	MEK2
Designed	BARR
Approved	MEK2

RILEY PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

ROCK RIFFLE DETAIL
& CHANNEL ALIGNMENT

BARR PROJECT No. 23270053.14
CLIENT PROJECT No.
DWG No. C-03
REV No. 0

CADD USER Matt Kumka FILE M:\DESIGN\23270053\14\SCENIC HEIGHTS FOREST\23270053.14_SCENIC HEIGHTS FOREST_C-03_STORMSEWER AND DITCH ALIGNMENT_2017_09_25 DWG PLOT SCALE 1:2 PLOT DATE 9/25/2017 8:54 AM
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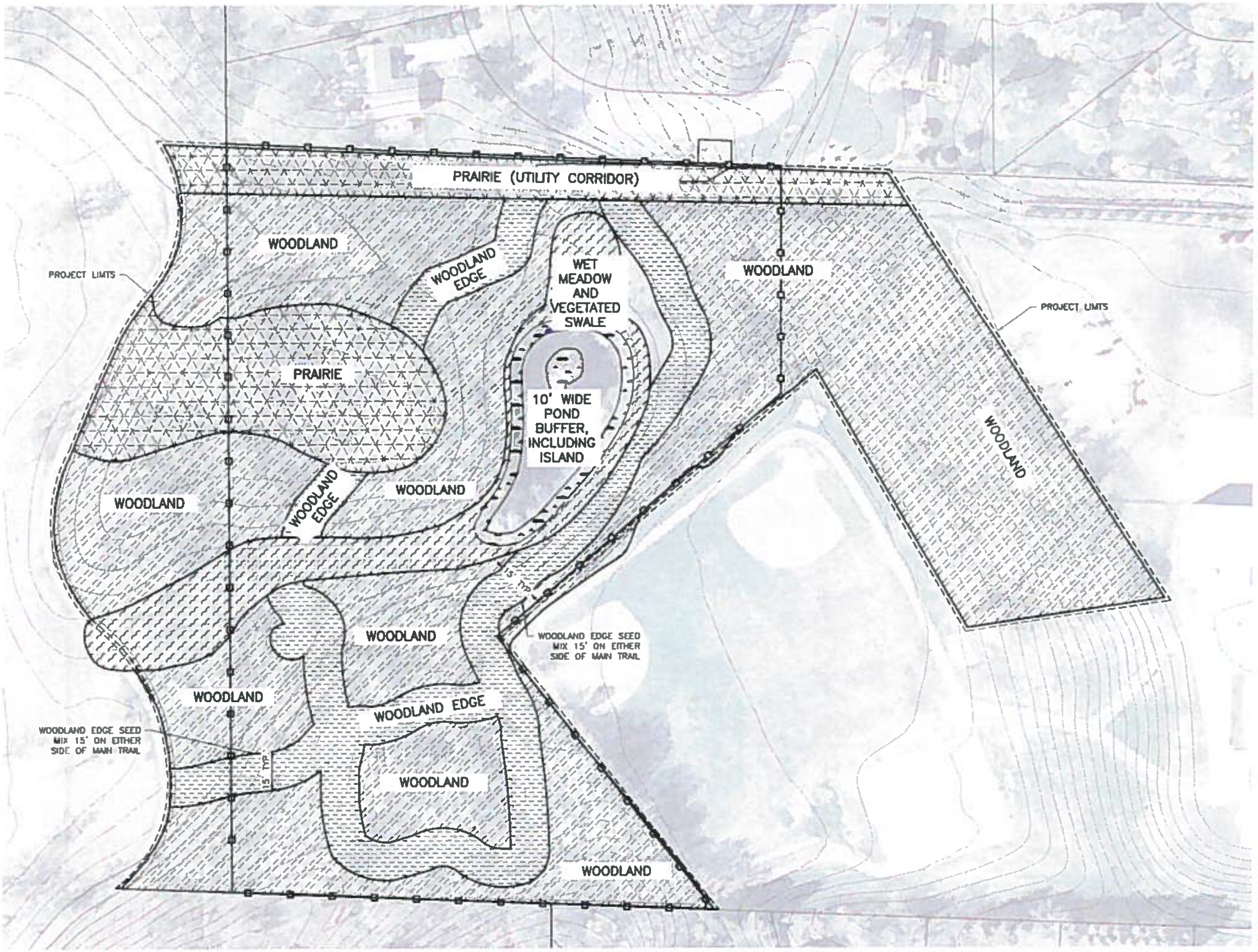

1 PLAN: PLANTING PLAN

0 50 100
SCALE IN FEET

LEGEND

SEED MIXES:

- WOODLAND (203,500 SQFT) Custom Mix
- WET MEADOW (27,500 SQFT) MnDOT 33-261
- PRAIRIE (55,000 SQFT) MnDOT 35-221
- WOODLAND EDGE (51,000 SQFT) MnDOT 36-711
- EXISTING FENCE

GOPHER STATE ONE CALL
CALL BEFORE YOU DIG
1-800-252-1166

PLANTING NOTES:

1. CONTRACTOR SHALL COORDINATE LAYOUT OF ALL PLANTS WITH DIRECTION OF LANDSCAPE ARCHITECT IN THE FIELD.
2. TREES AND SHRUBS ARE TO BE PLANTED AND MULCHED FIRST, THEN SEEDING AND HYDROMULCHING IS TO OCCUR.
3. PLUGS ARE TO BE FURNISHED BY CONTRACTOR AND INSTALLED BY VOLUNTEERS ORGANIZED BY OWNER, ON A DATE TO BE AGREED UPON IN SEPTEMBER 2018.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS, OR SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

SEEDING NOTES:

1. ANY GRASS OR WEEDS WITHIN SEEDING AREAS SHALL BE SPRAYED WITH HERBICIDE 14 DAYS PRIOR TO TILLING.
2. ALL HERBICIDE APPLICATION SHALL BE APPLIED BY A LICENSED APPLICATOR WITHIN THE STATE OF MINNESOTA.
3. AFTER SEEDING, TYPE B MULCH MATERIAL SHALL BE DISC-ANCHORED OVER ENTIRE SEEDING AREA IN ACCORDANCE WITH MN/DOT STANDARD SPECIFICATION 3882.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN THE CASE OF ANY DISCREPANCIES BETWEEN THIS DETAIL, PLANS, OR SPECIFICATIONS.

SEEDING ESTABLISHMENT NOTES:

1. SEEDING AREAS SHALL BE FREE OF DEAD OR DYING PATCHES LARGER THAN TEN SQUARE FOOT FOR ENTIRETY OF THE TWO YEAR WARRANTY OF PLANTING WORK. SEE SPECIFICATION 32-93-00 HERBACEOUS PLANT ESTABLISHMENT FOR MORE INFORMATION.
2. CONTRACTOR WILL BE RESPONSIBLE FOR WATERING (REGARDLESS OF NOTIFICATION) DURING ENTIRE TWO YEAR WARRANTY PERIOD. WATERING WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
3. ONCE A MONTH (MAY THROUGH OCTOBER) DURING MAINTENANCE PERIOD CONTRACTOR SHALL INSPECT FOR INVASIVE WEED ENCROACHMENT, DEAD PLANTS AND EROSION PROBLEMS AS PER SPECIFICATION 32-93-00.
4. UPON DISCOVERY OF INVASIVE SPECIES DURING SCHEDULED INSPECTIONS CONDUCT HERBICIDE AND/OR MANUAL TREATMENTS FOR WEED CONTROL.

ISSUED FOR BID

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.
PRINTED NAME MATTHEW E. KUMKA
SIGNATURE
DATE 10/8/2017 LICENSE # 53974

RELEASED TO/FOR	A	B	C	0	1	2	3
CLIENT							
BID				10/6/17			
CONSTRUCTION							

DATE RELEASED

BARR
Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277

Project Office:
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
Suite 200
MINNEAPOLIS, MN 55435
Ph: 1-800-632-2277
Fax: (952) 832-2601
www.barr.com

Scale	AS SHOWN
Date	6/23/2017
Drawn	BHD
Checked	MEK
Designed	FJR
Approved	MEK2

RILEY-PURGATORY
BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL
FOREST RESTORATION

SEEDING AND PLANTING PLAN
PLAN

BARR PROJECT No. 23270053.14
CLIENT PROJECT No.
DWG. No. L-01
REV. No. 0

WET MEADOW SEED MIX (MnDOT 34-261)

34-261	Riparian South & West				
Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
Virginia wild rye	*Elymus virginicus*	1.75	1.96	5.56%	2.78
American slough grass	*Beckmannia syzigachne*	1.38	1.52	4.38%	24.00
fowl bluegrass	*Poa palustris*	0.84	0.94	2.66%	40.00
riverbank wild rye	*Elymus riparius*	0.50	0.56	1.58%	0.53
prairie cordgrass	*Spartina pectinata*	0.30	0.34	0.95%	0.74
tall manna grass	*Glyceria grandis*	0.25	0.28	0.80%	6.50
rice cut grass	*Leersia oryzoides*	0.16	0.18	0.51%	2.00
fowl manna grass	*Glyceria striata*	0.09	0.10	0.29%	3.00
	Grasses Subtotal	5.25	5.88	16.68%	80.37
fox sedge	*Carex vulpinoidea*	0.20	0.22	0.65%	7.50
dark green bulrush	*Scirpus atrovirens*	0.12	0.13	0.38%	20.00
painted broom sedge	*Carex scoparia*	0.06	0.07	0.21%	2.00
woolgrass	*Scirpus cyperinus*	0.05	0.06	0.16%	30.00
tussock sedge	*Carex stricta*	0.04	0.04	0.13%	0.80
path rush	*Juncus tenuis*	0.03	0.03	0.09%	10.00
	Sedges & Rushes Subtotal	0.50	0.56	1.61%	70.30
blue vervain	*Verbena hastata*	0.15	0.17	0.48%	5.00
marsh milkweed	*Asclepias incarnata*	0.12	0.13	0.38%	0.21
giant sunflower	*Helianthus giganteus*	0.07	0.08	0.22%	0.23
spotted Joe pye weed	*Eutrochium maculatum*	0.06	0.07	0.18%	2.80
bunched ironweed	*Vernonia fasciculata*	0.06	0.07	0.18%	0.50
autumn sneezeweed	*Helenium autumnale*	0.05	0.06	0.17%	2.50
spotted touch-me-not	*Impatiens capensis*	0.05	0.06	0.17%	0.06
Virginia mountain mint	*Pycnanthemum virginianum*	0.05	0.06	0.16%	4.00
tall coneflower	*Rudbeckia laciniata*	0.05	0.06	0.15%	0.25
common boneset	*Eupatorium perfoliatum*	0.03	0.03	0.11%	2.80
great lobelia	*Lobelia siphilitica*	0.03	0.03	0.09%	5.00
giant goldenrod	*Solidago gigantea*	0.02	0.02	0.07%	2.00
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.03%	5.87
	Forbs Subtotal	0.75	0.84	2.36%	28.86
Oats	*Avena sativa*	25.00	28.02	79.37%	11.14
	Cover Crop Subtotal	25.00	28.02	79.37%	11.14
	Total	31.50	35.31	100.00%	190.66
Purpose:	Native riparian and floodplain plantings for wetland mitigation, ecological restoration, or general permanent cover after culvert or bridge work. Tolerates partial shade.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. MnDOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8				

