2018 Valley Branch Watershed District Infrastructure and Conveyance Systems Inspections

Prepared for
Valley Branch Watershed District Board of Managers

December 2018
# 2018 Valley Branch Watershed District Infrastructure and Conveyance Systems Inspections
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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables</td>
<td>ii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>ii</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>ii</td>
</tr>
<tr>
<td>Certifications</td>
<td>iii</td>
</tr>
<tr>
<td>1.0 Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>2.0 Systems Inspections</td>
<td>3</td>
</tr>
<tr>
<td>2.1 Project 1007</td>
<td>3</td>
</tr>
<tr>
<td>2.2 Echo Lake Outlet</td>
<td>7</td>
</tr>
<tr>
<td>2.3 Weber Pond Outlet</td>
<td>7</td>
</tr>
<tr>
<td>2.4 Silver Lake Spent Lime Filter</td>
<td>7</td>
</tr>
<tr>
<td>2.5 Silver Lake Bioretention Basin</td>
<td>8</td>
</tr>
<tr>
<td>2.6 Silver Lake Outlet</td>
<td>10</td>
</tr>
<tr>
<td>2.7 Long Lake Ravine Stabilization Project</td>
<td>11</td>
</tr>
<tr>
<td>2.8 DeMontreville Ravine Stabilization Project</td>
<td>11</td>
</tr>
<tr>
<td>2.9 Olson Lake Estates Pond Outlet Project</td>
<td>16</td>
</tr>
<tr>
<td>2.10 Raleigh Creek</td>
<td>17</td>
</tr>
<tr>
<td>2.11 Raleigh Creek Bank Stabilization Project</td>
<td>18</td>
</tr>
<tr>
<td>2.12 Farney Creek Stabilization Project</td>
<td>18</td>
</tr>
<tr>
<td>2.13 Goetschel Pond Ravine Stabilization Project</td>
<td>19</td>
</tr>
<tr>
<td>2.14 Goose Lake Ravine Stabilization Project</td>
<td>20</td>
</tr>
<tr>
<td>2.15 Downs Lake Flood Duration Reduction Project</td>
<td>21</td>
</tr>
<tr>
<td>2.16 Valley Creek</td>
<td>22</td>
</tr>
<tr>
<td>2.17 Oakgreen Avenue Infiltration Basin</td>
<td>27</td>
</tr>
<tr>
<td>2.18 Valley Creek Ravine Stabilization Projects—Landucci and Moynagh Ravines</td>
<td>28</td>
</tr>
<tr>
<td>2.19 Blasko Dam Removal Project</td>
<td>28</td>
</tr>
<tr>
<td>2.20 Valley Creek Upstream Stabilization Project</td>
<td>29</td>
</tr>
<tr>
<td>2.21 Valley Creek Downstream Stabilization Project</td>
<td>29</td>
</tr>
<tr>
<td>2.22 30th and Trading Post Ravine Stabilization Project</td>
<td>32</td>
</tr>
<tr>
<td>2.23 Kelle’s Creek</td>
<td>33</td>
</tr>
</tbody>
</table>
2.24 Swede Hill Creek Subwatershed .............................................................................................................................40
2.25 Cost-Share Projects with More Than $5,000 in VBWD Contribution .................................................................41
3.0 Non-System Specific Activities .....................................................................................................................................43
  3.1 Web Mapping ................................................................................................................................................................43
  3.2 Web-Based Permit Inspection Reporting ..................................................................................................................43
  3.3 Beaver-Removal Cost-Share Program ......................................................................................................................43
  3.4 General Maintenance ..................................................................................................................................................44
  3.5 Locating Services ..........................................................................................................................................................44
  3.6 Major Repair Funding Approaches ........................................................................................................................45
  3.7 Long Lake Sediment Delta Assessment ..................................................................................................................45
  3.8 Sunfish Lake Ravines Inspection and Feasibility Study ..............................................................................45
4.0 Maintenance Work Performed in 2018 .....................................................................................................................47
5.0 Recommendations ............................................................................................................................................................56
  5.1 Inspections ......................................................................................................................................................................56
  5.2 Operations and Maintenance Items ......................................................................................................................57
  5.3 Maintenance Costs .......................................................................................................................................................59

List of Tables
Table 2-1 Prioritized Significant Erosion Locations for Valley Creek ............................................................... 23
Table 2-2 Prioritized Significant Erosion Locations for Kelle’s Creek ............................................................... 34
Table 2-3 St. Croix Trail South Ravine Inspection—Erosion Summary ............................................................. 35
Table 2-4 Cost-Share Projects Receiving More than $5,000 in VBWD Contributions ................................ 41
Table 5-1 2019 Recommended Inspection Activities ............................................................................................. 56
Table 5-2 Recommended Operations and Maintenance Activities Based on 2018 Inspections .......... 57
Table 5-3 Summary of Maintenance Costs ................................................................................................................ 59

List of Figures
Figure 1-1 Infrastructure and Conveyance Systems ................................................................................................. 2
Figure 2-1 St. Croix Trail South Ravine Inspection—Erosion Locations ............................................................... 36
Figure 5-1 Maintenance Recommendations ............................................................................................................... 60

List of Appendices
Appendix A 2018 Eagle Point Lake Dam Inspection Report
Appendix B 2018 Rest Area Pond Dam Inspection Report
Appendix C 2018 Washington Conservation District Inspection Reports of VBWD Cost-Share Projects
Certifications

I hereby certify that this 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.

Nathan Campeau
PE #: 44917

December 5, 2018

Date
1.0 Executive Summary

The Valley Branch Watershed District (VBWD) owns, operates, and/or maintains a number of infrastructure and conveyance systems throughout the VBWD, including streams, storm sewer pipes, manholes, catch basins, water level control structures, infiltration basins, bank stabilizations, and dams. Natural and constructed, these systems convey, store, or treat surface water throughout the VBWD.

This report describes 24 VBWD systems (Figure 1-1) inspected by or to be inspected by Barr on a regular basis. Observations made by Barr staff during each inspection, including recommendations for maintenance and further inspection are provided. This report also documents maintenance activities performed by VBWD in 2018, including many activities recommended by Barr in the 2017 inspection report. Where maintenance or inspection are recommended in 2019, a cost estimate and priority level (Low, Medium, or High) are provided.

In general, the VBWD systems continue to perform well, with some exceptions as documented in the report. We recommend that the Managers authorize Barr to continue monitoring VBWD systems (natural and constructed) in 2019. Several of the systems can be inspected less than once a year (biennially, triennially, etc.); those systems would not be scheduled for re-inspection until 2020 or beyond. We also recommend that 21 of the 24 systems be inspected by Barr staff in 2019, for an estimated cost of $50,500.

Barr recommends 27 maintenance activities, classified as Low, Medium, or High priority. While completing all repairs would cost an estimated $589,500, we recommend that VBWD authorize the completion of all High-priority maintenance activities, for an estimated cost of $187,500, bringing the total for inspection and maintenance to $238,000 (assuming only High-priority items are addressed).
2.0 Systems Inspections

This section summarizes Barr’s inspections of Valley Branch Watershed District (VBWD) infrastructure and natural conveyance systems and subsequent maintenance recommendations. VBWD systems are shown on Figure 1-1 and maintenance recommendations are shown on Figure 5-1. Systems discussed in this report are generally organized geographically from northwest to southeast.

2.1 Project 1007

2.1.1 Background

In 1987, the VBWD constructed Project 1007—a large flood-control project ($4.25 million). This project provides an outlet for many landlocked and flood-prone lakes in the northwest portion of the watershed, directing water to a Minnesota Department of Transportation (MNDOT) storm sewer along Interstate 94 and, ultimately, to the St. Croix River. The project included construction of new outlets for Long Lake, Lake Olson, Deer Pond, Hedges Pond, Hedges Bog, Lake Jane, Crombie Pond, Beutel Pond, Eagle Point Lake, Lake Elmo, Horseshoe Lake, the West Lakeland Storage Site (North, Middle, and South Ponds), and the MNDOT Rest Area Pond. VBWD has operated Project 1007 since construction. Project 1007 comprises approximately 5 miles of pipe, 60 manholes and water level control structures (including over 40 catch basins/manholes), two dams, and approximately 2 miles of open channels.

VBWD performs periodic maintenance on system components, as needed. This includes annual mowing of the Rest Area Pond and the side slopes of the channels between Horseshoe Lake and Interstate 94 and the West Lakeland Storage Site South Pond.

In 2018, VBWD replaced the wooden stop logs in the Lake Olson outlet (Structure 11) with aluminum stop logs, removed various downed trees and brush piles in and along Raleigh Creek to maintain unobstructed flow through the creek, and performed routine maintenance on the entire Project 1007 system. All 2018 maintenance activities are listed in Section 4.0.

Additionally, during VBWD annual inspections in October 2018, Barr met with The Royal Golf Club staff to investigate downed trees and abandoned pedestrian bridges in the Lake Elmo outlet channel. The Royal Golf Club staff removed the abandoned pedestrian bridges and downed trees in November 2018.

2.1.2 Observations

Barr staff inspect Project 1007 open channels, water level control structures, and dams on an annual basis. The remaining manholes and catch basins are inspected every 3 years on a rotating basis, unless maintenance activities require more frequent inspection. On October 23 and 24, 2018, Patrick Brockamp, PE, Josh Phillips, and Jeff Brower conducted the regular (annual) inspection of Project 1007 components, as well as all 2018 maintenance activities performed by VBWD-hired contractors. On May 25, 2018, Pat Brockamp, PE, and Jeff Brower inspected the Eagle Point Lake Dam, and on October 31, 2018, Nathan Campeau, PE, and representatives from MNDOT inspected the Rest Area Pond Dam (both dams are part of the Project 1007 system). While most open channels, manholes, catch basins, and structures were accessible for inspection, some features were not fully accessible due to high water elevations.
Appendices A and B contain separate inspection reports for Eagle Point Lake Dam and the Rest Area Pond Dam, previously provided to the Managers.

In 2018, MNDOT provided Barr a video of pipe inspection near the I-94 weigh station, from Structure 1 to MH8 (approximately 3,576 feet). Josh Phillips reviewed the video and generally found the storm sewer in good condition. The video showed minimal water in the storm sewer. We noted various longitudinal and circumferential cracks in the pipe, but our observations do indicate a need for repair.

Barr staff noted a number of locations that require maintenance, as noted in Section 2.1.3.

2.1.3 Recommendations

All of Project 1007’s components appeared to be performing adequately; however, we suggest that the Managers consider the maintenance items listed below. Relevant photos are provided following the recommendations list.

1. Continue annual mowing of the Rest Area Pond Dam and spillway.
2. Continue annual mowing of the side slopes of the channels between Horseshoe Lake and Interstate 94, including the West Lakeland Storage Site South Pond.
3. Remove accumulated dead trees and debris near the Rest Area Pond outlet and within the pipe to Structure 2 (Photo 1). The Managers authorized Buelow Excavating Inc. to perform this work in 2016; however, due to high water levels in 2016, 2017, and 2018 this work could not be completed. If water levels permit, this work will be performed in 2019.
4. Implement animal management at the Rest Area Pond Dam at the burrows on the downstream side of the dam near the transmission tower (Photo 2) and continue to monitor and mitigate animal activity at the Rest Area Pond Dam.
5. Replace wooden stop logs with aluminum stop logs (Photo 3) at water level control structures, including structures: 3, 4, 5, 9, 10, and 12.
6. Inspect Deer Pond outlet channel and outlet pipe and investigate vegetation removal and sediment dredging to maintain outlet flow capacity (Photo 4).
7. Inspect the Project 1007 storm sewer via video. This storm sewer has not been inspected since construction in 1987; many municipalities conduct video inspections of their infrastructure every 5 to 10 years.

Barr also recommends continuing the annual inspection of Project 1007 outlet control structures, channels, and associated dams and continuing the rotating triennial inspection of manholes and catch basins.
Photo 1 (November 2015): Barr recommends removing dead trees and debris from the Rest Area Pond outlet. (There is no 2018 photo because the outlet is under water.)

Photo 2 (October 2018): Barr recommends investigating the need for animal management at the Rest Area Pond Dam, as suggested by burrows located on the downstream side of the dam near the transmission tower. Barr also recommends continuing to monitor and mitigate animal activity at the Rest Area Pond Dam as part of annual inspections.
Photo 3 (January 2017): Barr recommends replacing wooden stop logs with aluminum stop logs at all water control structures, including structures 3, 4, 5, 9, 10, and 12.

Photo 4 (October 2017): Barr recommends inspecting the Deer Pond outlet channel and outlet pipe and investigating vegetation removal and sediment dredging to maintain outlet flow capacity.
2.2  Echo Lake Outlet

2.2.1  Background
In 1999, the City of Mahtomedi reconstructed the Echo Lake outlet to restrict outflows and protect downstream areas from flooding, as required by the VBWD. In 2002, the city installed a metal fence in front of the outlet to prevent debris from accumulating on the outlet structure.

2.2.2  Observations
Patrick Brockamp, PE, and Josh Phillips inspected the Echo Lake outlet on October 24, 2018, and found the structure in good condition. A dead tree had also fallen along the path, adjacent to the structure; Barr partially cleared the tree to facilitate inspection. The inlet was submerged and the upstream water level was at the elevation of the weir. The 4-inch-diameter low-flow orifice was clogged with debris and vegetation at the time of the inspection; Barr cleared the orifice during the inspection to restore flow through the structure.

