Shingle Creek Watershed Management Commission
West Mississippi Watershed Management Commission

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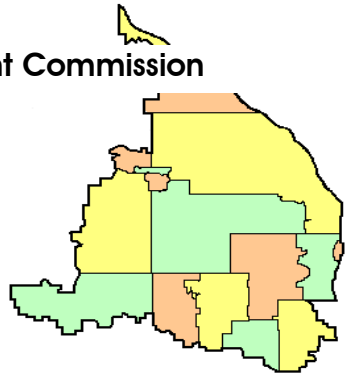

A meeting of the joint Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions is scheduled for 11:30 a.m., Thursday, November 14, 2019, at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN, immediately preceding the Commissions' regular meeting.

A G E N D A

1. Call to Order.
   a. Roll Call.
   b. Approve Agenda.*
   c. Approve Minutes of Last Meeting.* *(Item 6.b.1) on the November Regular Meeting Agenda.)*
2. SRP Reduction Project – 2091 Results.* *(Item 8.a. on the November Regular Meeting Agenda.)*
3. Next TAC meeting is scheduled for _____.
4. Adjournment.

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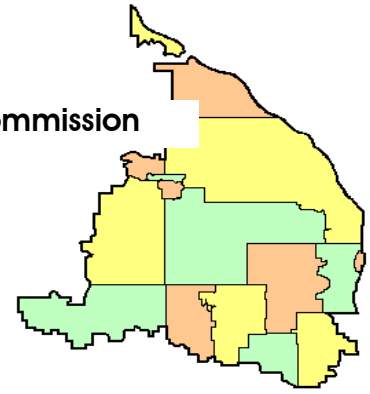


MINUTES

October 10, 2019

A meeting of the Technical Advisory Committee (TAC) of the Shingle Creek and West Mississippi Watershed Management Commissions was called to order by Chairman Richard McCoy at 11:37 a.m., Thursday, October 10, 2019, at Edinburgh USA, 8700 Edinbrook Crossing, Brooklyn Park, MN.

Present were: Andrew Hogg, Brooklyn Center; Mark Ray, Crystal; Derek Asche, Maple Grove; Shahram Missaghi, Minneapolis; Megan Hedstrom, New Hope; Ben Scharenbroich, Plymouth; Richard McCoy, Robbinsdale; Ed Matthiesen and Eileen Weigel, Wenck Associates, Inc.; and Judie Anderson, JASS.

Not represented: Brooklyn Park, Champlin, and Osseo.

Also present: Burt Orred, Jr., Crystal; Harold Johnson, Osseo; Amy Riegel, Plymouth; Marta Roser, Robbinsdale; and Stephen Mastey, Landscape Architecture; and Ann Gaash and Jeannie Myers, Twin Lake North Condominium Association.

I. Motion by Ray, second by Scharenbroich to **approve the agenda.*** *Motion carried unanimously.*

II. Motion by Ray, second by Asche to **approve the minutes***of the September 12, 2019 meeting. *Motion carried unanimously.*

III. Twin Lake North Cost Share Application.

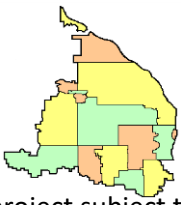
The City of Crystal has received a Partnership Cost Share Application* for improvements at the Twin Lake North Condominiums adjacent to Wetland 639W. This is on the Commission's agenda today as Project review SC2019-006. A parking lot on site is partly within the floodplain and when Twin Creek and Upper Twin Lake are high, it can become inundated with water.

The proposed Parking Lot Relocation Project will move that existing parking lot out of the floodplain and restore the area with a diverse native plant community. The project is also reducing the amount of impervious on-site by .39 acres and treating runoff from the relocated parking lot. Currently, runoff from the parking lot drains untreated directly into Twin Creek.

The request is for $43,510 to fund the proposed rain garden and TDA (tire-derived aggregate) Infiltration System, including rain garden plantings and native buffer to restore an area that once was a parking lot to a high quality water filtration system and pollinator habitat along Twin Creek. A 100-year event of 7.33 inches will be infiltrated on site.

Staff recommends approval of the request for $43,510. The Partnership Cost Share account currently has an unencumbered balance of just over $100,000.

Landscape architect Stephen Mastey was present to answer members' questions. Members were concerned that the outflow be monitored and that a water quality sampling plan be made a requirement of the grant.