PRAIRIE SEED MIX (MnDOT 35-221)

35-221	Dry Prairie General				
Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
side-oats grama	*Bouteloua curtipendula*	3.00	3.36	8.22%	6.61
little bluestem	*Schizachyrium scoparium*	3.00	3.36	8.22%	18.53
nodding wild rye	*Elymus canadensis*	1.00	1.12	2.74%	1.91
kalm's brome	*Bromus kalmii*	0.73	0.82	2.00%	2.14
big bluestem	*Andropogon gerardii*	0.70	0.78	1.92%	2.57
indian grass	*Sorghastrum nutans*	0.70	0.78	1.92%	3.00
blue grama	*Bouteloua gracilis*	0.50	0.56	1.37%	7.35
junegrass	*Koeleria macrantha*	0.25	0.28	0.69%	10.37
prairie dropseed	*Sporobolus heterolepis*	0.12	0.13	0.34%	0.73
	Grasses Subtotal	10.00	11.21	27.42%	53.30
black-eyed susan	*Rudbeckia hirta*	0.31	0.35	0.84%	10.32
purple prairie clover	*Dalea purpurea*	0.19	0.21	0.51%	1.02
hoary vervain	*Verbena stricta*	0.13	0.15	0.34%	1.29
lead plant	*Amorpha canescens*	0.09	0.10	0.26%	0.42
blue giant hyssop	*Agastache foeniculum*	0.06	0.07	0.17%	2.07
butterfly milkweed	*Asclepias tuberosa*	0.06	0.07	0.17%	0.10
Canada milk vetch	*Astragalus canadensis*	0.06	0.07	0.18%	0.40
bird's foot coreopsis	*Coreopsis palmata*	0.06	0.07	0.16%	0.21
white prairie clover	*Dalea candida*	0.06	0.07	0.15%	0.39
Canada tick trefoil	*Desmodium canadense*	0.06	0.07	0.16%	0.13
stiff sunflower	*Helianthus pauciflorus*	0.06	0.07	0.17%	0.09
wild bergamot	*Monarda fistulosa*	0.06	0.07	0.15%	1.42
stiff goldenrod	*Oligoneuron rigidum*	0.06	0.07	0.15%	0.83
large-flowered beard tongue	*Penstemon grandiflorus*	0.06	0.07	0.17%	0.32
smooth aster	*Symphyotrichum laeve*	0.06	0.07	0.17%	1.28
rough blazing star	*Liatris aspera*	0.04	0.04	0.12%	0.23
gray goldenrod	*Solidago nemoralis*	0.04	0.04	0.10%	3.04
heath aster	*Symphyotrichum ericoides*	0.04	0.04	0.10%	2.58
	Forbs Subtotal	1.50	1.68	4.09%	24.98
Oats	*Avena sativa*	25.00	28.02	68.49%	11.13
	Cover Crop Subtotal	25.00	28.02	68.49%	11.13
	Total	36.50	40.91	100.00%	87.39
Purpose:	General dry prairie mix for native roadsides, ecological restoration, or conservation program plantings.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. MnDOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8				

WOODLAND EDGE SEED MIX (MnDOT 36-711)

36-711	Woodland Edge Central				
Common Name	Scientific Name	Rate (lb/ac)	Rate (kg/ha)	% of Mix (by weight)	Seeds/ sq ft
Virginia wild rye	*Elymus virginicus*	1.75	1.96	4.93%	2.70
kalm's brome	*Bromus kalmii*	1.50	1.68	4.22%	4.40
little bluestem	*Schizachyrium scoparium*	1.13	1.27	3.17%	6.20
side-oats grama	*Bouteloua curtipendula*	1.00	1.12	2.81%	2.20
slender wheatgrass	*Elymus trachycaulus*	1.00	1.12	2.81%	2.53
nodding wild rye	*Elymus canadensis*	0.75	0.84	2.11%	1.43
big bluestem	*Andropogon gerardii*	0.50	0.56	1.42%	1.83
fringed brome	*Bromus ciliatus*	0.50	0.56	1.39%	2.00
indian grass	*Sorghastrum nutans*	0.50	0.56	1.41%	2.20
poverty grass	*Danthonia spicata*	0.37	0.41	1.04%	3.40
	Grasses Subtotal	9.00	10.09	25.31%	28.91
Canada milk vetch	*Astragalus canadensis*	0.25	0.28	0.71%	1.58
black-eyed susan	*Rudbeckia hirta*	0.20	0.22	0.57%	6.80
purple prairie clover	*Dalea purpurea*	0.18	0.20	0.51%	1.00
Early Sunflower	*Heliopsis helianthoides*	0.13	0.15	0.37%	0.30
smooth wild rose	*Rosa blanda*	0.09	0.10	0.27%	0.09
round-headed bush clover	*Lespedeza capitata*	0.07	0.08	0.19%	0.20
blue giant hyssop	*Agastache foeniculum*	0.06	0.07	0.18%	2.10
white prairie clover	*Dalea candida*	0.06	0.07	0.16%	0.40
wild bergamot	*Monarda fistulosa*	0.06	0.07	0.18%	1.60
Clayton's sweet cicely	*Osmorhiza claytonii*	0.06	0.07	0.17%	0.06
showy goldenrod	*Solidago speciosa*	0.06	0.07	0.17%	1.80
smooth aster	*Symphyotrichum laeve*	0.06	0.07	0.18%	1.30
skyblue aster	*Symphyotrichum oolentangiense*	0.06	0.07	0.17%	1.80
golden alexanders	*Zizia aurea*	0.06	0.07	0.16%	0.23
lead plant	*Amorpha canescens*	0.05	0.06	0.13%	0.21
common yarrow	*Achillea millefolium*	0.03	0.03	0.08%	7.00
pearly everlasting	*Anaphalis margaritacea*	0.02	0.02	0.05%	1.30
	Forbs Subtotal	1.50	1.68	4.26%	22.77
Oats	*Avena sativa*	25.00	28.02	70.43%	11.14
	Cover Crop Subtotal	25.00	28.02	70.43%	11.14
	Total	35.50	39.79	100.00%	62.81
Purpose:	Partly shaded grassland planting for native roadsides, reclamation, etc.				
Planting Area	Chippewa Plains, Pine Moraines & Outwash Plains, and Mille Lacs Uplands subsections. MnDOT Districts 2(southeast) & 3A.				

CUSTOM WOODLAND SEED MIX

Common Name	Scientific Name	Rate (lb/ac)	% of Mix (by weight)
Big Bluestem	*Andropogon gerardii*	0.75	7%
Sideoats Grama	*Bouteloua curtipendula*	1	9%
Kalm's Brome	*Bromus kalmii*	0.5	5%
Bottlebrush Grass	*Elymus hystrix*	0.3	3%
Silky wild rye	*Elymus villosus*	0.75	7%
Fowl Manna Grass	*Glyceria striata*	0.5	5%
Switchgrass	*Panicum virgatum*	0.5	5%
Little Bluestem	*Schizachyrium scoparium*	2	18%
Indiangrass	*Sorghastrum nutans*	1	9%
	Grasses Subtotal	7.3	66%
Common Wood Sedge	*Carex blanda*	0.03	0%
Plains Oval Sedge	*Carex brevior*	0.0625	1%
Ivory Sedge	*Carex eburnea*	0.0625	1%
Slender Wood Sedge	*Carex gracilescens*	0.03	0%
Field Oval Sedge	*Carex molesta*	0.125	1%
Palm Sedge	*Carex muskingumensis*	0.0625	1%
Long-beaked Sedge	*Carex sprengelii*	0.0625	1%
	Sedges & Rushes Subtotal	0.435	4%
Red Baneberry	*Actaea rubra*	0.0625	1%
Wild Garlic	*Allium canadense*	0.3	3%
Nodding Onion	*Allium cernuum*	0.03	0%
Fragrant Hyssop	*Agastache foeniculum*	0.125	1%
Poke Milkweed	*Asclepias exaltata*	0.03	0%
Calico Aster	*Aster lateriflorus*	0.0625	1%
Big-leaved Aster	*Aster macrophyllus*	0.0625	1%
Jack-in-the-Pulpit	*Arisaema triphyllum*	0.0625	1%
Canada milk vetch	*Astragalus canadensis*	0.125	1%
Columbine	*Aquilegia canadensis*	0.125	1%
Tall Bellflower	*Campanula americana*	0.0625	1%
Blue Cohosh	*Caulophyllum thalictroides*	0.0625	1%
Partridge Pea	*Chamaecrista fasciculata*	0.0625	1%
Prairie Coreopsis	*Coreopsis palmata*	0.05	0%
Pale purple coneflower	*Echinacea pallida*	0.08	1%
Flowering Spurge	*Euphorbia corollata*	0.0156	0%
Wild Geranium	*Geranium maculatum*	0.125	1%
Western Sunflower	*Helianthus occidentalis*	0.04	0%
Round-headed Bush Clover	*Lespedeza capitata*	0.0625	1%
Wild Bergamot	*Monarda fistulosa*	0.3	3%
Spotted Bee Balm	*Monarda punctata*	0.0625	1%
Large-flowered Beardtongue	*Penstemon grandiflorus*	0.04	0%
Bloodroot	*Sanguinaria canadensis*	0.0625	1%
Solomon's Plume	*Smilacina racemosa*	0.0625	1%
Solomon's Seal	*Polygonatum canaliculatum*	0.125	1%
Virginia mountain mint	*Pycnanthemum virginianum*	0.06	1%
Long-headed Coneflower	*Ratibida columnifera*	0.06	1%
Black-eyed Susan	*Rudbeckia hirta*	0.04	0%
Sweet Black-Eyed Susan	*Rudbeckia subtomentosa*	0.06	1%
Old Field Goldenrod	*Solidago nemoralis*	0.06	1%
Stiff Goldenrod	*Solidago rigida*	0.125	1%
Goat's Rue	*Tephrosia virginiana*	0.03	0%
Early Meadow Rue	*Thalictrum dioicum*	0.125	1%
Hoary Vervain	*Verbena stricta*	0.0625	1%
Culver's Root	*Veronicastrum virginicum*	0.3	3%
Golden Alexanders	*Zizia aurea*	0.1875	2%
	Forbs Subtotal	3.3001	30%
	Total	**11.04**	**100%**

POND BUFFER AND VEGETATED SWALE PLANTING LIST

Shrubs

Common Name	Latin Name	Quantity	Spacing	Size
American Cranberry	*Viburnum trilobum*	5	4' O.C.	Bare Root
Common Snowberry	*Symphoricarpos albus*	5	6' O.C.	Bare Root
Missouri gooseberry	*Ribes missouriense*	25	4' O.C.	Bare Root
Nannyberry	*Viburnum lentago*	20	4' O.C.	Bare Root
Prickly Gooseberry	*Ribes cynosbati*	30	4' O.C.	Bare Root
Red-Berried Elder	*Sambucus pubens*	32	4' O.C.	Bare Root
Roundleaf Dogwood	*Cornus rugosa*	30	4' O.C.	Bare Root
	TOTAL	147		