2.2.3  Recommendations
Barr recommends continuing the annual inspection of this project.

2.3  Weber Pond Outlet

2.3.1  Background
Weber Pond is a 7.5-acre wetland in the City of Mahtomedi that is split in two by an old streetcar embankment. In 2001, VBWD constructed a restricted outlet from the larger upstream portion of Weber Pond to the smaller downstream portion to replace the previous temporary outlet and limit the flood level of Long Lake.

2.3.2  Observations
Patrick Brockamp, PE, and Josh Phillips inspected the Weber Pond outlet on October 24, 2018, and found the structure in good condition. The 9-inch-diameter low-flow orifice was partially clogged with debris and vegetation at the time of inspection; Barr cleared the orifice during the inspection to restore full flow through the structure.

2.3.3  Recommendations
Barr recommends continuing the annual inspection of this project.

2.4  Silver Lake Spent Lime Filter

2.4.1  Background
In 2015, the VBWD applied for and obtained a FY2016 State of Minnesota Clean Water Fund (CWF) grant to implement best management practices (BMPs) to reduce phosphorus loading from the watershed tributary to Silver Lake. The CWF grant included an "enhanced filtration" stormwater practice in the SLV-10 subwatershed located north of Silver Lake in the City of Maplewood.
In 2017, Barr met with the City of Maplewood and the City of North St. Paul to discuss options for BMP design in the SLV-10 subwatershed. Barr designed a spent-lime filter that treats drainage from approximately 50% of the watershed tributary to Silver Lake.

In August 2018, the VBWD signed a joint powers agreement (JPA) defining roles and responsibilities related to the Silver Lake spent-lime filter. Among other items, the JPA indicates that the VBWD will annually inspect the site and perform routine maintenance of the filter. The VBWD will be responsible for removal and replacement of the spent-lime filter media when performance dictates (estimated at approximately 10 years). The VBWD contracted with Rachel Contracting, Inc., to construct the Silver Lake spent-lime filter in the fall of 2018.

2.4.2 Observations

Construction of the Silver Lake spent-lime filter began in September 2018. Rachel Contracting completed basin grading, filter media placement, and all structural elements from September 2018 through November 2018. Planting and site restoration is planned for the spring of 2019. The spent-lime filter is currently “on-line” and stormwater will be routed through the basin after snowmelt.

2.4.3 Recommendations

As part of the CWF grant, Barr will monitor the planting and site restoration planned in the spring of 2019 and through the duration of the 1-year guarantee period for plantings. Following construction, Barr recommends periodic inspection of the basin during or following periods of precipitation to confirm that the filter is functioning as intended. At the request of the VBWD Managers, Barr will take samples of influent and effluent stormwater and test for total and dissolved phosphorus concentrations to assess BMP performance. The stormwater monitoring is not included in the budget values included in this report.

2.5 Silver Lake Bioretention Basin

2.5.1 Background

In 2000, the VBWD applied for and received a MetroEnvironment Partnership Grant to construct the Silver Lake Bioretention Basin. At the time, the stormwater management effectiveness of bioretention basins had not been studied to any great extent. The project was intended to treat previously untreated stormwater runoff prior to discharging to Silver Lake and included designing, constructing, studying, and documenting the effectiveness of bioretention. The VBWD designed the project and the City of North St. Paul did the original construction and planting. After the original construction, the VBWD made enhancements to the basin to improve infiltration. The basin is approximately 0.4 acres and has a tributary area of about 7.4 acres.

In 2015, the VBWD applied for and obtained a FY2016 State of Minnesota Clean Water Fund (CWF) grant to implement BMPs to reduce phosphorus loading from the watershed tributary to Silver Lake. The CWF grant included improvements to the Silver Lake Bioretention Basin.

In January 2017, the VBWD and the City of North St. Paul signed a memorandum of understanding (MOU) regarding roles and responsibilities related to the Silver Lake Bioretention Basin. Among other items, the
MOU indicates that the VBWD will annually inspect the site and provide a memorandum to the city with ordinary and necessary maintenance recommendations. The city will then contract with a qualified professional landscape maintenance company, facilitate, and pay for all maintenance at the site beginning the fifth year after construction. VBWD performed basin improvements in 2017 and 2018, with final revegetation completed in June 2018. VBWD’s contractor will perform vegetation management under the original construction contract through June 2019. The VBWD will be responsible for vegetation management through June 2023, after which responsibility will be transferred to the city.

2.5.2 Observations

Greg Williams, PE, of Barr observed the construction of the basin through final revegetation in June 2018. Following construction, turf grass has successfully been established around the perimeter of the basin. Some weed growth within the basin has occurred due to inadequate vegetation management within the 1-year maintenance period included in the original construction contract. Some of the plugs planted within the basin are failing.

In fall 2018, the City of North St. Paul performed street reconstruction work adjacent to the basin. Significant rainfall occurred on September 20, 2018. At that time, no erosion control was in place upstream of the basin, and the basin’s primary outlet was blocked with sediment-control logs. As a result, significant sedimentation occurred in the south end of the basin and water levels in the basin rose above the emergency overflow swale. Within 24 hours following the storm, water within the basin had completely infiltrated. No permanent damage to basin earthwork occurred, but further observation is needed to determine the impact of the sedimentation on vegetation and infiltration performance.

2.5.3 Recommendations

As part of the CWF grant, Barr will continue to monitor the condition of vegetation in the basin through the end of the 1-year vegetation maintenance period in June 2019. Plugs that are dead at the end of the 1-year vegetation maintenance period will be replanted under the original construction contract. Prior to June 2019, Barr will assist the VBWD in hiring a contractor to perform an additional 4 years of basin vegetation management prior to transferring maintenance responsibility to the city, as described in the MOU. Additionally, Barr will continue to inspect the basin after significant rainfall events to determine if the sedimentation resulting from the September 20, 2018, storm has permanently impacted basin performance.

Following the conclusion of the City of North St. Paul road reconstruction project, anticipated in the summer of 2019, Barr recommends that the VBWD request that the city hire a contractor to remove the deposited sediment from the south end of the basin and replace vegetation that has died as a result of excess sedimentation (Photo 5).
Following completion of the City of North St. Paul’s road reconstruction project, Barr recommends coordinating with the city to remove deposited sediment from the Silver Lake Bioretention Basin.

2.6 Silver Lake Outlet

2.6.1 Background

The outlet from Silver Lake is a V-notch weir located on the west side of Century Avenue (T.H. 120) on the east side of the lake. The outlet is located in the City of Oakdale and Washington County, but Ramsey County has historically inspected and maintained the outlet. Since Silver Lake is tributary to Project 1007, VBWD’s flood-control project, it is important that the VBWD not allow modifications to the Silver Lake outlet that would negatively affect the proper functioning of Project 1007. Responding to a September 27, 2018, Ramsey County request, the VBWD has agreed to take over inspection and maintenance responsibilities from the county for the Silver Lake outlet effective January 1, 2020.

2.6.2 Observations

Barr did not inspect the Silver Lake outlet in 2018.

2.6.3 Recommendations

Barr recommends inspecting the Silver Lake outlet in 2019 in anticipation of assuming inspection and maintenance responsibility for the outlet effective January 2020. Following this preliminary inspection, Barr anticipates providing a recommendation for an inspection frequency, likely on an annual basis.
2.7  Long Lake Ravine Stabilization Project

2.7.1  Background
The Long Lake Ravine Stabilization Project was constructed by the VBWD in 2009. The project included channel grading, riprap, and natural vegetation to stabilize the head of a ravine entering Long Lake from the west. A portion of the stream entering the ravine is contained within a culvert and manhole to give neighboring landowners access to their property.

2.7.2  Observations
Jeff Weiss, PE, inspected this project on November 7, 2018. The project area was in good condition with well-established vegetation and no signs of erosion. There was water flowing through the project area, and velocities appeared to be low in the re-meandered section of the site. The rock vanes toward the downstream end of the project appeared to be intact and functioning as intended.

2.7.3  Recommendations
Barr recommends continuing the biennial inspection of this project, with the next inspection scheduled for 2020.

2.8  DeMontreville Ravine Stabilization Project

2.8.1  Background
The DeMontreville Ravine Stabilization Project was constructed by the VBWD in 2009. The ravine runs through the City of Lake Elmo’s DeMontreville Wildlife Park, connecting the ponds downstream of Long Lake with Lake DeMontreville. This VBWD project included installing boulder cross vanes, straight vanes, and natural vegetation to repair and stabilize the stream banks throughout the ravine. To reduce the amount of sediment entering Lake DeMontreville, VBWD also installed a sedimentation basin. In 2015, VBWD installed a baffle box and a flat, slotted grate at Catch Basin 47 to reduce plugging caused by leaf and tree debris and promote more efficient flow through the outlet.

2.8.2  Observations
On October 24, 2018, Patrick Brockamp, PE, and Josh Phillips inspected the project. The vegetation along the entire ravine is well-established, including the tree and shrub plantings. The boulder straight vanes appear to have partially washed away and are not easily identifiable in the channel. The boulder cross vanes appeared to be in good condition, but contained minor built-up debris and vegetation that partially obstructed flow. The debris and vegetation at cross vane No. 2 has caused minor erosion on both channel banks (Photo 6). Barr staff removed the built up debris and vegetation at all boulder cross vanes during the inspection to restore unobstructed flow through the ravine (Photo 7). Barr observed a downed tree upstream of cross vane No. 2 over the ravine. Barr removed a portion of the downed tree during the inspection, but was unable to remove it entirely.

Barr observed accumulated sediment in the DeMontreville Ravine sedimentation basin. The basin is full, allowing additional sediment to continue to flow downstream into Lake DeMontreville. In previous years’
inspections, Barr observed accumulated sediment near the outlet from DeMontreville Ravine into the lake. This year, Barr did not observe any accumulated sediment in the lake; however, this may be partially due to high lake levels at the time of the inspection. In past years, Barr observed vegetation growing throughout the sedimentation basin; however, vegetation was not present in the sedimentation basin since last year’s inspection. VBWD did not perform any vegetation removal and the City of Lake Elmo Public Works Department stated that they did not remove the vegetation, either.

The improvements at Catch Basin 47 appear to be functioning well, but the west side of the catch basin and baffle box was significantly overgrown with vegetation at the time of the inspection. Barr cleared and removed vegetation around the catch basin and baffle box to restore full flow through the outlet. (Photo 8 and Photo 9).

Photo 6 (October 2018): Barr observed minor bank erosion on both sides of the channel at cross vane #3.
Photo 7 (October 2018): Barr staff removed debris from DeMontreville Ravine during inspection.

Photo 8 (October 2018): A photo of Catch Basin 47 and the baffle box shows vegetation prior to removal.
2.8.3 Recommendations

The DeMontreville Ravine is providing adequate conveyance of flows from the ponds downstream of Long Lake to Lake DeMontreville; however, we suggest that the Managers consider the maintenance items listed below. Relevant photos are provided following the recommendations list.

1. Remove the remainder of the downed tree upstream of cross vane #2 (Photo 10).
2. Excavate deposited sediment from the DeMontreville Ravine sedimentation basin to restore the sediment-removal capacity of the basin (Photo 11 and Photo 12). State rules require sediment sampling and permitting before removal. Depending on sampling results, landfill disposal may be necessary.
3. Excavate deposited sediment from Lake DeMontreville near the outlet from Project 1007 catch basin 47, if present. State rules require sediment sampling and permitting before removal. Depending on sampling results, landfill disposal may be necessary.

Barr also recommends continuing the annual inspection of this project.
Photo 10 (October 2018): Barr recommends removing the remainder of the downed tree upstream of cross vane #2.

Photo 11 (October 2018): Barr recommends removing the accumulated sediment in the basin on the downstream end of DeMontreville Ravine.
Photo 12 (October 2018): Barr recommends removing the accumulated sediment in the basin on the downstream end of DeMontreville Ravine.

2.9 Olson Lake Estates Pond Outlet Project

2.9.1 Background

VBWD constructed the Olson Lake Estates outlet in 1996 to connect the overflow from the Olson Lake Estates Pond (located west of Lake Olson in an Oakdale housing development) to Project 1007. This allows the stormwater runoff from the housing development to bypass Lake Olson and discharge to Project 1007 downstream of Crombie Pond—protecting the water quality of Lake Olson. The project included the construction of 19 manholes. These are inspected every 3 years on a rotating basis, unless maintenance activities necessitate more frequent inspection.

2.9.2 Observations

On October 24, 2018, Patrick Brockamp, PE, and Josh Phillips inspected six manholes and found them all to be in good condition with 0–2 inches of standing or flowing water in the system. Barr observed minor coarse sediment and rocks in MH 12 and MH 15, a casting that is slightly offset relative to the structure cone and top slab at MH 15, and partially cracked castings rings at MH 6. These issues do not appear to be negatively affecting the system. Barr observed significant vegetation overgrowth at MH 12, but cleared and removed the vegetation to provide access to the structure for maintenance and inspection. Barr also observed a 7-inch-diameter maple tree growing adjacent to MH 9, within 1 inch of the casting cover opening.
2.9.3 **Recommendations**

The Olson Lake Estates Pond Outlet Project components appeared to be performing adequately; however, we suggest that the Managers consider the maintenance items listed below. Relevant photos are provided following the recommendations list.

