



Lake Orono Handbook

Courtesy of the



Lake Orono Improvement Association
INC.

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Why am I getting this handbook?

If you live on Lake Orono or have been identified as having interest in the lake, you are getting this as a handy reference guide courtesy of the Lake Orono Improvement Association.

We want you to be informed about the lake regardless of whether you choose to join.

If you already belong to the Association, in addition you will be getting a separate directory with member list and homeowner property map.

About the Lake Orono Improvement Association (LOIA)

LOIA was formed in 1971 in response to water quality and management issues.

We have organized numerous social events throughout the year including progressive dinners, family picnics and 4th of July boat parades. We also have committees that work to help identify and solve problems and promote good stewardship of the lake. For example, they serve as liaisons with agencies, monitor water quality, devise educational efforts and maintain a Lake Management Plan.

Benefits of membership

- Invited to all of our fun Association events.
- Receive a directory containing member list & homeowner property map.
- Support our committees which help improve our lake and shape our community.
- Belong as a lake association member to Minnesota Lakes and Rivers Advocates and Sherburne County Coalition of Lake Associations.

Cost:

Regular Member: Must own lake property to belong at this level. You will receive all of the above benefits, and also have voting privileges and may hold office. Fees are per household per year.

Associate Member: This is for individuals or families who do not own lakeshore property, but would like to become involved. You will receive all of the above benefits, but do not have voting privileges nor can hold office. Fees are per household per year. Dues are payable each year prior to the Annual Meeting.

First-time members will receive their first annual dinner (or one other meal of their choice) free of charge upon payment of dues. Dues do not carry over from year to year.

Regardless of when you pay, please keep in mind that you are helping with education and improve water quality efforts throughout the year.

For membership inquiries and more information visit LakeOrono.org or email info@lakeorono.org.

Contacts

For **LOIA Contacts** visit our Lake Orono Improvement Association Facebook page.

Reference Websites

<http://www.lakeoronno.org>

Facebook: Lake Orono Improvement Association

City of Elk River: <http://www.elkrivernm.gov/>

Sherburne County Soil and Water Conservation District:

<http://www.sherburneswcd.org/>

Sherburne County: <http://www.co.sherburne.mn.us/>

Minnesota Pollution Control Agency: <http://www.pca.state.mn.us/>

Department of Natural Resources:

<http://www.dnr.state.mn.us/index.html>

DNR Lakefinder: <http://www.dnr.state.mn.us/lakefind/index.html>



About the Lake

History

Originally Lake Orono was a millpond, formed by damming the Elk River as it flowed through farmland. The first dam was built in 1851 by Ard Godfrey, prominent in the lumber and milling industry in St. Anthony, and John C. Jamieson to provide power for a sawmill and a feedmill. A small town grew near this site and was named Orono after Jamieson's hometown in Maine.

In 1916, a new dam was built slightly north of the original, and increased the reservoir significantly. Sixty-two years later, the Dept. of Natural Resources ordered the lake lowered because of the dam's poor condition. In 1980, this dam was rebuilt.

More recently, the lake had been filling in with sediment where the Elk River enters on the northwest end, making that section unnavigable. With volunteer time from citizens, research, and cooperation between agencies, the lake was dredged in 1998.

Ecology

Lake Orono as part of a river has a very large watershed, or area that affects its water flow and quality. The watershed is about 613 square miles and includes about 70% of Sherburne County and 40% of Benton County.

Therefore, what happens upstream can affect our lake. Fortunately, because of its strong current, the water "turns over" about every 2-3 days. Problems show up quickly, and if not persistent, may move on. Regardless, what you do affects others downstream not only on the lake but past the dam as the Elk flows into the Mississippi.



LOIA gave educational pontoon rides for Elk River's Heritage Festival.

About Water Quality

What is not absorbed by the soil or is left on high-runoff areas such as driveways, roofs, and decks runs off into streets, gutters and ditches. The water is then funneled to the river and/or lake. This water is untreated and carries debris and pollutants with it.