Live Stake

Common Name	Latin Name	Quantity	Spacing	Size
Red-Twigged Dogwood	*Cornus sericea*	150	3' O.C.	Live Stake
Red Elderberry	*Sambucus racemosa*	150	3' O.C.	Live Stake
	TOTAL	300		

Trees

Common Name	Latin Name	Quantity	Spacing	Size
American Basswood	*Tilia americana*	9	Field Fit	#10 Cont.
Blue Beech	*Carpinus caroliniana*	5	Field Fit	#10 Cont.
Ironwood	*Ostrya virginiana*	2	Field Fit	#10 Cont.
Pagoda Dogwood	*Cornus alternifolia*	11	Field Fit	#10 Cont.
Sugar Maple	*Acer saccharum*	8	Field Fit	#10 Cont.
	TOTAL	35		

PLUGS FOR VOLUNTEER PLANTINGS, SEPTEMBER 2018 (FURNISHED, INSTALLED BY OTHERS)

Common Name	Scientific Name	Quantity	Spacing	Size
Maidenhair Fern	*Adiantum pedatum*	36	Field Fit	Plug
Anise Hyssop	*Agastache foeniculum*	72	Field Fit	Plug
Nodding Onion	*Allium cernuum*	36	Field Fit	Plug
Wild Ginger	*Asarum canadense*	36	Field Fit	Plug
Rose Milkweed	*Asclepias incarnata*	72	Field Fit	Plug
Butterfly Weed	*Asclepias tuberosa*	144	Field Fit	Plug
Whorled Milkweed	*Asclepias verticillata*	72	Field Fit	Plug
New England Aster	*Aster novae-angliae*	36	Field Fit	Plug
Sky Blue Aster	*Aster oolentangiensis*	72	Field Fit	Plug
Lady Fern	*Athyrium filix-femina*	36	Field Fit	Plug
Wild White Indigo	*Baptisia alba*	36	Field Fit	Plug
Blue Wild Indigo	*Baptisia australis*	36	Field Fit	Plug
Turtlehead	*Chelone glabra*	36	Field Fit	Plug
Purple Prairie Clover	*Dalea purpurea*	72	Field Fit	Plug
Pale Purple Coneflower	*Echinacea pallida*	72	Field Fit	Plug
Purple Coneflower	*Echinacea purpurea*	72	Field Fit	Plug
Rattlesnake Master	*Eryngium yuccifolium*	144	Field Fit	Plug
Joe Pye Weed	*Eupatorium maculatum*	72	Field Fit	Plug
Wild Strawberry	*Fragaria virginiana*	72	Field Fit	Plug
Sneezeweed	*Helenium autumnale*	36	Field Fit	Plug
Button Blazing Star	*Liatris aspera*	72	Field Fit	Plug
Meadow Blazing star	*Liatris ligulistylis*	72	Field Fit	Plug
Prairie Blazing Star	*Liatris pycnostachya*	144	Field Fit	Plug
Cardinal Flower	*Lobelia cardinalis*	72	Field Fit	Plug
Wild Lupine	*Lupinus perennis*	72	Field Fit	Plug
Wild Bergamot	*Monarda fistulosa*	72	Field Fit	Plug
Sensitive Fern	*Onoclea sensibilis*	72	Field Fit	Plug
Obedient Plant	*Physostegia virginiana*	36	Field Fit	Plug
Solomon's Seal	*Polygonatum biflorum*	72	Field Fit	Plug
Yellow Coneflower	*Ratibida pinnata*	72	Field Fit	Plug
Compass Plant	*Silphium laciniatum*	72	Field Fit	Plug
Stiff Goldenrod	*Solidago rigida*	144	Field Fit	Plug
Showy Goldenrod	*Solidago speciosa*	72	Field Fit	Plug
Blue Vervain	*Verbena hastata*	72	Field Fit	Plug
Culver's Root	*Veronicastrum virginicum*	72	Field Fit	Plug
Golden Alexanders	*Zizia aurea*	72	Field Fit	Plug
	TOTAL	2520		

NO.	BY	CHK	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME MATTHEW E. KUMKA

SIGNATURE

DATE LICENSE # 53874

CLIENT / BID / CONSTRUCTION

RELEASED TO/FOR | A | B | C | 0 | 1 | 2 | 3 | DATE RELEASED

BARR

Project Office:
BARR ENGINEERING CO.
4300 MARKETPOINTE DRIVE
Suite 200
MINNEAPOLIS, MN 55435
Ph: 1-800-632-2277
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Corporate Headquarters:
Minneapolis, Minnesota
Ph: 1-800-632-2277

Scale	AS SHOWN
Date	10/06/2017
Drawn	BHD
Checked	MEK
Designed	FJR
Approved	MEK2

RILEY-PURGATORY BLUFF CREEK WATERSHED DISTRICT

SCENIC HEIGHTS SCHOOL FOREST RESTORATION

SEED MIXES AND PLANTS LISTS

BARR PROJECT No. 23270053.14

CLIENT PROJECT No.

DWG. No. L-02 | REV. No. 0

CADD USER: Matt Kumka FILE: M:\DESIGN\23270053.14\SCENIC HEIGHTS FOREST\23270053.14_SCENIC HEIGHTS FOREST_L-01_RESTORATION PLAN.DWG PLOT SCALE: 1:2 PLOT DATE: 8/21/2017 10:34 AM

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2017-063

Received complete: September 1, 2017

Applicant: Paul Bourgeois, ISD #276

Consultant: Cliff Buhman, Inspec

Project: Clear Springs Elementary 2018 Building Addition – Minnetonka Schools is proposing to add a new gymnasium onto Clear Springs Elementary School. The project will also involve the installation of storm sewer, the construction of an underground detention and infiltration practice, additional bituminous surface for fire access to building as well as to provide for a play area.

Location: 5621 County Road 101, Minnetonka 55345

Reviewer: Terry Jeffery, Permit Coordinator

Rules: Applicable rules checked

	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal		Rule K: Variances and Exceptions
	Rule F: Shoreline/Streambank Stabilization		Rule L: Permit Fees
	Rule G: Waterbody Crossings		Rule M: Financial Assurances

Rule Conformance Summary

Rule	Issue		Conforms to RBPCWD Rules?	Comments
C	**Erosion Control Plan**		See Comment	See rule specific permit condition C1
J	**Stormwater Management**	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See rule specific permit condition J1.
L	**Permit Fee**		NA	Governmental Agency
M	**Financial Assurance**		NA	Governmental Agency

Project Description

The project proposes the construction of two additions onto Scenic Heights Elementary School totaling 0.2 acre. In conjunction with these additions, storm sewer will be added to capture and convey this runoff to the existing underground detention and infiltration system. Total new and disturbed impervious surface is equal to 0.42 acre. This existing underground detention system with underlying infiltration will provide the required storm water rate, volume and quality control. The project site information is summarized below:

1. Total Site Area: 11.3 acres (492,228 square feet)
2. Existing Site Impervious Area: 5.05 acres (219,978 square feet)
3. New (Increase) in Site Impervious Area: 0.194 acres (3.8% increase)
4. Disturbed Site Impervious Area: 0.127 acres (5,532 square feet)[1]
5. Total Disturbed Area: 0.349 acres (15,202 square feet)

Submittals:

1. Permit Application dated August 18, 2017.
2. Design Plan Sheets C1 – C5 dated August 24, 2017 (C1 - C3 revised September 12, 2017)
3. Storm Water Management Plan dated August 24, 2017
4. Existing Drainage Plan dated July 26, 2017
5. Proposed Drainage Plan dated July 26, 2017
6. MIDS calculator results dated July 26, 2017
7. MIDS calculator results dated September 14, 2017
8. MIDS calculator summary dated September 14, 2017
9. HydroCAD model dated August 24, 2017
10. HydroCAD model dated September 13, 2017
11. Geotechnical Evaluation Report dated August 21, 2017

Rule Specific Permit Conditions

Rule C: Erosion and Sediment Control

Because the project will alter 0.349 acres (15,202 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).

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[1] 0.028 acres to be converted to pervious surface

The erosion control plan prepared by Inspec, Inc includes installation of silt fence and inlet protection for storm sewer catch basins, the retention of native soils, soil decompaction and placement of six (6) inches of topsoil. 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 0.349 acres (15,202 square feet) of land-surface area, approval under the RPBCWD Stormwater Management Rule is required (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 will apply to the disturbed areas on the project parcel because the project only increases the impervious by 3.8 percent and only disturbs 2.5 percent of the existing impervious surface on the parcel. (Rule J, Subsection 2.3) Total new and disturbed impervious surface equals 0.321 acres or 6.3 percent of the existing impervious surface on the site. This is under the 50 percent disturbed or expanded impervious area threshold for applicability of stormwater management requirements.

The school is proposing to install an existing underground detention system with underlying infiltration to provide the rate control, volume abstraction, and water quality management on the site.

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 from the new and disturbed impervious areas. The Applicant used HydroCAD models 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 project modeling confirms the proposed project conforms to RPBCWD Rule J, Subsection 3.1.a.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
Catchment 4B-1	2.07	0.88	4.11	2.70	8.31	5.24	0.77	0.73

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the new and disturbed impervious surface of the parcel (0.293 acre). An abstraction volume of 0.035 acre-feet (1,537 cubic feet) is required from the 0.293 acre (12,763 square feet) of new or reconstructed impervious area on the project for volume retention. Braun Intertec advanced four (4) borings in the location of the proposed underground detention and infiltration practice. Three of the borings indicated D soils at the infiltration elevation. The fourth boring indicated B soils. Infiltration rates for soils in the D hydrologic group range from 0.06 to 0.15 inches per hour. In the absence of site specific infiltration data, it is common use the more conservative rate of 0.06 inches per hour. Because of the presence of B soils in a portion of the basin, the applicant has designed with an assumed infiltration rate of 0.09 inches per hour. Staff agrees this is an appropriate approach based upon the geotechnical data.

The bottom of the proposed detention/infiltration feature is to be set at 919.6 feet msl. No groundwater was observed within any of the borings advanced in the proposed infiltration area. These borings were to a depth of 910.2 or 910.6 feet. This is greater than the required three feet of separation to groundwater.

The proposed system provides abstraction for 1.1" of runoff from 0.385 acres of existing, improved and new impervious surface. The regulated abstraction volume from the new and reconstructed impervious surface is equal to 1,170 cubic feet. The system, as designed, will abstract 1,537 cubic feet of water. Pretreatment will be provided via a sump manhole located prior to discharging into the detention/infiltration system. This is compliant with Rule J, Subsection 3.1.b.ii.

The table below summarizes the volume abstraction on the site for the proposed 2018 additions. The proposed project is in conformance with Rule J, Subsection 3.1.b.

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Volume (cubic feet)[1]	Remaining Abstraction Volume (cubic feet)
1.1	1,170	1,537	367

[1] The volume reduction shown is the amount provided which includes, in addition to the new and reconstructed impervious area, existing and undisturbed impervious area which will be directed to the BMP.

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 an underground detention system with underlying infiltration to achieve the required TP and TSS removals and submitted MIDS modeling to assess expected TP and TSS removal rates.

