



West Mississippi Watershed Management Commission

2014 Annual Activity Report

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West Mississippi Watershed Management Commission
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Annual Activity Report.

This annual report has been prepared by the West Mississippi Watershed Management Commission in accordance with the annual reporting requirements of Minnesota Rules Chapter 8410.0150, Subps. 2 and 3. It summarizes the activities undertaken during calendar year 2014

The Commission.

The West Mississippi Watershed Management Commission is governed by a five-member board comprised of representatives from each member city who are appointed for terms of three years. The five member cities are Brooklyn Center, Brooklyn Park, Champlin, Maple Grove, and Osseo. Commissioners who served in 2014 are shown in *Appendix 1*.

Consultants.

The Commission has no employees. The names of the consultants currently retained by the Commission are also listed in *Appendix 1*.

Meetings.

The Commission meets monthly at 12:45 p.m. on the second Thursday at the Clubhouse at Edinburgh, USA, 8700 Edinbrook Crossing, Brooklyn Park. The meetings are open to the public. Meeting notices, agendas and approved minutes are posted on the Commission's website, www.shinglecreek.org.

Watershed Management Plan.

In 2013 the Shingle Creek and West Mississippi Watershed Management Commissions adopted their joint 2013-2022 Third Generation Watershed Management Plan. The Plan was approved by the Board of Water and Soil Resources on March 27, 2013.

The Plan is the culmination of an almost two-year planning effort by the two Commissions, the cities that are members of these Joint Powers Organizations, state agencies, and the public. The Plan sets forth goals and strategies that will guide water resources management activities in the two watersheds over the coming decade.

In 2013 the Commissions adopted a minor amendment to the Plan, revising the Commissions' Rules and Standards to adopt the new National Oceanic and Atmospheric Administration (NOAA) Atlas 14 precipitation frequency standards, replacing the outdated Weather Bureau Technical Paper 40 (TP-40) standards.

On May 8, 2014 the Commissions adopted a second minor amendment to the Plan. It revises the estimated cost and provides more description and detail about one proposed project, the Plymouth Bass Lake Pond project, on the Commissions' Capital Improvement Program (CIP).

On December 11, 2014 the Commissions adopted a major amendment to the Plan which added four projects to the Commissions' CIP (the 45th Avenue Pond Retrofit, Kilmer Pond Retrofit, Lions Park Pond Retrofit, and Priority BMP Retrofits). The Shingle Creek Commission's proposed cost-share portion of these four projects is \$338,750.

Local Plan Adoption and Implementation.

With approval of the Commissions' Third Generation Plan, member cities have two years in which to update their Local Stormwater Plans. These updates will be expected to include:

- Updated land use, hydrologic, and hydraulic data, and existing or potential water resource-related problems that may have changed since the last local plan.
- An explanation of how the member city will help to implement the actions set forth in the Commissions' Plan.
- An explanation of how the member city will implement project review requirements of the revised Rules and Standards.
- An updated Implementation Plan identifying specific structural, nonstructural, and programmatic solu-

tions to problems and issues identified in the LWMP.

- An implementation program that includes a description of the adoption or amendment of official

controls and local policies necessary to implement the Rules and Standards; programs; policies; capital improvement plan; and estimates of cost and funding mechanisms.

Status of 2014 Objectives.

The West Mississippi Watershed Management Commission established its 2014 Work Plan at its February 13, 2014 meeting. The following is a status report on those action items.

1. CONTINUE TO STAY ABREAST OF REGIONAL TMDLS.

a. Continue to pursue grant funding for projects and programs, including the Biochar and Iron-Enhanced Pond Filter Bench research project. *Commission submitted a Section 319 grant application for the Biochar project, which was not funded.*

b. Keep abreast of Upper Mississippi River bacterial TMDL implementation planning. *Staff reviewed the draft Upper Mississippi River TMDL and found that the Commission's previously-submitted comments were adequately addressed. The TMDL was approved in November 2014, and the Implementation Plan is currently being developed.*

c. Stay abreast of other regional and state TMDLs. *Staff continues to monitor regional and state TMDLs and will report as necessary.*

2. PARTNER WITH OTHER ORGANIZATIONS TO INCREASE REACH AND COST EFFECTIVENESS.

a. Participate in the West Metro Water Alliance joint education and outreach group. *The Commission continues to participate in the West Metro Water Alliance, with the primary activity being the 4th Grade education program called Watershed PREP. (Appendix 2)*

b. Partner with the USGS, DNR, and other interested parties to stay abreast of groundwater issues. *Staff continues to monitor groundwater issues with the USGS, DNR, and others..*

c. Partner with a member city to complete a subwatershed BMP analysis. *Completed an analysis for the northeastern part of Brooklyn Center. Currently in review, approval is expected in spring 2015.*

