

Shingle Creek Watershed Management Commission



2005 Annual Report

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Shingle Creek Watershed Management Commission
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Table of Contents

	page
Annual Activity Report	1
The Commission	1
Consultants	1
Meetings	1
Joint Powers Organization	1
Watershed Management Plan	2
2005 Activities	3
Project Reviews	4
Wetland Conservation Act	4
Water Quality Monitoring	4
Stream Monitoring	5
Lake Monitoring	6
Water Quality Plan	7
Capital Improvement Program	8
TMDLs	9
Chloride TMDL	10
Lakes TMDL	10
DO TMDL	11
Shingle Creek Corridor Study	12
River Watch	13
NPDES-II Education and Public Outreach Minimum Measure Program	13
Water Quality Education Grants	14
Public Outreach	15
Grant Opportunitites	15
Interest Proposals	15
Communications	16
Financial Reporting	16
Operating Budget	16
Treasurer's Reports	16
Financial Statement	16
Work Plan for 2005	17

Appendices

- 1 Commission and Staff
- 2 Local Planning/WCA Designations
- 3 Adopted Resolutions
- 4 Project Reviews
- 5 Lake Monitoring
- 6 River Watch
- 7 Financial Reports



Annual Activity Report ~ This annual report has been prepared by the Shingle Creek Watershed Management Commission in accordance with the Annual Reporting Requirements of Minnesota Rules chapter 8410.0150, Subparts 2 and 3.

The Commission ~ The Shingle Creek Watershed Management Commission is governed by a nine-member board comprised of representatives from each member city who are appointed for terms of three years. The nine member cities are Brooklyn Center, Brooklyn Park, Crystal, Maple Grove, Minneapolis, New Hope, Osseo, Plymouth and Robbinsdale. Commissioners who served in 2005 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 Lancer's, 8700 Edinbrook Crossing, Brooklyn Park. The meetings are open to the public. Current meeting notices and agendas and prior meeting minutes are posted on the Commission's website, www.shinglecreek.org.

Joint Powers Organization ~ The 1982 Metropolitan Surface Water Management Act (chapter 509) mandates that all watersheds within the seven county metropolitan area be governed by a watershed management organization. The Shingle Creek Watershed Management Commission was formed in 1984 under a Joint Powers Agreement (JPA) between the nine cities having land within the Shingle Creek watershed. The cities decided to form a joint powers commission because they believed it provided the best balance for the establishment of watershed-wide policies and strategies for meeting watershed management requirements while retaining the most flexibility and local input at the lowest cost. The JPA may be found at www.shinglecreek.org.

Early in 2004 the Commission forwarded an amendment to the JPA to the member cities for consideration for adoption. It proposes the following changes:

- ~ Assessments for general fund purposes for the year 2004 will be set as an "assessment cap."
- ~ The cap will be increased or decreased each year thereafter based on changes in the Consumer Price Index. The assessment cap cannot be exceeded by the Commission



- without the consent of a majority of the member cities.
- ~ The Commission cannot increase the assessment by more than 20% in any one year without the consent of a majority of the members, even if such an increase would be within the assessment cap.
- ~ A supplementary assessment, allowed under the existing agreement, together with the regular annual assessment for any one year cannot exceed the limits noted above without the consent of a majority of the member cities.

The amendment will not be in effect until approved by all the members. At December 31, 2005, the amendment had been adopted by eight of the nine member cities.

Watershed Management Plan ~ In accordance with the Metropolitan Water Management Act, the Commission prepared a watershed management plan that describes the watershed's physical and hydrologic policies, identified management issues and strategies, and proposed an implementation program for managing the water resources of the watershed. This "first generation" watershed management plan was adopted by the Commission in 1990.

Since four of the five member cities in the West Mississippi Watershed Management Commission (Brooklyn Center, Brooklyn Park, Maple Grove and Osseo) are also members of the Shingle Creek Commission, the two Commissions worked jointly to develop their "Second Generation" plan. They adopted the plan on May 13, 2004.

The Second Generation plan represents a major shift in the focus of the Commissions – from an emphasis on *controlling the amount* of stormwater runoff to an emphasis on *protecting and improving the quality* of water in the lakes and streams in the watersheds.

Another new priority is water quality education for property owners, students, and elected and appointed officials. The Commissions also adopted new standards that require developing properties to infiltrate some runoff on site as well as to require buffer areas between new development and lakes, streams and wetlands.

Eight water management goals were identified in the Second Generation Watershed Management Plan:

- ~ Protect and improve water quality based on practical use.
- ~ Reduce erosion and sedimentation.
- ~ Maintain the existing 100-year flood profile throughout the watersheds.
- ~ Protect and improve wetlands.
- ~ Establish an education and public outreach program.
- ~ Protect and improve groundwater quality and promote groundwater recharge.
- ~ Strive to provide water quality that supports recreation, fish and wildlife based on practical use.
- ~ Develop an appropriate management strategy for Hennepin County Ditch #13.