The regulated load from the 0.293 acres of proposed new and disturbed impervious surface for the improvements is 91.6 pounds of TSS and 0.504 pound of TP.

Given the drainage areas on the site, the system provides water quality treatment for runoff from 3.32 acres of the existing impervious surface. This results in the system reducing the TSS load 91.8 lbs and the TP load 0.506 lbs. The table below summarizes the water quality treatment provided for the site. Based on information reviewed, the proposed project conforms to Rule J, Subsection 3.1.c.

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)[1]	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	91.6	82.4 (90%)	91.8 (>100%)[2]
Total Phosphorus (TP)	0.504	0.302 (60%)	0.506 (>100%)[2]

[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.

[2]The TSS and TP removal is higher than required removal because the system treats a larger, undisturbed area of the existing impervious area.

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 feature are summarized below. The RPBCWD permit coordinator concurs that the proposed project is in conformance with Rule J, Subsection 3.6.

Structure	Low Floor Elevation (feet)	100-year Event Flood Elevation (feet)	Freeboard (feet)
Elementary School	931.24	922.33	8.91
Gymnasium Addition	929.82	922.33	7.49

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.

J1. Permit applicant must provide a draft maintenance and inspection plan. Once approved by RPBCWD, the plan must be documented in a written agreement with the RPBCWD.

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. The applicant must provide the name and contact information of general contractor responsible for the site.

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:

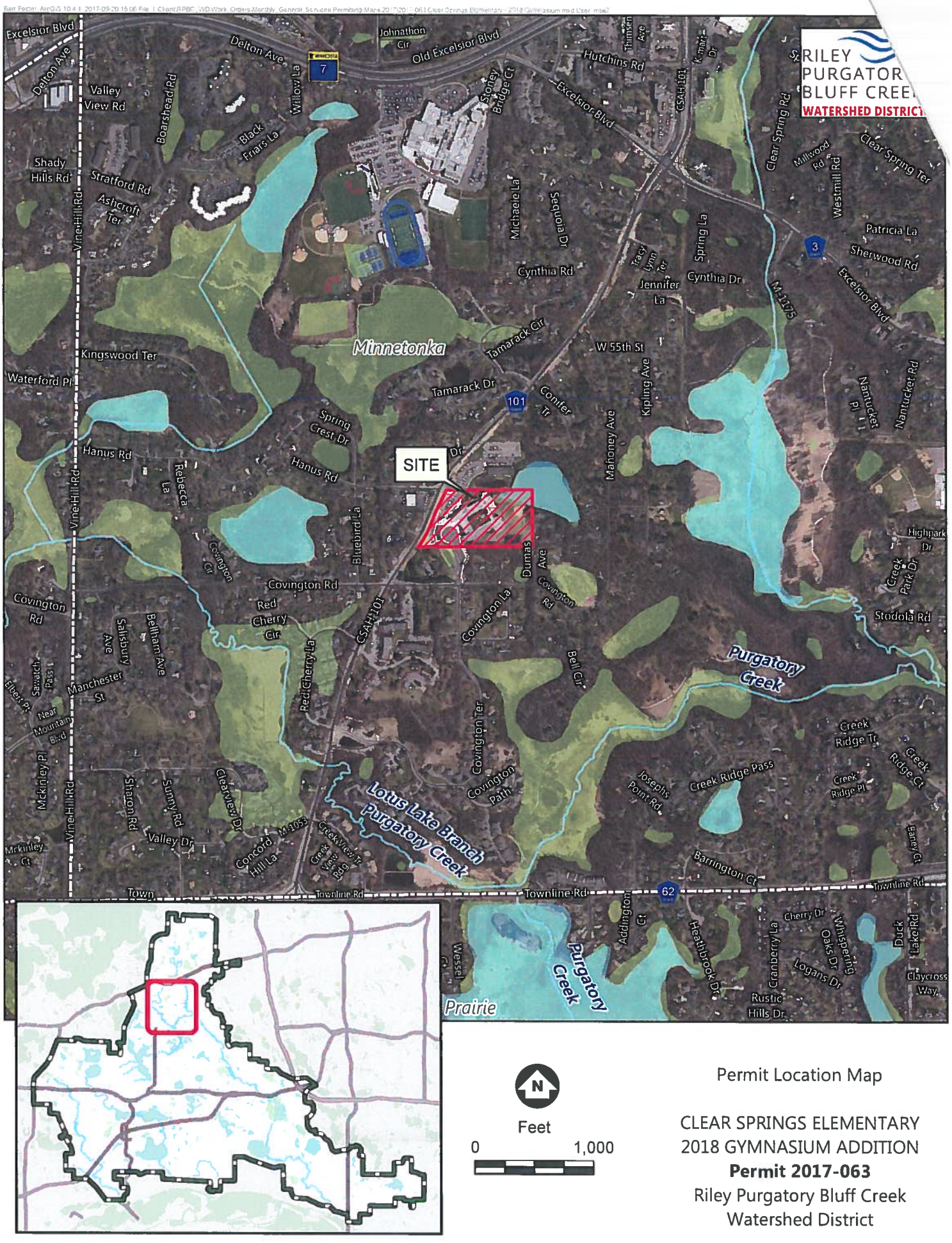
1. Continued compliance with General Requirements.
2. Permit applicant must provide a draft maintenance agreement and inspection plan for the management of stormwater BMPs, including exhibit clearly identifying stormwater BMPs location. Once approved by RPBCWD, the school district must enter an agreement with RPBCWD to maintain the project facilities in accordance with the plan.

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. 2017-063 with the conditions recommended by staff.



Feet

0 1,000

Permit Location Map

CLEAR SPRINGS ELEMENTARY
2018 GYMNASIUM ADDITION
Permit 2017-063
Riley Purgatory Bluff Creek
Watershed District

KEYED NOTES:

1. NEW 48" DIA. CONCRETE MONOLITHIC CATCH BASIN/MANHOLE (SEE DETAIL 9/C5).
2. NEW 48" DIA. CONCRETE MONOLITHIC CATCH BASIN/MANHOLE (SEE DETAIL 9/C5).
3. NEW 48" DIA. CONCRETE MONOLITHIC CATCH BASIN/MANHOLE (SEE DETAIL 9/C5).
4. NEW 48" DIA. CONCRETE MONOLITHIC CATCH BASIN/MANHOLE (SEE DETAIL 9/C5).
5. NEW 48" DIA. CONCRETE MONOLITHIC CATCH BASIN/MANHOLE (SEE DETAIL 9/C5).
6. NEW 60" DIA. CONCRETE MONOLITHIC MANHOLE WITH CONCRETE WEIR (SEE DETAIL 3/C5).
7. NEW 48" DIA. CONCRETE MONOLITHIC MANHOLE, (SEE DETAIL 8/C5).
8. NEW 48" DIA. CONCRETE MONOLITHIC MANHOLE, (SEE DETAIL 8/C5).
9. NEW 36" DIA. NYLOPLAST CATCH BASIN/MANHOLE, STANDARD INLET FRAME AND GRATE, (SEE DETAIL 7/C5).
10. NEW 12" DIA. HDPE DW PIPE, APPROX. 27 L.F., (SEE DETAIL 2/C5).
11. NEW 12" DIA. HDPE DW PIPE, APPROX. 49 L.F., (SEE DETAIL 2/C5).
12. NEW 12" DIA. HDPE DW PIPE, APPROX. 67 L.F., (SEE DETAIL 2/C5).
13. NEW 12" DIA. HDPE DW PIPE, APPROX. 110 L.F., (SEE DETAIL 2/C5).
14. NEW 12" DIA. HDPE DW PIPE, APPROX. 36 L.F., (SEE DETAIL 2/C5). CONTRACTOR TO CONNECT NEW PIPE TO EXISTING MANHOLE. CONTRACTOR TO VERIFY INVERT ELEVATIONS.
15. NEW 12" DIA. HDPE DW PIPE, APPROX. 39 L.F., (SEE DETAIL 2/C5). CONTRACTOR TO CONNECT NEW PIPE TO EXISTING MANHOLE. CONTRACTOR TO VERIFY INVERT ELEVATIONS.
16. NEW 18" DIA. HDPE DW PIPE, APPROX. 161 L.F., (SEE DETAIL 2/C5).
17. NEW 18" DIA. HDPE DW PIPE, APPROX. 89 L.F., (SEE DETAIL 2/C5).
18. NEW 18" DIA. HDPE DW PIPE, APPROX. 119 L.F., CONNECT TO EXISTING MANHOLE WHERE PREVIOUS 8" DIA. PIPE WAS REMOVED
19. NEW UNDERGROUND STORM CHAMBERS (SEE DET A3, 9/C5)
20. NEW 6" PIPE BY BUILDING ADDITION CONTRACTOR.
21. INSTALL NEW ADS FLEXSTORM PURE PERMANENT INLET PROTECTION
22. CONNECT EXISTING 6" PIPE TO NEW MANHOLE 06.
23. BULKHEAD ABANDONED 6" PIPE OUTLET OPENING IN EXISTING CATCH BASIN/MANHOLE.
24. MATCH TOP OF EXISTING FINISHED GRADE.

CATCH BASIN/MANHOLE SCHEDULE

NO.	SIZE/TYPE	FRAME/GRATE	TOP OF RIM ELEVATION	TOP OF WEIR ELEVATION	INV. ELEV. IN	INV. ELEV. OUT	BOTTOM OF MANHOLE
1	48" CONC. MONOLITHIC CATCH BASIN/MANHOLE	R-2536-A CATCH BASIN FRAME AND GRATE	939.00	-	923.32	923.45	923.45
7	48" CONC. MONOLITHIC CATCH BASIN/MANHOLE	R-2536-A CATCH BASIN FRAME AND GRATE	939.00	-	923.32	923.30	923.30
8	48" CONC. MONOLITHIC CATCH BASIN/MANHOLE	R-2536-A CATCH BASIN FRAME AND GRATE	939.80	-	923.78	922.74	922.74
9	48" CONC. MONOLITHIC CATCH BASIN/MANHOLE	R-2536-A CATCH BASIN FRAME AND GRATE	939.80	-	931.46	921.39	921.39
6	48" CONC. MONOLITHIC CATCH BASIN/MANHOLE	R-1536 FRAME, SOLID, SELF-SEALING LID WITH PERMANENT GRIP SURFACE	939.90	-	930.79	930.79	930.79
6	60" CONC. MONOLITHIC MANHOLE WWEIR	R-1536 FRAME, SOLID, SELF-SEALING LID WITH PERMANENT GRIP SURFACE	935.00	921.89	926.68	920.89	917.89
7	48" CONC. MONOLITHIC MANHOLE	R-1536 FRAME, SOLID, SELF-SEALING LID WITH PERMANENT GRIP SURFACE	934.80	-	926.69	920.48	920.48
8	48" CONC. MONOLITHIC MANHOLE	R-1536 FRAME, SOLID, SELF-SEALING LID WITH PERMANENT GRIP SURFACE	933.70	-	926.19	920.19	920.19
9	36" NYLOPLAST CATCH BASIN/MANHOLE	STANDARD INLET FRAME AND GRATE	934.80	-	921.46	921.36	921.36

CONTRACTOR TO VERIFY EXISTING PIPE INVERT ELEVATIONS AND TOP OF FINISHED GRADE.

