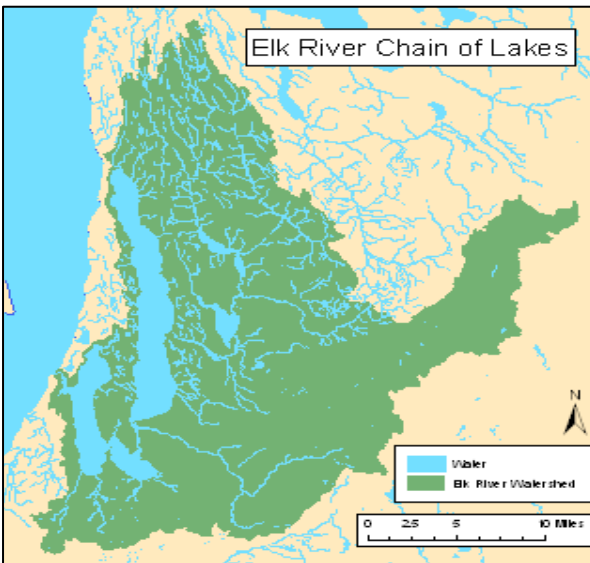


VILLAGE OF ELLSWORTH **WATER QUALITY ACTION PLAN**

Elk-River-Chain-of-Lakes Gaps Analysis Project

The Watershed Center Grand Traverse Bay
Michigan Department of Natural Resources and Environment

January 2011



Purpose

The Grand Traverse Bay watershed spans almost 1000 square miles, including major parts of Antrim, Grand Traverse, Kalkaska, and Leelanau counties. The Village of Ellsworth borders both St. Clair Lake and Ellsworth Lake in Antrim County. All surface waters within the village flow into the Elk-River-Chain-of-Lakes (ERCOL) subwatershed. Protecting these water resources is important to the quality of life of the residents and the economic vitality of the region.

While the soils in Antrim County are diverse, most are sandy and subject to erosion. Emmet-Montcalm soils are found in 35 percent of the county. Their upper most layers are sandy loams whose uses, according to the soil survey, are limited by erosion, droughtiness and steepness. Kalkaska-Montcalm soils are found in 30 percent of the county. Their upper most layers are sands and loamy sands. Kalkaska-East Lake – Karlin soils are found in 20 percent of the county, and their top layers consist of sand and loamy sand.

Sandy soils drain well and can filter water effectively. However, they are also highly erodible and low in nutrients; once disturbed, they easily erode into our surface water. In addition, excessive levels of nutrients and other pollutants are easily passed through to the near-surface groundwater that feeds our lakes and streams. In some cases, this excessive pollution passes into our groundwater aquifers, contaminating our drinking water.

The ERCOL is a unique series of 14 interconnected lakes and rivers in Antrim and Kalkaska counties, emptying into East Grand Traverse Bay through the Elk River in Elk Rapids. At 500 square miles, the ERCOL subwatershed is the largest tributary to Grand Traverse Bay and provides about 60 percent of the surface flow to Grand Traverse Bay. The ERCOL watershed area has more than 200 streams, with 138 miles as designated trout streams. More than 10 percent is covered by water. From the uppermost lake in

the chain, the waters flow 55 miles and drop 40 feet in elevation on their way to the bay. The Northwest Michigan Council of Governments (NWMCOG) developed a management plan for the ERCOL watershed in 1989, which the Conservation Resource Alliance updated in July 2001. This plan was then incorporated and expanded in the Grand Traverse Bay Watershed Protection Plan written by the Watershed Center Grand Traverse Bay and approved by the Michigan Department of Natural Resources and Environment and the US Environmental Protection Agency in 2005.

Sediments – including sand – are the number one surface water pollutant in the Grand Traverse Bay watershed, as set out in the Watershed Protection Plan. Nutrients, primarily nitrogen and phosphorus, are ranked as the second pollutant of concern throughout the watershed. Sediments and sand smother the habitat that aquatic organisms need to survive and reproduce. The sediments and sand enter our surface waters through stormwater that washes from roads, parking lots, and driveways carrying sediments and sand, as well as nutrients and other forms of pollution along with it.

As a result, one of the best ways for local governments in the Elk-River-Chain-of-Lakes watershed to address water quality protection is to consider how they are managing stormwater in their communities. In this context, protecting water quality is directly related to reducing impervious surfaces and protecting natural areas and natural vegetation. Through a grant from the Michigan Department of Natural Resources and Environment, the Watershed Center Grand Traverse Bay has partnered with Tip of the Mitt Watershed Council to review the regulatory framework in place throughout the ERCOL subwatershed, an analysis that Tip of the Mitt Watershed Council is doing as part of a larger and more detailed regional review.

Process

The Watershed Center Grand Traverse Bay reviewed the zoning ordinance available on the village's website. For the purposes of this project and the emphasis on stormwater management, the Watershed Center staff has focused on three topics:

- Roads and parking lots
- Lot design and development, and
- Protection of natural features.

