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October 24, 2016

Commissioners
Shingle Creek and West Mississippi
Watershed Management Commissions
Hennepin County, Minnesota

The agenda and meeting packet are available to all interested parties on the Commission's web site. The direct path is <http://www.shinglecreek.org/minutes--meeting-packets.html>

Dear Commissioners:

Regular meetings of the Shingle Creek and West Mississippi Watershed Management Commissions will be held **Thursday, November 10, 2016**, at Clubhouse at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN. Lunch will be served at 12:00 noon and the meetings will convene concurrently at 12:45.

Please email Kerstin at kerstin@jass.biz to confirm whether you or your Alternate will be attending the meetings. Your meal choices are

_____ **St. Andrews Salad.** Fire grilled chicken, organic spinach, mixed greens, red onions, candied almonds, strawberries, feta cheese, strawberry vinaigrette

_____ Dressing on the side

_____ **Fish and Chips.** Crispy fried Tilapia served with fries, coleslaw, lemon wedges

_____ **Reuben.** Corned beef and housemade Thousand Island dressing with sauerkraut, arugula and swiss cheese on a pretzel bun

_____ I will be attending but DO NOT want a meal.

_____ No one from our community will be attending the regular meeting on Thursday, November 10.

Signed _____

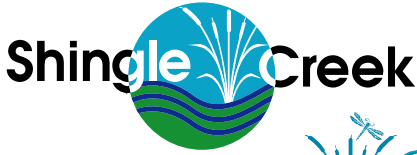
The Clubhouse at Edinburgh is now requiring reservations eight days before the event. We must make final reservations by **noon, Tuesday, November 1, 2016**. Please make a reservation, even if you are not requesting a meal, so we can arrange for sufficient seating and meeting materials. Thank you.

Regards,

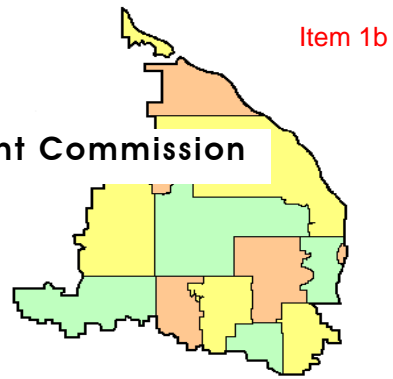
Judie A. Anderson
Administrator

cc: Alternate Commissioners Member Cites Troy Gilchrist TAC Members
Metropolitan Council Wenck Associates

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Watershed Management Commission

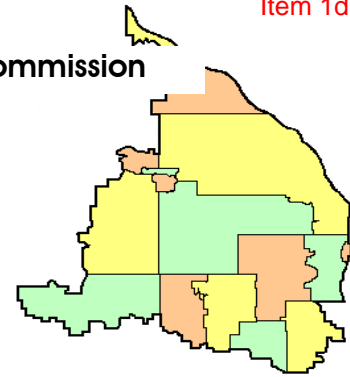


A combined regular meeting of the Shingle Creek and West Mississippi Watershed Management Commissions will be convened on Thursday, November 10, 2016, at 12:45 p.m. at the Clubhouse at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN. An agenda for the meeting follows. Agenda items are available at: <http://www.shinglecreek.org/minutes--meeting-packets.html>.

- 1. Call to Order.
 - SCWM a. Roll Call.
 - ✓ SC b. Approve agenda.*
 - ✓ WM c. Approve agenda.*
 - ✓ SC d. Approve minutes of last meeting.*
 - ✓ WM e. Approve minutes of last meeting.*
- 2. Reports.
 - ✓ SC a. Treasurer’s Report.*
 - ✓ SC b. Approve claims.*
 - ✓ WM c. Treasurer’s Report.*
 - ✓ WM d. Approve claims.*
- SCWM 3. Open forum.
- 4. Project Reviews.
 - ✓ WM a. WM2016-11 Northpark Business Center Buildings 3 and 4, Brooklyn Park.*
 - ✓ WM b. EAW - TH169/101st Avenue Interchange Project, Brooklyn Park.*
- 5. Watershed Management Plan.
- 6. Water Quality.
 - SC a. Wetland 639W Monitoring.*
- 7. Education and Public Outreach.
 - SCWM a. WMWA meeting – 1:00 pm, Tuesday, November 29, 2016, Plymouth City Hall.
- 8. Grant Opportunities and Updates.
 - SCWM a. Iron- and Biochar-Enhanced Sand Filter Bench Pond Retrofits.
 - SC b. Public Art Reaeration Structures.
 - SC c. Twin Lake Carp Management.
 - SCWM d. Clean Water Funds for Crew Labor.*
- 9. Communications.
 - SCWM a. Communications Log.*
 - SCWM b. MAWD 2016 Annual Meeting – December 1-3, 2016. www.mnwatershed.org
- SCWM 10. Other Business.
- SCWM 11. Adjournment

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* In meeting packet or emailed ** Available at meeting ***Previously transmitted **** Available on website ✓ Item requires action



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**MINUTES
Regular Meeting
October 13, 2016**

(Action by the SCWMC appears in blue, by the WMWMC in green and shared information in black.
*indicates items included in the meeting packet.)

I. A joint meeting of the Shingle Creek Watershed Management Commission and the West Mississippi Watershed Management Commission was called to order by Shingle Creek Chairman Andy Polzin on Thursday, October 13, 2016, at 12:45 p.m., at the Clubhouse at Edinburgh, USA, 8700 Edinbrook Crossing, Brooklyn Park, MN.

Present for Shingle Creek were: Dave Vlasin, Brooklyn Center; John Roach, Brooklyn Park; Janet Moore, Crystal; Karen Jaeger, Maple Grove; Bill Wills, New Hope; Daniel Spanier, Osseo; Andy Polzin, Plymouth; Wayne Sicora, Robbinsdale; Troy Gilchrist, Kennedy & Graven; Ed Matthiesen and Tom Langer, Wenck Associates, Inc.; and Judie Anderson, JASS.

Not represented: Minneapolis.

Present for West Mississippi were: Dave Vlasin, Brooklyn Center; John Roach, Brooklyn Park; Gerry Butcher, Champlin; Karen Jaeger, Maple Grove; Daniel Spanier, Osseo; Troy Gilchrist, Kennedy & Graven; Ed Matthiesen and Tom Langer, Wenck Associates, Inc.; and Judie Anderson, JASS.

