

# MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION

2016 ANNUAL REPORT



*Lake St. Croix Beach*

Prepared by:

MIDDLE ST. CROIX WMO BOARD OF MANAGERS  
APPROVAL DATE: February 9<sup>th</sup>, 2017

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## INTRODUCTION

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The Middle St. Croix WMO encompasses approximately 19.8 square miles and is located in the east-central part of Washington County. A distinction exists between the Middle St. Croix watershed and the other watersheds of Washington County in that the Middle St. Croix watershed has many small, parallel watersheds that all flow to the St. Croix, whereas the other watersheds in the County generally have one major drainage with a headwaters and outlet. Land use in the watershed is evenly distributed between agricultural uses, rural residential, high-density residential and commercial land uses.

The Middle St. Croix Watershed Management Organization (MSCWMO) is a Joint Powers Watershed Management Organization composed of ten St. Croix Valley communities that was established under State Statute 103B to cooperatively manage water resources within the watershed. The ten member communities of the MSCWMO are: Afton, Bayport, Baytown Township, Lakeland, Lakeland Shores, Lake St. Croix Beach, Oak Park Heights, St. Mary's Point, Stillwater, and West Lakeland Township

In general, the purposes of a Watershed Management Organization (WMO) are to conserve natural resources through land use planning, flood control, and other conservation projects in order to ensure continued public health and welfare. The specific purposes of a watershed management organization are:

- Cooperatively manage water resources in the watershed.
- Inventory and assess the resources of the watershed.
- Monitor the water quality of lakes and streams in the watershed.
- Provide education on water related issues in the watershed.
- Review development plans for stormwater management, erosion and sediment control, and provide wetland and shoreland protection.
- Plan and implement capital improvement projects that enhance the water resources of the watershed.

The mission of the Middle St. Croix Watershed Management Organization is to jointly and cooperatively manage the water resources of the watershed. The ten member communities will do so to conserve and protect the water resources in an efficient and effective manner.

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## ORGANIZATION AND BUDGET

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### MSCWMO Board of Managers

Each member municipality or township within the MSCWMO appoints one member to the MSCWMO Board. The 2016 representatives from each participatory community are listed below.

Vacant  
Afton, MN

Brian Zeller (Chair)  
55 Lakeland Shores Rd  
Lakeland Shores, MN 55043  
612.325.3038

Chuck Dougherty  
14168 Oak Park Blvd. N.  
Oak Park Heights, MN 55082  
651.439.4439

Doug Menikheim  
527 Broadway Ave. S.  
Stillwater MN 55082  
612.382.4929

Dan Kylo  
1891 Oldridge Ave. N.  
West Lakeland Township, MN 55082  
651.436.1134

Tom McCarthy  
16455 20<sup>th</sup> St. S.  
Lake St. Croix Beach, MN 55043  
651.436.7031

Nancy Anderson  
2870 Itasca Ave. S.  
St. Mary's Point, MN 55043  
651.436.7157

John Fellego  
4220 Osgood Ave N.  
Baytown Twp., MN 55082  
612.275.2200

Joe Paiement  
1190 St. Croix Trail South  
Lakeland, MN 55043  
651-436-4430

Dan Goldston  
294 North Third St.  
Bayport, MN 55003  
651-275-4404

### MSCWMO Contract Support Staff

The MSCWMO does not employ staff but does contract with several organizations for professional services. The organizations providing these services are listed below.

Administrator  
Mikael Isensee  
Washington Conservation  
District  
455 Hayward Avenue,  
Oakdale MN 55128  
651.330.8220 Ext. 22

Attorney  
Troy Gilchrist  
470 Pillsbury Center  
200 South Sixth Street  
Minneapolis, MN 55402  
612.337.9215  
tgilchrist@kennedy-  
graven.com

Recording Secretary  
Jenn Radtke  
Washington Conservation  
District  
455 Hayward Avenue,  
Oakdale MN 55128  
651.330.8220 Ext. 27