Following adoption of the Second Generation management plan, member cities were advised that they will be required to adopt or amend their local water management plans to be in conformance with the Commissions' plan. This must occur by May 2006. The status of local plan development is outlined in *Appendix 2*.

2005 Activities ~ Below is a summary of the work effort undertaken by the Shingle Creek Watershed Management Commission in 2005 to meet the goals and objectives and projected work plan. More information regarding these activities may be found in this *Annual Report* and on the Commission's website, www.shinglecreek.org.

- ~ Reviewed nineteen projects for conformance with Commission's Rules and Standards.
- ~ The joint (Shingle Creek and West Mississippi) Commissions' Education and Public Outreach Committee (EPOC) continued to identify educational and public relations opportunities.
- ~ As part of its NPDES Phase II Education and Outreach activities, published a guide booklet for commercial and common ownership communities entitled *Maintain Your Property the Watershed Friendly Way*, and forwarded 1000 copies to member cities for distribution.
- ~ Awarded Water Quality Education Grants to an elementary school, an Eagle Scout candidate and a non-profit organization.
- ~ Adopted the Shingle Creek Corridor Study and the management standards recommended within.
- ~ Participated in Hennepin County's River Watch program with two sites.
- ~ Participated in Metropolitan Council's Citizen Assisted Monitoring Program (CAMP) with six lakes.
- ~ Began development of an Implementation Plan for the Chloride TMDL project.
- ~ Amended the Capital Improvement Plan to describe in greater detail the Shingle Creek Restoration, Brooklyn Boulevard to Hampshire Avenue project and to set the Commission's financial contribution to the project.
- ~ Ordered the Shingle Creek Restoration Brooklyn Boulevard to Hampshire Avenue project in Brooklyn Park.
- ~ Adopted a \$426,190 operating budget, with member assessments totaling \$268,190.
- ~ Actively sought grant opportunities to fund Commission projects.
- ~ Continued its stream monitoring program for water quantity and water quality.
- ~ Met with consultant contracted by Hennepin County to study the feasibility of creek daylighting in Brooklyn Center and elsewhere in the watershed.
- ~ Conducted an annual review of the Commission's NPDES-II Education and Public Outreach Minimum Measure Program and submitted a report to the participating MS4s.
- ~ Continued development of the Lake TMDL for five lakes. Entered into a contract with the Minnesota Pollution Control Agency for Phase II with eight additional lakes.
- ~ Revised its project review and wetland review fee schedule.
- ~ Adopted eight resolutions. Copies of these resolutions are included as Appendix 3.
- ~ Continued operation of the Commission's web site, www.shinglecreek.org.
- ~ Prepared newsletters and other communications in accordance with MN Rules 8410.0100, Subp.4.
- ~ Published an Annual Report summarizing the Commission's yearly activities and financial reporting of revenues and expenditures in accordance with MN Rules 8410.0100, Subp.4.
- ~ Worked with governmental agencies and other watershed management organizations toward a common goal of protecting water resources and improving water quality within the watershed.



Project Reviews ~ The Commission currently reviews proposed land development and redevelopment projects as well as other projects affecting water resources within the Shingle Creek watershed. Projects are reviewed in accordance with the management standards and policies of the Commission and recommendations are made to the member city in which the project is located. It is the city's responsibility to enforce the Commission's recommendations to ensure that natural resources are protected and water quality improvements are implemented. In 2005 the Commission reviewed the projects listed in *Appendix 4*.

Copies of the engineer's reports and recommendations approved by the Commission for these projects are found on the Commission's web site, www.shinglecreek.org. A map showing their locations is also found in *Appendix 4*. Two variances were granted by the Commission as part of the review process.

The Commission has developed a pond inspection procedure in order to determine if projects are being completed as proposed. At the end of 2004 Commission Staff had inspected more than half of the approximately 100 eligible sites. The remaining inspections were completed in 2005. The Commission will also develop a protocol for cities to use if they choose to take on this responsibility as part of their NPDES-II programs.

Wetland Conservation Act (WCA) ~ The Shingle Creek Commission currently serves as the local governmental unit (LGU) for administering the Minnesota Wetland Conservation Act (WCA) of 1991 unless member cities elect to serve in that capacity. The cities of Crystal, Maple Grove, Minneapolis, New Hope and Plymouth have previously notified the Board of Water and Soil Resources (BWSR) and the Commission of their intent to serve as LGUs. Projects reviewed in 2005 by the Commission in its capacity as LGU are identified in *Appendix 4*.

A Wetland Management Policy adopted by the Commission in 1994 provides that the Commission will consider participation in the state wetland bank once such a bank has been established and LGUs are notified. During 2005, the Commission did not approve any banking of wetlands.