Also present were: Shelley Marsh, Brooklyn Center; Mitchell Robinson, Brooklyn Park; Todd Tuominen, Champlin; Mark Ray, Crystal; Rick Lestina, Maple Grove; Shawn Markham, New Hope; Leah Gifford and Ben Scharenbroich, Plymouth; Richard McCoy, Robbinsdale; Josh Olson and Chad Ayers, Sambatek, for Project WM2016-08; Todd McLouth, Loucks Associates, for Project SC2016-09; and Rich Xiong, Brooklyn Park resident.

II. **Agendas and Minutes.**

Motion by Moore, second by Jaeger to approve the revised **Shingle Creek agenda**.* *Motion carried unanimously.*

Motion by Butcher, second by Roach to approve the revised **West Mississippi agenda**.* *Motion carried unanimously.*

Motion by Vlasin, second by Spanier to approve the **minutes of the September regular meeting and public hearing**.* *Motion carried unanimously.*

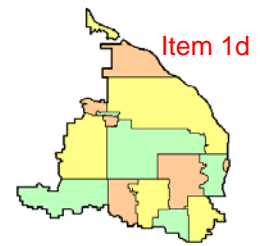
Motion by Jaeger, second by Butcher to approve the **minutes of the September regular meeting and public hearing**.* *Motion carried unanimously.*

III. **Finances and Reports.**

A. Motion by Vlasin, second by Moore to approve the **Shingle Creek Treasurer's Report**.* *Motion carried unanimously.*

Motion by Wills, second by Jaeger to approve the **Shingle Creek October claims**.* Claims totaling \$48,023.84 were *approved by roll call vote*: ayes – Vlasin, Roach, Moore, Jaeger, Wills, Spanier, Polzin, and Sicora; nays – none; absent – Minneapolis. Per confirmation from Matthiesen, the September 27 back-up invoice from Dr. Patrick Ceas in the Wenck invoice packet will be corrected to read as follows: ~~Vermillion River~~ Twin Lake Fish-sampling project, Goodhue Hennepin Co., MN, for the Vermillion River-Shingle Creek Watershed Joint Power Organization.

*items are included in meeting packet



B. Motion by Butcher, second by Vlasin to approve the **West Mississippi Treasurer's Report.*** *Motion carried unanimously.*

Motion by Jaeger, second by Roach to approve the **West Mississippi October claims.*** Claims totaling \$8,591.46 were *approved by roll call vote: ayes – Vlasin, Roach, Butcher, Jaeger and Spanier; nays – none.*

IV. Open Forum.

A. Xiong, a Brooklyn Park resident in the West Mississippi watershed, was present to discuss a potential flooding issue at his property at 4034 Foxglove Avenue North. Motion by Butcher, second by Roach to authorize Commission Staff to discuss this situation with Brooklyn Park City Staff. *Motion carried unanimously.*

B. Moore informed the members that the City of Crystal was doing another neighborhood street reconstruction and 27 residents wanted rain gardens installed in their yards. Altogether that makes about 150 rain gardens that have been installed since 2009. She complimented the City Engineer, the City of Crystal, and the road construction company for going above and beyond the watershed rules for capturing stormwater. She noted that capturing stormwater wherever feasible helps tremendously with water issues in other places.

V. Project Reviews.

A. SC2016-09 Sycamore Commons, Maple Grove.* Construction of a new office building, parking, and stormwater pond with filtration bench on a 2.9 acre site located 900 feet southwest of the East Fish Lake Road and Sycamore Lane North intersection. Following development, the site will be 73% impervious, an increase of 2.1 acres. A complete project review application was received on September 29, 2016.

To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 80-85% TSS removal and 50-60% TP removal. Runoff from the site is proposed to be routed to a NURP Pond with a filtration bench. Filtration is necessary due to the D soils on site. The applicant meets Commission water quality treatment requirements.

Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. Runoff from the site is directed to a NURP pond and passed through 70% sand / 30% compost filtration bench. The applicant meets the Commission's rate control requirements.

Commission rules also require the site to infiltrate 1.0" of runoff from new impervious area within 48 hours. The new impervious area on this site is 2.1 acres, requiring that 7,623 CF be infiltrated within 48 hours. The applicant proposes a filtration bench with 960 SF that has the capacity to filtrate the required volume within 48 hours, meeting Commission requirements. Filtration is necessary due to the D soils on site.

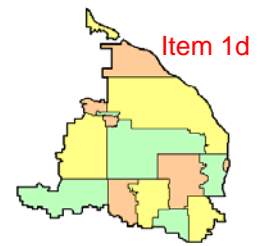
The NWI does not identify any wetlands on site. There are no Public Waters or floodplain on this site. The low floor elevations of the buildings are at least two feet higher than the high water elevation of the detention ponds according to Atlas 14 precipitation and meet Commission requirements.

An erosion control plan was submitted with the project review, and includes rock construction entrance, perimeter silt fence, and native seed specified on the pond slopes. The erosion control plan meets Commission requirements.

A public hearing for the project was held on October 10 as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.

Motion by Jaeger, second by Moore to notify the City of Maple Grove that Project 2016-09 is approved with no conditions. Motion by Sicora, second by Wills to amend the motion to require that an operation and maintenance plan for the storm sewer system agreeable to the City be provided. *The amendment passed unanimously. The main motion passed unanimously.*

*items are included in meeting packet



B. WM2016-07 Riverview Estates Second, Brooklyn Park.* Subdivision of three single-family lots and construction of two new homes on 2.0 acres on a site located at 8450 and 8500 Riverview Lane. Following development, Lot 1 will be 15% impervious, Lot 2 14% impervious, and Lot 3 unchanged, for a total increase of 0.08 acres. A complete project review application was received on August 26, 2016.

The project is within the Mississippi River Critical Corridor Area where the requirements are building setbacks of 40' from the top of bluff and 100' from the OHW (Ordinary High Water). The existing house to be demolished is within both the bluff and OHW setback. The proposed houses are beyond the setback requirements. At their September 8, 2016 meeting the West Mississippi Commissioners questioned whether the setback was correct or if it should be 200'. Following the meeting it was confirmed with the Minnesota Dept. of Natural Resources Wild and Scenic River Legislation and a phone call with Cindy Sherman, City of Brooklyn Park Planning Director, that the setbacks as shown in the plans are correct as stated above. The 200' setback from the river applies to Rural Open Space. There is no rural open space in Brooklyn Park or the West Mississippi Watershed.