1. Coordinate with the City of Lake Elmo to remove the 7-inch-diameter maple tree adjacent to MH 9 to ensure that the tree does not damage the structure or casting or grow over the cover and seal the structure (Photo 13).
2. Video inspect the portion of storm sewer not inspected by Washington County in 2017. Many municipalities conduct a video inspection of their infrastructure every 5 to 10 years.
3. Inspect MH 6, 12, and 15 on an annual basis to monitor deterioration.

Barr also recommends continuing the rotating triennial inspection of this project.

![Photo 13 (October 2018): Barr recommends coordinating with the City of Lake Elmo to remove the 7-inch-diameter tree adjacent to MH 9 to ensure that the tree does not damage the structure or casting or grow over the casting cover and seal the structure.](image)

**2.10 Raleigh Creek**

**2.10.1 Background**

Raleigh Creek is a perennial stream that drains water from portions of Oakdale and Lake Elmo, ultimately discharging to Eagle Point Lake. Downstream of Stillwater Boulevard, Raleigh Creek is used as a conveyance for, and inspected as part of, Project 1007 (Section 2.1). The Raleigh Creek Bank Stabilization
Project (Section 2.10) is at two locations between the Union Pacific Railroad and Stillwater Boulevard (CSAH 6).

### 2.10.2 Observations
While Barr staff have regularly observed several reaches of Raleigh Creek during inspection of other projects, Barr staff most recently performed a comprehensive inspection of the creek (including the areas referenced in Section 2.1 and Section 2.10) in June 2016.

### 2.10.3 Recommendations
Barr recommends continuing the triennial inspection of the entire creek, with the next inspection in 2019.

### 2.11 Raleigh Creek Bank Stabilization Project

#### 2.11.1 Background
The VBWD Raleigh Creek Bank Stabilization Project, constructed in 2009, includes two reaches. The first reach is in Oakdale’s Anna’s Grove development, located between the railroad tracks and 31st Street North, primarily on City of Oakdale property. A small section of the creek meanders onto private property, currently owned by Tony Ulrich (7650 31st Street North). The second reach is approximately 350 feet upstream of Tablyn Park in Lake Elmo on private properties currently owned by David Moore, Jr. (8680 Stillwater Boulevard) and Michael Reid (8740 Stillwater Boulevard). Stabilization work included installation of cross vanes for grade control, two new outlets for stormwater ponds, root wads, live stakes, and plantings.

#### 2.11.2 Observations
Jeff Weiss, PE, inspected this project on November, 7 2018. Most areas remained in stable condition. Minor erosion previously documented upstream of a rock vane installed on the Moore property has not worsened.

#### 2.11.3 Recommendations
Barr recommends continued biennial monitoring of the minor erosion on the Moore property and the stream upstream of the property to determine if additional action is necessary. Although the biennial inspection of these specific properties would be scheduled for 2020, the entirety of Raleigh Creek is slated for inspection in 2019, which will include these properties (see Section 2.10).

### 2.12 Farney Creek Stabilization Project

#### 2.12.1 Background
VBWD constructed the Farney Creek Stabilization Project in 2005 on the property currently owned by Aaron and Trista Goldstrohm (8171 21st Street North) within the Torre Pines subdivision of Lake Elmo. In March 2013, VBWD installed riprap to repair bank erosion caused by a July 2011 storm. In May 2013, the contractor returned to make final adjustments and repair minor damage to the lawn and sprinkler caused
during riprap installation. In the spring of 2014, the homeowners noted new erosion downstream of the repaired area and adjacent to a private walking bridge.

In 2015, the former owners of the home at 8219 21st Street North (Joe and Tammy Dunckel), downstream of the Goldstrohms, also contacted the VBWD Engineer regarding eroding banks on their property. David and Beverly Liebenow currently own the property. Barr assessed the erosion in 2015 and 2017, and in 2017, recommended stabilizing the creek in this area by stabilizing a head cut and grading eroding banks.

### 2.12.2 Observations

Jeff Weiss, PE, and Briana Drake completed a design to stabilize the project reach and solicited quotes from three contractors to complete the stabilization work. The Managers awarded the contract to Minnesota Native Landscapes, Inc., (MNL) at the October 11, 2018, meeting. MNL began the project on November 7 and completed the work on November 14, 2018.

MNL regraded steep eroded banks through the power line corridor and Liebenow property, installed four rock vanes for grade control, and installed cedar revetments on the upstream end of the Goldstrohm property. MNL seeded disturbed areas with a riparian mix of natural grasses and flowers and covered exposed banks with erosion control blanket. Briana Drake was onsite periodically during construction to observe progress.

### 2.12.3 Recommendations

Barr recommends annual inspection of the project until repairs are considered stable.

### 2.13 Goetschel Pond Ravine Stabilization Project

#### 2.13.1 Background

VBWD completed construction of the Goetschel Pond Ravine Stabilization Project in 2009 in the City of Lake Elmo. The ravine drains to Goetschel Pond and affects land on property currently owned by:

- Julie and Michael Nelson (4768 Larkspur Lane North).
- Kevin and Maureen Tholen (4854 Linden Trail North).
- Anthony and Sara Yocum (4886 Linden Trail North).
- The Fields of St. Croix Homeowners Association (some parcels).
- The Robert Engstrom Companies (out lots).

Prior to the project, residents reported erosion and accumulation of sediment at the downstream end of the ravine. Stabilization required:

- Importing fill to rebuild the base.
- Installing an armored channel to prevent future erosion of the base.
• Installing vegetated reinforced soil slope (VRSS) to stabilize a steep slope adjacent to a private residence.
• Repairing an upstream detention pond to prevent stormwater seepage near the outlet pipe.

2.13.2 Observations
Jeff Weiss, PE, inspected the project on November 7, 2018, and observed that sites stabilized during the original project were in good condition.

2.13.3 Recommendations
Barr recommends continuing the biennial inspection of this project, with the next inspection in 2020.

2.14 Goose Lake Ravine Stabilization Project
2.14.1 Background
VBWD completed construction of the Goose Lake Ravine Stabilization Project in 2009 at 9200 10th Street North (former Zimmerhakl residence) and 9140 10th Street North (Dennis and Karen Geffre residence) to stabilize significant erosion at the head of the ravine. Mr. Zimmerhakl had made several attempts to stabilize the channel on his property with mixed results. The initial project included installation of rock vanes, plantings, and an armored channel through the steepest and most actively eroding portion of the channel. High flows in the following years undermined the armoring and caused additional erosion in the armored channel. VBWD installed two large rock vanes in the ravine in December 2012 to act as grade control and stop erosion. After additional erosion was observed in subsequent years, VBWD hired Wetland Habitat Restorations (WHR) to install stabilization measures in October 2017. WHR installed two additional cross vanes, repaired a previously installed cross vane, and installed armoring in select places.

2.14.2 Observations
Briana Drake visited the project site on November 8, 2018, and observed that the stabilization measures installed in 2017 are in good condition (Photo 14), although one minor scour hole has developed below one of the rock vanes.
2.14.3 Recommendations

Barr recommends monitoring the minor scour hole and continuing annual inspection of this project.

2.15 Downs Lake Flood Duration Reduction Project

2.15.1 Background

VBWD constructed the Downs Lake Flood Duration Reduction (FDR) Project in 2002 to provide an emergency flood outlet from Downs Lake and a complex of wetland and lowlands adjacent to it. The project created a lower overflow from Downs Lake to Horseshoe Lake, which is part of the Project 1007 system. Efforts included the installation of pipes, a check valve (which acts as a flap gate), and four gates which require manual operation. The operating plan for the gates allows the water level on Downs Lake to be lowered under certain conditions.

2.15.2 Observations

Patrick Brockamp, PE, and Josh Phillips inspected the project components on October 23, 2018, and found them to be in generally good condition. In 2017, Barr discovered a broken top nut for the east sluice gate in Structure 1. Barr replaced the top nut in 2018.
In 2018, the Royal Golf Club provided Barr a video of pipe inspection from Structure 1 to MH 2 (approximately 345 feet). Josh Phillips reviewed the video and generally found the storm sewer in good condition. We noted minor sediment (<1” deep), small rocks, and standing water at various locations in the storm sewer, but our observations do indicate a need for repair.

2.15.3 Recommendations

The Downs Lake FDR Project is generally in good condition; however, we recommend that the Managers consider video inspection of the project components not inspected by The Royal Golf Club in 2018. These portions of the 16-year-old storm sewer has never been video inspected and many municipalities conduct a video inspection of their infrastructure every 5 to 10 years. Barr also recommends continuing annual inspection of this project.

2.16 Valley Creek

2.16.1 Background

Valley Creek comprises three major reaches: the North Fork, the South Fork, and the Main Stem. The North Fork flows 1.6 miles from Lake Edith to its confluence with the South Fork. Below the confluence of the North and South Forks, the Main Stem of Valley Creek flows 1.8 miles to the mouth of the creek at the St. Croix River. The perennially flowing reaches of Valley Creek make up a trout stream.

The South Fork of Valley Creek has areas of both perennial and intermittent flow. From a point approximately 0.75 miles east of Neal Avenue (CSAH 71) to its junction with the Main Stem (a 2.5-mile stretch) the South Fork flows year round. Upstream of this location, the creek is dry most of the time, flowing only during rain or snowmelt. The most upstream and western end of intermittent flow is about half a mile west of Manning Avenue (Highway 95) and north of Valley Creek Road in Woodbury. A southern leg of the South Fork includes a privately owned dam and splits into three reaches that each extend to near 40th Street South.

The Oakgreen Avenue Infiltration Basin (Section 2.17) and the stabilization projects on the Landucci and Moynagh properties (Section 2.18) are within the watershed of the South Fork of Valley Creek. The Blasko Dam Removal Project (Section 2.19) and the Valley Creek Upstream Stabilization Project (Section 2.20) are on the South Fork of Valley Creek. The Valley Creek Downstream Stabilization Project (Section 2.21) is on the Main Stem of the creek.

2.16.2 Observations

At its December 2017 meeting, the Managers authorized Barr to perform additional investigation of one site on the North Fork of Valley Creek and three sites on Valley Creek tributary ravines, as listed in Table 2-1. Barr had identified the sites during 2017 inspections as having significant erosion that warranted additional investigation to determine whether corrective action is needed. The Board authorized Barr to visit each of the sites and assess the feasibility of construction site access as well as gage landowner willingness to complete a project and, in some cases, incorporate a vegetated buffer.
Table 2-1  Prioritized Significant Erosion Locations for Valley Creek

<table>
<thead>
<tr>
<th>Site</th>
<th>Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>2167 Oakgreen Avenue South</td>
</tr>
<tr>
<td>72</td>
<td>14640 32nd Street South</td>
</tr>
<tr>
<td>223</td>
<td>14300 15th Street Circle South</td>
</tr>
<tr>
<td>221</td>
<td>1520 Stagecoach Trail South</td>
</tr>
</tbody>
</table>

Barr described the site inspections and evaluations in a memo provided to the Managers dated August 3, 2018. A summary of the inspections and evaluations follows.

2.16.2.1 Site 57—Ravine Bank Erosion

This erosion site is located on a ravine east of Oakgreen Avenue on a parcel owned by Localized LLC. The ravine feeds into Valley Creek on the Joe Meissner property. In 2017, Barr staff observed erosion on a poorly vegetated bank of this ravine, covering an area approximately 25 feet long and 20 feet high (Photo 15). The site is less than 1,000 feet from the creek and likely transports some amount of sediment to the South Fork of Valley Creek. Tom MacDonald, PE, inspected the site on June 20, 2018, and found that while erosion was evident, it appeared to have occurred over many years. Additional comparison with previous inspections found that the erosion did not appear to have significantly worsened since a 2004 inventory, and Barr did not recommend a project at that time. The landowners are interested in developing mountain bike trails on their property as well as stabilizing the ravine and improving vegetation. Matt Kumka, LA, met with the owners on August 9, 2018, to discuss vegetation management and their vision for developing trails. If they move ahead with developing trails, it may improve the feasibility of implementing stabilization and/or vegetation improvement measures in the ravine. Barr recommends continued communications with the landowners (at least annually) about the timing of trail development and construction and continued triennial monitoring of the erosion.
Photo 15 (June 2018): This photo shows a view from the top of a 20-foot-high headcut at Site 57 near the south end of Oakgreen Avenue.

2.16.2.2 Site 72—Ravine Bank Erosion

This ravine site is located east of Trading Post Trail and north of 32nd Street South, on properties owned by Ms. Irene Qualters, Mr. Don Holzmer, and Mr. Haiwei Wei Du. This area is located on the upstream branch of a long ravine that roughly parallels Trading Post Trail. There is nearly another mile of ravine downstream before it converges with the South Fork of Valley Creek; it is unlikely that a significant amount of sediment from this area reaches the creek in typical runoff events.

Tom MacDonald, PE, inspected the ravine site on June 20, 2018, and observed mild erosion near the termination of the 32nd Street South cul-de-sac at the top of the ravine (near the Holzmer property). A surface infiltration feature (such as a rain garden) located near the cul-de-sac would help limit the runoff contributing to the top of the ravine. This feature could be located in the 32nd Street South right-of-way at the terminus of the cul-de-sac. Due to the poor condition of the asphalt in this area, Barr recommends that any infiltration feature be installed after pavement resurfacing. In November 2018, Barr staff
contacted the City of Afton to discuss potential installation of a surface infiltration feature, but the city has not yet responded.

