

## **Boardman River Townships Project**

# **UNION TOWNSHIP**

## **WATER QUALITY ACTION PLAN**

Fall 2009

### *Partners:*

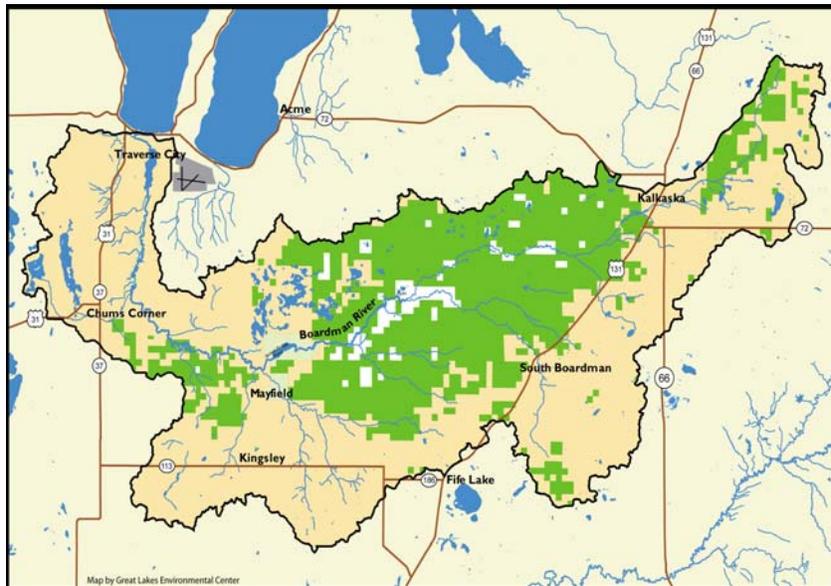
The Watershed Center Grand Traverse Bay

Northwestern Michigan College - Great Lakes Water Studies Institute

Grand Traverse Conservation District

*Funded by:* Michigan Department of Environmental Quality

### **Boardman River Watershed**



### **Purpose**

The Boardman River watershed spans 295 square miles and drains approximately 182,800 acres of land through 175 miles of river and stream tributaries. It is the largest tributary to the West Arm of Grand Traverse Bay and provides about 30 percent of the surface flow to Grand Traverse Bay. In addition, the Boardman River is considered one of the top ten trout streams in Michigan and is one of the particularly outstanding natural features of the Grand Traverse Bay region. It is a Natural River, a designation from the Michigan Department of Natural Resources that comes with associate management measures. Protecting this resource is important to the quality of life of the residents and the economic viability of the region.

The soils throughout this region are dominated by Kalkaska Sand that drains well and filters water very effectively. It is largely responsible for the remarkable water quality of lakes and rivers located in areas of the state where these soils are abundant such as northern lower Michigan. However, it is also highly erodible and low in nutrients; once disturbed, it easily erodes 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.

Sediment – including sand – is the number one surface water pollutant in the Grand Traverse Bay watershed, as set out in the Grand Traverse Bay Watershed Protection Plan. Sediment and sand smothers the habitat that aquatic organisms need to survive and reproduce. Sediment and sand enter our surface waters through stormwater that washes from roads, parking lots, and driveways carrying with it nutrients and many other forms of pollution such as salt, oil, anti-freeze.

As a result, one of the best ways for local governments in the Boardman River 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 Environmental Quality, the partners to the project – the Watershed Center Grand Traverse Bay, Northwest Michigan College Water Studies Institute (WSI), and Grand Traverse Conservation District (GTCD) – developed a process to assist townships and villages with a review of how they are doing with stormwater management and therefore their ability to protect their water resources.

## **Water Resources in Union Township**

Union Township lies entirely in the Boardman River Watershed. The township has high quality lakes and streams including several miles of the main stem of the Boardman River. Union Township is host to the “Forks of the Boardman” where the North and South Branches join to form the main stem. Tributaries Hanna Creek, Twenty Two Creek, Carpenter Creek, Parker Creek, and Parsons Creek are all located within the township. The township is also home to numerous small lakes including Muncie Lakes. A high percentage of the land in Union Township is owned by the state.

## **Process**

During the summer of 2009, Union Township officials met with representatives from WSI and GTCD to discuss the township’s zoning ordinances and policies as they relate to the protection of water quality. The discussion was guided by a modified version of the Code and Ordinance Worksheet (Worksheet), a tool developed by the Center for Watershed Protection for use throughout the country to help communities assess impacts on water quality.

The Worksheet focuses on three topics: **roads and parking lots, lot design and development, and conservation of natural areas.** The roads and parking lot section addressed management of roads and parking lots. The lot development and design section included discussion of open space ordinances, cluster ordinances, site plan review, front yard setbacks, driveways, on-site stormwater management, and septic system maintenance. The conservation of natural areas section focused on retention of native vegetation around water resources, tree conservation, and land clearing. The Worksheet was provided in advance of the meeting, and the participants at the meeting discussed the responses to the question.