To comply with the Commission's water quality treatment requirement, runoff from the site is proposed to be routed over turf grass. The applicant meets Commission water quality treatment requirements. Commission rules also require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The majority of the site by observation will be directed to flow over turf.

Commission rules further require the site to infiltrate 0.5" of runoff from new impervious area within 48 hours. The new impervious area on this site is .08 acres, requiring that soils need to be amended in all disturbed areas to meet Commission requirements. At the September meeting the Commissioners questioned whether the new homes would be subjected to groundwater flow through their basements. Following the meeting it was confirmed with Sherman that the home to be demolished located in the middle of the lot split has had no record of wet basement issues.

The NWI does not identify any wetlands on site. There are Public Waters on this site. The site is adjacent to the Mississippi River. There is no floodplain on this site. An erosion control plan was submitted with the project review, and includes perimeter silt fence. The erosion control plan meets Commission requirements.

A public hearing on the project has been conducted as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.

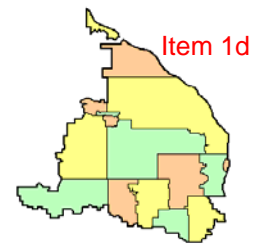
Motion by Butcher, second by Roach to advise the City of Brooklyn Park that project WM2016-07 is approved conditioned that soil amendments per the Commission's BMP standard detail be made in all areas of soil disturbance. *Motion carried unanimously.*

C. WM2016-08 Midas Station, Brooklyn Park.* Development of two hotels, three future retail buildings, parking, and surface and underground stormwater facilities on a seven-acre site located at the southeast corner of West Broadway Avenue and Highway 610. Following development, the site will be 74% impervious, an increase of 5.15 acres. A complete project review application was received on September 27, 2016.

To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 80-85% TSS removal and 50-60% TP removal. Runoff from the site is proposed to be routed to two infiltration basins and two underground infiltration/detention chambers with sump manholes and Rainguardians for sediment capture pretreat, the applicant meets Commission water quality treatment requirements.

Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The applicant meets the Commission's rate control requirements. The rules also require the site to infiltrate 1.0" of runoff from new impervious area within 48 hours. The new impervious area on this site is 5.15 acres, requiring that 9,405 CF be infiltrated within 48 hours. The applicant proposes two infiltration basins

*items are included in meeting packet



and two underground infiltration/detention chambers that have the capacity to infiltrate the required volume within 48 hours, which meets Commission requirements.

The NWI does not identify any wetlands on site. There are no Public Waters or floodplain on this site. The low floor elevations of the buildings are at least two feet higher than the high water elevation of the infiltration basins, meeting Commission requirements.

An erosion control plan was submitted with the project review and includes rock construction entrance, perimeter silt fence, and native seed specified on the pond slopes. The erosion control plan meets Commission requirements.

A public hearing on the project has been as part of Planning Commission and City Council review of this project on September 26, meeting Commission public notice requirements.

Motion by Roach, second by Spanier to advise the City of Brooklyn Park that project WM2016-08 is approved conditioned that the Applicant conduct a post construction infiltration test and provide an operation and maintenance plan for the storm sewer system agreeable to the City of Brooklyn Park. *Motion carried unanimously.*

D. WM2016-09 Gray's Estates 7th Addition, Brooklyn Park.* Residential development on an existing lot, consisting of the construction of eight new lots on 2.96 acres and a new street to provide access to eight new homes. The site is located at 8924 West Broadway. Following redevelopment the existing lot will be redeveloped to fit within the surrounding Grays Estates development. Following development, the site will be 27% impervious, an increase of 0.23 acres. A complete project review application was received on September 29, 2016.

To comply with the Commission's water quality treatment requirement, runoff from the site is proposed to be routed to a new infiltration basin. The applicant provided P8 calculations showing that the proposed basin provides a 70.7% reduction in phosphorus and an 87.2% reduction in TSS. The proposed BMP meets Commission water quality treatment requirements.

Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The applicant has provided HydroCAD calculations showing the pre- and post-development runoff rates. The project meets Commission rate control requirements.

Commission rules require the site to infiltrate 1.0" of runoff from the site's impervious area within 48 hours. The impervious area on this site is 0.81 acres, requiring 2,962 CF of infiltration volume. The basin is designed to infiltrate 5,693 CF of infiltration volume below the primary outlet and the bottom of the infiltration basin. The infiltration basin meets Commission volume control requirements.

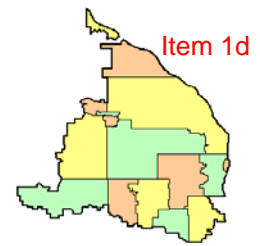
The NWI does not identify any wetlands on site. There are Public Waters on this site. There are no floodplains on the site. An erosion control plan was submitted with the project review, and includes a rock construction entrance, inlet protection, perimeter silt fence, post-grading silt fence, and tree-protection. The erosion control plan meets Commission requirements.

A public hearing on the project has been conducted as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.

Motion by Vlasin, second by Roach to advise the City of Brooklyn Park that project WM2016-09 is approved conditioned that the Applicant conduct a post construction infiltration test and provide an operation and maintenance plan for the storm sewer system agreeable to the City of Brooklyn Park. *Motion carried unanimously.*

E. WM2016-010 Parnassus Preparatory School, Maple Grove.* Redevelopment of former Zachary Square to charter school with building addition and school facilities on a 9.3-acre site located at 11201 96th Avenue North. Following development, the site will be 76% impervious, a decrease of 1.47 acres.

*items are included in meeting packet



To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 80-85% TSS removal and 50-60% TP removal. Runoff from the site is proposed to be routed to an infiltration basin. The applicant meets Commission water quality treatment requirements.

Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. The applicant has provided HydroCAD calculations showing the pre- and post-development runoff rates. The applicant meets the Commission's rate control requirements.

Commission rules require the site to infiltrate 0.5" of runoff from new impervious area within 48 hours. The new impervious area on this site is 4.27 acres, requiring that 7,747 CF be infiltrated within 48 hours. The applicant proposes to infiltrate 20,191 CF of infiltration volume below the primary outlet and the bottom of the infiltration basin. The infiltration basin meets Commission volume control requirements.

The NWI does not identify any wetlands on site. There are no Public Waters or floodplain on this site. The low floor elevations of the buildings are at least two feet higher than the high water elevation of the infiltration basins, meeting Commission requirements.