3. CONTINUE ONGOING ADMINISTRATION AND PROGRAMMING.

a. Undertake routine flow and water quality monitoring at two outfalls into the Mississippi River. *Sites included the outfall next to Oxbow Creek and the outfall at 65th Avenue. The results of the annual stream monitoring are included in the 2014 Annual Water Quality report, presented to the Commission at its April 2015 meeting.*

b. Conduct volunteer stream monitoring through RiverWatch and wetland monitoring through WHEP (Hennepin County). *Mattson Brook was monitored by students from South High School as part of RiverWatch. Three wetlands were monitored through WHEP. Results from those programs will be included in the 2014 Annual Water Quality report. (Appendix 3)*

c. Complete reviews of development and redevelopment projects as necessary. *The Commission reviewed 13 development and redevelopment projects and granted one variance (for the WM2014-10 Mississippi Gardens project). The Commission currently serves as the Wetland Conservation Act (WCA) Local Government Unit (LGU) for the cities of Brooklyn Center, Brooklyn Park, and Champlin. Five wetland delineations were submitted. Two delineation reviews are in process; one No Loss Determination was issued; and two boundary determination decisions were issued. The Commission does not have a wetland banking program. (Appendix 4)*

- d. Prepare an annual water quality report. *The 2013 Annual Water Quality report was reviewed and approved at the Commission's April 10, 2014 meeting.*
- e. Review feasibility studies for 2014 proposed capital projects, hold public hearings, and order projects. *The Shingle Creek/West Mississippi Commissions approved a Minor Plan Amendment to revise one project on the CIP – the Plymouth Bass Lake Pond project in Shingle Creek. At the Commissions' September 11, 2014 meetings a public hearing was held on that project as well as the proposed 2014 West Mississippi Retrofit Project. The projects were ordered and a \$50,000 levy request was certified to Hennepin County for collection in 2015 by the West Mississippi Commission.*
- f. Prepare a 2015 annual budget. *A 2015 operating budget totaling \$163,550 was approved by the Commission at their June 10, 2014 meeting. The budget continued the member assessments at the 2014 rate (\$135,700).*
- g. Continue education and outreach programming, including participation in the Education and Public Outreach Committee (EPOC), the West Metro Water Alliance (WMWA), WaterShed Partners, and BlueThumb, with a special focus on distributing educational materials regarding the use of native vegetation in lake and stream buffers. *The Commission is participating in the development of the WMWA special project "5,000 by 2025," a project to encourage the replacement of 5,000 acres of impervious surface or turf grass with native vegetation by 2025.*
- With Metro Blooms, sponsored raingarden workshops in Brooklyn Center, Champlin and Plymouth. A fourth workshop was co-sponsored by the cities of Crystal, Golden Valley, New Hope and Robbinsdale.*
- Continually updated the Commission's website.*
- Prepared news articles and other media releases in accordance with MN Rules 8410.0100 §4. Information releases were provided for education and public outreach activities as well as TMDL-related stakeholder meetings and Management Plan Amendments/CIPs. Information was also posted to Commission and other appropriate websites.*
- h. Award Water Quality Education Grants to eligible participants. Grants of up to \$1,000 are available to raise awareness of watershed issues, improve water quality education, and fund demonstration projects. *No grants were awarded in 2014.*
- i. Conduct an annual review of the NPDES Phase II education and outreach program and submit a report to the participating MS4s. *The 2014 NPDES Phase II Education and Public Outreach Program Annual Report was distributed to the member communities on February 23, 2015.*
- j. Invite three guest speakers to make lunchtime water resources presentations. *Two guest speakers appeared before the Commission. Randy Anhorn, Hennepin County Environmental Services (HCES), appeared to introduce himself and to ask the Commissioners to create a list of services that HCES can provide to the Commission. James Stark, USGS, presented on "Water Sustainability in Minnesota: Decisions for our Grandchildren," which focused on lake levels and groundwater sustainability.*
- k. Tour project sites in the watershed. *A bicycle tour was held on May 31, 2014, but only had two participants.*

WATER MONITORING

Minnesota Administrative Rule 8410.0100 Subp.5 requires watershed management organizations to conduct monitoring programs "capable of producing accurate data to the extent necessary to determine whether the water quality and quantity goals of the organization are being achieved." Together the Shingle Creek and West Mississippi Watershed Management Commissions began monitoring water quality and stream flow in 1990.

The West Mississippi Commission monitored water quality and streamflow from 1990-1992 at two outfall sites in the Oxbow Creek and Mattson Brook watersheds. Results indicated very little flow in these tributaries and no water quality or quantity problems or concerns. Thus, the Commission chose to discontinue monitoring after the 1992 monitoring season. In 2010, the Commission elected to once again monitor water quality and flow at 2-3 outfall monitoring sites per year in the West Mississippi watershed.