Water Quality Monitoring ~ The Shingle Creek and West Mississippi Watershed Management Commissions annually monitor the lakes and streams of the watersheds to assess the current status of water resources in their respective watersheds as well as to monitor progress toward accomplishing the goals set forth in their Water Quality Plan.

Currently, the majority of the Commissions' water quality monitoring program is conducted in the Shingle Creek watershed where stream monitoring for water quantity and quality, lake monitoring, and macroinvertebrate monitoring take place. In the West Mississippi watershed,



only macroinvertebrate monitoring is conducted. The Commissions' technical staff obtains most stream water quality data while volunteers collect most lake water quality and stream macroinvertebrate data. The 2005 Water Quality Monitoring Reports is found on the Commission's website.

Stream Monitoring ~ Water quality is related to the volume of water flowing to and through the streams draining the watershed.

Water quality in a given year is also influenced by the amount of precipitation received and the type of precipitation events. Overall, 2005 was an above-average precipitation year. Above-average precipitation was recorded in January, February, April, June, September, October and December; the driest months were July and August.

Stream monitoring is comprised of flow monitoring and sampling. In 2005 stream monitoring occurred at two locations on Shingle Creek. Site SC-0, located on Shingle Creek at 45th Avenue, collects drainage from about 41 square miles, or 92% of the watershed. The upper watershed site is designated SC-2 and collects drainage from about 22 square miles, or 50% of the watershed. It is located upstream of Zane Avenue near the Brooklyn Park - Brooklyn Center border.

A third site, SC-1, is located at Queen Avenue near the border between Minneapolis and Brooklyn Center. It collects drainage from about 31 square miles or 70% of the watershed. The US Geological Survey (USGS) maintains this site as part of its National Water Quality Assessment (NAWQA) program and monitors for flow, chloride and conductivity. Real-time data at the Queen Avenue station is available at . For real-time data on Mississippi River stage just downstream of the Trunk Highway 610 bridge, visit. These sites are also linked to the Commission's website.

Routine and storm water quality samples are collected and analyzed for total phosphorus (TP), ortho phosphorus (OP), total suspended solids (TSS), volatile suspended solids (VSS), nitrate (NO₂), Total Kjeldahl nitrogen (TKN), and chloride (Cl). The average total phosphorus concentration (152 µg/L) was within the ecoregion range at SC-0. At SC-2, total phosphorus concentrations were stratified by flow with the highest concentrations during the rising limb of the hydrograph indicating phosphorus wash-off. TSS and VSS concentrations were relatively consistent with urban streams while nitrate concentrations at SC-0 were lower than typical for urban watersheds. Chloride and conductivity were monitored at SC-0 and SC-2. (Discussion of the chloride conductivity relationships may be found in the Chloride TMDL document.) Focusing on runoff events, twelve samples were collected at SC-0 and analyzed for fecal coliform. Eight of the samples exceeded the state standard of 200 cfu/100 ml, with concentrations as high as 2,200 cfu/100 ml. Although Shingle Creek is not on the State of



Minnesota's 303(d) list of impaired waters for fecal coliform, recently collected data meet the listing criteria and it is likely Shingle Creek will be added to the list of impaired waters during the next evaluation in 2006.

Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, eventually depositing them into lakes, rivers, wetlands and underground sources of drinking water. Natural landscapes like forests, wetlands and grasslands trap rainwater and snowmelt, allowing it to slowly filter into the ground and reach receiving waters gradually. Conversely, urban landscapes like roads, parking lots, and buildings don't allow runoff to slowly percolate into the ground. Water remains above the surface, accumulates, and runs off in large volumes, providing an additional avenue for pollutants to reach surface waters.

Although state standards and pollution indices are based on pollutant concentrations in the case of streams, pollutant loads provide more comparative information for assessing the level of impact. Pollutant loads are a function of pollutant concentrations and stream flow and are more representative of the amount of pollutants moving through a system. Changes in stream flow and watershed runoff can affect both the amount of flow in the stream and the pollutant by carrying more (or less) pollutants to the streams. Since nonpoint source pollution and runoff are linked, loads are often a more appropriate way to look at stream pollution. Both TSS and TP tend to vary with flow suggesting that storm loads account for a significant portion of pollutant loads.

Currently there are only narrative standards for nutrients in streams in Minnesota. However, it is widely understood that increased nutrients lead to increased algal production, increased biochemical oxygen demand (BOD), and a generally limited aquatic environment (lower Index of Biotic Integrity scores). Water quality in Shingle Creek is typical of an urban stream in the Twin Cities metropolitan area. Continued monitoring of stream water quality will allow the Commission to evaluate the effectiveness of best management practices (BMPs) and provide a baseline for reasonable water quality goals.

Lake Monitoring ~ There are sixteen lakes in the Shingle Creek watershed and none in the West Mississippi watershed. Twin Lake is comprised of three basins and is considered as three separate lakes for monitoring purposes even though it is one chain of lakes.