**Table 1: 2016 Budget**

<b>Administration Budget</b>	<b>Community Contributions</b>
Administration - General	\$ 29,200
Accounting	\$ 1,500
Legal Fees – General	\$ 1,000
Audit	\$ 1,900
Insurance	\$ 3,000
Office supplies/equipment/postage	\$ 750
Minutes/Clerical	\$ 1,100
Copying/printing	\$ 750
<b>Subtotal</b>	<b>\$ 39,200</b>
<b>Project Budget</b>	
Project Contingency	\$ 2,000
Engineering - Project	\$ 5,400
Development Plan Reviews	\$ 4,800
Erosion Monitoring Program	\$ 2,250
BMP Program Tech. Assistance	\$ 25,859
BMP Program Cost Share	\$ 19,500
Community TA	\$ 3,000
Water Resource Educator	\$ 6,000
Website	\$ 750
Inspection and Tracking Database	\$ 600
Water Monitoring	\$ 16,411
Water Monitoring Equip. Savings	\$ 1,000
2025 WMP Update	\$6,000
<b>Subtotal</b>	<b>\$ 93,570</b>
<b>TOTAL</b>	<b>\$ 132,770</b>

**Table 2: 2017 Draft Budget**

<b>Administration Budget</b>	<b>Community Contributions</b>
Administration - General	\$ 29,200
Accounting	\$ 1,500
Legal Fees – General	\$ 1,000
Audit	\$ 1,900
Insurance	\$ 3,000
Office supplies/equipment/postage	\$ 750
Minutes/Clerical	\$ 1,100
Copying/printing	\$ 750
<b>Subtotal</b>	<b>\$ 39,200</b>
<b>Project Budget</b>	
Project Contingency	\$ 2,000
Engineering - Project	\$ 5,400
Development Plan Reviews	\$ 4,800
Erosion Monitoring Program	\$ 2,250
BMP Program Tech. Assistance	\$ 25,859
BMP Program Cost Share	\$ 19,500
Community TA	\$ 3,000
Water Resource Educator	\$ 6,000
Website	\$ 750
Inspection and Tracking Database	\$ 900
Water Monitoring	\$ 16,411
Water Monitoring Equip. Savings	\$ 1,000
2025 WMP Update	\$6,000
<b>Subtotal</b>	<b>\$ 93,870</b>
<b>TOTAL</b>	<b>\$ 133,070</b>

## **AUDIT REPORT**

Michael Peterson, Certified Public Accountant & Consultant, completed an audit of the financial management of the WMO for the year 2016. The result of this audit disclosed no instances of noncompliance or other matters that are required to be reported under Government Auditing Standards, and that the MSCWMO does comply with the material terms and conditions of applicable legal provisions. In the opinion of the auditor, the financial statements of the MSCWMO for the year ending December 31, 2016 were in conformity with accounting principles generally accepted in the United States of America.

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## 2016 PROGRAMS AND PROJECTS

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### 2016 Implementation of Performance Standards

The mission of the MSCWMO is to jointly and cooperatively manage water resources within the WMO and to provide effective and efficient services to the residents of the watershed. To work towards meeting this goal, the MSCWMO chose to integrate its performance standards into existing city and township review processes rather than create its own separate permit program. This integration has two levels. One, the communities within the WMO are to submit project applications to the WMO for staff level review whenever a proposed project requires a city building permit and adds 500 square feet of new impervious surface, or if a project requires a variance from local impervious surface zoning requirements for the property. And, two for projects that meet the criteria listed in section 7.0 of the 2016 WMP, full project review and comment by the MSCWMO board is required.

#### *Community Ordinance Updates*

In 2014 the MSCWMO received a Minnesota Board of Water and Soil Resources Clean Water Fund Accelerated Implementation Grant to Integrate Minimal Impact Design Standards into local controls. In 2016, at the completion of the grant, all MSCWMO with the exception of the City of Stillwater and the City of Afton had adopted full revisions of their Stormwater and Erosion Control Ordinance to be consistent with the 2015 MSCWMO Watershed Management Plan standards.

#### *Community Implementation of MSCWMO Performance Standards*

Table 3 summarizes project reviews which were completed in the MSCWMO in 2016. All ten of the member communities Local Water Management Plans provide guidance on how to complete the MSCWMO review process. The MSCWMO review process is applied consistently in each of its ten member communities.