There are two major issues that have been identified with affecting the water quality of the lake:

Phosphorus. The state of Minnesota restricts the use of phosphorus in lawn fertilizer (see pg. 11). Phosphorus is also present in leaves and yard waste. This nutrient helps plants grow, and provides food for algae if it ends up in the lake or river, making the water green and murky. It also depletes oxygen levels so that plant life and fish do not flourish. Unpleasant to swim in, algae is not generally dangerous to humans, but can be toxic to wildlife and pets.

E. coli bacteria. E. coli can cause illness when at elevated levels. Sources may include feedlots upstream, failing septic systems, excessive quantities of geese, dumping waste directly into drains or ditches, letting children in diapers play in the lake or not cleaning up after your pet.

The City of Elk River tests the water at the public beach for E. coli frequently during the summer to make sure the lake is safe for recreation.

Some Tips to Help Clean Up Our Waterways:

- Keep leaves, debris and grass clippings off of high runoff areas like decks, driveways, and sidewalks and out of ditches, gutters, storm sewers, roadways and the lake.
- Clean up after your pet.
- Make sure your lawn fertilizer contains phosphorus (the middle number on a bag). If you use a lawn service, confirm what type of fertilizer they apply.
- Create a buffer strip of vegetation along the shore. It deters geese, filters pollutants, helps stop erosion, provides privacy, and attracts favorable wildlife. The easiest way to do this is to leave a strip of at least 10' wide of unmowed grass.
There may be funding available to create a buffer strip. Contact the Sherburne Soil and Water Conservation District for advice on construction and/or funding.
- If you own a septic system, have it pumped every two years.

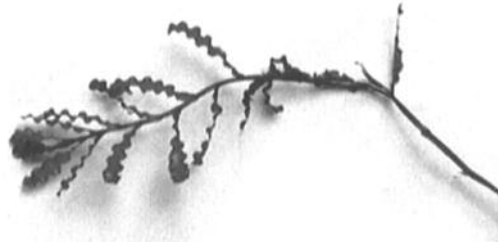


**Natural buffer
planted from seed.**

About Aquatic Vegetation

Generally, there is not much aquatic vegetation in our lake. Some attempts at establishing favorable vegetation to provide habitat for fish and filter pollutants have been made. However, because it is so sparse, once an exotic noxious weed invades the lake, it may spread uncontrolled because there is little competition.

Curlyleaf Pondweed. In 2003, a proliferation of this exotic appeared in our lake. It is an exotic noxious weed, which forms dense mats that are difficult to navigate through. It produces stem-like turions that protrude above the water, flowers, then dies off rapidly. It grows in cool weather and even under the ice, and is the first plant to appear in a lake in the spring.



In past years, the lake was drawn down to a depth of 4 1/2' to attempt to freeze and kill the plants. Overall this was a success, but still must be controlled so as not to reach the levels it has in the past. More recently, homeowners chemically treat their lakeshore individually to help control curlyleaf pondweed and other nuisance plants and algae. A permit is required from the MN DNR. Visit the website or Facebook sites for more information.

Aquatic Vegetation Removal. You may clear a portion of Curlyleaf (to identify this plant, please go to www.lakeorono.org/curlyleaf.html) or other exotics by hand in front of your property without a permit, provided:

- The area to be cleared must be no larger than 2,500 sq. feet.
- The area must not extend more than 50 feet along the shoreline or one-half the length of your shoreline, whichever is less.
- A boat channel up to 15 feet wide and as long as necessary to reach open water may also be cleared.

Be sure to destroy the weed and do not compost it. Also take care to not remove favorable vegetation like lily pads.

Lake Orono Water Quality Committee

In 1995, a joint committee composed of members representing LOIA, the City of Elk River, and Sherburne County Soil and Water Conservation District was formed to address the sedimentation of the lake. After successfully completing the lake dredging in 1998, this group decided to continue and address water quality issues. The group meets approximately every other month.