Bass, Crystal, Eagle, Meadow and Lower and Middle Twin Lakes were monitored in 2005 through the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP). They received water quality grades of C, D, B, F, C and C, respectively.



The lakes in the Shingle Creek watershed are typical of urban lakes. For most lakes there is not enough data to identify clear trends. Many factors may influence a single year's results, including weather, unusual activity such as construction in the watershed, or number of samples taken during the season. The Commission's lake monitoring rotation schedule and volunteer monitoring process are included in *Appendix 5*. Excerpts from the 2005 CAMP report on the six lakes are also included there.

The 2005 Water Quality Monitoring Report provides more detail on the Commissions' stream and lake monitoring activities and is available on the Commission's website.

Water Quality Plan ~ In 2005 the Commissions continued working on the Water Quality Plan (WQP) which details strategies for achieving the Commissions' Second Generation Management Plan goal of protecting and improving water quality and providing guidance for water quality management in the combined watersheds over a ten-year period. The major components of the Water Quality Plan are:

- ~ Classification, prioritization and numerical water quality goals for lakes;
- ~ Water quality goals for streams;
- ~ Identification of wetlands that are of highest priority for conducting functions and values assessments;
- ~ An implementation plan, including monitoring, education, management planning and a CIP; and
- ~ Standard protocols for monitoring.

Activities proposed in the Management Plan include developing individual management plans for major water resources. In addition, the Commissions are required by law to:

- ~ Complete and implement chloride and low dissolved oxygen TMDLs for Shingle Creek;
- ~ Establish numerical water quality goals for lakes;
- ~ Complete and implement thirteen lake nutrient TMDLs;
- ~ Complete and implement an impaired biota TMDL for Bass Creek; and
- ~ Identify priority wetlands for preservation or restoration.

The Water Quality Plan sets forth the Commissions' water quality goals, standards, and methodologies in more detail than those established in the Second Generation Management Plan; provides philosophical guidance for completing water resource management plans and TMDLs; and provides direction for the ongoing water quality monitoring programs that will be essential to determining if the TMDLs and implementation program are effectively improving water quality.

The Commissions have reviewed and approved the WQP except for the Implementation Section. The Implementation Section is divided into four sections – Monitoring and Data Gathering, Management Plans, Capital Improvement Plan (CIP), and Education and Public Outreach – and is described in more detail below. A final component summarizes issues,



responsibilities and future actions. This section is currently under review while the Commissions' CIP is being completed. Following completion and approval of the CIP, the entire WQP will be incorporated into the Management Plan through a Major Plan Amendment process that includes extensive city and agency review and a public hearing. This is expected to occur in 2006.

As TMDLs are completed, implementation plans will be developed for each of the listed water bodies. These implementation plans will then be incorporated into the WQP and CIP. The TMDLs will provide targets and identify the level of effort needed to bring the specific water bodies back into compliance with State water quality standards.

A copy of the draft Water Quality Plan is found at www.shinglecreek.org.

Capital Improvement Program ~ The Implementation Plan and Capital Improvement Program (CIP) sections of the Water Quality Plan are the last items to be developed before the Commissions adopt the Water Quality Plan through the Major Plan Amendment process. The Second Generation Watershed Management Plan included a general CIP that identified a few projects, but noted that more detail would be provided as part of the Water Quality Plan and from the series of TMDLs and Management Plans to be developed over the next several years.

The draft Water Quality Plan includes an Implementation Plan of management activities and potential capital projects that have been identified in either lake management plans or the Shingle Creek Corridor Study. This initial Implementation Plan is expected to be updated on an ongoing basis as TMDLs and Management Plans are completed and approved. The Implementation Plan includes a variety of activities to be undertaken to achieve the water quality and other goals. These activities may be:

- ~ Non-structural activities that may be new or extensions of existing activities the cities and Commission already undertakes, such as increased street sweeping or targeted education.
- ~ Small projects or activities that don't meet the thresholds usually considered for capital projects, such as aquatic plant management, shoreline restoration, or small erosion control projects.
- ~ Capital projects such as detention pond construction, installation of in-line treatment devices, or lake treatments.

In recent years the Commissions, their Technical Advisory Committee (TAC), and member cities have debated how to finance the projects and activities that will be identified in the Implementation Plans. The Joint Powers Agreement authorizes three methods for financing capital improvements: 1) A negotiated apportionment of cost, 2) an apportionment of cost to the cities in the same proportion as the operating budget, or 3) certification of the cost to the county for an ad valorem tax levied on all taxable property in the watershed.



The TAC met to discuss various cost-sharing strategies and how they might be applied to three projects identified for inclusion in the Implementation Plan. An important consideration was linking capital projects funding and specific goals or benefits. Another important consideration was controlling the process so that the CIP did not become a “laundry list” of projects. Finally, it was important to provide some flexibility in the process to minimize the times a minor or major plan amendment would be required to amend the CIP.