"W" DENOTES NEW TOP OF FINISHED GRADE ELEVATION. ALL OTHER ELEVATIONS ARE EXISTING UNLESS NOTED OTHERWISE.

+ DENOTES NEW SPOT ELEVATION.

INDICATES NEW BITUMINOUS PAVEMENT

INDICATES NEW BUILDING ADDITIONS BY OTHERS

INDICATES NEW TOPSOIL AND SOD

ADD ALTERNATE

DUMAS AVENUE

GRADING AND DRAINAGE PLAN

SCALE: 1" = 20'-0"

NORTH

ATS&R
ARCHITECTURE
PLANNING
INTERIOR DESIGN
ENGINEERING
LANDSCAPE ARCHITECTURE
6851 GOLDEN VALLEY ROAD
SUITE 300
MINNEAPOLIS, MN 55427
TEL. 763.544.3731
FAX. 763.533.3299
WEB. www.ats-r.com

INSPEC PROJECT NO. - 6214288

REVISED 9-13-17

Renovations and Additions to
Clear Springs Elementary School
Minnetonka Public Schools District 276
5701 County Rd #101
Minnetonka Minnesota 55345

PRELIMINARY - NOT FOR CONSTRUCTION

16028

C3

resourceful. naturally.
engineering and environmental consultants

BARR

Memorandum

To: Riley Purgatory Bluff Creek Watershed District Board of Managers
From: Barr Engineering Company
Subject: Permit Application 2017-039: Mission Hills Senior Living – 3rd Extension of Review Period
Date: September 28, 2017
Project: 23270053.14

Project Description

Permit No: 2017-039

Received complete: May 22, 2017

Applicant: Headwaters Development, Michael Hoagberg
Consultant: BKBM Engineers, Keith Matte
Project: Mission Hills Senior Living – Disturbance of 8.65 acres to construct a 55,000 square foot senior housing building, eight townhome buildings and five biofiltration basins.
Location: Northeast Quadrant of MN Highway 101 and US Highway 212, Chanhassen, MN

Rules Implicated:

	Rule B: Floodplain Management		Rule H: Appropriation of Public Waters
X	Rule C: Erosion and Sediment Control		Rule I: Appropriation of Groundwater
	Rule D: Wetland and Creek Buffers	X	Rule J: Stormwater Management
	Rule E: Dredging and Sediment Removal		Rule K: Variances and Exceptions
	Rule F: Shoreline/Streambank Stabilization	X	Rule L: Permit Fees
	Rule G: Waterbody Crossings	X	Rule M: Financial Assurances

Recommendation

On May 22, 2017, Headwaters Development submitted a complete permit application for construction of a new senior living building and eight townhome buildings along with new parking lots, roadways and landscaping. Five bioretention facilities with elevated draintile to provide infiltration will provide stormwater quantity, volume and quality control.

Based on the Engineer's review of the submitted plans, the latest site designs and stormwater management approach do not provide the required volume abstraction.

On July 18, 2017, the applicant's representative requested a 60-day extension of the RPBCWD review period. Staff agreed and the Board extended the review period by 60 days to September 19, 2017, for permit 2017-039 Mission Hills Senior Living. At the request of the applicant, the permit review period was extended a second time by the Board at the September 6, 2017, meeting. No additional information has been submitted for review and the extended

permit review period for Permit 2017-039 expires on October 5, 2017 which is before the Board's regular November meeting. The applicant has requested an additional extension of the application-review period to allow the application to be considered at the November Board meeting. Staff recommends that the Board grant the extension to December 7, 2017 as requested for permit 2017-039 to allow the Applicant time to supply the revised design and the Engineer time to complete a review.

Scott Sobiech

From: Kevin Bohl <kbohl@bkbm.com>
Sent: Thursday, September 28, 2017 1:17 PM
To: Scott Sobiech
Cc: VStrong@ci.chanhassen.mn.us; tjeffery@rpbcwd.org; Nate Anderson; Keith Matte; Tom Cesare; andrewa@sra-mn.com
Subject: RE: Permit 2017-039: Mission Hills Senior Living - Extension

Scott,

Following up on our phone conversation, we are requesting an extension on the review period for the Mission Hills Senior Living project to December 7, 2017.

BKBM's plan is to have updated plans addressing your review comments sent over to the district by the end of next week (October 6th). It is my understanding that this should put us in line to have project approval for the November 1st board meeting.

Thanks,

Kevin A. Bohl, P.E.
Associate

BKBM ENGINEERS

5930 Brooklyn Blvd., Minneapolis, MN 55429
Direct: 763-843-0427 | Mobile: 651-633-9557
Minneapolis | Denver
www.bkbm.com

Every Relationship. Every Day.
Celebrating our 50th Year

We're Moving!

Effective September 30, 2017, our new address will be:
6120 Earle Brown Drive, Suite 700
Minneapolis, MN 55430

From: Nate Anderson
Sent: Thursday, September 28, 2017 11:24 AM
To: Joel Maier <jmaier@bkbm.com>; Tom Cesare <tcesare@bkbm.com>; Kevin Bohl <kbohl@bkbm.com>
Subject: FW: Permit 2017-039: Mission Hills Senior Living - Extension
Importance: High

Nate Anderson
Civil EIT

Minutes: Monday September 25, 2017

RPBCWD Citizen's Advisory Committee Monthly Meeting

Location: RPBCWD new offices: 18681 Lake Street, Chanhassen

CAC Members

Anne Deuring	P	Peter Iverson	P	Joan Palmquist	P
Jim Boettcher	P	Matt Lindon	P		
Paul Bulger	P	Sharon McCotter	P	David Ziegler	P

Others

Dick Ward	District Board Member	P
Claire Bleser	District Administrator	P
Michelle Jordan	District Liaison	P
Scott Sobiech	Barr Engineering	P

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

Note: The CAC meeting was preceded by a 25 x 25 meeting, run by Michelle Jordan.

CAC Meeting

1. **Call to Order:** President Ziegler called the September 25 meeting of the CAC to order at 7:11 P.M. Attendance noted above—all present.

2. **Matters of general public interest:** None

3. **Approval of the Agenda:** Motion was made (Palmquist/Bulger) and passed to approve the Agenda.

4. **Approval of meeting minutes from August 2017:** In the interest of time we waived the reading of the minutes. One correction to the minutes from Joan, changing her absence at the August meeting from an A (absent) to an E for excused. Motion to approve minutes with the correction made by Bulger/McCotter and passed unanimously.

5. **Draft Ten Year Plan Review**: A quick overview of 10-year Plan was presented by Administrator, Claire Bleser. Her goal is to have the plan, (including the Appendices and Executive Summary), released for public comment in November 2017. An additional appendix is being added, related to tracking comments to goals and strategies. The Appendices will be made available to the CAC as the latest drafts are completed.

a. **Comments:** General reaction was very positive, praising the document for its transparency, use of one voice, comprehensive content, organization, and the grouping strategies by goal and topic. In addition, it included clear communication of how public impact was involved. It's a "ridiculous improvement" over the previous plan in terms of organization, etc. One CAC member (Anne) said that it communicated a sense that the goals and strategies seem consistent with what we have been doing, and that she was very pleased to see the reference to being open to new science/technologies, which to opens this up for new, creative approaches.

b. **Recommendations for board and staff review:** CAC requested the following:
   - More detail on adaptive management
   - Clarification of goals, trying to make them more specific and measurable if possible.
   - More information about tracking progress and how that is being done, incorporating some of the elements in the process, including financial changes to project.
   - Clarity on frequency of evaluation (e.g. every two years rather than periodically)
   - Ideas on possible ways to minimize the number of Plan Amendments that need to be made when something unexpected happens and capital improvement projects are required, as this requires a lot of staff time.

Note: Several, but not all CAC members have provided feedback to Michelle on the Plan. She sent out an email Sept. 12 providing a link to the document and to a Google Docs document, where comments could be entered, and reviewed by others. **Those members who have not yet provided their feedback, are asked to do so in the next two weeks.** Michelle will re-send the e-mail so it is clear how to do this. Additional comments are also solicited from those who have commented.

6. **Agenda items for October meeting:** Monday October 16th, 6:30 PM
   a. 10-year plan appendices discussion
   b. Review of 25 by 25 and see how it relates to our goals and actions
   c. Updates from subcommittees
   d. Dates for remaining CAC meetings in 2017

7. **Upcoming events**
   a. Board Workshop and Regular Meeting, October 4, 5:30 PM, 18681 Lake Drive East
   b. Cycle the Creek, October 7, 10:00 AM to noon, 18681 Lake Drive East
   c. CAC meeting agenda (Monday October 16th, 6:30 PM)
   d. Chanhassen leaf clean up Saturday, Oct. 21 (rain date of the 22nd)

8. **Adjourn CAC meeting**: Motion to adjourn the meeting was made by Iverson/Boettcher and passed unanimously at 8:28 p.m.

Respectfully submitted by Joan Palmquist, recorder

25 by 25 Community Water Meeting
September 25, 2017
at Riley Purgatory Bluff Creek Watershed District (18681 Lake Drive East, Chanhassen)
In partnership with Lower Minnesota River Watershed District

Attendees: Jill Crafton, David Ziegler, Linda Loomis, Sharon McCotter, Jim Boettcher, Dorothy Pedersen, Anne Deuring, Katy Thompson, Paul Bulger, Tom Torkelson, Marilynn TOrkelson, Joan Palmquist, Perry Forster, Dick Ward, Lyn Marie Berntson, Matt Lindon.

Facilitated by: Michelle Jordan (RPBCWD)

Ideas submitted to the 25 by 25 website

Q1. What goals would you like to see to improve water quality 25% in your region?

1. Dramatically increase community/individual participation in clean water stewardship.
2. Reduce the amount of stormwater runoff through onsite filtration and infiltration.
3. No net aquifer drawdown.

Q2. What actions are needed in your area to improve water quality?

1. Determine and charge the real cost/value of water, both in terms of consumption and discharge. (STATE LEVEL)
2. Educational campaigns using the most up to date social/behavioral science research. (STATE, METRO, LOCAL)
3. Creation of a water quality cap and trade, with incentives and enforcement. (WATERSHED, SUB-WATERSHED)

Q3. What would it take to move these actions forward?

1. Better communications and collaboration between agencies/businesses at a local and regional level (LOCAL).
2. Embed water resource education in state curriculum standards (Project WET in all schools) (STATE).
3. Hardline enforcement of adequate and sustainable regulation (CITY & WATERSHED DISTRICT).

Q4. Other ideas?

1. Something needs to be done about chloride pollution.
2. Street sweeping can have a big impact.
3. Need to reduce water used for lawn irrigation.
4. Need to change community/individual expectations.
5. Install stormdrain filters, managed by cities.

Additional idea generated, but not submitted

What is one issues, fact, idea, or theme from the packet that resonated with you?