**Table 3: 2016 Community Implementation of Performance Standard**

<b>Community</b>	<b>2016 Implementation of Performance Standards</b>
City of Afton	<ul style="list-style-type: none"> <li>No projects referred to the MSCWMO in 2016 for staff level review</li> </ul>
City of Bayport	<ul style="list-style-type: none"> <li>Bayport City Parking Lot Redevelopment, 169 3<sup>rd</sup> Street North</li> </ul>
Baytown Township	<ul style="list-style-type: none"> <li>Stillwater Area Public Schools Bus Maintenance Facility, 3547 Stagecoach Tr. N.</li> </ul>
City of Lakeland	<ul style="list-style-type: none"> <li>1067 Quixote Ave, Residential Reconstruction</li> <li>745 Quixote Ave., Timber Wall Replacement</li> <li>Lakeland City Hall New Development, 12<sup>th</sup> Street and St. Croix Trail</li> <li>2016 Streets Improvement, Redevelopment</li> </ul>
City of Lakeland Shores	<ul style="list-style-type: none"> <li>55 Lakeland Shores Road Garage and Trail Stabilization</li> </ul>
City of Oak Park Heights	<ul style="list-style-type: none"> <li>CSAH 23 Redevelopment</li> <li>Oak Park Crossing Trail New Development</li> <li>CSAH 26, Redevelopment</li> <li>Holiday Station, 5965 Osgood Ave, Redevelopment</li> <li>Dahl-Tec, 5805 St. Croix Trail, Addition</li> <li>Boutwells Chapel, 5450 Nolan Parkway N, New Development</li> <li>Baytown Substation, 13809 60<sup>th</sup> St. N., New Development</li> </ul>
City of Stillwater	<ul style="list-style-type: none"> <li>CSAH 12 Redevelopment</li> <li>Mulberry Harbor Yacht Marina, 575 Main St. N., Pier Replacement</li> <li>2016 Stillwater Streets Improvement</li> </ul>
City of Lake St. Croix Beach	<ul style="list-style-type: none"> <li>1640 Riviera Addition</li> <li>2016 Streets Improvement, Redevelopment</li> </ul>
City of St. Mary's Point	<ul style="list-style-type: none"> <li>No projects referred to the MSCWMO in 2016 for staff level review</li> </ul>
West Lakeland Township	<ul style="list-style-type: none"> <li>No projects referred to the MSCWMO in 2016 for staff level review</li> </ul>

## Information and Education Program

### *Shared Water Resource Educator*

The MSCWMO continues to participate in the shared East Metro Water Resource Education Program (EMWREP). During 2016, EMWREP continued to use a variety of strategies to educate the general public about stormwater pollution and other issues affecting the quality of surface and groundwater resources, and to inform them about partner programs and activities. EMWREP contributed 54 press releases and news columns to 18 area newspapers, in addition to producing educational content for city newsletters, social media, and on-line news sites. EMWREP staff attended more than 20 community events and participated in the planning and program development for several regional water education initiatives as well.

Though the impact of these larger public education and awareness raising efforts is often hard to measure directly, we know they greatly improve the success of our targeted outreach activities and are usually the initial gateway through which people learn about EMWREP partner organizations and engage at a higher level by attending a workshop, participating in a watershed planning process, or installing a clean water project on their property.

In 2016, the watershed also completed the following activities

- Concluded outreach to landowners in the prioritized catchment SD-3 of the Lake St. Croix Direct Discharge Subwatershed Analysis to identify potential locations for voluntary retrofit projects.
- Provided education about groundwater and water conservation at the Washington County Fair.
- Supported a prairie planting with 1,100 grade school students at St. Croix Preparatory Academy.

**Blue Thumb Program:** EMWREP uses Blue Thumb – Planting for Clean Water ([www.BlueThumb.org](http://www.BlueThumb.org)) tools and resources to conduct public education and enhance outreach efforts, as well as promote watershed cost-share programs, conduct targeted outreach for neighborhood raingarden projects, and teach educational workshops for homeowners. The program was developed by the Rice Creek Watershed District in 2006 and is now led by Metro Blooms.

- In 2016, EMWREP conducted raingarden Urban Landscaping design workshops in Lake Elmo and coordinated a neighborhood party in Lakeland.