After reviewing various cost-sharing strategies, the TAC recommended, and the Commissions agreed, that an option based on the following principles seemed to be a reasonable compromise.

- ~ There is a benefit to the entire watershed from meeting water quality and management plan goals.
- ~ For most projects there is a direct benefit to some area – for example, lakeshore or streamside properties.
- ~ For most projects there is an upstream area *causing* the need for improvements.
- ~ For many projects there is a downstream area *benefiting* from improvements.

Early in 2005 a letter was sent to the member communities outlining the proposed cost-sharing policy and requesting their review and comment.

The Technical Advisory Committee continued to meet to discuss the components of the CIP. Their discussion centered around the types of projects that should be considered for potential Commission funding and how they should be prioritized for potential Commission funding. They also considered what policies the Commission should enact when establishing and amending the CIP. Finalization of the Capital Improvement Program and Cost-sharing Policy and the resultant Major Plan Amendment process are expected in 2006.

TMDLs ~ Biannually, the Minnesota Pollution Control Agency (MPCA) releases the 303(d) list of impaired waters in Minnesota. This list, named after the section of the Clean Water Act in which the impaired waters law is found, includes all state lakes, rivers and streams known to exceed water quality standards.

Shingle Creek was first listed for excessive chloride in 1998. In 2002, twelve of the sixteen lakes in the Shingle Creek watershed were included on the list for excessive nutrients. Bass Creek was also included on the list for “impaired biota” (failure to maintain its biotic integrity). In 2004 an additional lake, Cedar Island Lake, was added to the list and Shingle Creek was listed impaired by low dissolved oxygen levels. A Total Maximum Daily Load (TMDL) study is being prepared for each Impaired Water, identifying the contributors to the excessive loads of pollutants and outlining a plan for returning the water to an unimpaired state. Funding to undertake the TMDL studies is provided by grants from the MPCA.



Chloride TMDL ~ The TMDL study for chlorides in Shingle Creek began in 2002. The goal of this TMDL is to quantify the pollutant reduction needed to meet the water quality standards for chloride in Shingle Creek, including Ryan, Bass and Pike Creeks. This TMDL, the first for chloride in Minnesota, has shown that the majority of chloride in the Shingle Creek watershed is derived from nonpoint sources, primarily road deicing, as well as commercial and industrial deicing and groundwater.

In 2004 an amendment to the original work plan was written, calling for development of a road salt application database, essential to understanding chloride application rates and timing. A product of this amendment is an updated land use coverage that includes all road surfaces and lane miles, improving the accuracy and usefulness of the completed chloride TMDL.

Load allocations in the TMDL represent aggressive goals for chloride reduction with the added challenge of addressing public safety and expectation. Consequently, implementation will be conducted using adaptive management principles. Continued monitoring and “course corrections” responding to monitoring results will be used to attain the water quality goals established in the TMDL while maintaining required levels of public safety.

In 2004 MPCA increased the grant amount to allow for more public participation. Meetings were held in 2005 with local stakeholders and public officials to present the results of the project and begin development of the Implementation Plan. Member cities, MnDOT and Hennepin County all agreed to identify and implement BMPs focused on reducing chloride use in the watershed. Meetings focused on their current activities and identification of activities that can be added to address the target load reductions. Discussion centered around product application equipment, product stockpiles, product type and quality, operator training, clean-up and snow stockpiling, and ongoing research into salt alternatives. Although the Commission will be the lead for implementing the identified BMPs, individual stakeholders will ultimately be responsible for implementing them. These activities will be tracked by the MPCA as part of the members’ NPDES Phase II permits.

A load allocation of percent reductions was set and requires an overall reduction of 71% to meet State water quality standards. The Commission is currently developing an implementation strategy and plan to meet the allocated reductions. The Implementation Plan should be finalized in 2006. The Chloride TMDL Report may be found on the Commission’s website.

Lake TMDLs ~ In 2003 the Commission began developing a TMDL for five of the lakes included on the 303(d) list. TMDLs were prepared for the three basins of Twin Lake, Ryan Lake, and Crystal Lake to coincide with lake management plans currently being developed by the cities of Brooklyn Center (for Twin Lake) and Robbinsdale (for Crystal Lake).



Data compilation and assessment of lake nutrient sources and issues for Twin Lake were completed in 2004 and sent to the PCA. The next phase involved selecting water quality indicators and target values, selecting critical environmental conditions for evaluation of compliance, and presenting this information to the Commission's Technical Advisory Committee (TAC). Load allocations will be developed for the lakes, including provisions for future growth, seasonality and margin of safety. An implementation plan will then be developed to reach water quality standards.