An erosion control plan was submitted with the project review and includes rock construction entrance and perimeter silt fence. Native seed is not specified on the infiltration basin slopes. The erosion control plan does meet Commission requirements.

A public hearing on the project was held on September 26, 2016 as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.

Motion by Jaeger, second by Butcher to advise the City of Maple Grove that project WM2016-10 is approved conditioned that the Applicant specify native seed mix on the filtration basin slopes, conduct a post construction infiltration test, and provide an operation and maintenance plan for the storm sewer system agreeable to the City of Maple Grove. *Motion carried unanimously.*

VI. Water Quality.

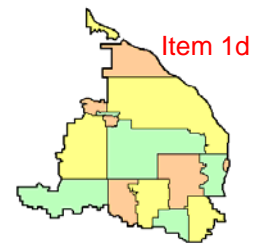
In their October 7, 2016 memo* Staff discussed the **September 21-22 rain event**. On September 21-22, 2016, a band of heavy rain settled over the northern Metro area, resulting in rainfall depths greater than 8" in Maple Grove. The official amount received at the Crystal Airport was 3.3" over about 13 hours. Flow in Shingle and Bass Creeks immediately rose and there were reports of street flooding. Lanes of TH 169 were closed for a time. Rain recorded by volunteers who are part of the national CoCoRaHS monitoring network ranged from 8.11" to 2.38".

The memo included a hyetograph depicting rainfall by hour. Staff also summarized the rain event for various durations and compared them to the Atlas 14 return frequency depths for the Crystal Airport location. For the longer duration events, this storm was about a 5-year storm, but for the shorter durations, it was about a 2-year or more frequent event. In other words, the most intense part of the storm was not unusually intense, there is about a 50/50 chance of it occurring each year. However, it is less probable - a one in five chance - to receive this amount of rain over an extended period.

Staff also investigated the return frequency of the streamflow, which peaked at 288 cfs between 1-1:30 am. If that holds as the highest peak flow this year, then this will be the third highest peak flow recorded since 1996. They performed a Log-Pearson Type III frequency analysis on the 19 years of annual peak flow data available for the USGS monitoring site at Queen Avenue in Minneapolis. Frequency distributions tell the likelihood of various discharges as a function of recurrence interval or exceedance probability.

The analysis calculated the 25-year streamflow to be 286 cfs, so the 288 cfs peak flow recorded for this stream was right at about a 25-year flow. Fewer years of continuous data have been collected at the Shingle Creek

*items are included in meeting packet



Commission's other monitoring sites; thus, a frequency analysis was not done. In West Mississippi, some of the areas of most intense rain discharge through Edinbrook Channel, which is a system that Commission does not monitor. This year, Mattson Brook is being monitored. Staff will be able to look at the storm hydrograph, but too little data are available to do a frequency analysis.

Staff visited the monitoring sites the day after the storm to retrieve storm samples and download flow data. The streams were very high. They also sampled and measured flow at Wetland 639W, which was discharging over the long weir and flowing over the wood chip paths. In Bass Creek Park in Brooklyn Park, a culvert carrying a trail across Bass Creek blew out, and the Jobox and monitoring equipment were under water. Staff will be doing routine sampling the week of October 10; if the water has receded enough to recover the equipment, they will assess the damage and report to the Commission.

VII. Education.

A. Outreach. The Shingle Creek Watershed Management Organization Facebook page has 57 Likes. There was a flurry of activity in September as photos and updates about the Twin Lake carp population estimate and tracking activities and the results of the September 22, 2016 rain event were posted. Many of the Twin Lake posts were shared on other Facebook pages such as Birdtown, Upper Twin Lake, and Lower Twin Lake. As a result, those posts garnered the most engagement experienced to date. In September over 3,500 people were reached, i.e., they saw the post in their feeds. There were 894 engagements, meaning the posts were clicked through, or someone commented or liked. By far the most popular were posts with photos from the carp counting in mid-September. The West Metro Water Alliance (WMWA) also maintains a Facebook Page and currently has 78 likes.

Included in Staff's October 13, 2016 memo,* were the analytics for the website for September 2016. Usage is pretty stable. The most popular pages are Minutes and Meeting packets page and the Rules and Standards page. Some of the Facebook posts about Twin Lake included a link to the project page on the website, and the September analytics show that drove 47 click-throughs to the website.

B. WMWA Update.

1. Planting for Clean Water Project. The Planting for Clean Water and Pollinators "Big Project" is underway. As of last month there were about 130 electronic pledges and about 300 pledge cards that hadn't been added into the electronic tracking system yet. WMWA is in the early stages of organizing opportunities for native plant sales at various city events around the watersheds. The early concept is that WMWA would identify native plant vendors willing to sell plants at city festivals, craft fairs, farmers markets, etc., and WMWA would pay their vendor booth charge. The vendors and local staff would be available to educate and take pledges. The campaign site is at <http://www.bluethumb.org/pledge/>.

2. Educators. The educators are winding down the fall semester classroom visits. There is growing interest in a 6th grade follow-up lesson, and the three educators will be meeting over the next few months to prepare the lesson plan.

3. The next **WMWA meeting** is scheduled for 1:00 p.m., Tuesday, November 29, 2016, at Plymouth City Hall.

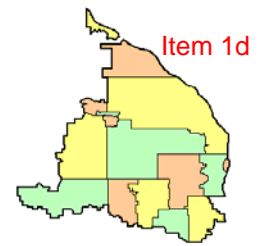
VIII Grant Opportunities and Updates.

A. Becker Park Infiltration Project.*

1. This project is scheduled to be bid in late 2018 for 2019 construction. The Board of Water and Soil Resources (BWSR) is willing to extend the FY2016 \$725,000 Clean Water Fund Grant Agreement to December 31, 2019. Motion by Moore, second by Vlasin to **approve the amendment.** * Motion carried unanimously.

2. Included in the meeting packet was a **Subgrant Agreement,*** which was adopted by the City of Crystal City Council on October 5, 2016. The Subgrant Agreement would authorize release of funds to Crystal to complete Phase 1 of the engineering services for the project. Phase 1 is comprised of soil borings and-

*items are included in meeting packet



other geotechnical services; location of utilities; boundary and topographic survey; environmental Phase 1 investigation; and a technical report summarizing all data and making findings.

