

# CHAPTER 6 WATERSHED GOALS AND OBJECTIVES

The Grand Traverse Bay watershed is a high quality waterbody of international significance and should be protected and maintained as such. The overall mission for the Grand Traverse Bay Watershed Protection Plan is to provide guidance for the implementation of actions that will reduce the negative impact that pollutants and environmental stressors have on the designated watershed uses. The envisioned endpoint is to have Grand Traverse Bay and all lakes and streams within its watershed support appropriate designated and desired uses while maintaining their distinctive environmental characteristics and aquatic biological communities.

Using suggestions obtained from stakeholder meetings conducted throughout the watershed and examples from other watershed management plans, the project steering committee developed six broad goals for the Grand Traverse Bay watershed (Table 34). Working to attain these goals will ensure that the threatened designated uses described Chapter 4 are maintained or improved.

**TABLE 34: GRAND TRAVERSE BAY WATERSHED GOALS**

<b>Goal</b>	<b>Designated or Desired Use Addressed</b>	<b>Pollutant(s) Addressed</b>
1. Protect the integrity of aquatic and terrestrial ecosystems within the watershed.	Coldwater Fishery Other Aquatic Life Desired Use: Ecosystem Preservation	Sediment Nutrients Changes to Hydro Flow Invasive Species Thermal Pollution
2. Protect and improve the quality of water resources within Grand Traverse Bay and its watershed.	Coldwater Fishery Other Aquatic Life Public Water Supply Total Body Contact	Nutrients Thermal Pollution Toxins Pathogens
3. Establish and promote land and water management practices that conserve and protect the natural resources of the watershed.	Coldwater Fishery Other Aquatic Life Navigation	Sediment Nutrients Thermal Pollution Toxins Changes to Hydro Flow Pathogens
4. Enhance the amount and quality of recreational opportunities and support a sustainable local economy.	Desired Use: Recreation	All
5. Establish and promote educational programs that support stewardship and watershed planning goals, activities, and programs.	All	All
6. Preserve the distinctive character and aesthetic qualities of the watershed.	Desired Use: Aesthetics	All

**Goal #1**  
**Protect the integrity of aquatic and terrestrial ecosystems within the watershed.**

*Designated Use: Coldwater Fishery and Other Aquatic Life*

*Desired Use: Ecosystem Preservation*

*Pollutant or Stressor Addressed: Sediment, Changes to Hydrologic Flow, Invasive Species*

- Objective 1** Protect and restore desirable habitat areas for aquatic organisms in streams and lakes throughout the watershed and the Grand Traverse Bay and preserve the biodiversity of populations and communities of aquatic organisms in the watershed.
- *Maintain and enhance stream canopy of trees and shrubs.*
  - *Prevent spread of disease between animal, fish, and avian populations by utilizing latest research and techniques.*
  - *Promote proper riparian land management and bank stability practices to reduce the amount of sediment influxes to protect aquatic habitat.*
  - *Promote and maintain naturally reproducing native fish populations.*
  - *Manage fish and other animal populations for species appropriate for the area, with an attempt to maintain the diversity of species already present (i.e., stocking, fishing/hunting/trapping regulations, species introductions and reintroductions, habitat improvement efforts).*
- Objective 2** Protect shoreline habitats by minimizing artificial shoreline alteration, including hardening and grooming.
- *If shoreline erosion protective measures are needed, make sure they are sited, designed, and installed properly to minimize the impact on beaches, nearshore sand drift, and habitat. Support shoreline stabilization procedures that are as natural as possible.*
  - *Support proper beach grooming techniques that do not disrupt the natural habitat.*
- Objective 3** Minimize hydrologic flow fluctuations from the following sources:
- *Dams and lake-level control structures*
  - *Stormwater*
  - *Road stream crossings*
  - *Beaver dams*
  - *Other sources*
- Objective 4** Work to stop wetland and other types of lowland filling.
- Objective 5** Reduce the magnitude of overland stormwater runoff to streams.