On August 2, 2018, Matt Kumka, LA, met with Mr. Holzmer, whose property drains to the ravine. Mr. Holzmer has performed a significant amount of buckthorn and garlic mustard removal, which has left the sandy soils open and potentially prone to erosion (Photo 16). Matt Kumka and Mr. Holzmer discussed native vegetation restoration in detail, including VBWD cost-share grant opportunities for planting native vegetation.

In the ravine, Barr observed a notable headcut (Photo 17), but it did not appear to be rapidly worsening.

Barr contacted Mr. Du to inquire about his willingness to participate in a stabilization and vegetation improvement project. Mr. Du did not allow Barr staff access to his property.

Barr reached out to Ms. Qualters about her willingness to participate in a stabilization and vegetation improvement project, but has been unable to discuss the project with her to gauge her willingness to participate, nor have we inspected her property aside from the ravine itself.

Photo 16 (June 2018): Mr. Holzmer cleared vegetation on his property at the Site 72 ravine.
2.16.2.3 Site 223—Headcut on North Fork of Valley Creek

Barr staff performed the first inspection of this site in 2017 and observed a 3-foot-high by 50-foot-long headcut on the western tributary of the North Fork of Valley Creek, immediately west of 15th Street Circle South on the Davis parcel. This portion of the stream flows intermittently, limiting the sediment loading to the creek. Barr did not observe flow during the investigation.

Tom MacDonald, PE, inspected the headcut on June 20, 2018, but did not observe worsening of the headcut, even with several large rain events in the watershed. Based on our assessment that erosion is not worsening, we recommend continued triennial monitoring of this site.

2.16.2.4 Site 221—Bank Erosion on North Fork of Valley Creek

Site 221 is located near the intersection of Stagecoach Trail and Indian Trail on a parcel owned by Roger Meisner. The sandy creek banks are being undercut by erosion. Mr. Meisner denied permission to inspect his property; therefore, no further action is recommended.

2.16.2.5 Ravine 2 East

Following a 2008 inspection, Barr classified Ravine 2 East as medium priority; however, it was not included in Table 2-1, as the landowners at that time were not conducive to incorporating stabilization and/or infiltration measures. In 2016, during the construction of the Moynagh ravine stabilization project, the landowner approached Barr about installing stabilization features in Ravine 2 East. Barr inspected the ravine in 2017 and again identified some erosion concerns.
During their August 9, 2018, meeting, the Managers directed Barr to consider submitting a Clean Water Fund (CWF) grant for a project on Valley Creek. Briana Drake, Jen Koehler, PE, and Jeff Brower inspected Ravine 2 East on August 22, 2018. The ravine is mostly on property owned by Don and Mary Lacho; however, the field area immediately above the ravine is owned by Landucci Homes. The 2018 inspection found that while moderate, ongoing erosion is evident within the ravine (site 32) and significant headcutting is occurring at the head of the ravine on property owned by Landucci. Barr recommended the installation of a vegetated infiltration basin on the Landucci property to reduce the rate of erosion along with stabilization at the erosion and headcut sites within the ravine. Barr discussed the possibility of partnering with Mr. Lacho and Mr. Landucci on a project, including the submission of a CWF grant application. VBWD submitted the application in August; grant recipients will be notified in mid-December 2018.

2.16.3 Recommendations

In a memo provided to the Managers and dated August 3, 2018, Barr staff recommended continued communications (annual) with the Localized LLC landowners (Valley Creek Site 57) about their plans to construct mountain biking trails and the possibility of integrating stabilization and/or vegetation improvement measures into trail development.

At Valley Creek Site 72, we recommend continued outreach to Mr. Holzmer about planting native vegetation on his property, discussing with the City of Afton the feasibility of installing a surface infiltration feature adjacent to the 32nd Street South cul-de-sac to reduce runoff to the top of the ravine, and annual inspection of the ravine (Qualters, Holzmer, and Du properties). At Ravine 2 East, we recommend installing a vegetated infiltration basin at the head of the ravine and stabilizing the erosion and headcut sites within the ravine to reduce the rate of erosion.

For all other erosion sites, we recommend continued triennial inspections, with the next inspection scheduled for 2020.

2.17 Oakgreen Avenue Infiltration Basin

2.17.1 Background

VBWD completed the Oakgreen Avenue Infiltration Basin Project in 2008. The project involved the construction of a 0.4-acre infiltration basin at the top of an eroding ravine to reduce runoff volume and sediment loading to Valley Creek.

VBWD and an Environmental Protection Agency 319 grant paid for the project.

2.17.2 Observations

Barr staff most recently inspected this project in September 2017 and found it in good condition.

2.17.3 Recommendations

Barr recommends continuing the biennial inspection of this project, with the next inspection in 2019.
2.18 Valley Creek Ravine Stabilization Projects—Landucci and Moynagh Ravines

2.18.1 Background
The Valley Creek Ravine Stabilization Projects—Landucci and Moynagh Ravine (also known as the Clean Water Fund Ravine 2 West Project) stabilized approximately 2,100 feet of eroding ravine in the Valley Creek subwatershed of Afton with 29 check dams and a riprapped drop structure. A grant from the Clean Water Fund matched with VBWD dollars paid for construction of the projects. The Landucci Ravine Stabilization Project was completed in December 2015 and the Moynagh Ravine Stabilization Project was completed in October 2016. The Moynagh Ravine property was sold to Jim and Marjorie Wade in 2016.

2.18.2 Observations
Leslie DellAngelo, PE, inspected the Landucci Ravine Stabilization Project and the Moynagh Ravine Stabilization Project in May 2018 and found them in good condition. Vegetation has established in areas where sunlight reaches the floor of the ravine. Shadier areas remain mostly unvegetated, though this is not unexpected. Rock vanes appear intact and are not being bypassed or significantly eroded.

Barr observed evidence of bank erosion where additional sediment has been deposited at the upstream side of the Valley Creek Trail culvert crossing. It appears that the source of the sediment is Ravine 2 East (Section 2.16.2.5), which is adjacent to the Landucci/Moynagh Ravine and drains to the same culvert crossing of Valley Creek Trail.

2.18.3 Recommendations
Barr recommends continuing annual inspection of these projects to monitor vegetation growth and possible sediment movement in the ravine.

2.19 Blasko Dam Removal Project

2.19.1 Background
VBWD completed the Blasko Dam Removal Project in 2010 at the request of landowners Scott and Audrey Blasko (14020 Valley Creek Trail South). VBWD removed the existing dam and replaced it with a series of boulder weirs that maintain upstream water levels, allow upstream fish passage, and prevent channel downcutting at the upstream bridge on Valley Creek Trail. The boulder weirs also result in less upstream pool area and associated reductions in solar input benefit the trout population.

2.19.2 Observations
Barr staff last inspected the project in April 2017 with Scott Blasko. The project site was in good overall condition, with no observed erosion. There has not been a large flood at this site since construction; these typically occur following rapid snowmelt or large precipitation events when the ground is frozen.

2.19.3 Recommendations
Barr recommends continuing the biennial inspection of this project, with the next inspection in 2019.
2.20 Valley Creek Upstream Stabilization Project

2.20.1 Background

The Valley Creek Upstream Stabilization Project addressed bank erosion exacerbated by a severe flood in the spring of 2007. The work was done on properties owned by Jeff and Angela Polacek (14100 Valley Creek Trail South) and Joseph Meissner (14186 Valley Creek Drive South). Work on the Polacek property consisted of stabilizing a short portion of streambank using a root wad, grading, biolog, and revegetation. More extensive remediation was required on the Meissner property, located several hundred feet downstream of the Polaceks. This included repair of two significantly eroded banks using a combination of grading, root wads, boulder vanes, and riprap, as well as replacement of an illegal weir/culvert with a boulder riffle more amenable to fish passage. VBWD also stabilized a nearby culvert inlet to the creek on the downstream end of the Doyle property (14378 Valley Creek Trail) using rock and native vegetation. The work was completed in 2008 and paid for by the VBWD and an Environmental Protection Agency 319 grant. In 2009, VBWD repaired erosion of a contributing ravine where it joins the creek on the Meissner property (caused by early spring snowmelt). These repairs were paid for by VBWD.

2.20.2 Observations

Barr staff last inspected the project in April 2017 and found it in good condition. Minor erosion was evident at the downstream bank on the Meissner property, repaired in 2009, but additional repairs are not recommended.

2.20.3 Recommendations

Barr recommends continuing the biennial inspection of this project, with the next inspection in 2019.

2.21 Valley Creek Downstream Stabilization Project

2.21.1 Background

In 2009, VBWD completed the Valley Creek Downstream Stabilization Project at 15901 Putnam Boulevard South (property formerly owned by Tom Johnson and now owned by Tim and Diane Rivas) and 2398 St. Croix Trail South (property owned by Susan Stanton). The VBWD and an Environmental Protection Agency 319 grant paid for the project. The purpose of the project was to stabilize the badly eroded and incised channel reach. To accomplish this, VBWD installed a series of eight boulder riffles to achieve channel grade control, created floodplain terraces to provide connectivity to the floodplain, and restored the streambanks with native vegetation. The VBWD stabilized channel banks susceptible to erosion using bioengineering methods (primarily root wads) and established a native vegetation buffer along the project corridor to provide additional protection and habitat.

The project has largely been successful, and the associated reach of Valley Creek is considered stable; however, at the upstream reach of the project, Tim and Diane Rivas have not maintained the full extent of the native buffer. This has increased the potential for future erosion. In addition, the channel had been eroding the east streambank at the upstream-most riffle.
In 2015, Barr recommended repairs consisting of repositioning the boulders on the left side of the riffle (looking downstream) and adding additional boulders to further reinforce the riffle. Barr also recommended repairing the bank immediately downstream of Riffle 8 by installing root wads, provided that Mr. Rivas would agree to stop mowing the overbank adjacent to the erosion area. Mr. Rivas agreed to stop mowing in certain vulnerable areas, but not to maintain the extent of the original buffer. The Managers obtained bids for the work in late June 2016, and they selected Nadeau Companies to perform the work. Construction was completed in fall 2016.

2.21.2 Observations

Tom MacDonald, PE, inspected the project on November 15, 2018, and found it in very good condition, with a few areas of minor bank erosion, most of which existed prior to the 2016 repairs. The repaired riffle and adjacent downstream area were in very good condition, and improved over 2017 as vegetation has become more established (Photo 22). The few areas of minor bank erosion (downstream of the repair area) could likely be self-mitigated if the vegetative buffer width is increased (Photo 23).

On the Stanton property, mowing has occurred adjacent to the stream in an area that has not been previously mowed, and minimal buffer exists for a portion of the left (north) overbank (Photo 24). No related stream erosion is evident, but it increases the vulnerability of the channel to future erosion.

Photo 18 (November 2018): Nadeau Companies repaired this upstream riffle in 2016.
Photo 19 (November 2018): Bank erosion could be self-mitigated with a wider buffer.

Photo 20 (November 2018): Mowing has occurred on the Stanton property, resulting in minimal buffer width for a portion of the stream.
2.21.3 **Recommendations**

Barr staff will discuss the vegetative buffer concerns with the two landowners to encourage them to increase the buffer width. Barr recommends inspection of the project in 2019 and, if no significant issues are observed, resume biennial inspections to be coordinated with other Valley Creek inspections.

2.22 **30th and Trading Post Ravine Stabilization Project**

2.22.1 **Background**

VBWD stabilized approximately 325 feet of an eroding ravine with a concrete drop structure and 130 feet of 60-inch-diameter pipe. The project site is near the intersection of 30th Street South and Trading Post Trail South in the Valley Creek subwatershed of Afton. Construction of the project was completed in December 2015 and funded by a grant from the Clean Water Fund with matching VBWD dollars.

2.22.2 **Observations**

Patrick Brockamp, PE, and Jeff Brower inspected the project on May 25, 2018, and found most of the site in good condition. The City of Afton repaved 30th Street in 2017 and installed a rolled bituminous curb along the north side of 30th Street all the way down the large hill to Trading Post Trail. A plugged driveway culvert appears to be causing the ditch to overtop and flow into the street and across the intersection of 30th Street and Trading Post Trail. Additionally, a new home construction site appears to be the source of significant sedimentation in the roadway. Both of these issues, increased flow and sedimentation, are causing nuisance conditions and erosion at the driveway of Mr. Du, resident at 2997 Trading Post Trail South ([Photo 21](#) and [Photo 22](#)). Jeff Brower contacted the City of Afton engineer and maintenance supervisor about fixing the ditch erosion and addressing the plugged driveway culvert. The city staff indicated that the repairs are on their list and will be completed in the spring of 2019.

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**Photo 21 (October 2018):** This photo shows a damaged flared-end section.
2.22.3 Recommendations

Barr recommends continuing to coordinate with the City of Afton to address drainage improvements at the intersection of 30th Street and Trading Post Trail. Barr also recommends continuing annual inspection of the 30th and Trading Post site.