Motion by Asche, second by Ray to recommend to the Commission approval of this project subject to determination of the need for a water quality sampling plan and finalization of an Operations and Maintenance agreement meeting TAC approval. *Motion carried unanimously.*

[Following the meeting Matthiesen did a search through the EPA, PCA and universities to find some guidance on what pollutants are of concern and recommended sampling frequency. The following is what he learned relevant to tire shreds in or near a water body.

From the University of Maine study prepared for the EPA in 2006 they noted leachate from TDA (tire derived aggregate) has limited effect on drinking water and negligible toxic effects on freshwater aquatic organisms."

A 2008 University of Wisconsin-Madison study notes that leachate from tire chips in groundwater has minimal human health concerns.

An MPCA waste tire guidance in 2012 has preapproved uses for tire chips and no comments on adverse water quality.

The greatest concern was slightly increased iron and manganese concentrations but are of limited concern because they unlikely to move away from the TDA installation. Matthiesen concluded that no sampling is necessary. The requirement that the tires must be washed and approved by City of Crystal staff or their designee during their installation will remain.]

[Scharenbroich departed 12:26 p.m.]

[Hogg arrived 12:30 p.m.]

IV. HUC-8 Modeling.

A. At the September TAC meeting the members queried whether **Ryan-Twin Lakes** should be added to the HUC-8 modeling. In their October 10, 2019 memo,* Wenck provided a proposal for a detailed analysis for the Twin Lakes and Ryan Creek/Lake system that is outside the scope of the HUC-8 study currently underway for Shingle Creek. The Commission's attorney has indicated this could be considered a watershed benefit project.

In addition to establishing the regulatory HWL, additional analysis will be completed to determine how the proposed HWL will impact nearby structures and how to mitigate risk with additional drainage options. The proposal provided an estimate for each of those areas. The generalized scope is as follows:

1. Include detailed survey information from recently completed Ryan Creek H&H Study into HUC-8 models (EPA-SWMM and HEC-RAS) and calibrate model to Twin Lake readings.

2. Include proposed pumping plan for Crystal Lake into HUC-8 models and additional analysis of impacts if needed.

3. Review of structures within floodplain. If structures are located within the floodplain, analysis of supplemental pipe under railroad tracks to alleviate issues.

4. Memo detailing the results.

B. Wenck estimates a budget of $13,000 is needed to complete this project. If the TAC approves, Wenck will prepare a proposal to add this work to the HUC-8 Study scope of work for Commission consideration.

Motion by McCoy, second by Hogg to recommend to the Commission that this action be approved. *Motion carried unanimously.*

V. Other Business.

A. The next Technical Advisory Committee meeting is tentatively scheduled for 11:30 a.m., Thursday, November 14, 2019, prior to the Commission's regular meeting.

B. The meeting was adjourned at 12:42 p.m.

Respectfully submitted,

Judie A. Anderson
Recording Secretary

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Technical Memo

WENCK ASSOCIATES

Responsive partner.
Exceptional outcomes.

To: Shingle Creek/West Mississippi WMC Commissioners/TAC

From: Ed Matthiesen, P.E. Brian Kallio, P.E.
Diane Spector Sarah Nalven

Date: November 8, 2019

Subject: SRP Reduction Project 2019 Results

At the November 14, 2019 TAC and Commission meetings Brian Kallio will present the results of the first year of the SRP Reduction Project. The SRP project is a Section 319-funded research project. Sarah Nalven made a presentation at the July 11, 2019 meeting about the project purpose and details about the project design. Brian was the design engineer and devised the instrumentation installed to determine the effectiveness of the project and Sarah is heading up the monitoring portion of it.

As a reminder, the SRP Reduction Project is testing the effectiveness of three different filter media at reducing soluble reactive phosphorus (SRP) in outflow from Wetland 639W. SRP is the form of dissolved phosphorus that is most readily available to plants such as algae.

As you will recall from the July presentation, phase 1 of the project was installing a three-compartment filter box at the overflow weir of Wetland 639W (Figure 1). Each compartment is filled with a different medium. As will be detailed in the presentation, even given the extremely wet year, we have seen some interesting and very encouraging results. One of the media is performing significantly less well than the other two, and one that generally accepted literature says does poorly in saturated, low oxygen conditions is performing comparatively well. When taking volume of flow treated into account, we can estimate the load reduction, and one of the media provides a very reasonable cost per pound removed, while the worst-performing appears to be significantly more expensive per pound.