- Objective 6** Promote the reduction of potential global warming factors to limit projected evaporative losses from the bay and inland lakes.
- Objective 7** Reduce and/or minimize sediment inputs to streams and lakes in watershed from the following sources:
- *Stream bank and lakeshore erosion*
  - *Road stream crossings*
  - *Recreational access*
  - *Boating*
  - *Agricultural access*
  - *Land use practices*
- Objective 8** Prevent the spread of existing invasive species and the introduction of new ones in area watersheds.
- *Boat hulls and bilges*
  - *Other biota*
  - *Connected waterways*
  - *Purposeful and accidental human introductions*
- Objective 9** Maintain terrestrial habitat and preserve the biodiversity of populations and communities of terrestrial organisms in the watershed.
- Objective 10** Minimize the negative effects of recreational boating and other types of watercraft from pollutants such as sediment, toxins, and pathogens.

**Goal #2**  
**Protect and improve the quality of water resources within Grand Traverse Bay and its watershed.**

*Designated Use: Public Water Supply, Coldwater Fishery, Other Aquatic Life, Total Body Contact*  
*Pollutant or Stressor Addressed: Nutrients, Thermal Pollution, Toxins, E. Coli and Pathogens*

**Note:** One of the major pathways by which many pollutants get to lakes and streams is through stormwater runoff. Stormwater runoff results when drops of rain fall to the ground, or snow melts, and water flows over the surface of the land. This stormwater flow often dislodges and carries soil or sediment particles to which many pollutants are attached, or directly moves the pollutant itself. The amount of stormwater runoff that occurs is dependent upon a variety of conditions including: storm intensity and duration, topography, time of year, soil moisture levels, soil permeability, vegetative cover types, the extent of vegetated cover, and the amount of impervious surfaces (surfaces that water cannot penetrate such as paved roads, parking lots, and roofs). Urban locations like Traverse City often produce greater amounts of stormwater flow due to the increased amount of impervious surfaces in urban areas relative to more rural settings. Stormwater contributes directly to thermal pollution as well; as the water runs over the land, it can be warmed by the land surface and may cause significant increases in stream temperatures. Any reductions to stormwater flow will decrease the amount of sediment, nutrients, thermal pollution, toxins, and pathogens that enter area waterbodies. See Section 5.5 of the Protection Plan for further details regarding stormwater.

- Objective 1** Control and/or minimize the input of nutrients, pathogens, and toxic compounds (herbicides, pesticides, heavy metals, etc.) into surface water and groundwater.
- Objective 2** Maintain current levels of phosphorus and nitrogen in Grand Traverse Bay.
- Objective 3** Control and reduce the amount of stormwater runoff entering Bay and tributaries; control and reduce the amount of pollutant in stormwater as well.
- Objective 4** Control and reduce thermal pollution in the watershed resulting from stormwater inputs, impervious surfaces, lack of stream canopy, dams and lake-level control structures, and reduced groundwater inputs.
- Objective 5** Maintain dissolved oxygen levels that support cold-water fish and other aquatic species in cold-water lakes and streams.
  - *Excessive Nutrients and Eutrophication: increases dissolved oxygen use from plant respiration as well as from decaying plants*
- Objective 6** Protect groundwater and surface water recharge areas and discourage water withdrawals that negatively impact the sustainability of the aquatic system and water supply.
- Objective 7** Minimize air deposition into surface water from sources including vehicles and industrial, commercial, and municipal facilities.

### Goal #3

## Establish and promote land and water management practices that conserve and protect the natural resources of the watershed.

*Designated Use: Navigation, Coldwater Fishery, Other Aquatic Life*

*Pollutant or Stressor Addressed: Sediment, Nutrients, Thermal Pollution, Toxins, Changes to Hydrologic Flow, E. Coli and Pathogens*

- Objective 1** Establish and promote land management practices that conserve natural resources and protect water quality throughout the watershed.
- *Avoid development that encroaches upon sensitive or biologically important areas.*
  - *Preserve open space, sensitive/important natural areas, wetlands, and desirable species of aquatic vegetation.*
  - *Protect critical riparian areas.*
  - *Minimize the change of terrestrial vegetation types from forest/shrub species to turf or cropland species.*
  - *Limit habitat fragmentation by maintaining compact communities.*
  - *Properly manage working lands such as farms and woodlots.*
  - *Maintain or reduce the amount of impervious surfaces in the watershed, especially in areas of high groundwater recharge.*
  - *Shift development to those areas (or subwatersheds) that can support a particular type of land use or density.*
- Objective 2** Promote voluntary arrangements and regulatory tools that help prevent degradation of natural resources.
- Objective 3** Assist townships with zoning and master plans in developing ordinances to protect water quality and natural resources, where an interest has been expressed. Examples of items to address include:
- *Adequate setbacks for buildings*
  - *Minimize development clearings by landowners*
  - *Establish riparian buffers along waterways*
  - *Protecting wetlands*
- Objective 4** Establish and support stormwater best management practices that reduce the amount and harmful effects of stormwater entering waterways. Improve stormwater management throughout the watershed.
- Objective 6** When new or redevelopment of existing property takes place along shoreline and residential areas, encourage appropriate provisions for water quality and natural resources in the approval process.