**Stormwater U:** In 2016 the watershed coordinated with the University of Minnesota Erosion and Stormwater Management Certification Programs to provide a Regulatory Inspectors Training on May 17<sup>th</sup>. The watershed also provided educational presentations on infiltration design for the Stormwater Pollution Prevention Design Recertification classes on March 29<sup>th</sup>, April 7<sup>th</sup>, and April 15<sup>th</sup>. On April 28, 2016 the MSCWMO met with member community Building Inspectors to review watershed erosion and sediment control standards.

The watershed also supported EMWREP development and distribution a set of ten 10-minute PowerPoint presentations for municipal staff monthly meetings. The presentations covered training topics included under Minimum Control Measure 6 of the MS4 permit.

**NEMO:** The Northland NEMO program (Non-point Education for Municipal Officials) provides local elected officials and decision makers with resources and information to make informed decisions about land use and water quality in their communities. Northland NEMO is hosted by the University of Minnesota Extension and EMWREP is a partner organization.

- During 2016 the watershed collaborated with NEMO and local partners to host the annual St. Croix River Workshop on the Water on Sept 14 for local decision makers:

The MSCWMO plans to continue working through the EMWREP in 2017.

A full report of EMWREP activities completed in 2016 can be viewed at the following link:

<http://www.mscwmo.org/watershed-education>

### ***Website***

The MSCWMO continued to update its website in 2016. The website contains up to date meeting dates, agendas, minutes, annual reports, water monitoring information, contact information and more. In addition, the website also contains a section for grant reporting which highlights projects completed as part of the BWSR Clean Water Legacy Program. The website also contains a tab “for developers” and “for builders” which provides all necessary information on the MSCWMO’s project review process. The MSCWMO website can be viewed at the following link:

<http://www.mscwmo.org>

## **2016 Data Collection Program**

### ***Water Quality Monitoring Program***

In 2016 the Middle St. Croix Watershed Management Organization (MSCWMO) continued condition monitoring and water quality and elevation biweekly on McKusick Lake and Lily Lake. Information from the Brown’s Creek Diversion Drainage which flows to McKusick Lake is monitored by the Brown’s Creek Watershed District, but resulting information is also provided to the MSCWMO for use in management planning. The MSCWMO also continued its problem identification monitoring at Lily Lake. In 2015 the MSCWMO conducted flow and nutrient grab sample monitoring on seven outfalls discharging to Lily Lake, including the Brick Pond outfall. In 2016 flow and nutrient sampling continued at four outfalls into Lily Lake. Additionally, in 2016 flow and nutrient sampling was conducted at the two outfalls of Perro Pond and at the diversion structure at Perro Creek. These monitoring results will enable the MSCWMO will use this data to more effectively implement management strategies and practices to address phosphorous discharges to Lily Lake.

Full water monitoring reports can be viewed on our website. The 2016 monitoring report will be available in July of 2017.

<http://www.mscwmo.org/water-monitoring>

## 2016 Projects

### ***Construction Monitoring Program***

The MSCWMO construction-monitoring program was developed to ensure that the policies and performance standards of the MSCWMO were implemented on the ground for qualifying projects. Staff continues to monitor projects, which were reviewed by the MSCWMO board. The MSCWMO coordinates its inspection program with its member communities and their building/permit inspectors.

### ***BMP Inspections and Maintenance***

The MSCWMO BMP Inspection and Tracking Database was developed to ensure that the installed practices are meeting functional and aesthetic expectations. In 2016 106 MSCWMO projects were inspected. Utilizing MCC Crews from Clean Water Funding, targeted maintenance was performed on over 100 best management practices.

### ***Groundwater***

The MSCWMO continued to recognize the Washington County Groundwater Plan during 2016 and continued to participate in County wide technical advisory committee meetings to prioritize implementation and identify responsible parties for specific activities. In addition, the MSCWMO continued to participate in the North and East Metro Groundwater Management Plan Stakeholder Input Process.

### ***Local Government Controls***

The MSCWMO continued to work with its member communities to strengthen water quality and natural resource management. Through a Clean Water Fund Accelerated Implementation grant the MSCWMO is assisting its member communities to update their local controls. By the end of 2016 the MSCWMO plans to have council resolutions to adopt Minimum Impact Design Standards into local ordinance and code. All communities will continue to participate in the MSCWMO's project review program.