BWSR released 50% of the grant amount earlier this year. \$75,000 is specifically earmarked in the grant work plan for preliminary engineering services. This Subgrant Agreement would release upto \$75,000 to Crystal to complete this work. Unspent funds could be applied to phase 2 engineering costs to prepare 30% plans and a more detailed, updated cost estimate. Attached to the Subgrant Agreement are the BWSR grant contract and the professional services proposal from Wenck that was accepted by the City. The amended grant contract approved above will also be attached to this Agreement. Motion by Moore, second by Jaeger to approve the Subgrant Agreement. *Motion carried unanimously.*

B. Iron- and Biochar-Enhanced Sand Filter Bench Pond Retrofits. Signed Memoranda of Understanding have been received from the Minneapolis Park and Recreation Board (MPRB) and the City of Crystal.

C. Public Art Reaeration Structures. Two artists, Cecelia Schiller and Jim Brenner, have been selected and are under contract. Schiller's structures will be located at Park Center High School near the amphitheater (painted turtle) and in the park at Brooklyn Center City Hall (brass leaves). Brenner's design (three bowls) will be located at the outlet of Palmer Lake and is a permanent structure.

[Sicora departed 2:15 p.m.]

D. Over the month of September, the team completed the population estimate and radio tagging tasks of the **Twin Lake Carp Management Project**. Tom Langer presented a pictorial overview of the work completed to date.

1. Mark and Release. Initial mark and recapture began on September 2 with electro-boat shocking on Lower Twin Lake. Fisheries information and shocking time were recorded. The left pelvic fin was clipped on all captured Lower Twin common carp. On September 9 boat shocking continued on Middle and Upper Twin Lakes. The right pelvic fin was clipped on all carp captured on Upper Twin and the right pectoral fin was clipped on all carp captured on Middle Twin. Fisheries and shocking related information from the initial survey efforts are reported in Staff's October 7, 2016 memo.*

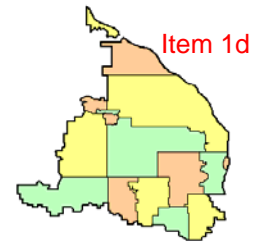
The second assessment was conducted on September 29 and coincided with radio tag implanting on select carp. Only one fish initially fin-clipped on Middle Twin was recaptured on Middle Twin. This is suggestive of a very large population of fish within the lake system. Fisheries and shocking related information from the second survey efforts are also reported in the memo. There are some funds remaining in the budget for this task. The team will likely complete another day of mark and release in spring 2017 so they have a third data point for the population estimate.

Literature and lake management experience suggest that carp and other rough fish can have negative impacts to water quality and the ecosystem when the biomass of the carp exceeds 100 kilograms per hectare (kg/ha). (A hectare is just less than 2.5 acres in size.) Both Upper and Middle Twin are estimated to be well above the critical biomass threshold. Lower Twin was estimated to be below the critical impairment threshold, but because the lakes are interconnected and fish can migrate easily, all three basins are likely being impacted by carp.

2. Radio Tagging. Radio tag implanting was completed on September 29. A unique radio frequency was assigned to each fish and length, weight, sex information were recorded. In total 40 fish were implanted with radio tags. An attempt was made to tag equal numbers of fish per lake, but the team was limited by the number and size they caught in each lake. Carp were less abundant in Lower Twin. Relatively equal males to females were tagged within the system and fish of various sizes were tagged.

3. Tracking. On September 30 the team began tracking the fish. Their primary objectives were to determine any initial post-surgery mortality and to test out tracking equipment and methods. Three of the four fish tagged from Lower Twin Lake were located. One was found in Lower Twin and the other two fish were in the

*items are included in meeting packet



outlet channel or downstream wetland complex. It is possible the remaining Lower Twin tagged fish that were not located had left the system over the France Avenue weir since the water was high.

Sixteen of 17 Middle Twin carp were located. Eleven of the 16 were still in Middle Twin with most fish moving back to areas where carp were captured the day before. Five of the 16 carp had relocated into Upper Twin Lake.

Ten of 19 Upper Twin carp were found in Upper Twin. The team did not monitor the channels and wetlands upstream of the lake. The status of the other nine fish is unknown, however, since these fish were not located in Middle or Lower Twin lakes it is likely that they were in some of the nooks and crannies of Upper Twin Lake that were not tracked that trip.

4. Conclusions. A large population of common carp persists within the Twin Lake chain. Various-sized fish led the team to believe that many successful year classes also persist within the lakes. The large biomass/hectare of carp within the system in addition to the many year classes suggests that a thriving population of carp is within the lake chain and is likely degrading water quality and habitat quality of the chain of lakes.

Additionally, the system appears to be a relatively open system with fish migrating between lakes, within lakes and also out of the lake chain. The team currently has limited information about fish movement within and outside of the chain of lakes, however, the tracking of carp less than 24 hours post-surgery suggest strong movement of carp within the chain of lakes.

D. Connections at Shingle Creek. The stream restoration portion of the project is essentially complete and the buffer vegetation is being established.

E. On behalf of the Commission, Staff has submitted an application for a 2017 BWSR Accelerated Implementation grant to help fund the **Minneapolis subwatershed assessment**. Awards will be announced in December.

IX. Communications.

The **September communications log*** was included in the meeting packet. No action required.

X. Other Business.

XI. Adjournment.

There being no further business before the Shingle Creek Commission, motion by Vlasin, second by Moore to adjourn. *Motion carried unanimously.*

There being no further business before the West Mississippi Commission, motion by Jaeger, second by Vlasin to adjourn. *Motion carried unanimously.*

The meeting was adjourned at 2:35 p.m.

Respectfully submitted,

Handwritten signature of Judie A. Anderson.

Judie A. Anderson
Recording Secretary
JAA:tim

Z:\Shingle Creek\Meetings\Meetings 2016\10_Regular Meeting Minutes.doc

*items are included in meeting packet

WEST MISSISSIPPI WATERSHED MANAGEMENT COMMISSION

PROJECT REVIEW WM2016-11 Northpark Business Center Building 3 & 4

Owner: Scannell Properties
821 Meander Ct
Medina, MN 55340

Engineer: Adam Ginkel, P.E
Company: Plowe Engineering
Address: 6776 Lake Dr
Lino Lakes, MN 55014

Phone: 651.361.8234
Email: adam@plowe.com

Purpose: Develop two Buildings Commercial/Industrial at the Northpark Business Center

Location: Southeast corner of 109th Ave and Highway 169 in Brooklyn Park (see Figure 1)

Exhibits:

1. Project review application and project review fee of \$XXXX, dated , rcvd. .
2. Site plan, grading, utility, erosion control, and landscaping plans dated and hydrologic calculations by Adam Ginkel of Plowe Engineering, dated 10/25/2016, rcvd. 10/28/2016.