Activities include:

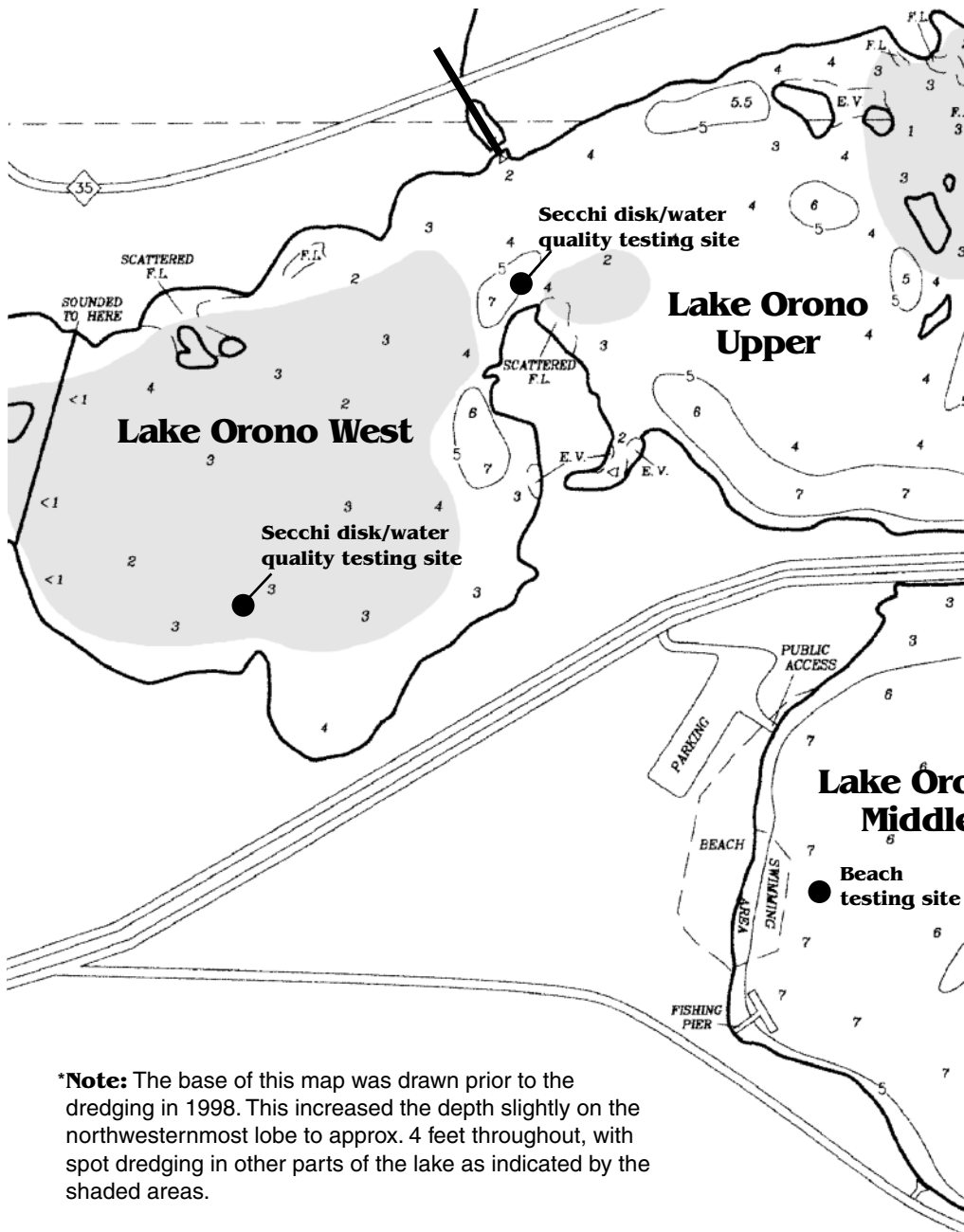
- Perform water quality testing on the lake.
- Survey Curlyleaf Pondweed and help with removal in public areas.
- Maintain a presence on other watershed committees such as the Sherburne County Coalition of Lake Associations.
- Identify issues that may adversely affect the lake (i.e., sedimentation, goose population, exotic weeds), call in advisors such as the DNR, the Board of Soil and Water Resources, MPCA and others to discuss those issues, set a plan to try to resolve them and act on that plan.



