

# Chapter 5 – Goals and Objectives of the Watershed



## 5.1 Goals for the Watershed

## 5.2 Objectives for the Watershed Goals

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### 5.2.3 Desired Uses

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# 5.0 GOALS AND OBJECTIVES OF THE WATERSHED

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## OBJECTIVES

- How will designated and desired uses be supported by the WMP?
- How will the sources of NPS pollutants be addressed?
- Which tools and programs are available for preservation and conservation?

## 5.1 GOALS FOR THE WATERSHED

The Steering Committee used past studies, such as the Watershed Management Plans (WMPs) previously discussed in Chapter 3 reports, especially the integrated report with TMDL non-attainment reaches, and the nonpoint source (NPS) inventories, P-LOAD and HIT modeling results to determine the goals for the Lower Grand River Watershed (Watershed or LGRW). The goals are based on reducing and/or eliminating the impacts of NPS pollutants within the Watershed, restoring or maintaining the designated uses, and supporting implementation of desired uses. The goals have been developed on a Watershed-wide basis and have been prioritized based on decisions by the Steering Committee.

The following goals for the Watershed have been determined:

1. Restore and maintain waterbodies for partial body contact recreational use.
2. Restore and maintain waterbodies for total body contact recreational use.
3. Restore and maintain waterbodies for other indigenous aquatic life and wildlife use.
4. Restore and maintain waterbodies for cold water fishery use.
5. Restore and maintain waterbodies for warmwater fishery use.
6. Protect and preserve waterbodies for agricultural use.
7. Protect and preserve waterbodies for navigational use.
8. Protect and preserve waterbodies for industrial water supply.
9. Protect and preserve waterbodies for public water supply.
10. Conserve and preserve high quality areas.
11. Promote and support desired uses identified during development of this WMP, as listed in prioritized order in Table 5.1.
12. Educate stakeholders about the Watershed and the impacts that stakeholders have on the Watershed.
13. Create a sustainable strategy for implementing the WMP.

Table 5.1 relates to the goals and objectives for segments of the impaired or threatened water bodies within the Watershed, as well as to the pollutants, sources, and causes. The information presented in Table 5.1 is prioritized by pollutants, designated uses, goals, sources, causes and objectives as determined by the Steering Committee. At a meeting held in spring 2010, the Steering Committee and current Lower Grand River Organization of Watersheds (LGRW) members, reviewed the findings and information about pollutants, sources, and causes. Discussion ensued about the prioritization of pollutants. Although sediment and *Escherichia Coli* (*E. coli*) are both viewed as very high priority pollutants, the Committee decided that since the practices that control sediment are well known, *E. coli* should be listed as the No. 1 priority pollutant, since so little is known of how to reduce pathogens. Implementation of practices, monitoring, and education need to be concentrated on determining the best methods to reduce and control contamination from *E. coli*.

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## **5.2 OBJECTIVES FOR THE WATERSHED GOALS**

The goals of the WMP will be accomplished by implementing techniques to address the causes of the sources of NPS pollution and by meeting the objectives of harnessing existing positive community awareness, utilizing locally driven experienced agency resources, retaining qualified staff, and selecting qualified contractors. The objectives for meeting the goals of this WMP are listed in Table 5.1 for each cause of a sources of pollutant that is impairing a designated use. The objectives are more fully described below.

### **5.2.1 *Water Quality Impairments***

Water quality objectives will be accomplished by implementing appropriate and effective Best Management Practices (BMPs) to specifically address the sources and causes of each pollutant, as described in Table 5.1.

### **5.2.2 *Preserving and Protecting Designated Uses***

The goals of preserving and protecting designated uses currently being met will be achieved by promoting the use of preservation tools. The objectives in Table 5.1, such as “implement watershed focused land-use planning, restore and protect wetlands, restore and protect floodplains and restore and protect the stream buffer and canopy will be accomplished using tools and BMPs listed in Chapter 6.” The Steering Committee discussed the objectives for preservation and protection goals with assistance from the Michigan Department of Natural Resources and Environment (MDNRE) and other land conservation groups in the Watershed, such as the Land Conservancy of West Michigan, the Nature Conservancy, and United Growth for Kent County, to identify the tools and programs available for preservation and conservation.

This objective will be accomplished by developing and implementing specific land preservation and protection measures, using the initial results of the policy review conducted at a county level for the watershed, which is discussed in Chapter 6.