2.23 Kelle’s Creek

2.23.1 Background

Kelle’s Creek, formerly part of the Lower St. Croix Watershed Management Organization (LSCWMO), was added to the VBWD in 2009. Kelle’s Creek has areas of both perennial and intermittent flow. The perennially flowing portion of the creek starts about 0.45 miles northeast of the intersection of Trading Post Trail and Afton Boulevard (CSAH 18) in a steep-walled valley that extends approximately 2.8 miles to the mouth of the St. Croix River. Upstream, the creek is intermittent—dry most of the time but flowing during runoff events. VBWD has funded several projects implemented by the Washington Conservation District (WCD) in the Kelle’s Creek subwatershed to stabilize eroding ravines.

2.23.2 Observations

2.23.2.1 Sites Identified in 2017

At its December 2017 meeting, the Managers authorized Barr to perform additional investigation of five sites in the Kelle’s Creek subwatershed, as listed in Table 2-2. Barr had identified the sites during 2017 inspections as having significant erosion that warranted additional investigation to determine whether corrective action is needed. The Board authorized Barr to visit each of the sites and assess the feasibility of construction site access as well as gage landowner willingness to complete a project.
In 2018, Jeff Weiss, PE, and Josh Phillips discussed erosion concerns with staff at the Washington Conservation District (WCD), who have completed multiple nearby projects in recent years. They learned that WCD had identified many of the same erosion concerns and had already discussed stabilization options with landowners. WCD has also received grant money to help pay for a portion of the project that would include all five sites included in Table 2-2. At the July 12, 2018, Board meeting, VBWD pledged $5,000 to assist WCD with the additional funds needed to implement the project; however, the project is not yet fully funded.

The site inspections and evaluations were described in a memo provided to the Managers and dated August 3, 2018.

### 2.23.2.2 Sites Identified in 2018

In 2017, Barr recommended inspection of the ravine south of Kelle’s Creek along St. Croix Trail South. Josh Phillips inspected the ravine on November 15, 2018, and found the ravine generally in good condition, but identified 15 erosion sites. Barr categorized the identified erosion sites as having minor, moderate, significant, or severe erosion as summarized in Table 2-3 and shown in Figure 2-1. These categories are defined as follows:

- **Minor erosion** – a site that appears to be slightly eroding and/or is a minor sediment source. Minor erosion sites would not justify a project on their own merits, but would likely be included in a project if other work is performed nearby and access to the site is easy. These sites may be left alone if access is difficult or would cause more harm than good.

- **Moderate erosion** – a site that appears to have more sediment loading than minor sites, but not enough to justify a project on its own merits. Moderate erosion sites would usually be included in a nearby project unless access is difficult.

- **Significant erosion** – a site that is a notable source of sediment and, at minimum, should be monitored at least every other year. A significant erosion site may justify a project on its own merits if access is relatively easy and/or the project provides additional benefits related to infrastructure protection and/or habitat improvement. If a project is not justified, additional investigation to properly assess the cause and severity of the issue may be warranted.
• **Severe erosion** – a site that is a significant source of sediment and would usually justify a project on its own merits unless access is difficult. If a project is not completed, the site would be monitored annually.

**Table 2-3**  St. Croix Trail South Ravine Inspection—Erosion Summary

<table>
<thead>
<tr>
<th>Erosion Severity</th>
<th>Number of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor</td>
<td>8</td>
</tr>
<tr>
<td>Moderate</td>
<td>6</td>
</tr>
<tr>
<td>Significant</td>
<td>1</td>
</tr>
<tr>
<td>Severe</td>
<td>0</td>
</tr>
</tbody>
</table>

Because sites with minor and moderate erosion do not justify projects on their own, we are only including further discussion of the one site with significant erosion. Barr categorized Site No. 9 as a significant headcut based on the apparent amount of sediment being transported downstream. The headcut is approximately 4 feet tall and tree roots are exposed across the ravine for approximately 25 feet downstream, indicating that the erosion is active and recent ([Photo 23](#)). The channel upstream of the headcut includes shallow bank slopes and appears stable ([Photo 24](#)); however, the channel downstream of the headcut includes very steep bank slopes and limited vegetation ([Photo 25](#)), which is conducive to continued erosion. This ravine eventually drains to a flared-end section (FES) and storm sewer at St. Croix Trail South; however, the FES and trash rack are significantly buried in eroded sediment from this ravine ([Photo 26](#)).

In addition to the erosion sites, Barr observed a FES that is separated from the storm sewer along the ravine ([Photo 27](#)). The joint between the FES and first section of 24-inch-diameter reinforced concrete pipe (RCP) is separated by approximately 5 inches ([Photo 28](#)). It was unclear whether the FES has completely shifted or has settled near the opening and has separation only on the top of the RCP.
**Detached Flared End Section**

**Erosion Locations***
- Green: Minor
- Yellow: Moderate
- Red: Significant

*Note: Numbering refers to Erosion Location ID

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**Figure 2-1**

ST. CROIX TRAIL
RAVINE INSPECTION
Kelle's Creek Subwatershed
2018 Infrastructure and Conveyance Systems Inspections Report
Valley Branch Watershed District
Photo 23 (October 2017): There is a 4-foot-tall headcut with exposed tree roots approximately 25 feet downstream.

Photo 24 (October 2018): This photo shows a stable channel with shallow bank slopes upstream of the headcut.
Photo 25 (October 2017): This potentially eroding channel with steep bank slopes is located downstream of the headcut.

Photo 26 (October 2018): A flared-end section and trash rack at St. Croix Trail South is significantly buried in eroded sediment from the upstream ravine and headcut.
Photo 27 (October 2017): A flared-end section is separated from the RCP storm sewer along the ravine.

Photo 28 (October 2018): The joint between the flared-end section and RCP storm sewer is separated by approximately 5 inches.
2.23.3 Recommendations
Barr recommends investigating the feasibility of a ravine stabilization project for erosion site No. 9 along the St. Croix Trail South ravine by initiating discussions with WCD to collaborate on a stabilization project.

Barr recommends coordinating with the City of Afton to repair separated FES and storm sewer along the ravine.

Barr recommends continuing discussions with WCD about erosion sites identified in the Kelle’s Creek erosion inventory and continued collaboration with WCD to work towards implementation of the funded stabilization project.

Barr also recommends continued triennial inspection of the entire creek and major ravines to complete an erosion inventory, with the next inspection scheduled for 2020. Future inspections should include prioritization of erosion sites.

2.24 Swede Hill Creek Subwatershed

2.24.1 Background
The Swede Hill Creek subwatershed has a drainage area of 836 acres, or approximately 1.3 square miles, and contains several steep-sided ravines and bluffs that drain directly to the St. Croix River. Most of the subwatershed is undeveloped and heavily forested; there are no perennial streams, Minnesota Department of Natural Resources (MNDNR) public waters, or other significant waterbodies. The channels in this subwatershed consist of ravines and ephemeral streams that only transport water during and immediately after storm events.

2.24.2 Observations
Barr staff most recently inspected the Swede Hill Creek subwatershed ravines in May 2017 and found the ravines in generally stable condition. Barr staff documented erosion sites and provided a complete summary of the inspection to the Managers in a memorandum dated July 7, 2017.

2.24.3 Recommendations
There were a number of ravines that Barr was not able to inspect in 2017 within the allocated budget. The Managers did not authorize inspection of these ravines in 2018 due to budget constraints; therefore, we recommend inspection of these remaining ravines in 2019.

Following the inspection of the remaining ravines, Barr recommends completing an inspection and erosion inventory of the entire creek and major ravines every 5 years. The next inspection should occur in 2022 and include prioritization of erosion sites.
2.25 Cost-Share Projects with More Than $5,000 in VBWD Contribution

2.25.1 Background

VBWD provides cost-share assistance (administered by the WCD) for projects that improve water quality and natural resources. In 2018, the VBWD asked the WCD to provide inspection reports for projects that received more than $5,000 in VBWD funding. A full list of these projects is shown in Table 2-4. Inspection reports provided by the WCD for projects that received more than $5,000 in VBWD funding are included in Appendix C.

2.25.2 Recommendations

Barr recommends that for all projects receiving $5,000 or more of VBWD funding, the District continue to request that the WCD and Ramsey Conservation District (RCD) annually inspect and provide reports on the project for the first 5 years following installation—or direct Barr staff to inspect and report during that period. After 5 years, Barr recommends that VBWD request inspections from WCD, RCD, and/or Barr staff for each project at least triennially, which would include any project constructed in 2011 or earlier.

Table 2-4 Cost-Share Projects Receiving More than $5,000 in VBWD Contributions

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Grant Year</th>
<th>Grant Type</th>
<th>VBWD Contribution</th>
<th>Inspected in 2018?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiessner</td>
<td>2018</td>
<td>Individual</td>
<td>$5,000</td>
<td>No</td>
<td>In process of survey and design</td>
</tr>
<tr>
<td>Washington County Roadways, Lake Elmo Avenue</td>
<td>2018</td>
<td>Community</td>
<td>$10,000</td>
<td>No</td>
<td>Project completion expected summer 2019</td>
</tr>
<tr>
<td>City of Oakdale Nature Preserve</td>
<td>2017</td>
<td>Community</td>
<td>$5,408.50</td>
<td>Yes</td>
<td>No maintenance needed</td>
</tr>
<tr>
<td>Kopotzkie Property</td>
<td>2017</td>
<td>Individual</td>
<td>$5,250.00</td>
<td>No</td>
<td>Project completed September 2018</td>
</tr>
<tr>
<td>White Property</td>
<td>2016</td>
<td>Individual</td>
<td>$6,988.60</td>
<td>Yes</td>
<td>No maintenance needed</td>
</tr>
<tr>
<td>Kramer/Kirkwold Property</td>
<td>2015</td>
<td>Individual</td>
<td>$5,000.00</td>
<td>Yes</td>
<td>Degraded aesthetics</td>
</tr>
<tr>
<td>Landucci Property</td>
<td>2015</td>
<td>Buckthorn</td>
<td>$10,110.00</td>
<td>Yes</td>
<td>Degraded aesthetics</td>
</tr>
<tr>
<td>Wiessner/Hill Property</td>
<td>2015</td>
<td>CWF/Match</td>
<td>$22,419.00</td>
<td>Yes</td>
<td>No maintenance needed</td>
</tr>
<tr>
<td>Homestead Development</td>
<td>2015</td>
<td>Community</td>
<td>$13,250.00</td>
<td>Yes</td>
<td>No maintenance needed</td>
</tr>
<tr>
<td>Mutter Property</td>
<td>2015</td>
<td>Individual</td>
<td>$7,900.00</td>
<td>Yes</td>
<td>No maintenance needed</td>
</tr>
<tr>
<td>McComb/Kotz Property</td>
<td>2013</td>
<td>Special Incentive</td>
<td>$10,700.00</td>
<td>Yes</td>
<td>Degraded aesthetics</td>
</tr>
<tr>
<td>Gurney Property</td>
<td>2012</td>
<td>Individual</td>
<td>$5,550.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Lake Elmo Streets</td>
<td>2012</td>
<td>Special Incentive</td>
<td>$27,822.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Project Name</td>
<td>Grant Year</td>
<td>Grant Type</td>
<td>VBWD Contribution</td>
<td>Inspected in 2018?</td>
<td>Comment</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------</td>
<td>------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>DeMontreville Boat Launch</td>
<td>2011</td>
<td>Community</td>
<td>$9,000.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Lake Elmo Roadways</td>
<td>2011</td>
<td>Community</td>
<td>$17,000.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Lake Elmo Roadways</td>
<td>2009</td>
<td>Community</td>
<td>$28,750.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Joy Park Shoreline, Maplewood</td>
<td>2009</td>
<td>Community</td>
<td>$18,789.10</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Century College</td>
<td>2009</td>
<td>Community</td>
<td>$50,000.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
<tr>
<td>Mahtomedi Public Works</td>
<td>2008</td>
<td>Community</td>
<td>$22,500.00</td>
<td>No</td>
<td>Inspections are only performed for 5 years</td>
</tr>
</tbody>
</table>
3.0 Non-System Specific Activities

3.1 Web Mapping

3.1.1 Background
Barr maintains an online map to assist with inspection and maintenance activities and information requests. In 2018, Barr performed minor updates to the web map, including adding infrastructure, flow arrows, and providing more attribute data to assist in reporting.

3.1.2 Recommendations
Barr recommends that the VBWD web map be updated with additional infrastructure and conveyance systems data, as needed. The Managers should also discuss if they would like to upgrade the website to include approved plans and permits as well as photos and other documents related to the inspections of permitted projects.

3.2 Web-Based Permit Inspection Reporting

3.2.1 Background
The Managers requested that Barr investigate using mobile-enabled devices (e.g., phones, tablets) to assist the VBWD inspector in performing permit inspections and developing reporting and file organization on the VBWD web map.

3.2.2 Recommendations
Barr recommends that the Managers authorize Barr to develop a mobile-enabled tool for performing permit inspections and place permit inspection notes, photos, and plans on the VBWD web map.

3.3 Beaver-Removal Cost-Share Program

3.3.1 Background
Over the last 10 years, beaver activity—particularly the construction of dams—has damaged several Valley Creek locations and impacted the conveyance of flows through the Project 1007 system in the West Lakeland Storage Site.

To reduce costs related to beaver activity, the Managers established a beaver-removal cost-share program at their November 10, 2016, meeting. Homeowners must request access to the cost-share program before initiating beaver removal, and if the Managers approve, the homeowners are then required to hire a beaver trapper and can submit their receipts to VBWD for full reimbursement.