Since they will drive the selection of BMPs, management activities and capital projects, a discussion of wasteload allocations (WLAs) occurred in 2005. Specifically, Wasteload Allocation in the Lakes TMDL can be expressed as either a 1) single number for all NPDES-regulated stormwater discharges, or 2) when information allows, as different WLAs for different categories.

The ultimate goal is to develop implementation plans for TMDLs that can be adopted by the Commissions as part of their CIP and provide activities that can be directly referenced in the cities' Stormwater Pollution Prevention Plans (SWPPPs). The member cities have generally agreed that there is a watershed benefit to meeting water quality standards in our lakes and streams. The strategy will be to develop a cooperative, collaborative process of identifying a suite of activities that would, in total, result in the desired load reduction. That suite would include local activities as well as larger, multi-city cooperative projects. The cities' SWPPPs will include local-benefit-only projects as well as their share of larger projects.

The Phase II TMDL provides for completion of TMDLs for Bass, Cedar Island, Eagle, Pike, Magda, Meadow, Pomerleau and Schmidt Lakes, the remaining eight lakes included on the 303 (d) list. Funding for Phase II was approved in 2005 and it is anticipated all of the required lake TMDLs will be completed by the end of 2006.

When it has been completed, the Lake TMDL work plan will be posted to the Commission's website, www.shinglecreek.org.

Dissolved Oxygen TMDL ~ In 2004 the Commission began working with the MPCA to develop a work plan for the Dissolved Oxygen (DO) TMDL process. The first phase will consist of additional data collection in order to diagnose the cause of low DO concentrations; the second phase will include modeling and load development; and the third phase will involve remedial actions/projects. The MPCA was unable to fund this TMDL in 2004 or 2005; funding is anticipated in 2006 for work to be completed in 2007.



Shingle Creek Corridor Study ~ In 2003 the Shingle Creek Commission was awarded a Conservation Partners grant by the Minnesota Department of Natural Resources to conduct a Shingle Creek Corridor Study.

The study began early in 2004 with meetings with city and other agency representatives and the general public to identify appropriate goals and priorities for the corridor that balance environmental improvement with the creek's urban setting and role in stormwater management.

Field work was performed along all of Shingle Creek in Brooklyn Center and Brooklyn Park as well as in Ryan Creek in Robbinsdale. It included in-creek surveying and data collection regarding channel conditions, and habitat and land cover assessment in the immediate vicinity of the creek. Field work was completed in 2004.

This study incorporated and built upon data compiled by the Minneapolis Park Board in its evaluation of that part of the creek corridor in the City of Minneapolis and will be followed in future years by similar studies for Eagle, Bass and Pike Creeks as well as Oxbow Creek in the West Mississippi watershed. The end product of the Corridor Study is a coordinated vision for the future of Shingle Creek and its tributaries, a capital improvement plan that outlines projects for the restoration of Shingle Creek, and a program of management activities.

In late 2004, Staff met with Brooklyn Park residents, city staff and elected officials to present concepts for improving the creek, specifically in the reach from Brooklyn Boulevard crossing west of Zane Avenue to the Hampshire Avenue footbridge. The ecological concept, which would restore the creek with a low flow channel and native streambank plantings and remove the dam at Brooklyn Boulevard and replace it with rock vanes riffle/pool sequences was favorably received by the residents. In May 2005 the City of Brooklyn Park formally requested the Commission to draft a minor amendment to its Watershed Management Plan for the creek restoration project under design in that city. In the meantime, the City expanded the project to include the subreach of Hampshire to Candlewood Drive.

The draft study was forwarded to the member cities for review and comment in July 2005. Along with the Shingle Creek Corridor Management Standards, it was approved by the Commission at its September meeting.

At the same meeting, the Commission adopted a resolution ordering the Shingle Creek Restoration Improvement project in Brooklyn Park. Up to \$75,000 of the costs of the project will be borne by the Commission through the County levy process; the remaining costs will be paid by the City of Brooklyn Park. The Shingle Corridor Study as well as pictures of the Brooklyn Park restoration project are available on the Commission's website. The project will be constructed in 2006.



River Watch ~ The River Watch program was initiated in 1995 to provide hands-on environmental education for high school and college students, promote river stewardship and obtain water quality information on streams in Hennepin County. The program connects teachers and students with professionals to monitor the health of local streams. The monitoring program, which started with six sites, has expanded to 30 sites. In 2005 approximately 500 students monitored nine sites in Hennepin County.

The Shingle Creek Watershed Management Commission has been a sponsor of the River Watch Program since 1998. In 2005, two sites in the Shingle Creek watershed were monitored - site 10 on the grounds of Park Center High School, between Brooklyn Boulevard and Noble Avenue, and site 28 near 45th Avenue in Minneapolis. An overview of the Shingle Creek macroinvertebrate monitoring results is found in Appendix 6.