Past projects include:

- Successful completion of the dredging of Lake Orono in 1998.
- Creation of the monitoring of Orono beach and notifying residents if water is unsafe.
- Erosion control of the banks of Orono Cemetery.
- Planting of upland buffer strips and in-lake vegetation.
- Development and implementation of a Lake Management Plan under the Healthy Lakes Program of the Central Minnesota Initiative Foundation.

If you are interested in joining visit www.lakeorono.org or email info@lakeorono.org.

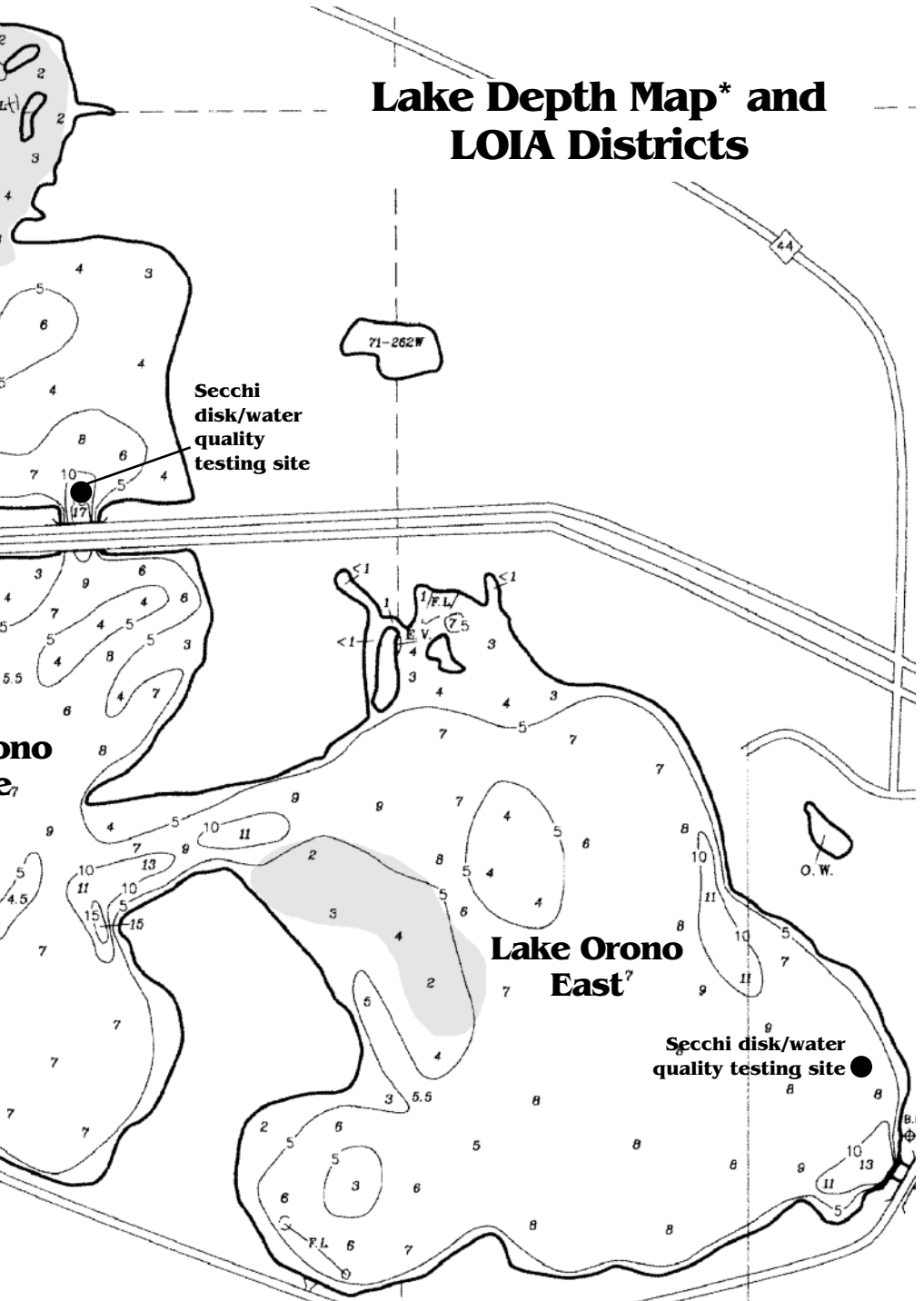


***Note:** The base of this map was drawn prior to the dredging in 1998. This increased the depth slightly on the northwesternmost lobe to approx. 4 feet throughout, with spot dredging in other parts of the lake as indicated by the shaded areas.

Map © 1998 MN Department of Natural Resources. Dredging Data from the City of Elk River.

 Dredged areas

Lake Depth Map* and LOIA Districts



Note: THIS IS IN ADDITION TO Minnesota boating and personal watercraft laws. Other ordinances that affect or restrict lake use are the hunting, snowmobile and shoreland ordinances. Please call City Hall for information.

Regulation of Watercraft

Definitions

Personal Watercraft: a motorboat less than 12 feet in length propelled by a water jet pump.

Slow No-wake: the operation of a watercraft at the slowest possible speed necessary to maintain steerage, but in no case greater than 5 miles per hour.

Watercraft: any contrivance used or designed for navigation on water other than (a) duck boat during the duck hunting season, (b) rice boat during the harvest season, or (c) seaplane. (Note: Lake Orono is not in an area allowed for hunting.)

Regulations

- All motorized watercraft exceeding the slow no-wake speed shall travel in a counter-clockwise direction.
- Maximum speed limit 40 mph at all times with the exception of those areas and times listed in the next two paragraphs.
- Maximum speed limit of watercraft shall be 15 mph sunset to sunrise all year.
- A slow no-wake speed shall be maintained in an area extending 100 feet from the shore. Watercraft launching or landing water skiers by the most direct route to open water are exempt from this provision.