3.3.2 Recommendations
Barr recommends that the beaver-removal cost-share program be included in the 2019 VBWD operations and maintenance budget.
3.4 General Maintenance

3.4.1 Background

As outlined in this report, VBWD maintains a number of structures and systems throughout the watershed to protect the District’s water resources and property. Emergency maintenance issues occasionally come up during the course of the year and cannot wait for VBWD’s normal annual budgeting process to be addressed. Most of these issues involve removal of trees and debris from streams and channels to protect the stream from erosion and adjacent properties from flooding. In 2018, the Managers acted on over $2,000 of unanticipated maintenance expenses. In addition to contractor costs, Barr staff members spend time preparing related memos for the Board packet; this adds to the total cost of these relatively inexpensive maintenance projects. Additionally, waiting 2 to 4 weeks for Manager authorization can sometimes increase the risk of damage to the water resource or property.

At their December 14, 2017, meeting, the Managers authorized Barr to hire contractors for maintenance activities less than $3,000.

3.4.2 Recommendations

Barr suggests that the Managers continue giving Barr authorization to hire contractors for maintenance activities less than $3,000 for a total estimated annual budget of $10,000.

3.5 Locating Services

3.5.1 Background

VBWD owns several underground facilities (e.g., storm sewer pipes), including major portions of Project 1007, the Olson Lake Estates Pond Outlet Project, and the Downs Lake Flood Duration Reduction Project. Currently, these underground facilities are not registered in Minnesota’s Gopher State One Call (GSOC) system. This is the standard method of communicating the location of underground facilities and must be used by anyone planning excavation or soil boring activities. Currently, an entity such as MNDOT, Washington County, or the City of Lake Elmo would not know about the presence of VBWD’s underground facilities through the use of GSOC.

Barr prepared a memo dated April 20, 2018, providing the following recommendations:

A. Direct Barr to register all VBWD underground infrastructure in the GSOC system after January 1, 2019.
B. Direct Barr to perform locating services after January 1, 2019.
C. Budget $20,000 for 2019 for all costs related to GSOC system locating services.

At their April 26, 2018, meeting, the Managers authorized Barr’s recommendations.

3.5.2 Recommendations

Barr recommends implementing the recommended actions to register all VBWD underground infrastructure in the GSOC system and perform locating services as of January 1, 2019.
3.6 **Major Repair Funding Approaches**

3.6.1 **Background**
Over the past 30 years, VBWD has installed millions of dollars in infrastructure and performs annual inspections and routine maintenance on these systems described in this report. All infrastructure comes to the end of its useful life. For example, concrete structures are typically expected to last between 50 and 100 years. Since much of the Project 1007 system is made of concrete, major portions of that system may need to be replaced in as little as 20 years.

3.6.2 **Recommendations**
Barr recommends that the Managers consider authorizing Barr to explore approaches to fund future major repairs to their existing infrastructure. Approaches could include bonding for major repairs or setting aside funds each year to establish a major repair fund.

3.7 **Long Lake Sediment Delta Assessment**

3.7.1 **Background**
At the southwest corner of the north basin of Long Lake, a sediment delta has formed at the inlet northeast of the Highways 36 and 694 interchange. The inlet conveys flow from the upstream Silver Lake subwatershed. The presence of the sediment delta was also noted by the MNDNR in their 1989 fisheries survey. According to lake residents, the sediment delta has been forming for nearly 30 years, possibly as a result of highway runoff. The VBWD investigated and identified a culvert under Highway 36 as the conveyor of the sediment. In 2011, MNDOT implemented improvements to reduce the sediment loading. The Friends of Long Lake have requested that the VBWD remove the delta.

3.7.2 **Recommendations**
Consistent with VBWD’s 2015–2025 Watershed Management Plan, Barr recommends that VBWD consider authorizing Barr to perform a site visit to determine the source of the sediment, estimate the size (volume) of the delta, and assess whether the delta has increased in size since MNDOT’s 2011 improvements. Barr would then summarize the results of the investigations in a memo. If the Managers wish to have the delta removed, then Barr would then develop recommendations to reduce the sediment loading and remove the existing sediment delta, as well as providing feasibility-level cost estimates.

3.8 **Sunfish Lake Ravines Inspection and Feasibility Study**

3.8.1 **Background**
Sunfish Lake is a landlocked, nutrient-impaired water in Lake Elmo. Along the north shore there are a number of ravines that drain into the lake, several of which have erosion areas. The ravines are city-owned and private (residential) property. While a formal ravine inspection and erosion site assessment has not been performed, Barr staff have visited this area and observed ravines potentially in need of stabilization. The Friends of Lake Elmo’s Sunfish Lake Park and Sally Manzera Interpretive Nature Center is located on the northwest shore of the lake, and there may be opportunities for VBWD to collaborate with the Nature Center on natural resources improvement and education efforts.
3.8.2 Recommendations

Consistent with VBWD’s 2015–2025 Watershed Management Plan, Barr recommends that the Managers consider authorizing Barr to perform an erosion inventory along the ravines adjacent to the north shore of Sunfish Lake and determine the necessity of ravine stabilization projects to improve water quality. Barr recommends developing concepts and cost estimates for stabilization projects that can be used in applications for Clean Water Fund grants.
4.0 Maintenance Work Performed in 2018

The Managers took the following actions in 2018:

1. **Hired Buelow Excavating Inc. (Buelow) to:**
   a. Mow the Rest Area Pond Dam crest and spillway. This work was completed in October 2018 for $500.
   b. Mow the side slopes of the channels between Horseshoe Lake and Interstate 94, including the West Lakeland South Storage sites. The Managers approved $1,800 for mowing; however, due to high water levels, only a portion of the channels could be mowed. This work was completed in October 2018 for $1,300.
   c. Remove various downed trees and brush piles in and along Raleigh Creek to maintain unobstructed flow through the creek (Photo 29, Photo 30, Photo 31, and Photo 32). This work was completed in October 2018 for $4,605.
   d. Remove accumulated dead trees and debris near the outlet of the Rest Area Pond. The Managers originally approved $1,411 for removals in 2016; however, due to high water levels in 2016, 2017, and 2018, the work could not be completed. Buelow plans to complete the remaining work once the water levels recede.

2. **Hired Minger Construction Co. Inc. (Minger) to remove and replace wooden stop logs at the Lake Olson outlet (Project 1007, Structure 11) with new aluminum stop logs (Photo 33 and Photo 34).** Minger completed the work in August 2018 for $20,000.

3. **Hired MNL to stabilize a reach of Farney Creek, which included regrading of creek banks, grade control with rock vanes (Photo 35), and installation of cedar revetments for bank stabilization (Photo 36).** MNL completed the work in November 2018 for $28,179.

4. **Barr completed the following activities in 2018:**
   a. Explored Gopher State One Call utility locate services.
   b. Administered the work performed by contractors for the VBWD.
   c. Coordinated with The Royal Golf Club staff to remove abandoned pedestrian bridges (Photo 37, Photo 38, Photo 39, and Photo 40) and downed trees (Photo 39, Photo 40, Photo 41, and Photo 42) in the channel downstream of Lake Elmo.
   d. Replaced the top nut for the east sluice gate in Structure 1 of the Downs Lake Flood Duration Reduction Project (Photo 43 and Photo 44).
   e. Requested that WCD submit annual inspection reports to VBWD on all projects that VBWD supported with contributions of more than $5,000.
   f. Updated the infrastructure and conveyance systems web map.

The total cost of the completed repairs was $54,584, excluding Barr fees.
Photo 29 (October 2017): This photo shows a downed tree across Raleigh Creek, prior to removal.

Photo 30 (October 2018): This photo shows Raleigh Creek, following removal of a downed tree.
Photo 31 (October 2017): A downed tree and brush pile are shown in Raleigh Creek, prior to removal by Buelow.

Photo 32 (October 2018): This photo shows Raleigh Creek, following removal of a downed tree and brush pile.
Photo 33 (October 2017): This photo shows unleveled wooden stop logs in the Lake Olson outlet (Project 1007, Structure 11).

Photo 34 (July 2018): Minger installed aluminum stop logs in the Lake Olson outlet (Project 1007, Structure 11).
Photo 35 (November 2018): MNL regraded creek banks and installed rock vanes and erosion control blankets.

Photo 36 (November 2018): Cedar revetments were installed on the upstream end of the Goldstrohm property.
Photo 37 (October 2018): An abandoned and washed out pedestrian bridge was located in the channel downstream of Lake Elmo.

Photo 38 (November 2018): This photo shows the channel downstream of Lake Elmo after the abandoned and washed out pedestrian bridge was removed by The Royal Golf Club staff.
Photo 39 (October 2018): A second abandoned pedestrian bridge was found in the channel downstream of Lake Elmo.

Photo 40 (November 2018): This photo shows the channel downstream of Lake Elmo after the abandoned pedestrian bridge was removed by The Royal Golf Club staff.
Photo 41 (October 2018): There were several downed trees in the channel downstream of Lake Elmo.

Photo 42 (November 2018): This photo shows the channel downstream of Lake Elmo after several downed trees were removed by The Royal Golf Club staff.
Photo 43 (October 2018): This photo shows the east sluice gate in Structure 1 of the Downs Lake Flood Duration Reduction Project, prior to replacement of the top nut.

Photo 44 (October 2018): Barr replaced the top nut in the east sluice gate in Structure 1 of the Downs Lake Flood Duration Reduction Project.
5.0 Recommendations

We recommend that the Managers consider the inspection, operation, and maintenance items summarized in Table 5-1 and Table 5-2. If the Managers agree to the recommended actions, we will obtain bids from contractors to perform the work and present those bids to the Managers for consideration. Several recommended projects could be grouped and performed by a single contractor to reduce costs. Maintenance locations are shown on Figure 5-1.

5.1 Inspections

Table 5-1 summarizes the recommended inspection frequency and inspection/reporting cost for each VBWD system described in Section 2.0.

Table 5-1 2019 Recommended Inspection Activities

<table>
<thead>
<tr>
<th>System</th>
<th>Inspection Frequency</th>
<th>Last Inspected</th>
<th>Next Recommended Inspection</th>
<th>Estimated 2019 Inspection/Reporting Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1007</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$21,000</td>
</tr>
<tr>
<td>Echo Lake Outlet</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Weber Pond Outlet</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Silver Lake Spent Lime Filter</td>
<td>Annual</td>
<td>NA</td>
<td>2019</td>
<td>$4,000</td>
</tr>
<tr>
<td>Silver Lake Bioretention Basin</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Silver Lake Outlet</td>
<td>Likely Annual</td>
<td>NA</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Long Lake Ravine Stabilization Project</td>
<td>Biennial</td>
<td>2018</td>
<td>2020</td>
<td>NA</td>
</tr>
<tr>
<td>DeMontreville Ravine Stabilization Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Olson Lake Estates Pond Outlet Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$3,000</td>
</tr>
<tr>
<td>Raleigh Creek</td>
<td>Triennial</td>
<td>2016</td>
<td>2019</td>
<td>$3,500</td>
</tr>
<tr>
<td>Raleigh Creek Bank Stabilization Project</td>
<td>Biennial</td>
<td>2018</td>
<td>2020</td>
<td>NA</td>
</tr>
<tr>
<td>Farney Creek Stabilization Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Goetschel Pond Ravine Stabilization Project</td>
<td>Biennial</td>
<td>2018</td>
<td>2020</td>
<td>NA</td>
</tr>
<tr>
<td>Goose Lake Ravine Stabilization Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Downs Lake Flood Duration Reduction Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$2,000</td>
</tr>
<tr>
<td>Valley Creek</td>
<td>Part-Annual Part-Triennial</td>
<td>2018 2017</td>
<td>2019 2020</td>
<td>$1,000 NA</td>
</tr>
<tr>
<td>Oakgreen Avenue Infiltration Basin</td>
<td>Biennial</td>
<td>2017</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Valley Creek Ravine Stabilization Projects—Landucci and Moynagh Ravine</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Blasko Dam Removal Project</td>
<td>Biennial</td>
<td>2017</td>
<td>2019</td>
<td>$1,500</td>
</tr>
<tr>
<td>Valley Creek Upstream Stabilization Project</td>
<td>Biennial</td>
<td>2017</td>
<td>2019</td>
<td>$1,500</td>
</tr>
<tr>
<td>Valley Creek Downstream Stabilization Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>System</td>
<td>Inspection Frequency</td>
<td>Last Inspected</td>
<td>Next Recommended Inspection</td>
<td>Estimated 2019 Inspection/Reporting Cost</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>----------------------</td>
<td>----------------</td>
<td>-----------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>30th and Trading Post Ravine Stabilization Project</td>
<td>Annual</td>
<td>2018</td>
<td>2019</td>
<td>$1,000</td>
</tr>
<tr>
<td>Kelle’s Creek</td>
<td>Part-Triennial</td>
<td>2017</td>
<td>2020</td>
<td>NA</td>
</tr>
<tr>
<td>Swede Hill Creek subwatershed</td>
<td>Part-Biennial, Full every 5 years</td>
<td>2017</td>
<td>2019 2022</td>
<td>$2,000 NA</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td><strong>$50,500</strong></td>
</tr>
</tbody>
</table>

### 5.2 Operations and Maintenance Items

Table 5-2 summarizes responsible parties, planning-level cost estimates, and estimated priority (*High*, *Medium*, or *Low*) for recommended maintenance activities. Estimates are for total project costs including contractor time, Barr time, and expenses.