The River Watch program is under the auspices of the Hennepin County Department of Environmental Services. A detailed report of the 2005 monitoring results is found on the Hennepin County web site, [http://www.co.hennepin.mn.us/River Watch](http://www.co.hennepin.mn.us/River%20Watch). For more information, contact Jenny Schaust, jenny.schaust@co.hennepin.mn.us.

NPDES-II Education and Public Outreach Minimum Measure Program ~ The nine cities with land in the Shingle Creek and West Mississippi watersheds that are also MS4s (having municipal separate storm sewer systems) have designated the Commissions to prepare and provide the education and public outreach minimum measures of the NPDES-II (National Pollutant Discharge Elimination System Phase II) stormwater pollution prevention programs. (Minneapolis is an NPDES-I city and has different requirements.)

The Commissions prepared a joint Public Outreach program that incorporated many of the Commissions' current activities and identified new activities to be undertaken in 2005 and subsequent years. These activities include:

- ~ Volunteer lake and stream water quality monitoring
- ~ Informational articles, brochures and website
- ~ Water Quality Education Grants
- ~ Water quality demonstration projects
- ~ Handbooks for developers, contractors and maintenance staff
- ~ Hands-on activities such as storm drain stenciling, watershed cleanups and shoreline restoration
- ~ Special community events
- ~ Outreach to lake associations
- ~ Collaboration with WaterShed Partners

The program includes six elements -- education and public outreach, public participation and



involvement, illicit discharge and elimination, construction site stormwater runoff control, post construction stormwater management in new and re-development projects, and pollution prevention/good housekeeping for municipal operations. It serves as a base program that cities may supplement with additional programming and includes appropriate BMPs (best management practices) and measurable goals.

In 2005 the Education and Public Outreach Committee (EPOC), which coordinates NPDES activities, developed a handbook, *Maintain Your Property the Watershed Friendly Way: A Guidebook for Commercial and Common Ownership Communities*. This booklet provides information aimed at commercial and multi-family property managers and townhome associations on maintaining detention ponds, proper turf maintenance, parking lot plowing and de-icing options and maintaining other stormwater facilities such as in-line devices, infiltration basins and rain gardens. It may be found on the Commission's website.

A majority of the education and public outreach goals were attained in 2005. Some programs did not reach their goals because there was insufficient participation such as low attendance at the Open House or lack of a volunteer to monitor a lake through CAMP. Others did not reach their goals because they required participation and collaboration by the member cities.

A category of goals that was not met in 2005 was development of educational materials on various subjects such as construction activity, municipal maintenance good housekeeping and the like. In the interest of nonduplication of effort and expense, the EPOC has recommended that the Commissions wait to finish these tasks until those materials are completed by other entities such as WaterShed Partners and MPCA and then incorporate them into the Commissions' education and public outreach program.

The Commissions provided an annual report of the NPDES-II program to the MS4s for their use in developing their own annual reports. A copy of the report is included on the website.

Water Quality Education Grants ~ The Shingle Creek and West Mississippi Commissions co-sponsor a program to provide grant funding to promote water quality education. Grants of up to \$1,000 each are available to fund activities that raise awareness of water quality and improve water quality education. Faculty and staff of public and private K-12 schools, youth groups, service clubs, churches and neighborhood associations located in the Shingle Creek and West Mississippi watersheds are eligible to receive these grants. Costs of the grants are shared equally between the two commissions.

Funded activities must directly provide educational activities for participants, improve educators' knowledge, skills and ability to provide educational activities, or provide a "demonstration model" to further water quality education and awareness. Projects approved in



2005 were:

Monroe Elementary School
Minneapolis Blooms, Friends of CUE
Adam Hockert, Scout Troop 542

Brooklyn Park
Minneapolis
Brooklyn Center

Pond Life
Rain garden workshops
Storm drain stenciling

Public Outreach ~ The Commission continues to provide information and support to its member cities and the citizens living in those communities. Public involvement and participation is encouraged through a number of projects and events.

In addition, many of the cities within the watersheds have active outreach programs. These range from assisting lakeshore associations in promoting use of phosphorus-free fertilizer to providing educational materials to schools. All of the cities have some type of citizen commission that reviews and provides recommendations to their city councils. Below is a brief list of Commission outreach activities that occurred in 2005.

- ~ Sponsored the fourth annual Great Shingle Creek Watershed Cleanup.
- ~ Held its Annual Meeting on May 12, 2005.
- ~ Continued the “free soil test kits” program for watershed residents.
- ~ Was represented at ScienceFest 2005, an event of the Young Scientist Roundtable sponsored by ten Metro school districts; the City of Crystal All-Neighborhood event; and the Palmer Lake VFW Shingle Creek Cleanup breakfast.
- ~ Held meetings with residents of the Mallard Creek townhomes discuss source of debris in adjacent channel.
- ~ Prepared e-newsletters and articles that provide updated information on Commission activities to cities and interested parties.
- ~ Maintained web site to allow for easy access to Commission activities and watershed information and events.