-Water conservations (Pg8). What we need to do: "Improve soil moisture sensors for lawn watering" Aargh!! How about "Don't water lawns."
-How to ensure drinking water quality - while infrastructure ages.
-accessible land/easement areas for raingardens (put utility lines, cables, etc in trench under road)
-water conservations: no aquifer drawdown below year 2000 levels
-Keeping drinking water safe and in good supply now and in the future
-nitrates/phosphorus runoff from ag. and lawn "care". We need land/water care instead of industrial ag/lawn chemicals
-tax credits for storm water reuse systems
-private/public water runoff restrictions for all building permits
-boulevard rain gardens
-settlement pond cleanout
-safe lakes/ponds
-road surfaces cleaned too little and too late for spring rains
-Keep lawn fertilizer runoff out of lakes, causes algal blooms and contributes to poor water quality.
-overuse
-Groundwater consumption and quality
-contaminated runoff
-erosion
-sediment
-There isn't enough control of runoff - most people are unaware of the impact.

Q1. Additional ideas
-25% less water use
-50% reduction in the number of days which recreational use of lakes is restricted due to algae blooms and/or bacteria etc.
-25% less lawn care products used (currently 30,000 tons/year)
-phosphorus reduction 3% per year
-runoff control- recapture, buffers
-nitrate reduction 3% per year
-Incorporating water quality landscaping ordinances to cities
-reduce salt use by private applicators or individuals, maybe salt should be a licensed use
-treat runoff on site/at the source
-encourage municipal regional bmps and credit trading system.
-more analysis and understanding about aquifer withdrawals
-better oversight/review of the big picture and cumulative impacts of withdrawals
-appropriate enforcement of rules
-Education:groundwater conservation and responsible use and reuse
-sediment runoff in general, public awareness
-micro-level watershed community activism/groups

-better management of water flows in southwest minnesota agricultural practices
-create statewide standard for chloride capture from roads and education of road truck spreading

Q2. Additional ideas
-Financial penalties
-Financial incentives
-development rules need to change (+enforcement)
-watershed districts across the state/everywhere

Q3. Additional ideas
-money
-micro-watershed level work/activism
-building the mindset that responsible development is a given/what we all do.

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

Treasurers Report

August 31, 2017

REPORT INDEX

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Cash Disbursements
August 31, 2017

Accounts Payable		Amount
Amy Herbert LLC	$	1,838.82
Barr Engineering Company		64,501.63
Cavell HOA		8,250.00
CenturyLink		741.15
Dell Five Business Park G-I		7,347.31
Dragonfly Promotions		496.11
Dunn and Semington Printing		53.65
ECM Publishers, Inc.		716.75
Environmental Systems Research Institute, Inc		3,264.00
Erdahl Aerial Photos		1,000.00
HealthPartners		3,548.39
JMSC Futurity, PLLC		3,545.00
Joseph & Stephanie Taffe		3,000.00
Josh Maxwell		142.41
Klein Bank Visa		5,326.99
League of Minnesota Cities		1,860.00
League of MN Cities Insurance Trust (0011)		10,121.00
Metropolitan Council Environmental Services		2,157.50
Michelle Jordan		46.52
Minnehaha Creek Watershed District		182.00
Perry Forster		1,157.92
PLM Lake & Land Management		299.80
ProTech		80.00
Purchase Power		802.21
RMB Environmental Laboratories, Inc.		8,713.00
Sign Source		5,802.22
Smith Partners PLLP		20,925.61
SouthWest Metro - Chamber of Commerce		335.00
Southwest Newspapers		689.25
Spee-Dee Delivery Service Inc.		387.11
Spotless Cleaning Service LLC		534.37
The Lincoln Nathional Life Insurance Company		288.21
Washburn-McReavy		54,400.00
Xcel Energy		15.88
Xcel Energy		589.39
Xcel Energy		49.45
Total Accounts Payable	**$**	**213,208.65**

Payroll Disbursements		Amount
Payroll Processing Fee	$	145.00
Manager Payroll Taxes		86.06
Employee Salaries		27,942.98
Employee Payroll Taxes		2,097.22
PERA Match		1,929.37
Total Payroll Disbursements	**$**	**32,200.63**

Total Disbursements	**$**	**245,409.28**

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
August 31, 2017

	2017 Budget	Month Ended Aug. 31, 2017	Year to Date Aug. 31, 2017
REVENUES			
Interest Income	0.00	292.50	592.74
Other Income	0.00	3,406.69	3,631.69
Other Income - Refunds	0.00	0.00	5,485.18
Other Income - District Floodplain	0.00	0.00	22,080.00
Plan Implementation Levy	2,859,000.00	0.00	1,470,610.37
Permit Income	15,000.00	14,608.60	38,958.60
TOTAL REVENUES	**$ 2,874,000.00**	**$ 18,307.79**	**$ 1,541,358.58**
EXPENDITURES			
Administration			
Accounting/Audit	$ 39,500.00	$ 3,690.00	$ 28,798.30
Advisory Committee	4,000.00	257.11	3,665.94
Engineering Services	103,000.00	7,976.50	56,650.20
Insurance and Bonds	12,000.00	783.47	6,268.54
Legal Services	75,000.00	11,553.23	50,051.63
Manager Expenses	18,500.00	1,330.04	8,896.99
Dues and Memberships	8,000.00	2,709.00	6,709.00
Office Costs	95,000.00	10,539.56	115,658.16
Permit Review and Inspection	90,000.00	19,195.72	140,255.61
Recording Services	15,000.00	3,244.82	8,888.31
Employee Cost	450,000.00	35,815.16	244,612.12
Total Administration Costs	**$ 910,000.00**	**$ 97,094.61**	**$ 670,454.80**
Programs and Projects			
District Wide			
‡ Education & Outreach	$ 114,000.00	11,745.51	49,328.16
AIS Inspection and Early Response	75,000.00	45.17	107.41
Cost Share Program	200,000.00	11,250.00	16,620.79
District Wide Floodplain Eval- Atlas 14	30,000.00	0.00	1,559.32
Data Collection	180,000.00	23,430.14	90,506.72
U of M Plant Restoration	75,000.00	0.00	27,931.26
TMDL	10,000.00	0.00	1,028.00
District Floodplain Vulnerability	0.00	405.76	405.76
Watershed - 10 Year Plan	75,000.00	9,107.50	79,355.67
○ Repair and Maintanance	100,000.00	0.00	0.00
○ ♦ Community Resilience MPCA	0.00	0.00	28,426.55
Creek Restoration Action Straegies Phase 2	20,000.00	0.00	11,487.00
District Groundwater Assessment	30,000.00	1,331.00	27,783.00
Total District Wide Costs	**$ 909,000.00**	**$ 57,315.08**	**$ 334,539.64**
Bluff Creek One Water			
○ ♦ Fish Passage Bluff Creek	$ 0.00	3,685.00	12,077.43
○ Bluff Creek Tributary	0.00	0.00	18,205.77
○ ♦ Chanhassen HS reuse	50,000.00	156.00	97,083.90
Total District Wide Costs	**$ 50,000.00**	**$ 3,841.00**	**$ 127,367.10**

○ 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

See Accountants Compilation Report

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Fund Performance Analysis - Table 1
August 31, 2017

	2017 Budget	Month Ended Aug. 31, 2017	Year to Date Aug. 31, 2017
Riley Creek One Water			
Lake Riley EWM Treatment	$ 25,000.00	0.00	22,325.20
○ Lake Riley Alum Treatment	0.00	0.00	681.85
○ ♦ Lake Susan Improvement Phase 2	0.00	4,914.50	18,390.52
○ ♦ Chanhassen Town Center	0.00	0.00	12,605.56
Rice Marsh Lake Aeration	0.00	0.00	15.88
Lake Riley - CLP Treatment	10,000.00	0.00	7,173.37
Lake Susan - CLP Treatment	10,000.00	0.00	3,074.30
Rice Marsh Lake WQ Improvement - Phase 1	20,000.00	0.00	0.00
Rice Marsh Lake Winter Fish Kill Prevention	10,000.00	0.00	398.57
Riley Creek Restoration	600,000.00	3,024.50	24,550.10
Total Riley Creek One Water Costs	**$ 675,000.00**	**$ 7,939.00**	**$ 89,215.35**
Purgatory Creek One Water			
○ Purgatory Creek Restoration	$ 0.00	3,290.00	37,701.50
Mitchell Lake Plant Management	15,000.00	0.00	2,261.83
Red Rock Lake Plant Management	15,000.00	0.00	4,064.89
Starring Lake Plant Management	20,000.00	0.00	7,949.98
♦ Fire Station 2 Water Reuse	20,000.00	0.00	17,778.74
Purgatory Creek Rec Area	50,000.00	0.00	0.00
Hyland Lake UAA	20,000.00	2,902.50	16,893.00
Lotus Lake - Phase 1	20,000.00	0.00	0.00
Silver Lake Restoration - Phase 1	20,000.00	248.00	248.00
○ ♦ Scenic Heights	0.00	8,289.72	28,170.32
Total Purgatory Creek One Water Costs	**$ 180,000.00**	**$ 14,730.22**	**$ 115,068.26**
Contingency Reserve			
Contingency Reserve	$ 135,000.00	$ 0.00	$ 0.00
Total Contingency Reserve Costs	**$ 135,000.00**	**$ 0.00**	**$ 0.00**
TOTAL EXPENDITURES	**$ 2,859,000.00**	**$ 180,919.91**	**$ 1,336,645.15**
Excess (Deficiency)	**$ 15,000.00**	**$ (162,612.12)**	**$ 204,713.43**

○ 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

See Accountants Compilation Report

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Multi-Year Project Performance Analysis - Table 2
August 31, 2017

	Total Available for Project	2017 Budget	Month Ended Aug. 31, 2017	Year to Date Aug. 31, 2017	Lifetime Costs	Remaining Budget Funds
Projects						
○ ♦ Chanhassen Town Center	63,000.00	0.00	0.00	12,605.56	35,196.56	27,803.4
○ ♦ Fish Passage Bluff Creek	415,000.00	0.00	3,685.00	12,077.43	36,870.82	378,129.1
○ Lake Lucy Iron Enhanced	85,000.00	0.00	0.00	0.00	62.32	84,937.6
○ Lake Riley Alum Treatment	260,000.00	0.00	0.00	681.85	235,659.41	24,340.5
○ Lake Susan Improvements	275,000.00	0.00	0.00	0.00	272,134.10	2,865.9
○ ♦ Lake Susan Improvement Ph 2	383,400.00	0.00	4,914.50	18,390.52	35,132.30	348,267.7
○ Purgatory Creek Restoration	661,094.00	0.00	3,290.00	37,701.50	368,927.06	292,166.9
○ ♦ Chanhassen HS Reuse	250,000.00	50,000.00	156.00	97,083.90	108,221.00	141,779.0
○ ♦ Community Resilience MPCA	47,000.00	0.00	0.00	28,426.55	46,601.68	398.3
○ ♦ Scenic Heights	260,000.00	0.00	8,289.72	28,170.32	28,170.32	231,829.6
○ Bluff Creek Tributary	200,000.00	0.00	0.00	18,205.77	18,205.77	181,794.2
Total Multi-Year Project Costs	**$ 2,899,494.00**	**$ 50,000.00**	**$ 20,335.22**	**$ 253,343.40**	**$ 1,185,181.34**	**$ 1,714,312.6**
Programs						
○ Repair and Maintenance	$102,005.00	100,000.00	0.00	0.00	0.00	102,005.0
○ Survey and Analysis	37,257.00	0.00	0.00	0.00	24,165.26	13,091.7
Total Program Costs	**$ 139,262.00**	**$ 100,000.00**	**$ 0.00**	**$ 0.00**	**$ 24,165.26**	**$ 115,096.7**
Other						
Total Other	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.00**	**$ 0.0**
Total Multi-Year Project Costs	**$ 3,038,756.00**	**$ 150,000.00**	**$ 20,335.22**	**$ 253,343.40**	**$ 1,209,346.60**	**$ 1,829,409.4**