High school volunteers coordinated by Hennepin County Environmental and Energy (HCEE) performed macroinvertebrate monitoring at one site on Mattson Brook through the River Watch program. HCEE also coordinates wetland monitoring by adult volunteers through WHEP. In 2014, wetland monitoring was performed at one location in the West Mississippi watershed.

Water quality was collected at two outfall locations (Oxbow and 65th Avenue), and continuous flow monitoring was collected at one location (Oxbow) in the West Mississippi watershed in 2014. Located in the City of Champlin, the Oxbow outfall site was first sampled during the 1990-1992 monitoring program. When monitoring resumed in 2010, this site was not sampled the first few years because the storm sewer's outfall to the Mississippi River was completely submerged and inaccessible.

In 2013, an alternative site upstream of where the outfall discharges to the Mississippi at 112th Avenue was selected for monitoring. Flow at this site is contained below ground in a 48" pipe which is accessible through a 2-foot manhole. Most of the Oxbow Creek outfall watershed consists of a series of storm sewer pipes that drain approximately 1,167 acres of land in Champlin.

The 65th Avenue outfall is located in the City of Brooklyn Center at the northeast corner of the Highway 252 and I-694 interchange. This outfall drains approximately 590 acres of land in Brooklyn Center, including runoff from the Regal Cinema and other commercial and industrial land east of Highway 252. Continuous flow monitoring was not collected at this site in 2014 due to high-flow conditions in the Mississippi River from April until early August. High flow conditions created backwater effects near the 65th Avenue outfall location, preventing reliable stage measurements in the outfall pipe and creating unsafe conditions for mounting and setting monitoring equipment. However, Wenck staff was able to safely collect water quality grab samples at the 65th Avenue outfall throughout most of the 2014 sampling season by lowering a weighted bucket into the storm sewer pipe.

Reliable stage (water level) was continually recorded from mid-July through late October at the Oxbow outfall. The flow monitoring equipment was initially installed in mid-April, however the high, intense rainfall events in April and June dislodged the equipment from its mounting bracket on several occasions. In the fall of 2014, Wenck installed new mounting brackets in both the Oxbow and 65th Avenue outfall storm sewer pipes. These brackets should be able to withstand the higher flow conditions and allow staff to better monitor flow in 2015.

At the Oxbow outfall site, flow was estimated using the measured stage data in the storm sewer pipe and applying Manning's equation for uniform flow. Results indicate flow at this site has a consistent year around base-flow of at least 0.5 cfs; however, the site is extremely flashy during storm events. During storm events, the hydrograph rises quickly, typically peaks within 30 minutes of the initial rainfall, then quickly subsides to base-flow conditions within a few hours. This type of flow response is common in smaller urban catchments.

Routine water quality sampling for each outfall station consisted of bi-weekly grab samples from May through early November. Three composite storm samples were also collected at the Oxbow site using automated sampling equipment. No composite storm samples were collected at the 65th Avenue outfall in 2014 due to high levels in the Mississippi River. Routine and storm samples were analyzed for total phosphorus (TP), ortho phosphorus (ORP), total suspended solids (TSS), nitrate, and chloride. *E. coli* (bacteria) samples were also collected during bi-weekly grab sampling events. Field parameters including dissolved oxygen (DO), temperature, pH, and conductivity were also recorded during each bi-weekly site visit.

The *Shingle Creek/West Mississippi 2014 Annual Water Quality Report* includes one page summaries of the three major water quality parameters of concern for the West Mississippi outfalls: TSS, TP, and *E. coli*. Both

outfalls outlet to the Mississippi River which has a recently completed TMDL study for *E. coli*, a future TMDL study for TSS (in-progress), and a potential future TMDL study for TP based on proposed state river eutrophication standards. Monitoring results for ORP, nitrate and chloride are also summarized in the report.

Neither outfall has been assigned a beneficial use classification by the state of Minnesota. Both features have been extensively altered to function as underground stormwater conveyance systems and would most likely be considered similar to Class 7 waters according to MN Rules Chapter 7050. Class 7 waters are considered limited resource value waters that are not subject to state water quality standards as they are not protected for aquatic life and recreation due to lack of water, lack of habitat, or extensive physical alterations.