### **5.2.3 *Desired Uses***

Part of the mission of LGROW is to maintain social and economic viability in the Watershed while supporting a healthier environment, which relates to many of the desired uses, as listed in Table 3.1 as recreation (access and viewsapes), habitat preservation (riparian areas and floodplains), use of natural resources (energy and climate change), planning and development (master plans and zoning), education (awareness and stewardship), and other topics (local food, community art). Some of these overlap with objectives in Table 5.1, but overall the desired uses will be addressed by developing and implementing a long-term strategy to achieve these desired uses. Table 6.2, Measurable Milestones, and Chapter 9 outline the long-term strategy and sustainability plan for the Watershed.

### **5.2.4 *I&E Strategy***

Goal 12, “Educate stakeholders about the Watershed and the impacts that stakeholders have on the Watershed”, will be addressed with the implementation of the information and education (I&E) strategy. Objectives for Goal 12 are presented in Chapter 7 - I&E Strategy.

### **5.2.5 *Sustainable Strategy***

Objectives for the Goal 13, “Create a sustainable strategy for implementing the WMP”, are presented in Chapter 9. LGROW will continue to work toward sustaining the momentum for meeting the goals and objectives established for the Watershed by supporting Watershed groups and organizations that are working toward improving water quality and the quality of life in the Lower Grand River Watershed.

**Table 5.1 – Goals and Objectives**

Prioritized Pollutants and Impairments to Designated Uses	Prioritized Designated Use	Prioritized Goal	Sources (by priority)	Causes (by priority)	Prioritized Objectives
1. Pathogens (Bacteria) (s)	1. Partial Body Contact Recreation (I/T) 2. Total Body Contact Recreation (I/T)	1. Restore and maintain waterbodies for partial body contact recreational use. 2. Restore and maintain waterbodies for total body contact recreational use.	1. Cropland (k)  2. Livestock (k)  3. Septic tanks (k)	1. Over or improper application of manure (k)  1. Uncontrolled access (k)  2. Lack of buffer or setback at holding facilities adjacent to channel (k)  1. Aging systems (k)  2. Lack of septic system regulation (k)	Implement manure management planning and implementation.  Implement livestock management practices at access sites.  Implement vegetative buffering practices and manure management planning and implementation.  Encourage proper septic tank management.  Encourage septage ordinance.
			4. Ducks and geese (k)	1. Maintained lawn to edge of water (k)  2. Overpopulation of waterfowl (k)	Implement vegetative buffering practices.  Implement MDNRE population management practices.
			5. Sanitary sewer (s)	1. Aging/leaking sanitary sewer (s)	Implement sanitary sewer maintenance practices.

**Table 5.1 – Goals and Objectives**

Prioritized Pollutants and Impairments to Designated Uses	Prioritized Designated Use	Prioritized Goal	Sources (by priority)	Causes (by priority)	Prioritized Objectives
2. Sediment (k)	3. Other Indigenous Aquatic Life and Wildlife (I/T) 4. Cold Water Fishery (I/T) 5. Warm water Fishery (I/T)	3. Restore and maintain waterbodies for other indigenous aquatic life and wildlife use. 4. Restore and maintain waterbodies for cold water fishery use. 5. Restore and maintain waterbodies for warm water fishery use.	1. Cropland (k)  2. Urban landscapes (k)  3. Streambanks (k)	1. Tillage practices (k) 2. Lack of buffers (k) 3. Dense drainage network (k)  1. Impervious surfaces (k)  2. Dense drainage network (k) 3. Construction sites (k)  1. Altered morphology and hydrology (k)  2. Uncontrolled livestock access (k)  3. Removal of vegetation (k)  1. Agriculture practices (k).  2. Concentrated flow from roadside ditch (k)  1. Boat traffic/seawalls/wave action (k)	Implement cropland management practices. Implement vegetative buffering practices. Implement watershed focused land-use planning.  Implement Low Impact Development practices to reduce imperviousness and increase infiltration Implement watershed focused land-use planning. Implement proper soil erosion and sedimentation control techniques. Implement watershed focused land-use planning. Implement watershed focused channel stabilization and erosion control techniques. Implement livestock management practices at access sites. Implement streambank stabilization, bio-engineering, and erosion control techniques. Reduce and control gully erosion.  Implement streambank stabilization and erosion control techniques. Reduce and control lakeshore erosion.
3. Nutrients (k)			4. Rill and gully erosion (k)  5. Lakeshore erosion (k)  1. Livestock (k)	1. Over or improper application of manure (k)	Implement manure management planning and implementation.