**Table 5-2 Recommended Operations and Maintenance Activities Based on 2018 Inspections**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Responsible Party</th>
<th>Planning-Level Cost Estimate</th>
<th>Estimated Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Annually mow the Rest Area Pond Dam and spillway</td>
<td>VBWD</td>
<td>$500</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>Annually mow channel side slopes between Horseshoe Lake and Interstate 94, including the West Lakeland Storage Site South Pond</td>
<td>VBWD</td>
<td>$2,000</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Remove accumulated dead trees and debris near the Rest Area Pond outlet and within the pipe to Structure 2 <em>(Photo 1)</em></td>
<td>VBWD</td>
<td>$1,500 (Authorized)</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>Implement animal management at the Rest Area Pond Dam at the burrows located on the downstream side of the dam near the transmission tower <em>(Photo 2)</em></td>
<td>VBWD</td>
<td>$3,000</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>Replace wooden stop logs with aluminum stop logs at water control structures, including structures 3, 4, 5, 9, 10, and 12 <em>(Photo 3)</em></td>
<td>VBWD</td>
<td>$180,000</td>
<td>Medium</td>
</tr>
<tr>
<td>6</td>
<td>Investigate vegetation removal and sediment dredging to maintain outlet flow capacity at the Deer Pond outlet channel and outlet pipe <em>(Photo 4)</em></td>
<td>VBWD</td>
<td>$1,000</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>Inspect the Project 1007 storm sewer not previously inspected via video</td>
<td>VBWD</td>
<td>$85,000</td>
<td>Low</td>
</tr>
<tr>
<td>8</td>
<td>Following the conclusion of the City of North St. Paul road reconstruction work in summer 2019, request that the city hire a contractor to remove the deposited sediment from the south end of the basin and replace</td>
<td>VBWD / City of North St. Paul</td>
<td>$500</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Responsible Parties</td>
<td>Cost</td>
<td>Priority</td>
</tr>
<tr>
<td>---</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>-------</td>
<td>----------</td>
</tr>
<tr>
<td>9</td>
<td>Remove the remainder of the downed tree upstream of cross vane #2 (Photo 10)</td>
<td>VBWD</td>
<td>$500</td>
<td>High</td>
</tr>
<tr>
<td>10</td>
<td>Remove accumulated sediment from the sedimentation basin at the downstream end of the ravine (Photo 11 and Photo 12) and, if needed, remove accumulated sediment at the outlet into Lake DeMontreville</td>
<td>VBWD</td>
<td>$95,000</td>
<td>High</td>
</tr>
<tr>
<td>11</td>
<td>Request that the City of Lake Elmo remove the 7-inch-diameter maple tree adjacent to MH 9 to ensure that the tree does not damage the structure or casting or grow over the casting cover and seal the structure (Photo 13)</td>
<td>VBWD / City of Lake Elmo</td>
<td>$0</td>
<td>High</td>
</tr>
<tr>
<td>12</td>
<td>Inspect the Olson Lake Estates Pond Outlet Project storm sewer not previously inspected via video</td>
<td>VBWD</td>
<td>$20,000</td>
<td>Low</td>
</tr>
<tr>
<td>13</td>
<td>Inspect the Downs Lake Flood Duration Reduction Project storm sewer not previously inspected by video</td>
<td>VBWD</td>
<td>$5,000</td>
<td>Low</td>
</tr>
<tr>
<td>14</td>
<td>Request that the City of Afton consider installing an infiltration feature near 32nd Street South cul-de-sac</td>
<td>VBWD / City of Afton</td>
<td>$0</td>
<td>High</td>
</tr>
<tr>
<td>15</td>
<td>Install a vegetated infiltration basin at the head of Ravine 2 East and stabilize the erosion and headcut sites within the ravine</td>
<td>VBWD</td>
<td>$112,000</td>
<td>Medium</td>
</tr>
<tr>
<td>16</td>
<td>Coordinate with the City of Afton to address drainage improvements at the intersection of 30th Street and Trading Post Trail (Photo 21 and Photo 22)</td>
<td>VBWD / City of Afton</td>
<td>$0</td>
<td>High</td>
</tr>
<tr>
<td>17</td>
<td>Investigate the feasibility of a ravine stabilization project for erosion site No. 9 along the St. Croix Trail South ravine or initiate discussions with Washington Conservation District to collaborate on a stabilization project</td>
<td>VBWD / WCD</td>
<td>$2,000</td>
<td>High</td>
</tr>
<tr>
<td>18</td>
<td>Coordinate with the City of Afton to repair separated flared-end section and storm sewer in the ravine along St. Croix Trail South</td>
<td>VBWD / City of Afton</td>
<td>$500</td>
<td>High</td>
</tr>
<tr>
<td>19</td>
<td>Continue to collaborate with the Washington Conservation District to work towards implementation of a stabilization project along Kelle’s Creek</td>
<td>VBWD / WCD</td>
<td>$1,000</td>
<td>High</td>
</tr>
<tr>
<td>20</td>
<td>Update web mapping as needed</td>
<td>VBWD</td>
<td>$2,000</td>
<td>High</td>
</tr>
<tr>
<td>21</td>
<td>Web-based permit inspection reporting</td>
<td>VBWD</td>
<td>$10,000</td>
<td>High</td>
</tr>
<tr>
<td>22</td>
<td>Continue beaver-removal cost-share program</td>
<td>VBWD</td>
<td>$3,000</td>
<td>High</td>
</tr>
</tbody>
</table>
23 Perform general maintenance VBWD $10,000 High
24 Locating services VBWD $20,000 High
25 Investigate major repair funding approaches VBWD $5,000 High
26 Long Lake sediment delta assessment VBWD $5,000 High
27 Sunfish Lake Ravines Inspection and Feasibility Study VBWD $25,000 High

1 Costs do not include any snowpack monitoring or any work (Barr or contractor) associated with a potential drawdown of lakes in the spring to mitigate flooding.

2 Barr estimates the total project cost at $517,000. The VBWD has applied for a Clean Water Fund grant to pay for $405,000 of that amount, and we expect to hear back in late 2018 if the grant applicant is successful. The remaining $212,000 local match could be provided by several sources, including the VBWD.

3 Cost estimate does not include work related to adding permit documents, inspection photographs, etc.

5.3 Maintenance Costs

Table 5-3 summarizes the estimated project costs by priority.

<table>
<thead>
<tr>
<th>Priority Rank</th>
<th>Planning-Level Cost Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Priority</td>
<td>$187,500</td>
</tr>
<tr>
<td>Medium Priority</td>
<td>$292,000</td>
</tr>
<tr>
<td>Low Priority</td>
<td>$110,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$589,500</td>
</tr>
</tbody>
</table>
Appendix A

2018 Eagle Point Lake Dam Inspection Report
June 5, 2018

Mr. Jason Boyle
Dam Safety Unit, Division of Waters
Minnesota Department of Natural Resources
500 Lafayette Road
St. Paul, MN 55155

Re: 2018 Annual Inspection of Eagle Point Lake Dam, Valley Branch Watershed District

Dear Mr. Boyle:

On May 25, 2018, Jeff Brower, inspector for the Valley Branch Watershed District (VBWD), and I performed an inspection of the Eagle Point Lake Dam and its control structures. This was done in accordance with Special Provision 8 of the Minnesota Department of Natural Resources permit for the dam, issued to the VBWD. The inspection report form and photographs of the dam and control structures are enclosed. The results of the inspection are summarized below.

- The inspections revealed the dam to be in generally good condition.
- We observed debris in the primary outlet structure. A branch approximately 4 inches in diameter was stuck on the top of the aluminum stop logs and had collected weedy vegetation. The outlet structure is still able to pass flow. We will bring proper confined-space safety equipment and remove the branch during our regular fall inspections if it is still present.
- In 2017, we observed trees growing on the upstream face of the dam and requested that Washington County Parks remove the trees. This was not completed before the 2018 inspection. Additionally, in 2018, we observed several small trees growing on the downstream face of the dam. We will request that Washington County Parks remove the trees and treat the stumps.
- We noted an animal path crossing the dam near the secondary outflow structure on the upstream face and near the secondary outlet pipe on the downstream face. While we do not recommend maintenance at this time, we will monitor these locations in future inspections to assess if action is required.

If you have any questions or need additional information, please contact me at 952-842-3593 or pbrockamp@barr.com.

Sincerely,

Patrick Brockamp, PE

Enclosures

c: VBWD Managers
# Inspection Report

## Eagle Point Lake Dam

Valley Branch Watershed District

Inspected by Patrick Brockamp, PE

May 25, 2018

<table>
<thead>
<tr>
<th>Feature</th>
<th>Deficiency Observed</th>
<th>Remarks</th>
<th>Photo #</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. OUTLET STRUCTURES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Accumulation of debris</td>
<td>X</td>
<td>Branch and weedy vegetation stuck on weir of primary outlet</td>
<td>5</td>
</tr>
<tr>
<td>B. Cracking or spalling of concrete</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Deterioration of concrete</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Abnormal leakage</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Unusual or inadequate operational behavior</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>II. UPSTREAM EMBANKMENT SLOPE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Wave erosion</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Cracks</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Slides or sloughs</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Subsidence</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Damage to slope protection</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Other erosion</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Vegetation failure</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Tree growth</td>
<td>X</td>
<td>Willow trees observed on upstream face</td>
<td>9</td>
</tr>
<tr>
<td>I. Animal burrows</td>
<td>X</td>
<td>Animal path crossing dam, no damage</td>
<td>11, 12</td>
</tr>
<tr>
<td><strong>III. DOWNSTREAM EMBANKMENT SLOPE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Wave erosion</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Cracks</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Slides or sloughs</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Subsidence</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Other erosion</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Excessive seepage or boils</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Vegetation failure</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Tree growth</td>
<td>X</td>
<td>Small trees observed on downstream face</td>
<td>10</td>
</tr>
<tr>
<td>I. Animal burrows</td>
<td>X</td>
<td>Animal path crossing dam, no damage</td>
<td>12</td>
</tr>
</tbody>
</table>

1. Animal path on downstream face difficult to see in photo and is not included, see photo 12 on upstream face.
INSPECTION REPORT (continued)
EAGLE POINT LAKE DAM
Valley Branch Watershed District

PHOTOGRAPHS (taken May 25, 2018)

Photo 1: Upstream face, looking toward left abutment (north)

Photo 2: Downstream face, looking toward left abutment (north)

Photo 3: Upstream face, looking toward right abutment (south)

Photo 4: Downstream face, looking toward right abutment (south)

Photo 5: Aluminum stoplog weir in primary outlet; weedy vegetation and one 4-inch-diameter branch stuck on weir

Photo 6: Inlet to secondary structure
Photo 7: Inside of secondary structure

Photo 8: Outfall pipe from secondary structure

Photo 9: Willow trees on upstream face of dam should be removed

Photo 10: Small trees on downstream face of dam should be removed

Photo 11: Animal path crossing dam—upstream face looking upstream

Photo 12: Animal path crossing dam—upstream face looking downstream
November 2, 2018

Mr. Bryce Fossand, P.E.
MNDOT Water Resources Engineering
1500 West County Road B2
Roseville, MN 55113

Re: 2018 Annual Inspection of Interstate 94 Rest Area Pond Dam

Dear Mr. Fossand:

On October 31, 2018, you, Christina Caouette, and Brian Tomassoni of MNDOT and Nathan Campeau of Barr, representing the Valley Branch Watershed District, inspected the Interstate 94 Rest Area Pond Dam (Permit 86-6270). Barr staff (Josh Phillips and myself) also performed an inspection of the dam on October 23, 2018. Two copies of related documents are enclosed:

- Chart of historic water levels
- Completed Rest Area Pond Dam inspection form
- Comment sheet
- Photographs from the inspection

We found the dam and outlet structure to be in good condition. On October 23, 2018, Barr staff estimated the water level of the pond at Elevation 835.2 feet, approximately 1.2 feet above the invert elevation of the low-flow orifice outlet and 7.3 feet below the elevation of the secondary outlet weir.

Since the 2017 inspection, VBWD performed minor maintenance on the Rest Area Pond Dam, mowing the entire dam and spillway in October 2018 prior to the recent inspections.

VBWD plans the following maintenance activities before the next inspection in fall 2019:

- Mowing the entire dam and spillway
- Continued monitoring of animal burrows and investigation of animal management; burrows are located on the back-side of the dam near the transmission tower, below the elevation of the emergency spillway
- Removing tree debris near the pond outlet; this work was authorized in 2016, but has not been performed due to high water

Please contact me with any corrections to the inspection form. If we do not hear from you, we will assume that you have forwarded this information to Jason Boyle at the Department of Natural Resources Dam
Safety Unit, 500 Lafayette Road, St. Paul, MN, 55155. If you have any questions or need additional information, please contact me at (952) 832-2854.

Sincerely,

Patrick Brockamp, P.E.