Findings:

1. The proposed project is the development of 29 acres. Following development, the site will be 73 percent impervious, an increase of 21 acres.
2. The complete Project Review sans project review fee was received on October 28th, 2016. To comply with the 60-day review requirement, the Commission must approve or deny this project no later than the December 8th meeting. Sixty calendar-days expire on 12/27/2016.
3. To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 80-85% TSS removal and 50-60% TP removal. If a sump is used the MnDOT Road Sand particle size distribution is acceptable for 80% capture.

Runoff from the site is proposed to be routed through a series of stormwater ponds built to hold two 100-year (7.26") events for the water quality pre-treatment and infiltration basins. All the stormwater will be managed onsite through infiltration. The applicant meets the Commission's water quality treatment requirements.

4. Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events. Runoff from the site is directed to a series of stormwater ponds and infiltration basins. All the water is managed onsite and is designed for two back-to-back 100-year events. Table 1 shows the runoff of pre- and post-development scenarios. The applicant meets the Commission's rate control requirements.

WM2016-11: Northpark Business center Building 3 & 4

Table 1. Runoff from site (cfs).

Drainage Area	2-year event		100-year event	
	Pre-	Post-	Pre-	Post-
All Subcatchments	Not Shown	0.00	Not Shown	0.00

5. Commission rules require the site to infiltrate 1.0” of runoff from new impervious area within 48 hours. The new impervious area on this site is 20.89 acres, requiring that 1.74 acre-feet be infiltrated within 48 hours. The applicant proposes to infiltrate all the water onsite due to the highly permeable soils (4.5 in/hr). The maximum allowable infiltration rate from the MN Stormwater Manual is 1.63 in/hr. Wenck spoke to Todd Smith at the MPCA in storm water permitting and based upon the calculations accounting for the risk factor of 2.5 they are fine with the higher infiltration rate as fine sediments will accumulate in the basin and reduce the rate over time. The infiltration basin can infiltrate the 100-year event within 48 hours and has the capacity to hold the volume of a back-to-back 100-year event (14.52”). This meets the Commission requirements for infiltration. The applicant will conduct a post-construction infiltration test on the infiltration basin to verify the infiltration rates used in the design. If not met, corrections will be made to meet the design infiltration rates.
6. The NWI does not identify any wetlands on site.
7. There are no Public Waters on this site.
8. There is no floodplain on this site per FEMA. The low floor elevations of the buildings are at least two feet higher than the high-water elevation of the detention pond & infiltration basin per Atlas 14 precipitation and the, meeting Commission requirements.
9. An erosion control plan was submitted with the project review, and includes rock construction entrances, and native seed specified on the pond slopes. The erosion control plan meets Commission requirements.
10. A public hearing on the project was held on October 12th as part of Planning Commission and City Council review of this project, meeting Commission public notice requirements.
11. This site is north of the DWSMA
12. A Project Review Fee of \$xxx has been received.

Recommendation: Recommend approval with no conditions.

Wenck Associates, Inc.
Engineers for the Commission

Ed Matthiesen, P.E.

Date

WM2016-11: Northpark Business center Building 3 & 4

Figure 1. Site location.





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 wenckmp@wenck.com
 www.wenck.com

TECHNICAL MEMORANDUM

TO: Jeff Holstein, City of Brooklyn Park
CC: West Mississippi WMO Commissioners

FROM: Ed Matthiesen, Wenck Associates, Inc.

DATE: November 3, 2016

SUBJECT: Comments on Environmental Assessment Worksheet for the TH169/101st Avenue Interchange Project in Brooklyn Park

SRF Consulting prepared an Environmental Assessment Worksheet (EAW) for a proposed project to reconstruct and expand Highway 169 and 101st Avenue. The work is intended to provide transportation infrastructure for 1,500 acres of undeveloped property and the expansion of the Target Campus. The project includes the construction of a new folded interchange at the existing at-grade intersection of TH 169 and 101st Avenue. A new bridge along 101st Avenue will be constructed over TH 169, and auxiliary lanes will be constructed on north and southbound lanes between TH 610 and 101st Avenue. Roundabouts will be constructed at TH 169/101st and Jefferson Highway/101st. Stormwater ponds and filtration basins will be constructed near the Jefferson Highway/1-01st Avenue intersection and within the TH 169/101st Avenue interchange ramp areas. (see Figure 1).

The EAW is a standard format used in Minnesota for environmental review of projects that meet certain thresholds. The EAW provides information about a project that may have the potential for significant environmental effects, and is prepared by a Responsible Governmental Unit (RGU) or its agents to determine whether an Environmental Impact Statement (EIS) should be prepared. The EAW is reviewed by agencies having permitting or other authority to review a project and by the public at large. The EAW is not intended to identify and solve all potential environmental issues, but to disclose them and identify potential mitigation measures that would be further developed as project design proceeds.

This technical memo addresses the TH169/101st Avenue Interchange Project and its conformance with the West Mississippi Watershed Management Commission's rules for linear construction projects. This memo outlines the conformance of the project in regards to the Commission's water quality, stormwater runoff control, volume control, and erosion control standards. Additionally, this memo addresses impacts on wetlands, Public Waters, groundwater, and the regulatory floodplain. The findings of this review are addressed below.

Water Quality

To comply with the Commission's water quality treatment requirement, the site must provide ponding designed to NURP standards with dead storage volume equal to or greater than the volume of runoff from a 2.5" storm event, or BMPs providing a similar level of treatment - 80-85% TSS removal and 50-60% TP removal.

Technical MemoTH169/101st Avenue Interchange Project in Brooklyn Park

November 3, 2016

This 52ac site drains to the east into city storm sewer and an unnamed creek in the Environmental Preserve.

The ground cover is summarized below:

Cover Type	Existing (acres)	Proposed (acres)
Wetlands	3.0	0
Stormwater Features	3.8	7.1
Median Wetlands	0.7	0.7
Streams	N/A	N/A
Woods	4.7	0
Cropland	5.8	0
Lawn/landscaping	9.1	23.1
Impervious	13.8	21.4
Total	52.3	52.3

It should also be noted there are no impaired waters within 1 mile of the project site.