### ***St. Croix Beach Shoreline Stabilization***

The MSCWMO worked collaboratively with the City of Lake St. Croix Beach and the St. Croix River Association to stabilize an eroding shoreline on Lake St. Croix. Specifically the project applied bio-engineering practices in combination with hard armor shoreline stabilization methods to stabilize 400 feet of Lake St. Croix in the City of Lake St. Croix Beach. Stabilizing this shoreline, which was substantially damaged during high water levels of June 2014, reduced soil loss by 268 tons and reduce phosphorous 228 lbs. as estimated by the Board of Water and Soil Resources Pollutant Load Estimator. Incorporating bio-engineering approaches which include native vegetation serve multiple functions: decreasing erosion during flood events, reducing shoreline damage during spring ice flow, maintaining native habitat along the river flyway, and reducing the establishment of terrestrial invasive species.

### ***Subwatershed Implementation Program***

#### **Lake St. Croix Direct South**

In 2016 the MSCWMO allocated funds from the general budget and received funding from the Metropolitan Conservation Districts to conduct a subwatershed analysis of the southern portions fo

the MSCWMO that directly discharge to Lake St. Croix. Work completed to date includes ArcSWAT drainage analysis based on new LiDAR data, collection of updated drainage data from MnDOT and municipalities, and field identification of culverts. In 2017, WinSLAMM pollutant loading models will be developed and potential BMPs will be located. The final report will include locations and cost/benefit evaluation of potential stormwater practices to reduce nutrients discharging to Lake St. Croix.

### **Lake St. Croix Direct North**

The MSCWMO received a 2015 Board of Water and Resources Clean Water Fund grant to install stormwater treatment features as prioritized in the 2014 Lake St. Croix Direct Discharge Subwatershed Analysis. The MSCWMO coordinated with the City of Oak Park Heights to install the first phase of the project, seven curb cut bioretention cells, in 2016. Additionally, the MSCWMO completed the design of a large bioretention basin with iron enhanced sand filters at the Stillwater Junior High School. The final design infiltrates and filtrates stormwater from a 10.75 acre watershed prior to discharging directly to Lake St. Croix.

Additionally, the MSCWMO received a 2016 Board of Water and Soil Resources Clean Water Fund grant to install phase II of the prioritized stormwater retrofit projects identified in the 2014 Subwatershed Analysis. Currently two large curb cut bioretention basins have been designed and will be installed in 2017.

### **Lily Lake, Stillwater**

In 2013 the MSCWMO received funding from the BWSR's Clean Water Legacy Program to fund the third phase of project implementation within the Lily Lake Subwatershed. In 2016 design was completed for a large gully stabilization project on Brick Pond. The project will stabilize the gully by diverting 6 acres of drainage into a large filtration basin and routing high flows to the City of Stillwater storm sewer system. The project will be bid and installed in 2017.

### **Lake McKusick, Stillwater:**

In 2016 the MSCWMO provided review and installation quality control inspections for the installation of two biofiltration basins in conjunction with the reconstruction of County Road 12, which drains to Lake McKusick.

### **Perro Creek:**

In 2016 the MSCWMO provided review and installation quality control inspections for the installation of a bioretention basin in conjunction with the redevelopment of the City of Bayport Parking Lot. The parking lot area drains to Perro Creek and was identified in the 2013 Perro Creek Subwatershed analysis. Implementation of retrofit BMPs identified in the subwatershed analysis is planned for 2018.

### ***Best Management Practices Program***

The MSCWMO continued to promote its Best Management Practices Program during 2016. A total of \$45,359 was designated in the 2016 budget for both cost-share and technical assistance for residents and communities within the MSCWMO. These projects were awarded funding in 2016:

The following is a list of completed projects and a brief description of the project:

*St. Croix Prep Academy Native Prairie Restoration* (TP: 2.4): A 6 acre native prairie restoration in the Perro Pond subwatershed catchment. The prairie was hand seeded by 1,100 students.

*Manley Raingarden, Lake St. Croix Beach* (TP: 0.7; TN: 2.2; TSS: 272): A 500 square foot bioretention basin that infiltrates stormwater from two acres of street drainage from a medium density residential neighborhood, prior to discharging directly to Lake St. Croix.