Enclosures

c: VBWD Managers
REST AREA POND WATER LEVELS
Valley Branch Watershed District

Water Elevation in NGVD 29 datum
Discharge Elevation in NGVD 29 datum
100-Year Flood Level Elevation in NAVD 88 datum
<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vegetation Cover</td>
<td>See note</td>
<td>See Remarks 1 and 3</td>
</tr>
<tr>
<td></td>
<td>See note</td>
<td>See Remarks 1 and 3</td>
</tr>
<tr>
<td>2. Rip Rap</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>3. Spillway</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>4. Seepage Rate</td>
<td>None Observed</td>
<td>None Observed</td>
</tr>
<tr>
<td>5. Pond Elevation</td>
<td>Approx. 832.4</td>
<td>Approx. 835.5</td>
</tr>
<tr>
<td></td>
<td>Approx. 834.7</td>
<td>Approx. 835.2</td>
</tr>
<tr>
<td>6. Changes in Stream Area</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7. Photographs</td>
<td>Taken 11-06-15</td>
<td>Taken 10-17-16</td>
</tr>
<tr>
<td></td>
<td>Taken 10-04-17</td>
<td>Taken 10-23-18</td>
</tr>
<tr>
<td>8. Structure #2</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>9. 60&quot; RCP</td>
<td>Good</td>
<td>See Remark 2</td>
</tr>
<tr>
<td></td>
<td>See Remark 2</td>
<td>See Remark 2</td>
</tr>
<tr>
<td>10. RCP</td>
<td>Good</td>
<td>Good</td>
</tr>
</tbody>
</table>

**Inspected By:**
Nathan Campeau and Patrick Brockamp  
**Date:** Nov. 6, 2015  

**Inspected By:**
Nathan Campeau and Patrick Brockamp  
**Date:** Oct. 17 & 25, 2016  

**Inspected By:**
Patrick Brockamp and Josh Phillips  
**Date:** Oct. 4, 2017  

**Inspected By:**
Patrick Brockamp and Josh Phillips  
**Date:** Oct. 23, 2018  

**Date:** Nov. 2, 2018  

Bridge Inspections Engineer
1 - Condition of vegetation cover (brush and trees cleared)
2 - Condition of Rip Rap
3 - Condition of Spillway
4 - Check drainage pipe on downstream side
5 - Top pond water elevation
6 - Look for changes of downstream area (new building, excavation, etc.)
7 - Take representative photos

Rating
G - Good – No repairs needed
F - Fair – Minor repairs
P - Poor – Repairs needed
U - Unsatisfactory – Repairs needed immediately
## Other Comments and Observations

- Valley Branch Watershed District (VBWD) and Minnesota Department of Transportation staff inspected the dam on October 23 and October 31, 2018.

- In general, dam and appurtenant structures are in good condition.

- The water level of the pond is above the low-flow control elevation and water is discharging from the pond.

- VBWD’s contractor mowed the dam and spillway in October 2018, before the inspections.

- Inspectors observed woody debris at the pond outlet (flared end inlet to Structure 2) during the 2015 inspections, and VBWD has hired a contractor to remove the debris. High water levels in 2016, 2017, and 2018 prevented removal of the woody debris prior to the 2018 inspections. The pond outlet was submerged and could not be inspected. Inspectors observed water discharging from the outlet structure.

- Inspectors observed animal burrows at one location on the back side of the dam near the power line tower. Inspectors will monitor this location and investigate animal management.
2018 I-94 Rest Area Pond Dam Inspection Photographs (October 23, 2018)

Photo 1: Crest, looking toward left abutment (northeast)

Photo 2: Spillway and downstream face, looking northeast

Photo 3: Upstream face, looking toward right abutment (south)

Photo 4: Downstream face, looking toward spillway (south)
2018 I-94 Rest Area Pond Dam Inspection Photographs (continued)

Photo 5: Animal burrows, downstream side near tower

Photo 6: 60-inch-diameter reinforced-concrete pipe outlet (submerged)

Photo 7: Outlet structure, upstream side of weir

Photo 8: Outlet structure, downstream side of weir
Appendix C

2018 Washington Conservation District Inspection Reports of VBWD Cost-Share Projects
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Hall Paula L,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/4/2018, we conducted an inspection of the Urban BMPs project located at 4824 Grenwich Way N, Oakdale Mn  55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.**

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Borgwardt Mark A & Barbara K,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the Urban BMPs project located at Po Box 223, Afton Mn 55001-0223. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Notes: Hoary alyssum and locust a slight concern.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Brach John C & Kim F,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the Urban BMPs project located at 2946 Oakgreen Ave N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Notes: White flowering plant is hoary alyssum, should be removed.
Dear Brink Mary F & Thomas W,

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/4/2018, we conducted an inspection of the Urban BMPs project located at 4719 Olson Lake Trl N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project requires maintenance, please follow the notes below:**

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding Yellow Iris, Dame's rocket, Reed Canary grass

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear City Of Oakdale,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/19/2018, we conducted an inspection of the forest park garden and nature preserve projects located the Oakdale Nature Preserve. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Both of your projects do not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Marcott Amy D,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 303 Leeward Trl, City Of Woodbury. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Devcich Blake A & Mollie Drabik,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 1727 Newberry Ave N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project requires maintenance, please follow the notes below:

- **Practice Status:** Degraded Aesthetics
- **Inlet Maintenance Needed:** No
- **Hydraulic Function is Degraded:** No
- **Vegetative Management Required:** Weeding Thistle, dandelion, birds foot trefoil, creeping Charlie
- **Overflow Bypass Maintenance Required:** No
- **Structural Maintenance Required:** No
Downing David E & Debra A
5135 Lake Elmo Ave N
Lake Elmo Mn  55042-9562

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Downing David E & Debra A,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 5135 Lake Elmo Ave N, Lake Elmo Mn  55042-9562. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Gierke Cathy J L & Charles H,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 9440 53rd St N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
**Notes:** Some burdock and thistle.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Grabowski Dennis J & Sandra L Grabowski,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 9652 55th St N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

*Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.*

**Practice Status:** No maintenance needed
Notes: Hoary alyssum and curly dock, should be removed.
Hauer Justin E & Aimmie N  
5787 Highland Ct N  
Lake Elmo Mn 55042  

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Hauer Justin E & Aimmie N,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 5787 Highland Ct N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas  
President  
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project requires maintenance, please follow the notes below:

Practice Status: Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding  
Burdock, vetch, thistle, stinging nettles, birdsfoot trefoil

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Hedberg Supply,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 8400 60th St N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project requires maintenance, please follow the notes below:

Practice Status: Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding
Birds foot teefoil, burdock, thistle, dandelion, clover, curly dock

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Dear Helms Catherine,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 3287 Lake Elmo Ave N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Hill Peter L & Cherie L,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/28/2018, we conducted an inspection of the AG BMPs project located next to 3750 Paradox End Ave S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Homestead Homeowners Assoc,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 11075 14th St N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Homestead Homeowners Assoc,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 11075 14th St N, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Notes: Some trefoil along the path. White cockle and stinging nettles a minor concern.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Hunt Randall J & Luann Q Trs,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 4330 Neal Ave N, Stillwater Mn  55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project requires maintenance, please follow the notes below:

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Woody Cutting
Use chemical glyphosate, brands include: roundup, rodeo, touchdown

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Kirkwold Patrick A & Lynette
8010 Demontreville Trail Circle Ct
Lake Elmo Mn 55042

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Kirkwold Patrick A & Lynette,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 8010 Demontreville Trail Circle Ct, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project requires maintenance, please follow the notes below:

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding
One large patch of burdock, west of driveway

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Landucci Homes Inc,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/14/2018, we conducted an inspection of the buckthorn removal projects located near Valley Creek Trl and 50th St N. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Both of your projects require maintenance, please follow the notes below:

Multiple early stages of buckthorn present at the Valley Creek site. Herbicide and cutting/pulling will likely be needed. The 50th St N site shows welcoming signs, only first year growth is present in the treatment area.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Landucci Homes Inc,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/15/2018, we conducted an inspection of the Urban BMPs project located at 13230 20th Street Ct N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project requires maintenance, please follow the notes below:**

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Herbicide Treatment

Only first year growth present where treated, good sign of treatment success.

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Rodriquez Lorna J D  
6586 48th Street Pl N  
Oakdale Mn  55128

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Rodriquez Lorna J D,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 6586 48th Street Pl N, Oakdale Mn  55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project requires maintenance, please follow the notes below:**

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Replanting
French iris, sedges, yarrow, and others are options available. Contact Tara Kline for more information. White cockle and Reed Canary grass should also be removed.

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Mary Santori  
3881 Ironwood Trl  
Lake Elmo Mn 55042

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Mary Santori,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 3881 Ironwood Trl, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project requires maintenance, please follow the notes below:

- **Practice Status**: Degraded Aesthetics
  - Inlet Maintenance Needed: Clean Out Rock
  - Turf grass and sediment on brick/edging
  - Hydraulic Function is Degraded: No
  - Vegetative Management Required: Weeding
    - Some thistle and other small weeds
  - Overflow Bypass Maintenance Required: No
  - Structural Maintenance Required: No
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Santori Mary,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 3881 Ironwood Trl, Lake Elmo Mn 55042. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project requires maintenance, please follow the notes below:**

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: Clean Out Rock
Turf grass and sediment on brick/edging

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding
Some thistle and other small weeds

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Tammy Dennis
303 Leeward Trl
Woodbury Mn  55125

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Tammy Dennis,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at Spinnaker Cove HOA (no mow). Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Anne E Mccomb,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 2813 Division St N, North St Paul Mn 55109-1676. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project requires maintenance, please follow the notes below:**

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Woody Cutting Buckthorn and tree seedlings

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Ales Gregory T & Colleen Mcguire Ales,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 6161 Inwood Ct N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Herold Randall G & Lisa M Mekka,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 7175 44th St N, Oakdale Mn 55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Mutter Marines T,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the Urban BMPs project located at 1815 Stagecoach Trl S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.**

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Noyes Wesley C & Janet M,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Education project located at 1720 Oakgreen Ave N, Stillwater Mn  55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Reeh Ernest S & Mary A Bunczak-Reeh,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/8/2018, we conducted an inspection of the Urban BMPs project located at 12635 53rd Street Ct N, Stillwater Mn 55082. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Sagstetter Steven A & Margaret M,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 1625 Hydram Ave N, Oakdale Mn 55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Notes: Reed Canary grass and daisies encroaching onto project.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Schlechte Jay S & Sheila A,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 2697 Greystone Ave N, Oakdale Mn  55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Schneider Allen P,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 7112 Upper 39th St, Oakdale Mn  55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed

**Notes:** Burdock encroaching from the back, consider removing to minimize risk.
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Sinclair Paul A & Anita L Martin,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the Urban BMPs project located at 15349 11th St S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

Inspection Summary

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Sparks Gary L & Donna M  
2287 Helmo Ct N  
Oakdale Mn 55128

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Sparks Gary L & Donna M,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/12/2018, we conducted an inspection of the Urban BMPs project located at 2287 Helmo Ct N, Oakdale Mn 55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President  
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed  
**Notes:** Replant by splitting different species of the well growing ones.
Thomas Kathleen M  
13736 Valley Creek Trl  
Afton Mn 55001

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Thomas Kathleen M,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the Urban BMPs project located at 13736 Valley Creek Trl, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed

**Notes:** Tara will be visiting.
Vang Jack
12788 50th St S
Afton Mn  55001

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Vang Jack,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/28/2018, we conducted an inspection of the AG BMPs project located at 12788 50th St S, Afton Mn  55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Charlie Wamstad/Traditional Ventures Llc,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/28/2018, we conducted an inspection of the AG BMPs project located at 1987 Manning Ave S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Warden Brian G & Kira H,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the raingarden project located at 14270 42nd St S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Dear Warden Brian G & Kira H,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/5/2018, we conducted an inspection of the prairie restoration project located at 14270 42nd St S, Afton Mn 55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

**Jill Lucas**

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

Practice Status: No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Wiessner Grant M & Carol G,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/28/2018, we conducted an inspection of the AG BMPs project located at 3750 Paradox End Ave S, Afton Mn  55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

**Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.**

**Practice Status:** No maintenance needed
White Kerry R & Judy M  
1132 Indian Trl S  
Afton Mn  55001  

Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear White Kerry R & Judy M,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/28/2018, we conducted an inspection of the AG BMPs project located at 1132 Indian Trl S, Afton Mn  55001. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas

President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project does not require any maintenance, thank you for sustaining your practice. We greatly appreciate your help.

**Practice Status:** No maintenance needed
Thank you for helping protect and restore natural resources in Valley Branch Watershed District!

Dear Wilson Dean L & Bonnie G,

This letter is a follow-up from our regular annual inspections of projects installed throughout the watershed. Funding for your project was provided by Valley Branch Watershed District while the Washington Conservation District supplied technical assistance. Our review will help you make sure your project looks good and functions properly long-term.

On 6/4/2018, we conducted an inspection of the Urban BMPs project located at 7890 44th St N, Oakdale Mn  55128. Our inspection process looks at several factors critical to the functionality of your project and determines if maintenance is needed to ensure the overall success of the project. A summary of our inspection findings is below. If maintenance is needed for your project, please make the improvements as suggested below or, if you need clarification, contact Tara Kline (651-330-8220 x28) or Bryan Pynn (651-330-8220 x36) at the Washington Conservation District.

Regards,

Jill Lucas
President
Valley Branch Watershed District Board of Managers

**Inspection Summary**

Your project requires maintenance, please follow the notes below:

**Practice Status:** Degraded Aesthetics

Inlet Maintenance Needed: No

Hydraulic Function is Degraded: No

Vegetative Management Required: Weeding

Overflow Bypass Maintenance Required: No

Structural Maintenance Required: No