The treatment provided by the various ponds and sump manholes should provide the amount of treatment necessary, however, calculations should be provided to show the treatment capacity of the stormwater ponds.

Stormwater Runoff Control

Commission rules require that site runoff be limited to predevelopment rates for the 2-, 10-, and 100-year storm events.

Calculations should be provided to determine that post-development rates are lower than pre-development rates.

Volume Control

Commission rules require the site to infiltrate 1.0" of runoff from new impervious area within 48 hours. The project proposes 7.6 acres of new impervious surface from the addition of roads, trails, sidewalks, and turn lanes. This amount of impervious surface requires 27,588 cu-ft. (0.63 ac-ft.) of infiltrative capacity.

The current project area does include rate control ponds. With the inclusion of new stormwater ponds in the project, it is recommended that filtration trenches or other filtration BMPs be included in the new pond construction as allows.

Erosion Control

An erosion control and stormwater pollution prevention plan should be developed for the project.

Wetland Impacts

The NWI identified six wetlands within the project area. The Commission is LGU for WCA Administration and will review wetland impacts due to fill and hydrology alterations. Table 5 in the EAW shows all

Technical Memo

TH169/101st Avenue Interchange Project in Brooklyn Park

November 3, 2016

wetlands will be filled post construction. As part of design these must be delineated and if necessary a mitigation plan prepared.

Public Waters

101st Avenue crosses a public watercourse approximately immediately east of Jefferson Highway. This is public water (#254W). As part of design these must be delineated and if necessary a mitigation plan prepared.

Floodplain

There is no regulatory floodplain on the site.

Additional Information Needed:

1. Calculations showing the amount of storage and to demonstrate that the project meets the Commission's;
 - a. Water quality standards,
 - b. Rate control standards.
2. Provide infiltration BMPs to meet the Commission's Volume control standards;
 - a. Provide an abstraction volume equivalent to 1" of runoff from new impervious surfaces (27,588 cu-ft.).
3. Create erosion control and stormwater pollution prevention plans to meet the Commission's Erosion control standards.
4. Complete necessary WCA documentation.

Recommended Commission Action

Review and discuss. Direct staff to submit comments to City of Brooklyn Park.

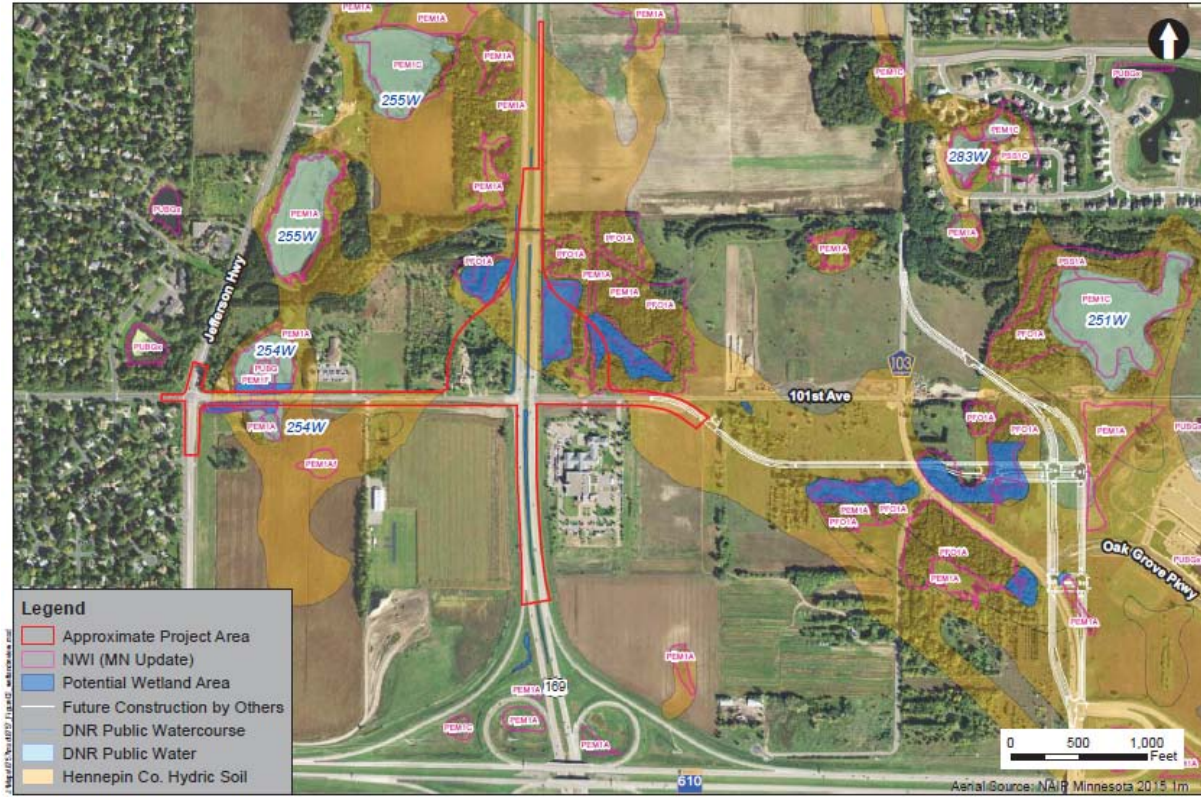
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TH169/101st Avenue Interchange Project in Brooklyn Park
November 3, 2016

Figure 1. Project Area



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TH169/101st Avenue Interchange Project in Brooklyn Park
November 3, 2016

Figure 2. Potential Wetland Areas



Potential Wetland Areas

TH 169 / 101st Avenue Interchange Project
City of Brooklyn Park

Figure 2

Technical Memo



Responsive partner.
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To: Shingle Creek/West Mississippi WMC Commissioners

From: Ed Matthiesen, P.E.
Diane Spector

Date: November 4, 2016

Subject: Wetland 639W Monitoring Follow Up

Diane Spector and Jeff Strom presented updated modeling results for the Wetland 639W project at the Minnesota Water Resources Conference on October 19, 2016. We will make that same presentation to the Commission at your November 8, 2016 meeting, and talk next steps.

Table 1 shows annual monitoring data for the inlet of wetland 639W at 63rd Avenue, and Table 2 shows data for the outlet of the wetland just upstream of CR 10. We don't have complete data for the monitoring that was done in 1999, so we will use it for reference but not for calculations. 2002 and 2008 are pre-construction, and 2012 and later is post-construction. After 2013 we discontinued monitoring the inlet to the wetland as we thought it was adequately characterized.