Results of the 2014 flow and water monitoring for the Oxbow and 65th Avenue outfalls support the following conclusions and recommendations:

- 2014 was an above average year for precipitation and runoff throughout the West Mississippi watershed. The above average precipitation and rainfall in 2014 was driven by a few large storm events in April and June. Rainfall was at or below average for all other months in 2014.
- Flow data collected at the Oxbow site in 2014 indicate this outfall is extremely flashy and responds quickly to rainfall events. The large, intense rainfall events in April and June dislodged the monitoring equipment on several occasions making it difficult to monitor flow early in 2014. Additionally, high water levels in the Mississippi River made it impossible to monitor continuous flow at the 65th Ave outfall.
- Both the Oxbow and 65th Avenue outfalls have continuous, year-round baseflow and never go dry or stop flowing.
- Due to the flashiness of these sites, high TSS concentrations at the Oxbow and 65th Avenue outfalls have only been observed during “first flush” events using automated sampling equipment. TSS levels fall quickly to below detection limit within a few hours of storm event. TSS does not seem to be a major concern at these outfalls.
- High TP concentrations at both outfalls sites are typically associated with higher flow events and, therefore, follow a similar pattern to TSS. Dissolved phosphorus (ORP) at both station is relatively low, suggesting most of the phosphorus is in particulate form and likely attached to TSS particles.
- The Oxbow outfall displays very low levels of *E. coli* and does not appear to be a source of bacteria to the Mississippi River. The 65th Ave outfall, on the other hand, displayed very high levels of *E. coli* during all flow conditions. The catchment system for this outfall contains underground storage and is completely below grade so it is unclear if the source of bacteria is from the watershed/stormwater ponds, or if bacteria is colonizing and proliferating within the catchment system itself. It is recommended that a more thorough source assessment

The *Shingle Creek/West Mississippi 2014 Annual Water Quality Report*, which contains detailed information on the water monitoring programs undertaken by the Commissions in 2014, will be available on the Commissions’ website in May 2015. *Appendix 5* shows the monitoring sites in the West Mississippi watershed.

CONSULTANT SERVICES SELECTION

The required biennial solicitation for interest proposals for administrative, legal, technical and wetland consulting services was published in the January 22, 2013 edition of the *State Register*. The Commission’s current consultants are listed in Appendix 1. This process will be repeated in 2015.

FINANCIALS

The Commission’s Joint Powers Agreement (JPA) provides that each member city contributes toward the annual operating budget based 50% on the area located within the watershed boundary and 50% on the tax capacity of all property within the watershed. The 2014 cost allocations to the members are shown as part

the members are shown as part of the Operating Budget found in *Appendix 6*.

Of the \$161,750 operating budget approved by the Commission for 2014, income of \$3,000 was projected as proceeds from application fees and \$50 as interest income, resulting in assessments to members totaling \$125,700. \$23,000 was taken from reserves to continue to spend down the Commission’s surplus and minimize increases in member assessments. (*Appendix 6*)

The West Mississippi Watershed Management Commission maintains a checking account at US Bank for current expenses and rolls uncommitted monies to its account in the 4M Fund, the Minnesota Municipal Money Market Fund. Amounts paid by the Commission per the 2014 Audit (*Appendix 6*) are as follows:

General engineering	\$ 43,575
General administration	\$ 50,629
Education	\$ 19,377
Programs	\$ 24,919
Projects and Management Plans	<u>\$ 20,701</u>
Total	\$159,201

General engineering work includes review of local plans, review of development/redevelopment projects, tracking grant opportunities, attendance at meetings and other technical services. General administration includes support to technical staff, attendance at meetings, insurance premiums, annual audit, legal counsel, and other non-engineering services.

2015 WORK PLAN

The Commission has identified the following activities in 2015:

1. CONTINUE TO STAY ABREAST OF REGIONAL TMDLS.
 - a. Continue to pursue grant funding for projects and programs addressing the bacterial impairment in the Mississippi River.
 - b. Keep abreast of Upper Mississippi River bacterial TMDL implementation planning.
 - c. Stay abreast of other regional and state TMDLS.

2. PARTNER WITH OTHER ORGANIZATIONS TO INCREASE REACH AND COST EFFECTIVENESS.
 - a. Participate in the West Metro Water Alliance (WMWA) joint education and outreach group.
 - b. Partner with the USGS, DNR, and other interested parties to stay abreast of groundwater issues.
 - c. Partner with a member city to complete a subwatershed BMP analysis.

3. CONTINUE ONGOING ADMINISTRATION AND PROGRAMMING.
 - a. Undertake routine flow and water quality at two outfalls into the Mississippi River.
 - b. Sponsor volunteer stream monitoring through RiverWatch and wetland monitoring through WHEP (Hennepin County).
 - c. Complete reviews of development and redevelopment projects as necessary.
 - d. Prepare an annual water quality report.
 - e. Solicit cost-share projects from member cities funded from the Cost Share Fund and the annual \$50,000 levy.

- f. Prepare a 2016 annual budget.
 - g. Solicit interest proposals for technical, administrative, and legal services.
 - h. Invite three guest speakers to make lunchtime water resources presentations.
 - i. Tour project sites in the watershed.
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Appendices