- Any watercraft owner or the operator thereof (if the owner not be present) who violates any provision of this ordinance shall be guilty of a misdemeanor.

Enforcement

Primary enforcement of this ordinance shall rest with the Sherburne County Sheriff's Office.

The City of Elk River shall be responsible for marking the public access and lake with signs or buoys explaining the rules and regulations of this ordinance.

City of Elk River Orono Beach Water Quality Testing Policy

Testing Frequency

Lake Orono is tested for E. coli bacteria twice per week from Memorial Day through Labor Day at the public beach. This measure determines fecal contamination in the lake. Elevated bacteria levels can be harmful to humans and can occur after significant rain events.

Standard for Posting Warning

Elk River follows MN Pollution Control Agency's guidelines for when to post caution due to impaired water quality and potential health risks. Posting occurs if a single E. coli sample results over 1,260 organisms per 100 mL of water or the

geometric mean of five samples exceeds 126 organisms per 100 mL of water. Daily sampling (Monday-Friday) will be conducted until the average drops below the limit, at which time the caution signs shall be removed.



Notice When Beach is Posted

- Park & Recreation Department places signs at Orono Beach and public access
- Lake Orono Improvement Association is notified
- Posted on city website and Lake Orono Improvement Association website
- Police Chief and Police Captain are informed
- Councilmembers and City Administrator are informed.

Shoreland Management Ordinance

The City of Elk River has an extensive ordinance that covers the use of land within 1,000 feet of public waters within city limits. It includes size and shape of lots; the use, size, type and location of structures on lots; the installation and maintenance of water supply and waste treatment systems; the grading and filling of any shoreland area; the cutting of shoreland vegetation; and the subdivision of land.

See pgs. 10-11 for additional information.