Grant and Other Income Performance Analysis - Table 3
August 31, 2017

	Total Available for Project	Total Grant Amount	Required District Match	Additional District Funds	Partner Funds
○ ♦ Chanhassen Town Center	$ 63,000.00	$ 48,000.00	$ 12,000.00	$ 3,000.00	$ 0.00
○ ♦ Fish Passage Bluff Creek	415,000.00	150,000.00	37,500.00	77,500.00	150,000.00
○ ♦ Lake Susan Improvement Ph 2	383,400.00	233,400.00	58,350.00	91,650.00	0.00
♦ Metropolitan Council - WOMP	5,000.00	5,000.00	0.00	0.00	0.00
○ ♦ Chanhassen HS Reuse	250,000.00	200,000.00	50,000.00	0.00	0.00
♦ Fire Station 2 Water Reuse	98,287.00	73,715.00	24,572.00	0.00	0.00
○ ♦ Community Resilience MPCA	47,000.00	27,000.00	10,000.00	0.00	10,000.00
○ ♦ Scenic Heights	260,000.00	50,000.00	0.00	165,000.00	45,000.00
Total Grants and Other Income	**$ 1,521,687.00**	**$ 787,115.00**	**$ 192,422.00**	**$ 337,150.00**	**$ 205,000.00**

○ 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

See Accountants Compilation Report

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

Balance Sheet

As of August 31, 2017

ASSETS		
Current Assets		
Checking	$	1,749,759.80
Money Market Savings		0.00
Investments		2,469,000.00
Standing Cash in Investment Account		575.57
Total Current Assets	$	4,219,335.37
Other Assets		
Security Deposit		9,744.00
Prepaid Expenses		43,384.51
Delinquent Property Taxes		17,622.16
Total Other Assets	$	70,750.67
Total Assets	$	**4,290,086.04**
LIABILITIES AND NET ASSETS		
Liabilities		
Current Liabilities		
Accounts Payable	$	214,829.44
Payroll Withholding		309.84
Accrued Payroll		10,816.15
PERA Withholding		2,006.15
Total Current Liabilities	$	227,961.58
Other Current Liabilities		
Retainages Payable		21,494.03
Total Other Current Liabilities	$	21,494.03
Long-Term Liabilities		
Deferred Revenues	$	17,622.16
Unearned Revenue		132,396.16
Permit Escrows		616,900.00
Total Long-Term Liabilities	$	766,918.32
Total Liabilities	$	1,016,373.93
Net Assets		
Cumulative Fund Balance	$	3,068,998.68
Excess (Deficiency) Current		204,713.43
Total Net Assets	$	3,273,712.11
Total Liabilities and Net Assets	$	**4,290,086.04**

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
Klein Bank Visa Activity
August 22, 2017

DATE	PURCHASE FROM	AMT	DESCRIPTION	ACCT #	Total
11-Aug	Delta	$ 440.40	Conferences & Training -Staff	71002	$ 440.40
11-Aug	AWRA-Internet	$ 849.00	Dues and Membershlps	90402	$ 849.00
8-Aug	Crumb Gourmet Deli	$ 257.11	Advisory Commlttee	92002	$ 257.11
21-Jul	Shutterfly	$ 123.26	Education and Outreach	93002	
25-Jul	Wayfair	$ 124.92	Education and Outreach	93002	
26-Jul	Amazon	$ 158.44	Education and Outreach	93002	
27-Jul	Cub Foods	$ 56.43	Education and Outreach	93002	
27-Jul	Cub Foods	$ 27.92	Education and Outreach	93002	
27-Jul	Target	$ 6.91	Education and Outreach	93002	
27-Jul	Home Depot	$ 5.54	Education and Outreach	93002	
28-Jul	Shutterfly	$ 52.89	Education and Outreach	93002	
31-Jul	Cub Foods	$ 2.14	Education and Outreach	93002	
31-Jul	Kowalski's	$ 7.58	Education and Outreach	93002	
31-Jul	Kowalski's	$ 5.88	Education and Outreach	93002	
31-Jul	Kowalski's	$ 58.79	Education and Outreach	93002	
31-Jul	Kowalski's	$ 109.97	Education and Outreach	93002	
31-Jul	Kowalski's	$ 171.21	Education and Outreach	93002	
31-Jul	Holiday Station	$ 14.97	Education and Outreach	93002	
31-Jul	Office Max/Depot	$ 60.89	Education and Outreach	93002	
1-Aug	Kowalski's	$ 88.11	Education and Outreach	93002	
8-Aug	Lunds&Byerlys	$ 13.98	Education and Outreach	93002	
9-Aug	Cub Foods	$ 25.68	Education and Outreach	93002	
10-Aug	Panera	$ 265.21	Education and Outreach	93002	
10-Aug	Crumb Gourmet Deli	$ 8.31	Education and Outreach	93002	
10-Aug	Akl's Breadhaus	$ 17.00	Education and Outreach	93002	$ 1,406.03
3-Aug	US Plastic Corp	$ 125.37	AIS Inspection	94002	$ 125.37
14-Aug	ShopFLS	$ 384.50	Data Collection	100802	
23-Jul	Amazon	$ 19.56	Data Collection	100802	
24-Jul	Amazon	$ 101.26	Data Collection	100802	
26-Jul	Amazon	$ 51.93	Data Collection	100802	
3-Aug	Hach	$ 237.48	Data Collection	100802	
3-Aug	Northern Tool	$ 75.08	Data Collection	100802	
4-Aug	In Situ	$ 519.22	Data Collection	100802	
7-Aug	Science First	$ 192.08	Data Collection	100802	
15-Aug	Amazon	$ 64.07	Data Collection	100802	
16-Aug	Holiday Station	$ 75.31	Data Collection	100802	
18-Aug	Marathon	$ 21.76	Data Collection	100802	
18-Aug	General Delivery	$ 59.84	Data Collection	100802	
18-Aug	Merlins Ace Hdwe	$ 37.38	Data Collection	100802	
18-Aug	Best Buy	$ 46.10	Data Collection	100802	$ 1,885.57
21-Jul	Home Depot	$ 14.58	Office Cost	170402	
24-Jul	McAfee	$ 64.11	Office Cost	170402	
25-Jul	General Delivery	$ 45.25	Office Cost	170402	
26-Jul	Randy's Sanitation	$ 49.21	Office Cost	170402	
28-Jul	General Delivery	$ 52.74	Office Cost	170402	
4-Aug	General Delivery	$ 38.55	Office Cost	170402	
10-Aug	Microsoft	$ 80.46	Office Cost	170402	
11-Aug	General Delivery	$ 18.61	Office Cost	170402	$ 363.51
TOTAL PURCHASES		**$ 5,326.99**			**$ 5,326.99**
Total Credits					-
TOTAL DUE		**$ 5,326.99**			**$ 5,326.99**

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 August 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

JMSC, PLLC
St. Louis Park, MN
September 28, 2017

RESOLUTION NO. 17-

Riley-Purgatory-Bluff Creek Watershed District
Board of Managers

Delegating certain permit-approval authority to the Administrator

Manager _____ offered the following resolution and moved its adoption, seconded by Manager _____.

WHEREAS Minnesota Statutes sections 103D.341 and .345 direct watershed districts to adopt rules and issue permits to protect water resources and mitigate flood risk, and the Riley-Purgatory-Bluff Creek Watershed District has duly adopted rules, issues permits, and enforces rules and permits accordingly;

WHEREAS certain procedural requests for permit renewals or transfers from applicants and permittees are subject to defined standards, and are subject to straightforward administrative determination; and

WHEREAS the time and resources of the board, staff and permit applicants are best served by delegating to the Administrator the authority to approve such applications;

NOW THEREFORE BE IT RESOLVED that the Board of Managers delegates to the Administrator the authority to approve applications for assignment or renewal of valid permits, so long as the application is submitted in accordance and compliance with District Rule A (5); and

BE IT FURTHER RESOLVED that the Board of Managers directs the Administrator to maintain a log of assignment and renewal applications approved pursuant to this resolution and regularly provide a report to the Board of Managers summarizing assignments and renewals granted by the Administrator.

The authority delegated hereby is in addition to authority previously delegated by the Board of Managers to the Administrator.

The question was on the adoption of the resolution and there were ____yeas and ____nays as follows:

	Yea	Nay	Abstain
CHADWICK			
CRAFTON			
PEDERSEN			
WARD			
YETKA			

Upon vote, the chair declared the resolution _____.

Dated:

_____
Richard Chadwick, secretary

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

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

IN TESTIMONY WHEREOF, I set my hand this _____ day of _____, 2017.

_____
Richard Chadwick, secretary

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT
DRAFT PLAN AMENDMENT

7.4b Other Watershed Improvement Programs

7.4b.2 Lotus Lake Alum Treatment

Need

In 2017, the District completed the *Lotus, Silver, Duck, Round, Mitchell, Red Rock Use Attainability Analysis Update; Lake Idlewild and Staring Lake Use Attainability Analysis; and Lower Purgatory Creek Stabilization Study*. In this study, alum treatment was identified as a best management practice to reduce phosphorus internal concentrations.

The District has aggressively pursued carp research and management with Dr. Peter Sorensen at the University of Minnesota Aquatic Invasive Species Research Center, and the carp population in Lotus Lake was found to be relatively small. The District continues to monitor the carp population and in 2016 and 2017 confirmed that the carp population remains below the University's identified population density of concern. The District also worked with Dr. Raymond Newman of the University of Minnesota Department of Fisheries, Wildlife and Conservation Biology to determine that the plant population is relatively diverse with a moderate species richness. In 2014, non-native Eurasian watermilfoil and curly-leaf pondweed were both present in Lotus Lake but are not currently at levels of concern. However, the District will continue to monitor to assess if control is necessary before, during and after a whole-lake alum treatment.

Description

The District will implement an alum treatment program for Lotus Lake in the context of a combined effort to address both internal and external pollutant loads to the lake. An updated Use Attainability Analysis will guide the coordination of a phased alum treatment with other best management practices to address external loading and thereby provide an integrated approach to restoring Lotus Lake water quality and habitat.

The District will first conduct an alum dosing study to determine that the proper dose is applied, the alum treatment is effective and that the treatment targets the appropriate phosphorus sediment pool, and that the treatment does not involve adverse effects from overdosing and excessive costs. The dosing study will provide the necessary information for the developments of the treatment specifications, contractor selection, treatment monitoring and post application monitoring. The District anticipates several alum applications over a multi-year period, as guided by monitoring results.