The roads and parking lot discussion addresses management of most of the impervious surfaces found in a community. The lot development and design discussion considers open space ordinances, cluster ordinances, site plan review, on-site stormwater management, and septic system maintenance. The discussion of protection of natural features focuses on retention of native vegetation generally and around water resources specifically, tree conservation, and management of land clearing.

Water Resources in the Village of Ellsworth

The Village sits where St. Clair Lake flows into Ellsworth Lake in the northern most part of the ERCOL subwatershed. Including both lakes, there is a total of 2.3 miles of shoreline in the village. Lands within the village also include wetland areas primarily along the lake and stream shorelines. The village's master plan notes concerns about non-point source pollution and heavy metals in sediments. (Village of Ellsworth Master Plan Update 2007 at 3-8 to 3-11).

Suggested Actions for Consideration in Village of Ellsworth

The Village of Ellsworth's zoning ordinance includes some good protections for water resources. All buildings must be setback 50 feet from water bodies and a 50-foot greenbelt of vegetation must be maintained on all lake and stream shorelines. It also includes planned unit development provisions. The parking lot provisions include measures that reduce the amount of impervious surface. The Village provides a drinking water and sewage system.

The discussion below provides more detail regarding the three topic areas, as well as suggested actions. In general, the more a local government can do to reduce impervious surfaces and increase the retention or restoration of native vegetation in riparian areas and in open spaces, the better for water quality. The suggested actions relate directly to the *General Water Quality Protection Principles and Targets* that accompany the plan. The principles and targets were based on the Better Site Design resources of the Center for Watershed Protection. The list of *Additional Resources* that accompanies this plan provides links to sample ordinances and information to support implementation of the suggested actions. Finally, we are including a copy of *A Natural Solution*, a guide to low-impact development methods to manage stormwater.

Roads and Parking Lots

The large majority of paved areas within a community are roads or parking lots. Most road design is significantly influenced by the county road commissions and local fire departments. Townships have the discretion to address the design of private roads. Limiting parking space numbers and space size can reduce paved areas. These savings may seem insignificant on a particular site, but across the village the reductions in paved area could be substantial. The reduction of parking spaces from 10 feet by 20 feet to 9 feet by 18 feet results in a 20 percent savings in impervious surface.

The village zoning ordinance provides for parking stalls of 9 feet by 18 feet and sets a required number of parking spaces for specific uses.

ACTION: Consider setting parking space dimensions and quantities as maximums.

ACTION: Consider requiring that the design of parking lot landscaping help address pollutant removal from stormwater runoff (i.e. providing curb cuts to allow flow of stormwater into landscaped areas).

ACTION: Consider converting the lot coverage limits to impervious cover limits for all zoning districts.

Lot Design and Development

Lot design and general development provisions in zoning ordinances provide great opportunities to encourage alternatives to and reductions of impervious surfaces, such as shared driveways. Ordinances also can be crafted to address the overall development design to benefit water quality, such as providing incentives to protect natural vegetation throughout the development site.

The planned unit development provisions encourage clustering. The village requires management of excess stormwater runoff on site and follows the Antrim County Stormwater Ordinance administered by the Antrim Conservation District. The Village provides a public drinking water supply and sewer system.

ACTION: Consider adding review standards for protection of natural features and natural vegetation to the site plan review ordinance.

ACTION: Consider adding specific review standards for stormwater best management practices that address water quality in the site plan review ordinance.

ACTION: Consider adding open space requirements to the PUD provisions and ways to encourage retention of native or natural vegetation in those open spaces.

Protection of Natural Features

Protecting natural features throughout the watershed helps to trap sediments and treat stormwater by using nutrients in the stormwater to grow. Native vegetation in riparian areas also helps prevent erosion and protect wildlife habitat. In addition, the soils on sites that have not been cleared or graded remain capable of infiltrating larger amounts of stormwater.

Ellsworth Village's zoning ordinance addresses impacts to and protection of natural features and natural vegetation by requiring a greenbelt along shorelines of lakes and streams.

ACTION: Consider adopting specific review standards for buffer protection, native vegetation and tree conservation in the site plan review process.

ACTION: Consider ways to encourage retention of native vegetation and open spaces throughout the village, such as a tree conservation ordinance.

Next Steps

The Village of Ellsworth Lake sits in the northern most reaches of the Elk-River-Chain-of-Lakes subwatershed. The zoning ordinance has implemented some good measures to protect those resources. Specific work on the recommendations set out above is at the discretion of the village and will be governed by what the local officials and local residents view as priorities for the community. The list of additional resources accompanying the action plan is designed to support the village's consideration of implementation.

- *General Water Quality Protection Principles and Targets*
- *A Natural Solution*
- *Additional Resources* (Internet resources, including best management practices; Center for Watershed Protection resources; *Filling the Gaps*, a Michigan Department Natural Resources and Environment document with sample ordinances; and sample ordinances from within the Grand Traverse Bay watershed and other communities in Michigan.

The partners to this project -- the Watershed Center, Tip of the Mitt Watershed Council, and the Michigan Department of Natural Resources and Environment -- will assist as much as possible with work on these recommendations. The DNRE grant that is supporting this work includes time for Watershed Center staff to work with the township on any of these recommendations through June of 2011. We look forward to supporting your work to protect water quality.