We did not have a specific annual volume reduction goal for the project, but the TP load reduction goal was 300 pounds per year on average. It is difficult to say with certainty whether we have achieved that goal. Flow out of the wetland is highly dependent on the amount and timing of precipitation, and the amount of available storage in the wetland. For example, not only was 2008 a below-normal precipitation year, the summer months were very dry and the wetland did not discharge all summer. Compare to 2015 which was only slightly above average but there were several large events that filled the wetland, and even small rain events caused the wetland to discharge.

At this point at best what we can say is that in wetter years, the wetland is retaining water, and loads are being reduced. In average or dryer years, the amount of load reduction is largely dependent on when precipitation is received and how much storage is available in the wetland. We are also looking for ways to further reduce ortho phosphorus, such as minimizing outflow from the relief valves and additional passive removal in the overflowchannel.

Table 1. Wetland 639W inlet monitoring data.

Year	Precipitation (in)		Inflow		Inflow Total Phosphorus (ug/L)		Inflow Ortho Phosphorus (ug/L)	
	Monitoring Period	Annual	Volume Acre-ft	Runoff (inches)	Conc (FWM)	Load (lbs)	Conc (FWM)	Load (lbs)
1999	?	27.17						
2002	21.27	39.89	786	9.77	123	263	72	154
2008	10.73	27.10	277	3.44	184	139	103	78
2012	22.52	30.21	257	3.19	311	217	77	54
2013	26.1	36.02	127	1.58	207	71	103	36
2015	30.3	35.51	*	*	*	*	*	*
2016			*	*	*	*	*	*

FWM = flow-weighted mean concentration

*Stopped monitoring inflows

Table 2. Wetland 639W outlet monitoring data.

Year	Precipitation (in)		Outflow		Outflow Total Phosphorus (ug/L)		Outflow Ortho Phosphorus (ug/L)	
	Monitoring Period	Annual	Volume Acre-ft	Runoff (inches)	Conc (FWM)	Load (lbs)	Conc (FWM)	Load (lbs)
1999	?	27.17	908	11.29	481	1,189	?	?
2002	21.27	39.89	970	12.06	275	725	148	390
2008	10.73	27.10	32	0.40	271	24	76	7
2012	22.52	30.21	155	1.92	252	106	142	60
2013	26.1	36.02	137	1.70	465	173	153	57
2015	30.3	35.51	838	10.42	208	474	180	409
2016			334	4.15	302	274	276	251

Request for Proposals



*Conservation Corps Minnesota
provides meaningful work for
young people in conserving
our natural resources.*

CLEAN WATER FUNDS FOR CREW LABOR

Conservation Corps Minnesota is accepting applications for 2017 field projects.

Funds are available for Conservation Corps crew labor on projects that protect, enhance and restore water quality in lakes, rivers and streams or protect groundwater and drinking water sources from degradation. Projects must be scheduled for completion during the 2017 calendar year.

The Legislature has directed the **Board of Soil and Water Resources (BWSR)** to appropriate \$500,000 of the Clean Water Fund to be contracted for services with Conservation Corps Minnesota. BWSR has contracted with the Corps to provide funded labor to cities, counties, soil and water conservation districts, watershed districts, metropolitan watershed management organizations, and joint powers organizations of those local government units to undertake projects consistent with the Corps mission, BWSR grant policies, and Clean Water Fund goals (Laws of Minnesota, Chapter 172, section 6).



Apply by December 15, 2016.

<http://www.conservationcorps.org/clean-water-funding/> for an application and more information.

Contact [Brian Miller](#) at 651.209.9900 x19 with any questions.

Our mailing address is: 60 Plato Blvd East Saint Paul, MN 55107

**SHINGLE CREEK / WEST MISSISSIPPI WATERSHED MANAGEMENT COMMISSION
MONTHLY COMMUNICATION LOG
October 2016**



Date	From	To	SC	WM	Description
10-7-16			X		Email Minneapolis Business Center II (Howe Chemical) scanned file to Amy Delbecq @ MPCA construction from Ed Matthiesen
10-7-16	Greg Gugerski, KIA , Brooklyn Park	Ed Matthiesen, Wenck Associates	X		re: repair of retaining wall
10-7-16	Thomas Rehwaldt , Ryan Companies	Ed Matthiesen		X	confirming the 9/1 plans for WM2016-05 Zane Medical Office Building are still consistent with the Commission rules
10-7-16	Kathleen Hammer, Landform	Diane Spector, Wenck Associates	X		Question re infiltration requirements for site improvements in Arbor Lakes infiltration credit area. Referred to city as site <5 acres.
10-7-16	Rachel Olmanson, MPCA	Diane Spector	X	X	Phone call check in on grant funded projects
10/10/16	Office of the State Auditor	SC WMC	X		Request to complete an online survey regarding the Clean Water Fund
10-11-16	George Schneider, Maple Grove	Ed Matthiesen	X		re: carp management on Rice Lake
10-11-16	Erin Hunker, SRF	Ed Matthiesen and Diane Spector		X	Reminder of Brooklyn Park Subarea meeting on October 13 at the Bottineau Project Office
10-18-16	Summer Streets, MPCA	Diane Spector	X		Phone call re: PFOS testing results on fish in Twin Lake, sent links to wetland 639W reports
10-18-16	Conservation Corps Minnesota	SCWM WMC	X	X	Notice now taking applications for 2017 projects, due December 15.
10-18-16	Andrew Helmers, HZ United	Ed Matthiesen	X		re: Metro Transit C BRT water resources design
10-21-16	Drew McGovern, Hennepin County	Ed Matthiesen	X		re: Shingle Creek and Hwy 81 culvert design model
10-21-16	Liz Stout, City of Minneapolis	Diane Spector	X		Phone call, Cleveland Neighborhood Association will not be able to fully complete blooming alleys project until next spring, can grant funds be carried over to 2017
10-24-16	DNR MPARS	SC WMC	X		Copy of work in Public Waters permit issued to city of Robbinsdale to restore shoreline at Sunset Park on Crystal Lake
10-26-16	Katy Allenson, USGS	Ed Matthiesen	X		re: spikes in flow and conductivity at Queen Ave gage
10-27-16	John Krausert, Rehder Assoc.	Ed Matthiesen	X	X	re: Commission requirements for a building addition on 0.3ac in Brooklyn Park