



WATERSHED UPDATE

Lake Assessments Find Gems within the Watershed

Terrapin, Mays and Clear Lakes may not be the best-known waters in the Carnelian-Marine-St. Croix Watershed District, but recent assessments found this chain of lakes to be particularly clean and healthy.

Based on analysis of water quality, plant species and fish populations, the three lakes are all potentially eligible for inclusion in the Minnesota Department of Natural Resources (DNR) List of Lakes of Outstanding Biological Significance, according to freshwater ecologist and survey coordinator Dr. Meghan Funke. Dr. Funke found that Terrapin is a particularly healthy lake and “could be used as a reference lake to describe pre-settlement conditions.”

Diverse, high quality plant species are an important indicator of health. The aquatic plant survey found 36 different species in Terrapin, 27 in Mays and 24 in Clear. The plant species were then rated from 0-10 on the Floristic Quality Index (FQI). Species with a value of 0, such as curly-leaf pondweed, are non-native and indicate a highly disturbed environment. Terrapin received an FQI score of 32, Mays a 24 and Clear a 27. All were above the average FQI score of 23.7 for Minnesota lakes within the District's ecoregion.

Fish surveys, conducted by the University of St. Mary, also were positive. Researchers collected seven fish species (totaling 278 individuals): black bullhead, black crappie, bluegill, green sunfish, hybrid sunfish, golden shiner, largemouth bass and northern pike. Compared with previous surveys in 1979 and 1991, the abundance of bullhead species has decreased in both Mays and Clear lakes, suggesting an improvement in the fish communities and water quality over the past four decades.

Water quality researchers tested for phosphorus (a nutrient causing algal blooms), clarity and chlorophyll-a (algae). All three lakes were found to have clear water, with algal blooms held in check by diverse and healthy plant and fish communities. The District's goal is to maintain the 10-year water quality average and have light penetrate to the bottom of the lakes.



Diverse shoreline plants help keep Terrapin Lake clean.

Based on the survey results, Dr. Funke and her team recommended more stringent water quality goals than the 2010 Water Management Plan. They also recommended management activities that include annual aquatic plant surveys, fish surveys every five years and partnering with Warner Nature Center and Wilder Foundation to protect the land surrounding the lakes through conservation easements. If the lakes secure registration with the DNR, it could bring additional funding to keep the lakes healthy.

FIGHTING INVASIVES IN LONG LAKE

This summer, while conducting a survey for curly-leaf pondweed in Long Lake, the District also found evidence of Eurasian watermilfoil. Both are aquatic invasive species that threaten the health of our waters. Curly-leaf pondweed compromises water quality by adding phosphorous to the water column, causing algal blooms. Watermilfoil creates thick mats of vegetation on the water's surface, interfering with recreation and crowding out important native plants.

The District is working with the Long Lake Homeowners Association to fight these newly discovered species and ensure that they do not spread downstream to Terrapin Lake, the first lake in the Terrapin, Mays and Clear chain of lakes. A lake assessment will be conducted on Long Lake in spring 2017 followed by implementation of a rapid response treatment plan.



Invasive Eurasian watermilfoil has been found in Long Lake.

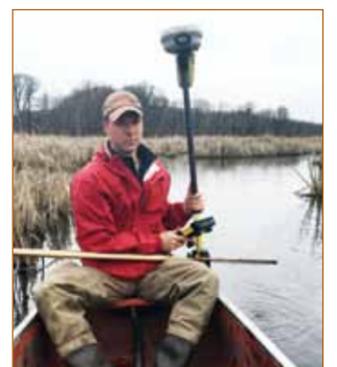
EFFORTS ADDRESS HIGH WATER IN BIG MARINE LAKE

Big Marine Lake-area residents have expressed concerns about high water and potential erosion problems. After two meetings on the issue, the District, Washington County and the DNR are working on solutions.

The District requested and received permission from the DNR to start an emergency drawdown of waters downstream to prevent problems from next year's spring runoff.

In an effort to identify causes of the high water, the District completed surveys of the area. No clear structural issues were found, but the District agreed to review and make any necessary revisions to the management plan for the adjustable weir on the Carnelian Creek Drainage downstream from the lake.

A follow up meeting will take place in late January so community members can review proposed plan revisions before they are adopted and implemented. To ensure residents and other concerned citizens have ongoing information on actions to address high water, the District created a maintenance activities log on the District's website.



Civil engineer Kyle Crawford surveyed water levels at the Big Marine outlet.

Formed in 1981, the Carnelian-Marine-St. Croix Watershed District oversees a variety of projects and programs to assess and improve the health of our 81-square-mile watershed—which includes 31 lakes, three designated trout streams, hundreds of acres of wetlands and over 17 miles of St. Croix River shoreline. The Watershed District is managed by the following volunteer board of residents appointed by Washington County:

President.....Dave De Vault, 612.670.5530
SecretaryKristin Tuenge, 651.433.3763
Treasurer.....Wade Johnson, 651.356.9573
ManagerEric Lindberg, 612.760.6695
ManagerThomas Polasik, 651.430.0263
ManagerJoel Stedman, 651.433.2836
ManagerAndy Weaver, 651.491.2656
AdministratorJim Shaver, 651.433.2150,
 jshaver@cmsc wd.org

Carnelian-Marine-St. Croix Watershed District meetings are open to the public and take place the second and fourth Wednesday of the month at 6:30 p.m., in the Heritage Room of the Scandia Community Center, 14727 209th St. N. in Scandia.

IT'S THE DISTRICT'S 35TH ANNIVERSARY!