Grant Opportunities ~ In 2005 the Commission continued to actively seeking grant opportunities to fund Commission projects. An application was written for DNR Environmental and Conservation Partnership Grant funding for the Eagle, Bass, Pike, Twin, Oxbow and Mattson Brook Corridor Study. While other grant programs were available, their criteria did not match with projects identified by the Commissions in their Management Plan. It is anticipated funding will become available in 2006 under the Clean Water Legacy Act. At that time, applications will made to fund implementation projects identified in the various TMDLs.

Interest Proposals ~ Biannually, the Commission publishes a notice in the *State Register* requesting interest proposals for administrative, legal and technical services. As prescribed in MSA 103B.227, Subd. 5, the noticing process will be repeated in 2006.



Communications ~ The Education and Public Outreach Committee (EPOC) of the joint Commissions prepares periodic newsletters for distribution to member cities for reproduction and distribution to the public. These newsletters provide information relative to the Commissions' operations and implementation of their Management Plan. Articles describing current activities and projects are also included.

In addition, the EPOC from time to time provides news releases to member cities, local newspapers and other media describing Commission and watershed-wide activities and events. Newsletters, news releases, and this Annual Report are available on the Commissions' web site, www.shinglecreek.org.

Financial Reporting ~ Financial accounting is handled by the Commission's Treasurer, an elected officer. Monthly Treasurer's Reports are prepared for review and approval by the Commission at their monthly meetings. Grady Boeck, representative from the City of Brooklyn Center, served as Treasurer for the Commission during 2005. Assistance was provided by Deputy Treasurer, Judie Anderson, JASS. The Commission's fiscal year is the calendar year.

Operating Budget ~ The Commission's Joint Powers Agreement 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 2005 cost allocations to the members are shown as part of the Operating Budget found in *Appendix 7*.

Of the \$426,190 operating budget approved by the Commission for 2005, income of \$145,000 was projected as proceeds from grant funding, \$12,000 as application fees, and \$1,000 as interest income, resulting in assessments to members totaling \$268,190.

Treasurer's Reports ~ Details of the Commission's expenditures are provided in financial documents prepared by the Commission's Treasurer which show year-end totals and monthly expenditures for each accounting category (*Appendix 7*.) Total expenditures for the year ending December 31, 2005 were \$330,446. Revenues received in 2005 totaled \$357,273, including proceeds from grants totaling \$67,069, and fees of \$17,650 collected for projects reviewed by the Commission. No WCA escrows were received in 2005.

Financial Statement ~ The Commission's 2005 Audit is being prepared by the firm of Johnson & company, Ltd. and will be available at a later date.



Work Plan for 2006 ~ The Commission's projected work plan for 2006 is as follows:

- ~ Continue to review projects within the watershed in accordance with the management standards and policies of the Commission.
- ~ Continue to serve as the local government unit (LGU) for administering the Minnesota Wetland Conservation Act unless member cities elect to serve as the LGU.
- ~ Develop and implement an Education and Public Outreach program that meets the requirements of the Education and Public Outreach and Public Participation minimum measures of the NPDES-II permit program.
- ~ Conduct an annual review of the NPDES-II permit program and submit a report to the participating MS4s.
- ~ Continue stream monitoring program to develop a more complete picture of the total pollutant load from the Shingle Creek Watershed.
- ~ Conduct the Phase II Stream Assessment extending the Shingle Creek Corridor Study to the other major streams in the watersheds: Bass, Eagle, Pike, Twin, and Oxbow Creeks, Mattson Brook, and Edinburg/Century Channels.
- ~ Continue participation in the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP).
- ~ Continue to fund and encourage participation by schools located within the watershed in Hennepin County's River Watch program.
- ~ Continually update the Commission's website.
- ~ Complete TMDL Study for chlorides.
- ~ Continue Lakes TMDL study.
- ~ Begin Dissolved Oxygen (DO) TMDL study.
- ~ Upon completion of the Water Quality Plan and CIP, initiate a Major Plan Amendment modifying the Second Generation Management Plan to adopt the WQP and revised CIP and Cost Sharing Policy.
- ~ Prepare periodic newsletters and other media releases in accordance with MN Rules 8410.0100, §4.
- ~ Implement 2006 objectives of EPOC.
- ~ Have a Commission presence at activities such as Great Shingle Creek Watershed Cleanup and other member community events.
- ~ Continue Water Quality Education Grant Program.
- ~ Actively seek grant opportunities to fund Commission projects.
- ~ Encourage cities to implement regional ponding facilities wherever feasible to treat stormwater runoff.
- ~ Publish an Annual Report summarizing the Commission's yearly activities and financial reporting.
- ~ Work with other governmental agencies and other watershed management organizations toward a common goal of protecting water resources and improving water quality within the watershed.

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Questions regarding this report should be directed  
to JASS, 763.553.1144 or judie@jass.biz.