Floodplain Management Act

Any work (terrain alteration, structural, etc.) within a floodplain is required to submit a Floodplain Application prior to the work. Review the City Code, https://library.municode.com/mn/elk_river/codes/code_of_ordinances (Chapter 30, Article IV, Division 11, Floodplain Management) to determine what restrictions apply within the Floodplain District.

Flood Insurance Rate Maps (FIRM)

Maps are published by the National Flood Insurance Program (NFIP) which depicts floodways, flood fringe and general floodplain.

To find out if your property is within the floodplain, enter you address into the FEMA maps, <https://msc.fema.gov/portal> or contact the Environmental Division for assistance.

Visit the DNR

http://www.dnr.state.mn.us/waters/watermgmt_section/floodplain/index.html for more info on floodplains.

Hunting

Please note there is no hunting within 1,000 feet of Lake Orono with the exception of The William Houlton Conservation Area just past the dam. Please see City Code, https://library.municode.com/mn/elk_river/codes/code_of_ordinances (Chapter 50, Article 14, Division 2, Dangerous Weapons).

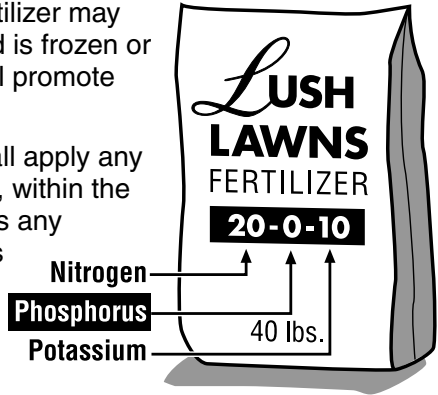


Lawn Fertilizer Application Control

This is a synopsis only. For the actual ordinance, contact the City of Elk River Environmental Department at (763) 635-1068.

General Regulations

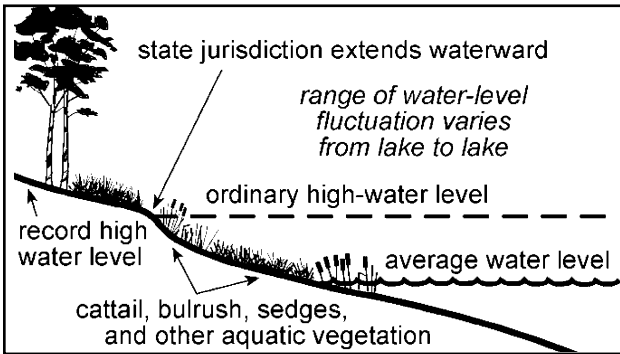
- **Time of Application.** Lawn fertilizer may not be applied when the ground is frozen or when conditions exist which will promote or create runoffs.
- **Fertilizer Content.** No one shall apply any lawn fertilizer, liquid or granular, within the City of Elk River, which contains any amount of phosphorus, such as phosphate, except the naturally occurring phosphorus in unadulterated natural or organic fertilizing products such as yard waste compost.
- **Impervious Surfaces and Drainage Ways.** No person shall apply fertilizer to impervious surfaces, areas within drainage ditches, or waterways.
- **Buffer Zone.** Fertilizers and pesticides shall not be applied:
 - a. to any established natural buffer zones;
 - b. below the Ordinary High Water lines as established by the Minnesota Dept. of Natural Resources; or
 - c. within 10 feet of any wetland or water resource.
- **Exemption to Phosphorus Requirement.**
 - a. Newly established or developed turf and lawn areas during first growing season; or
 - b. Turf and lawn areas which soil tests confirm a need for phosphorus, which is uncommon in Minnesota.



When do I need a permit?

THIS IS AN OVERVIEW ONLY. This is an overview only. Please contact the appropriate agencies **BEFORE** you begin work.

Generally, for work above the ordinary high water level please contact the City of Elk River's Environmental Department at (763) 635-1068; for work below the OHWL, contact the Department of Natural Resources Area Hydrologist at 320-223-7840.