**Objective 7** Increase awareness of developers and townships on the impacts of development on natural resources and biological communities from development.

**Objective 8** Develop new and maintain existing wildlife corridors; minimize habitat fragmentation due to development, dams/lake-level control structures, and other sources.

*Note: Consider the private property rights of public citizens when developing and implementing tasks.*

## Goal #4

### Enhance the amount and quality of recreational opportunities and support a sustainable local economy.

*Desired Use: Recreation*

*Pollutant or Stressor Addressed: Invasive Species, E. Coli and Pathogens*

- Objective 1** Watershed lakes and streams will support appropriate designated and desired uses while maintaining their distinctive environmental characteristics and aquatic biological communities.
- Objective 2** Maintain desirable sport, commercial, and tribal fishing quality throughout watershed and Grand Traverse Bay.
- *Have fishing regulations that support a diverse fishing experience.*
  - *Ensure sufficient public access to fishing sites.*
  - *Maintain natural environments for fish habitat.*
- Objective 3** Increase the amount of connected trails for pedestrian use.
- Objective 4** Increase the number of boardwalks, gardens, and public parks along rivers and lakes in urban settings.
- Objective 5** Ensure sufficient access to beaches, lakes, and streams for public use that does not jeopardize the integrity of the resource.
- Objective 6** Ensure safe and clean areas for public swimming and other types of water recreation.
- Objective 7** Ensure sufficient access for recreational boating.
- Objective 8** Reduce the impact of invasive species on recreation in the watershed.
- Objective 9** Focus on promoting a balance between environmental, local economy, and societal needs.

*Note: Consider the following items when developing and implementing tasks:*

- *Tourism is a major source of revenue for all areas in the watershed.*
- *The private rights of individuals must be protected while at the same time providing ample opportunity for public recreation.*
- *Weigh the factors between supporting a sustainable economy and protecting the environment.*
- *Be sensitive to businesses' rights to profit.*

## **Goal #5**

### **Establish and promote educational programs that support stewardship and watershed planning goals, activities, and programs.**

*Public I/E Campaign*

*Pollutant or Stressor Addressed: All*

- Objective 1** Establish a successful public Information and Education (IE) Program throughout the Grand Traverse Bay watershed. This public IE strategy is outlined in Section 7.4 in the protection plan.
- Objective 2** Educate watershed users and the general public about the value of the watershed and bay to the community and of their responsibility to be stewards of this community asset.
- Objective 3** Regularly inform public about the watershed, activities, study findings, success/example projects, and opportunities for contribution (organization to public).
- Objective 4** Provide focused information to residents, visitors, local governments, and other target groups on priority topics (organization to individual).
- Objective 5** Involve the citizens, public agencies, user groups and landowners in implementation of the watershed plan through meetings and workshops with individuals or groups.
- Objective 6** Develop ‘tourism ethic’ for area businesses to pass on to tourists. Market the fact that residents and businesses of the Grand Traverse Bay watershed are committed to protecting the watershed and that tourists who come here to enjoy the bay and watershed should do the same. “If you come here, you must protect it too.”

## **Goal #6**

### **Preserve the distinctive character and aesthetic qualities of the watershed.**

*Desired Use: Aesthetic Character*

*Pollutant/Environmental Stressor Addressed: All*

- Objective 1** Support public and private needs while promoting economic sustainability and a sense of community. Preserve existing settings of particular historical and/or cultural importance.
- Objective 2** Maintain the visual quality of desirable viewsheds while supporting landowner desires for property use, privacy, and security.
- Objective 3** Maintain open space, parks, greenways, and natural areas to allow for aesthetic enjoyment and to sustain the perception of the high quality of life that brings people to the area.
- Objective 4** Increase access to recreational lands and viewsheds through local land trusts.