However, the monitoring conditions in 2019 have been very challenging, and this is not an average water year. Most of the high flow at the overflow weir bypassed the filter box and thus was not treated. At this point it is unclear if these results are representative of how the media perform, or whether we might see different results in a more average or even low-precipitation year. The grant project calls for two more years of monitoring.

Brian's presentation at the TAC will go into more technical and design detail, while the Commission presentation will focus on the results.

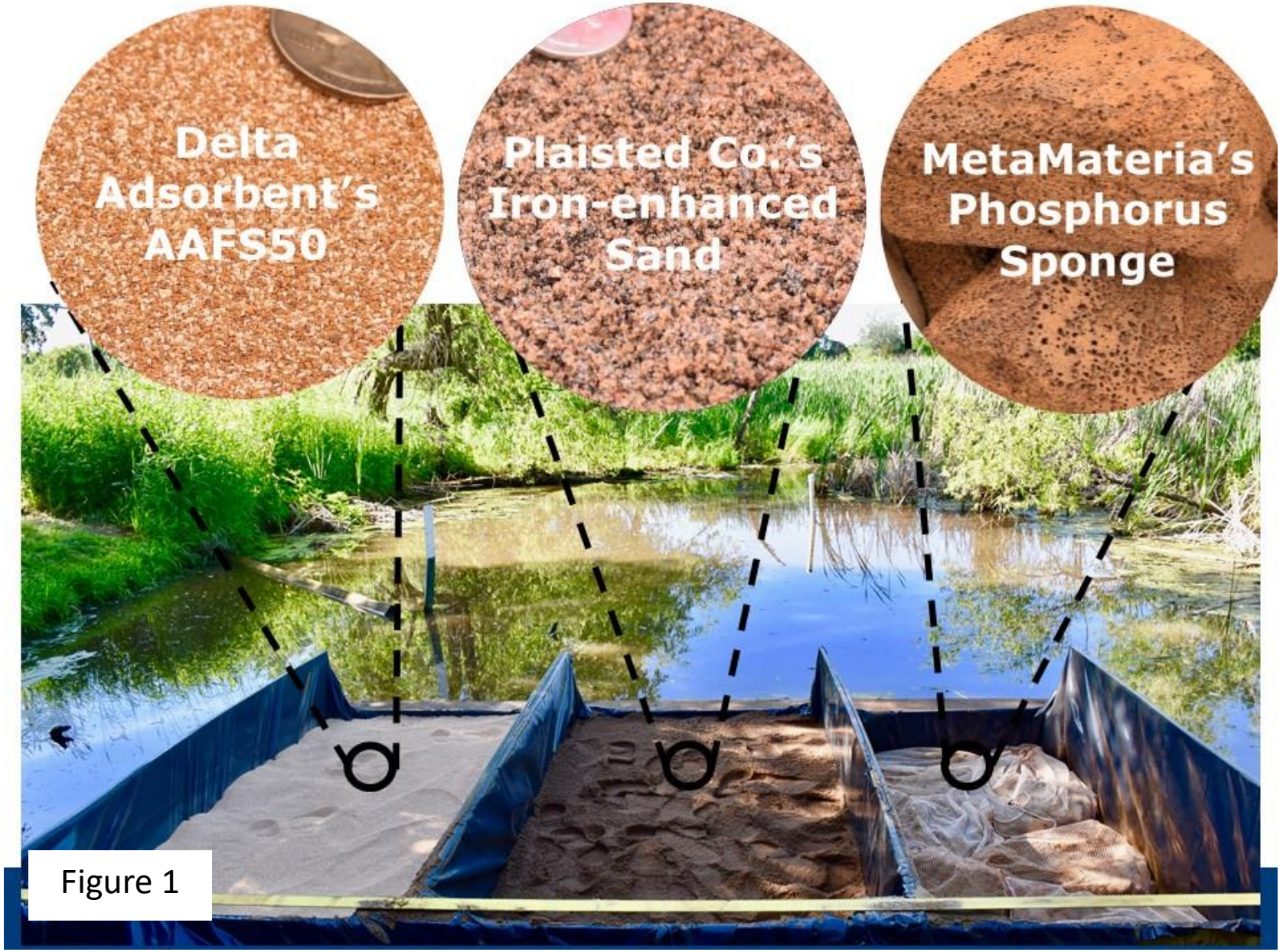
Delta Adsorbent's AAFS50
Plaisted Co.'s Iron-enhanced Sand
MetaMateria's Phosphorus Sponge

Figure 1

Figure 2

Figure 3