Estimated Cost: $700,000 for bidding, permitting, specs, application observation, and follow up monitoring.

Funding

The District would expect to fund this project by means of its watershed-wide ad valorem levy. However, if there are cost-sharing or grant opportunities with other public agencies, the District would explore these as sources of funding as well.

7.4b.3 Rice Marsh Lake Alum Treatment

Need

In 2016, the District completed the *Rice Marsh Lake and Lake Riley Use Attainability Analysis Update*. In this study, alum treatment was identified as a best management practice to reduce phosphorus internal concentrations.

Since 2011, the District has been running an aeration unit on Rice Marsh Lake to control the carp population. The aeration runs during winter months so that native fish forage on carp eggs. The carp populations are monitored in Rice Marsh Lake and carp populations remains below the University determined population density of concern. Aquatic vegetation monitoring identified low frequencies of non-native curly-leaf pondweed in the lake. The District will continue to monitor to determine if curly-leaf pondweed control is necessary before, during and after alum treatment.

Description

The District will implement an alum treatment program for Rice Marsh Lake in the context of a combined effort to address both internal and external pollutant loads to the lake. An updated Use Attainability Analysis will guide the coordination of a phased alum treatment with other best management practices to address external loading and thereby provide an integrated approach to restoring Rice Marsh Lake water quality and habitat.

The District has conducted an alum dosing study to determine the proper alum dose that targets the appropriate phosphorus sediment pool, promotes the long-term effectiveness of the treatment, safeguards against adverse impacts of alum overdosing, and optimizes estimated dosing costs. The dosing study will provide information to support the development of treatment specifications, contractor selection, treatment monitoring and post application monitoring, if the Board elects to order the project. The District anticipates several alum applications over a multi-year period, as guided by monitoring results.

Estimated Cost: $150,000 for bidding, permitting, specs, application observation, and follow up monitoring.

Funding

The District would expect to fund this project by means of its watershed-wide ad valorem levy. However, if there are cost-sharing or grant opportunities with other public agencies, the District would explore these as sources of funding as well.

RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

DRAFT: Position description: Citizen Advisory Committee (CAC)

deadline: 27 Nov 2017

Position: Citizen Advisor
Type: Volunteer

Term: CAC memberships are renewed annually; no term limits

Time Commitment: CAC members meet on a regular basis. This may include monthly meetings and special topical meetings as needed. Citizen advisors are expected to attend 50% of these meeting and show commitment to volunteering.

Reports to: The District Administrator and the RPBCWD Board of Managers

Purpose: The CAC meets at the request of the RPBCWD Board of Managers to assist in developing programs and activities that help improve and protect the water resources of the RPBCWD. The CAC fulfills legislative requirements for watershed districts (Minnesota Statutes: Section 103D.331).

Scope of Responsibilities: In accordance with Minnesota Statutes § 103D.331, the CAC is organized to advise and assist the Riley-Purgatory-Bluff Creek Watershed District Board of Managers on all matters affecting the interests of the watershed, and to make recommendations to the managers on all projects and improvements. The duties of the CAC include: supporting the mission and goals of the RPBCWD; reviewing and commenting on reports, minutes, activities, programs and projects of the RPBCWD; considering issues pertinent to the functions and purposes of the RPBCWD; advising in decision-making; raising issues of concern from the public; providing guidance on and assisting with coordination of volunteer activities; reporting to the Board of Managers on the content of CAC meetings and resulting recommendations.

Membership Policy
Preference is given to applicants who:

- Are residents of the RPBCWD*
- Represent a balance of areas across the watershed district
- Are property owners, employers or employees in the RPBCWD

*Please check our website for District boundaries or call Michelle Jordan at 952-607-6481

Desired Qualifications:

- Interest in natural resource protection/management, education & outreach, planning, etc
- Ability to serve as a liaison to the RPBCWD for the area you live/work
- Ability to work and communicate effectively with others

Benefits:

- Learn more about the watershed and issues facing our land and water resources
- Become an engaged citizen and meet other community-minded people
- Participate in watershed activities and trainings

For more information on the actions and activities of the CAC, visit:
http://rpbcwd.org/about/citizen-advisory-committee/

Please send via email to mjordan@rpbcwd.org, or to the address below:
18681 Lake Drive East, Chanhassen MN 55317

Deadline:

27 November 2017

RILEY PURGATORY BLUFF CREEK
WATERSHED DISTRICT

Application:
Citizen Advisory Committee (CAC)

deadline: 27 Nov 2017

Name:

Address (if you are employed in the District, please list address of employment):

Email: Phone Number:

Why are you interested in becoming a Citizen Advisor for the Watershed District?

What do you hope to accomplish while serving on the committee?

What are the strengths and/or qualifications you can bring to help this committee fulfill its purpose and duties?

One of the roles of CAC members is to identify education needs in the community. What is one need, related to water, that you have seen?

Are you able to commit to attending monthly meetings and special topical meetings as needed?

☐ **yes** ☐ **no**

Media & Government Affairs

540 Diffley Road, St. Paul, MN 55123
Office: 651-452-8506 Fax: 651-686-8679 E-mail: raybohnmga@aol.com

2017 MAWD Annual Meeting Resolution Process

August 16, 2017

TO: Watershed Districts

FROM: Barb Haake
MAWD Policy/Resolutions Committee Chair

SUBJECT: 2017 Resolution Process and Time Line

Enclosed is your 2017 Resolution packet for the MAWD Annual Meeting. The Policy/Resolutions Committee will work under the following process for the upcoming 2017 MAWD Annual Meeting Nov 30 – Dec 2, 2017.

* Resolutions passed by the membership at Annual Meetings will remain MAWD policy from year to year unless MAWD members, the Board of Directors, or the Policy/Resolutions Committee brings that policy back to the full membership during the resolutions process for updating and discussion at any regular annual meeting. There will be no need to keep revisiting MAWD standing policy on issues like flood mitigation, problem beaver control, etc. once a policy decision has been made by the membership.

* Proposed resolutions submitted by members will be reviewed by the Policy/Resolutions Committee and policy recommendations will be made to the membership and Board of Directors at the Annual Meeting.

Outlined below is the process and time line for resolutions to be considered at the 2017 Annual Meeting. For resolutions to be considered, you must meet the time line outlined below and they must be submitted in resolution format accompanied by the resolution background information sheet (see sample – we encourage submission in this format via e-mail to the MAWD office), both attached to this memo. All resolutions received by the MAWD office will be acknowledged.

Any resolution proposed after the deadline may only be brought to the floor if considered and forwarded to the membership by the MAWD Board of Directors. No floor resolutions will be considered.

1. Aug-Sept.-Oct. 2017	Districts discuss and approve resolutions. Complete background information sheet on each resolution.
2. Forward proposed resolutions no later than Friday, October 20th.	E-mail resolutions to raybohnmga@gmail.com

Note: Resolutions received after October 20th will not be presented to the membership by the Policy/Resolutions Committee.

3. Resolution Review - Oct. 20	The Policy/Resolutions Committee will organize and review resolutions, garner further information when necessary, and make recommendations on the proposed resolutions by the end of October.
4. November 1, 2017	Proposed resolutions with committee recommendations will be mailed to each watershed district by Nov. 1st. Districts should work with their MAWD Regions and MAWD Board concerning education and awareness of their proposed resolutions.
5. Nov 30-Dec2, 2017	Consideration of proposed resolutions at MAWD Annual Meeting.

It will be the responsibility of each district to provide their board members with copies of the proposed resolutions.

Please call the MAWD office at 651-452-8506 or email Ray Bohn at raybohnmga@gmail.com if you have any questions. Thank you.

Attachments: Sample resolution and resolution background worksheet.

2017 MAWD Resolutions

Background Information

Proposing District: _____

Contact Name: _____

Phone Number:

(day) _____ (cell) _____ (evening) _____

Email Address: _____

Resolution Title (brief subject statement): _____

_____

Factual points which provide background to, or a basis for, the issue addressed by Resolution:

Based upon the above facts, what is the proposed solution to the problem discussed above:

Likely Reaction by the Public or Other Governmental Units?

This issue is of importance (Check one):

To just our District: _____

To just our Region: _____

To the entire State: _____

Resolution

Watershed District Input on MN DNR Buffer Protection Map

Whereas, the Minnesota Department of Natural Resources (MN DNR) has been tasked with the creation of a buffer protection map that will include public waters subject to the statewide 50' average width buffer requirement and the public drainage system ditches that are subject to the statewide 16.5 minimum width buffer requirement by July 2016, under MN Statutes 103F.48; and

Whereas, local government units, including watershed districts, are conducting activities that improve water quality and assist with water quantity control, on both public & non-public waters; and

Whereas, local government units, including watershed districts, have experience in determining buffer needs for water quality;

NOW, THEREFORE, BE IT RESOLVED that the Minnesota Association of Watershed Districts call for the MN DNR to offer opportunities for local government units to offer input on the creation of the buffer protection map.

Submitted by the Clearwater River Watershed District

2017 MAWD Resolutions

Background Information

Proposing District: _____

Contact Name: _____

Phone Number:

(day) _____ (cell) _____ (evening) _____

Email Address: _____

Resolution Title (brief subject statement): _____

_____

Factual points which provide background to, or a basis for, the issue addressed by Resolution:

Based upon the above facts, what is the proposed solution to the problem discussed above:

Likely Reaction by the Public or Other Governmental Units?

.

This issue is of importance (Check one):

To just our District: _____

To just our Region: _____

To the entire State: _____

2015 MAWD Resolutions Background Information

Proposing District: Clearwater River Watershed District

Contact Name: Cole Loewen, Administrator

Phone Number:
(day) 320.274.3935 (cell) (evening)

Email Address: cole.loewen@cwd.org

Resolution Title (brief subject statement): Watershed District Input on MN DNR Buffer Protection Map

Factual points which provide background to, or a basis for, the issue addressed by Resolution:

MN Statutes 103F.48 provides for the MN Dept. of Natural Resources (MN DNR) to develop a "buffer protection map" in order to determine where buffers will be required under the law. However, the statute does not require the MN DNR to solicit or provide opportunity for input on the creation of this map from the entities that are mostly intimately involved with buffer, local government units (i.e. counties, soil & water conservation districts, watershed districts). There has been little to no indication that the MN DNR plans to provide these opportunities.

By not providing these opportunities, the state misses out on a deep well of information on public waters and drainage systems from the local level. This also creates opportunities for misunderstandings, especially if the MN DNR makes a determination on what is a public water or drainage system that conflicts with said local knowledge.

Based upon the above facts, what is the proposed solution to the problem discussed above:

By providing ample opportunity for local government units to offer input on the MN DNR's creation of the buffer protection map, the state gains local knowledge, while providing more transparency to a process that will be subject to scrutiny from a multitude of angles.

Likely Reaction by the Public or Other Governmental Units?

It is expected that local government units will appreciate the opportunity to provide input.
The public would likely appreciate having all of their government units providing input.
The MN DNR may oppose it on the grounds that they are using existing public waters inventory and public drainage records to create said map, thereby making additional input unnecessary.

This issue is of importance (Check one):

To just our District: _____

To just our Region: _____

To the entire State: __X____