**Table 5.1 – Goals and Objectives**

Prioritized Pollutants and Impairments to Designated Uses	Prioritized Designated Use	Prioritized Goal	Sources (by priority)	Causes (by priority)	Prioritized Objectives
4. Unstable Hydrology (k)				2. Uncontrolled access (k)	Implement livestock management practices at access sites.
				3. Lack of buffer or setback at holding facilities adjacent channel (k)	Implement vegetative buffering practices and manure management planning and implementation.
			2. Septic tanks (k)	1. Aging systems (k)	Encourage proper septic tank management.
				2. Lack of septic system regulation (k)	Encourage septage ordinance.
			3. Cropland and urban landscapes (k)	1. Over or improper application of fertilizers (k)	Implement proper fertilizer application practices.
				2. Lack of riparian buffer (k)	Implement vegetative buffering practices.
			4. Ducks and geese (k)	1. Maintained lawn to edge of water (k)	Implement vegetative buffering practices.
				2. Overpopulation of waterfowl (k)	Implement MDNRE population management practices.
			5. Sanitary sewer (s)	1. Aging/leaking sanitary sewer (s)	Implement sanitary sewer maintenance practices.
				1. Drainage/filling for agriculture/development (k)	Restore and protect wetlands.
				1. Agriculture land use practices (k)	Minimize the impact of tiles and drainage networks on hydrology.
				2. Urban land use practices (k)	
				3. Filling of floodplains (k)	1. Filling for agriculture/development (k)



**Table 5.1 – Goals and Objectives**

Prioritized Pollutants and Impairments to Designated Uses	Prioritized Designated Use	Prioritized Goal	Sources (by priority)	Causes (by priority)	Prioritized Objectives
5. Temperature (k)			4. Channelization (k)	1. Agricultural practices (k)	Use alternative techniques and stream restoration practices (e.g., two-stage channel design, in-stream structures) when drain maintenance is necessary.
			1. Lack of stream canopy (k)	1. Removal of riparian vegetation (k)	Restore and protect the stream buffer and canopy.
6. Habitat Fragmentation (k)			2. Excessive sediment (k)	1. See causes under sediment	See objectives under sediment.
			1. Destruction of habitat, including wetlands and floodplains (k)	1. Urban and agriculture development (k)	Implement Watershed focused land use planning.
7. Chemicals (k)			1. Cropland (k)	1. Over or improper application of herbicides and pesticides (k)	Implement turf management practices.
			2. Industrial activity (k)	1. Industrial emissions and discharges (k)	Reduce and control industrial emissions and discharges.
			3. Agriculture and urban areas (k)	1. Over or improper application of herbicides and pesticides (k)	Implement turf management practices.
			4. Pharmaceutical waste	1. Improper disposal of unused drugs	Develop pharmaceutical waste collection mechanism
No pollutants impairing or threatening this use.	6. Agriculture (M)	6. Protect and preserve waterbodies for agricultural use.	N/A	N/A	Implement farmland conservation and preservation tools. Encourage use of Generally Accepted Agricultural Management Practices.



**Table 5.1 – Goals and Objectives**

Prioritized Pollutants and Impairments to Designated Uses	Prioritized Designated Use	Prioritized Goal	Sources (by priority)	Causes (by priority)	Prioritized Objectives
No pollutants impairing or threatening this use.	7. Navigation (M)	7. Protect and preserve waterbodies for navigational use.	N/A	N/A	Promote and continue to implement river friendly channel maintenance techniques and river restoration practices.
No pollutants impairing or threatening this use.	8. Industrial Water Supply (M)	8. Protect and preserve waterbodies for industrial water supply.	N/A	N/A	Continue to monitor water quality for use as industrial water supply
No pollutants impairing or threatening this use.	9. Public Water Supply (N/A)	9. Protect and preserve waterbodies for public water supply.	N/A	N/A	Continue to monitor water quality for use as public water supply

k Known  
 s Suspected  
 p Potential  
 i Impaired  
 t Threatened  
 M met  
 N/A not applicable