The partners to the project discussed the results of the discussion in relation to design principles and targets for each of the three areas and developed general recommendations for specific areas of focus for Union Township.

### **Suggested Actions for Consideration in Union Township**

Union Township's zoning ordinance and policies include some protections for water resources. The township has adopted an Open Space ordinance that encourages the protection of natural vegetation and other natural resources on the site. It has implemented the Natural River Zoning requirements to protect the riparian areas of the Boardman River and its tributaries. The township has adopted stormwater management measures overseen by Grand Traverse County. The site plan review process includes consideration of preserving natural resources, including trees and shore areas. The special use permit process considers preservation of natural features, including drainage patterns. The zoning ordinance does not include a commercial or industrial district.

The discussion below includes a more detail regarding the three topic areas, as well as suggested actions. The suggested actions relate directly to the General Water Quality Protection Principles and Targets (Attachment-A) that accompany this plan. The Principles and Targets were developed from the Better Site Design resources of the Center for Watershed Protection. The List of Additional Resources that also accompanies this plan (Attachment-B) provides information to support implementation of the suggested actions. Finally, we are including a copy of "A Natural Solution" (Attachment-C), a document prepared by the Watershed Center GT Bay concerning low-impact design methods to manage stormwater.

In general, the more a local government can do to reduce impervious surfaces and increase the retention or restoration of native vegetation along riparian buffers and in open spaces, the better for water quality.

#### **Roads and Parking Lots**

The large majority of paved areas within a township are roads or parking lots. In the course of conducting the interviews with townships, it became clear that road design is significantly influenced by the county road commissions and local fire departments. The Grand Traverse County regulations for private roads allows for roads of 22 feet in width if agreeable to the local fire department.

Addressing parking space numbers and space size are two ways to reduce paved areas in parking lots. These savings may seem insignificant on a particular site, but across the township the reductions in paved area could be substantial. Reducing parking spaces from 10 feet by 20 feet to 9 feet by 18 feet results in a 20 percent reduction in asphalt. Generally, these issues are addressed in a township's zoning ordinance sections in the commercial or industrial districts. Nonetheless, these issues can arise in the residential setting.

**ACTION:** Consider setting impervious surface *maximums* that include parking lots and roads within a development.

**ACTION:** Consider adopting a smaller maximum parking stall size requirement.

### Lot Design and Development

Union Township's zoning ordinance includes an open space development option. The ordinance targets preservation of 40 percent of the site in open space. Wastewater in the township is treated by private septic systems. The site plan review process addresses preservation of natural resources, including trees. The special use standards for decisions address preservation of the natural features and preservation of drainage patterns.

**ACTION:** Consider setting impervious surface maximums that will be protective of water quality in residential districts.

**ACTION:** Consider ways to encourage shorter and narrower driveways and the use of non-pavement alternative pervious surfaces for driveways.

**ACTION:** Consider requiring that all stormwater be retained and managed on site in the site plan review process.

**ACTION:** Educate residents about proper septic system management and encourage residents to maintain septic systems on a regular basis.

**ACTION:** Consider adopting a septic maintenance ordinance or supporting a county septic maintenance ordinance.

### Conservation of Natural Areas

A large part of Union Township is owned by the State of Michigan. The state's current management of these lands is generally compatible with protection of water quality. The township's Natural River Zoning ordinance includes a 75-foot vegetated buffer on the "Wild and Scenic" portion of the Boardman River and a 50-foot vegetated riparian stream buffer for its tributaries.

**ACTION:** Consider adopting a buffer of native vegetation around all water resources, including wetlands.

**ACTION:** Consider tree and other vegetation conservation standards in the site plan review process.

**ACTION:** Consider buffer protection standards in the site plan review process.

## **Next Steps**

Specific work on these recommendations is at the discretion of Union Township and what the local officials and local residents view as priorities for the community. The additional resources accompanying the action plan are designed to support the township's consideration of implementation. These include:

- General Water Quality Protection Principles and Targets -Attachment-A
- Internet resources, including example local ordinances, best management practices, the Boardman River Natural River Plan, Center for Watershed Protection resources, and Filling the Gaps (a Michigan Department of Environmental Quality document with sample ordinances) – Attachment-B
- A Natural Solution. An introduction to low impact development for commercial and residential applications in the Grand Traverse Region, prepared by the Watershed Center Grand Traverse Bay through an MDEQ grant. – Attachment-C

The partners to this project will assist, to the extent possible, with work on these recommendations. In addition, the partners will be working on public road design for water quality protection. This work will require further discussions with the road commissions and fire departments. The partners will also be pursuing workshop opportunities to help interested townships strengthen or develop ordinance language that will benefit water quality.

### **Contact Information**

Watershed Center Grand Traverse Bay (231) 935-1514; [www.gtbay.org](http://www.gtbay.org)

Grand Traverse Conservation District (231) 941-0960 [www.natureiscalling.org](http://www.natureiscalling.org)

NMC's Great Lakes Water Studies Institute (231) 995-1722 [www.nmc.edu/water](http://www.nmc.edu/water)