The Managers of the Carnelian-Marine-St. Croix Watershed District thank you for your support over the last 35 years. This period has seen many changes at both the state and national levels including the U. S. Environmental Protection Agency's first list of impaired waters, detection of Eurasian watermilfoil and zebra mussels in Minnesota lakes and rivers and Minnesota's Legacy Amendment that helps protect our water resources.

The District was formed in 1981 to solve problems associated with high water levels on Big Marine and Big Carnelian lakes. The state established the District using watershed boundaries instead of political ones and gave it the power and authority to solve water-related problems within its borders.

Over the years the District has overseen many improvements from its initial project of lake level management to shoreline restoration, erosion control, agricultural projects and stormwater infiltration basins. The District helps local governments with water problems and uses its permitting authority to ensure that new construction projects meet rigorous stormwater and erosion control standards. In 2007 the District merged with the neighboring Marine on St. Croix Water Management Organization. The Board hired the first District Administrator in 2008.

As the Managers of the District look to the future, they intend to provide the same high level of services while prioritizing and targeting larger capital projects to deliver the most efficient water quality improvements. Most importantly, they are preparing for the changes that will present themselves over the next 35 years and count on your continued support to help meet those challenges.

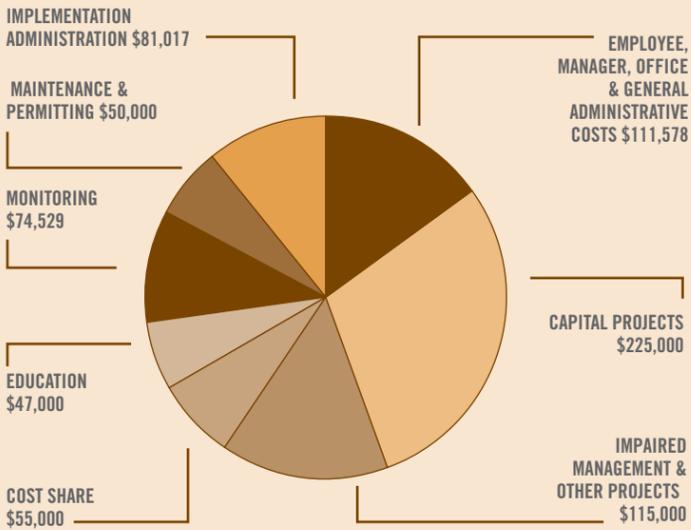
Visit us online at www.cmsc wd.org



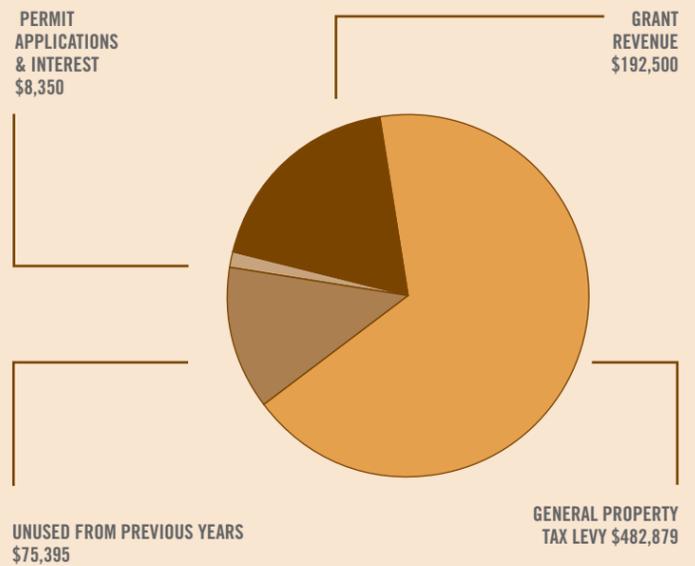
Proposed 2017 Budget

On September 13, 2016, the Board of Managers adopted the 2017 budget at its regular meeting.

EXPENSES \$759,124



INCOME \$759,124



With a tax levy of \$480,000, the estimated cost of water management in 2017 per home value is:

Home Value	\$200,000	\$400,000	\$600,000
Tax Levy	\$72	\$144	\$216



YOU CAN PREVENT AQUATIC INVASIVE SPECIES

- > **CLEAN** plants and animals off boats and trailers
- > **DRAIN** water and remove drain plugs
- > **DISPOSE** of unwanted bait in marked containers at boat launches

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CARNELIAN-MARINE-ST. CROIX WATERSHED DISTRICT
Scandia Plaza II • 21150 Ozark Avenue • P.O. Box 188 • Scandia, MN 55073

INSIDE

Lake assessments, improving Long Lake, our 35th Anniversary, 2017 budget and more!



Meet Manager Wade Johnson

Wade Johnson believes that the wise management of water resources is one of the most important issues in the world – and he is committed to doing his part here in the watershed.

Appointed to the Board of Managers in June 2015, Wade currently serves as the Board Treasurer. He became involved in the District when he helped design and install a stormwater demonstration project in the upper parking lot at Square Lake County Park.

He is a natural resources program coordinator for the Minnesota Department of Natural Resources and has an MS from the University of Wisconsin-Madison.

“I am personally fascinated with the movement and management of water in all forms,” says Wade. “I plan to live here for the rest of my life, raise my family and continue to enjoy abundant clean water, in lakes and streams and from our well. As a manager of our watershed district I will be able to take an active role in directing the future of our water resources.”

CITIZEN ADVISORY COMMITTEE

The Citizen Advisory Committee (CAC) advises and assists managers on all matters affecting the interests of the District and makes recommendations to managers on all potential projects and improvements. In August, the managers appointed John Bower, Jim Schoeller, Jim Roussi, Sally Leider, Gary Orlich and Jack Parchetta to serve on the CAC. The committee met in September to set its agenda for 2016-2017. Other residents interested in serving, can contact Administrator Shaver.