Any project constructed **below** the ordinary high water level (OHWL), which alters the course, current, or cross-section of protected waters or wetlands is

subject to the regulatory jurisdiction of the **Dept. of Natural Resources**. For lakes and wetlands, the OHWL is the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape. The OHWL is commonly that point where the natural vegetation changes from predominately aquatic to predominantly terrestrial. The OHWL is also used by local units of government as a reference elevation from which to determine structure setbacks from water bodies and watercourses.

No Permit Required provided all criteria are met:

Seasonal Docks and Floating Structures

A dock is a narrow platform or structure extending toward the water from the shoreline. A dock may provide access to moored watercraft or deeper water for swimming, fishing, and other recreation.

- The structure, other than a watercraft lift or watercraft canopy, is **not more than 8 feet wide** and is not combined with other similar structures so as to create a larger structure.
- The dock is no longer than needed to achieve its intended use, including reaching navigable water depth.
- The structure is not a hazard to navigation, health, or safety.

-
- It will allow the free flow of water beneath it.
 - The structure is not used or intended as a marina.
 - Is consistent with the guidelines of the local unit of government.
 - Docks placed on rock-filled cribs are located only on waters where the bed is predominantly bedrock.

The DNR allows modest platforms at the lake end of a dock under basic conditions. They allow a single, temporary platform up to 120 square feet measured separately from the access dock, or 170 square feet including the area of the adjacent access dock, if the following conditions exist: the access dock must be 5 feet or less in width and the dock must be on a lake with a shoreland classification of General Development.

Permit May be Required

Temporary Structures

Temporary structures which do not extend from shore, such as swim rafts, slalom courses, ski jumps or buoys of any kind, may not be placed in the waters of the state between sunset and sunrise without a permit from the county sheriff. Those structures not left in the water overnight are still required to be placed so that they do not create a hazard on the water body or obstruct navigation. Contact the Sherburne County Water Patrol at (763) 765-3500 for permitting.

Shoreland Alterations

A shoreland alteration permit is required for any alterations in the shoreland impact zone (half the structural setback to the lake or river).

Any alterations within 25' of the lake would require a permit. Examples of alterations requiring a permit include:

- Construction of water-oriented accessory structures
- Stairways and landings
- Tree removal
- Vegetation alterations or removal
- Creating a viewing corridor
- Adding an impervious surface (such as a deck, patio, walkway, etc.)
- Grading and filling more than 100 square feet
- Placement of riprap or beach creation.



There is a cost of the permit. Violation of the City's Municipal Code is a misdemeanor offense; tickets may be issued and restoration may be required.

If you'd like to make changes to your lakeside property, call the City of Elk River (763) 635-1068 to determine whether a permit would be required.

Retaining Walls

- In addition to the City permit, a DNR public waters work permit is required to build a retaining wall along your shoreline if the structure is proposed below the ordinary high water level (OHWL). The DNR discourages the construction of retaining walls. The use of hard armoring (rock riprap) or soft armoring (biovegetation) is encouraged. Contact the City of Elk River Building Department for any specific requirements.

Fill, Altering Land or Wetland

State rules specifically prohibit placement of fill into a water body by an individual or organization to create upland areas. To determine whether a local permit is allowed, contact the City of Elk River Environmental Department for work above the ordinary high water level, and the DNR Hydrologist for work below the OHWL.

Vegetation Removal

- Intensive vegetative clearing within the shore and bluff impact zones is not allowed. No permit is required for pruning and trimming of trees to accommodate the placement of stairways, paths, and water accesses and to provide a view to the water from the principal dwelling, or removal of dead or diseased limbs or branches. For complete removal of trees or other vegetation, contact the City of Elk River Environmental Department.
- A DNR aquatic plant management permit may be required to remove aquatic vegetation (see pg. 14, "Aquatic Vegetation Removal" for the amount allowed without a permit). However, no permit is required to remove debris below the ordinary high water level, such as trees, logs, stumps, and trash as long as the original alignment, slope or cross section of a lake, river, or wetland is not altered.