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## 2017 WORKPLAN

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### ***Best Management Practices Program***

The MSCWMO will continue to promote its Best Management Practices Program in 2017. A total of \$45,359 of the 2017 budget has been dedicated to both cost-share and technical assistance. The MSCWMO will continue to work to engage landowners in the Lily Lake, McKusick Lake and Stillwater direct discharge subwatersheds. The MSCWMO will continue to look for opportunities to collaborate with multiple landowners and communities to leverage additional funding and complete larger projects as part of its Best Management Practices Program. For 2017, the board is reviewing and considering revisions to its cost share programs.

### ***Water Monitoring***

The MSCWMO will continue water quality condition monitoring program for Lily and McKusick Lakes. The MSCWMO has hired the Washington Conservation District to complete condition monitoring activities on McKusick Lake and Lily Lake. The MSCWMO will implement a second year of outfall monitoring on Perro Creek and Perro Pond in 2017. The monitoring results from two years outfall monitoring will be summarized in a final report that will be used to initiate a Lily Lake Subwatershed Analysis update in 2017. The targeted outfall monitoring is enabling the MSCWMO to better target sources of phosphorous loads and more effectively implement management strategies and practices to address those sources.

### ***Public Education and Outreach Programs***

The MSCWMO will continue to participate in the East Metro Water Resource Education Program. The activities and programs offered through this partnership will help MSCWMO meet its goals for education and outreach.

### ***Comprehensive and Local Water Management Plan Assistance***

The MSCWMO will continue to offer assistance to its member communities to update comprehensive plan and will review draft plan updates for consistency with the MSCWMO 2015 Watershed Management Plan.

### ***Erosion and Sediment Control and Stormwater Management Ordinance Updates***

The MSCWMO will continue to assist its member communities to update local controls to incorporate MSCWMO performance standards. All updates are anticipated to be complete by the end of 2017.

### ***Development Plan Reviews and Erosion Monitoring Program; MSCWMO Policies and Performance Standards***

The MSCWMO will continue to review qualifying projects for consistency with the 2016 Watershed Management plan, and will continue to coordinate its review process with its member communities. Staff will also continue to monitor current and past projects to ensure stormwater management features are functioning as planned. The MSCWMO will promote trainings and events that will improve performance on future projects.

### ***Urban Subwatershed Assessments and Implementation***

The MSCWMO will work with the City of Stillwater to implement the recommendations of the 2010 Lily Lake Subwatershed Assessments. In 2013 the MSCWMO received funding from the BWSR's Clean Water Legacy Program to fund the third phase of project implementation within the Lily Lake Subwatershed. Final project design and installation is planned for 2016.

An assessment of the Perro Creek/Perro Pond subwatershed was completed in 2013. This assessment prioritized stormwater runoff pollutant reduction practices mostly for the community of Bayport. In 2016 the MSCWMO will be conducting targeted monitoring to more effectively target the implementation recommendations of the report. The MSCWMO will also work collaboratively with the City of Bayport to identify water quality retrofit opportunities during the development of a long-term drainage improvement plan.

In 2014 the MSCWMO completed Lake St. Croix Direct Discharge Subwatershed Analysis. The analysis prioritized projects in the catchments of Oak Park Heights, Stillwater and Bayport that drain directly to Lake St. Croix without treatment. In 2016 the MSCWMO will continue to work collaboratively with its member communities to identify, design and install water quality retrofit projects identified in the Subwatershed Analysis.

### ***City of Lake St. Croix Beach Stabilization and Buffer Project***

In 2016 the City of Lake St. Croix Beach received funding to repair flood damage done to 400' of shoreline along Lake St. Croix. Working in partnership with the MSCWMO the City received grant funding from the St. Croix River Association to fund a green infrastructure solution to stabilize the shoreline. City Engineering designed and installed soil filled rip-rap along the shoreline in the fall of 2016. In 2016 the MSCWMO will assist the city to establish native perennial vegetation and monitor the effectiveness of the Stabilization and Buffer Project.

### ***Website Update and Maintenance***

The MSCWMO continues to update and maintain its website.