CHAPTER 3 – PRIORITIZED POLLUTANTS, CRITICAL AREAS, AND PRIORITY AREAS

Many of the remaining natural resources and several nonpoint source pollutants have been prioritized for management based on current data. This prioritization was done to direct available resources towards preserving the remaining natural resources with the highest ecological diversity and water quality benefit in the Belle River Watershed and addressing the greatest threats to water quality. The prioritization process was based on four main factors:

1. Analysis of available water quality data;
2. Assessments of physical and qualitative watershed conditions based on recent hydrological studies and field surveys;
3. Review of master plan documents and natural features mapping; and,
4. Stakeholder input over the course of two public meetings and input from the Belle River WAG.

"Priority Areas" are high quality and environmentally-sensitive areas that require protection and preservation. "Critical Areas" are areas that produce the highest level of pollutants in a watershed. "Critical Areas" and "Priority Areas" are delineated so that implementation efforts can be focused on the areas where the most results will be produced.

3.1 Prioritized Pollutants and Watershed Concerns

Table 3.1 outlines the natural resources, prioritized pollutants, and land use planning concerns that have been identified for the first stage of implementation of this WMP. The table also highlights the most probable point and nonpoint sources of the pollutants or causes of concern and the impacts to water quality, public health, aquatic life, and the economy. Upon interpretation of the point sources listed in Table 3.1, it should be clarified that point source discharges from regulated facilities such as WWTPs, sewage lagoons, package treatment plants, and industrial facilities are typically in compliance with their NPDES permits to discharge wastewater (Figure 3.1). However, there are some instances where exceedances of established permit limits may occur due to operational upsets (i.e. such as power failures that cause certain treatment operations to be bypassed).

Figure 3.1 Belle River Coal-Fired Power Plant in E. China Township (Source: J. Smith, Times Herald)

Table 3.1 Prioritized pollutants and watershed concerns in the Belle River Watershed

Prioritized Pollutants	Prioritized Pollutant Sources	Pollutant Causes	Impacts
1. Sediment	1. Excessive stream bank/bed erosion (k)	Modified riparian vegetation (k)	• Reduces dissolved oxygen levels • Reduces spawning habitat for fish • Degrades in-stream habitat • Taste/odor problems in drinking water • Recreational impacts (appearance)
		Flashy flows (k)	
		Lack of floodplain connectivity (k)	
		Channel blockages (k)	
	2. Agricultural runoff (k)	Inadequate riparian buffers (k)	
		Cropland erosion (s)	
	3. Hydromodification (k)	Channelization (k)	
		Channel blockages (k)	
	4. Roadways (k)	Road-stream crossings (k)	
		Perched or undersized culverts (k)	
2. Pathogens/Bacteria	1. Failing septic systems (k)	Improper septic system maintenance (k)	• Human health risks – risks of illness from ingestion or from contact with contaminated water through recreation
	2. Animal waste (k)	Land application of manure (s)	
		Unrestricted access of livestock to waterways (s)	
		Excessive pet and wildlife waste near waterways (s)	
	3. Sanitary sewer overflows (s)	Sanitary sewer overflow events (s)	
3. Nutrients	1. Agricultural runoff (k)	Inadequate riparian buffers (k)	• Aquatic life impairments (i.e. excessive aquatic plant growth, lowered dissolved oxygen levels) • Drinking water supply impacts (i.e. dangers from elevated nitrates) • Recreational impacts (excessive plant growth, odors, appearance, etc.)
	2. Landscaping (s)	Improper application of fertilizer (s)	
	3. Failing septic systems (s)	Improper septic system maintenance (k)	
	4. Animal waste (s)	Unrestricted access of animals (domestic, wildlife, livestock) to waterways (s)	
4. Toxic Pollutants	1. Roadways (s)	Excessive application of road salt (s)	• Aquatic life impairments • Fish contamination (PCBs) • Contamination of drinking water supplies (elevated concentrations in source water)
	2. Urban runoff (s)	Illicit dumping of hazardous waste (s)	
	3. Agricultural runoff (s)	Improper application of pesticides (s)	

3.2 Priority Areas and Critical Areas

Priority Areas are remaining natural resources of high quality and environmentally-sensitive areas (such as wetlands, woodlands, headwater tributaries, unique natural sites, etc.) that require protection and preservation. A high priority is the protection and preservation of the many high quality natural areas that exist throughout the Belle River Watershed. Protection and proper management of water resources is much more effective, and considerably less costly, than restoration.

A Critical Area can be defined as a geographic portion of the watershed that is contributing the majority of the pollutants and is having a significant impact on particular waterbodies (such as unstable streams, construction sites, erosive soils, steep slopes, etc.). Identification of specific critical areas in a watershed saves time and money because projects can be focused on prioritized areas. In the Belle River Watershed, many of the pollutants and concerns exist in Zone 1 and 3, the headwaters and the lower reach of the Belle River.

The watershed-wide critical areas have been delineated based on the prioritized pollutants and watershed conditions of greatest concern. The prioritization process was based on available water quality and assessment data, as well as stakeholder input throughout the watershed planning process. In order to address the critical areas in the Belle River Watershed, the selection of BMPs is prioritized to focus on the following elements:

Priority Areas:

1. Significant natural resources (woodlands, wetlands, fisheries, areas with threatened and/or endangered species, and headwater tributaries) (Figure 3.2)
2. Preservation of prime agricultural land and rural character
3. Creation and preservation of public access to water resources
4. Protection of priority conservation lands

Critical Areas:

5. Sediment source areas
6. TMDL areas
7. Areas with altered watershed hydrology

Figure 3.2 Prioritized parcel for woodland and wetland preservation, Lapeer County (Source: SRLC)

3.2.1 Priority Areas

3.2.1.1 Significant Natural Resources

As outlined in Section 1.4 of Chapter 1, there are several areas throughout the Belle River Watershed that have been identified for their significant natural resource value. Conserving and protecting these features will be critical in attaining the goals and objectives of this WMP. All of the features

outlined in the above-mentioned section of Chapter 1 requiring priority for protection/enhancement include:

- Wetlands conservation and creation throughout the Belle River Watershed,
- Fisheries (primarily in the Lower Belle River), and
- Areas with threatened and/or endangered species throughout the Belle River Watershed.

In order to gain the necessary information to protect the high-quality natural features throughout the area, it is highly recommended that a site-level Michigan Natural Features Inventory (MNFI) be completed in order to ensure that the highest quality natural features are identified. Local communities are highly encouraged to then include the areas identified in the MNFI into their Comprehensive/Master Plan documents to support future planning strategies, such as adoption and implementation of ordinances and development standards that protect these natural features.

3.2.1.2 Preservation of Prime Agricultural Land and Rural Character

As outlined in Section 1.4.2 of Chapter 1, the most productive agricultural lands are located in the upper reaches of the Belle River Watershed (Figure 3.3). Farmlands in these areas have been identified by the NRCS as those best suited for food production. This means that they require minimal soil enhancement measures such as irrigation and fertilizer, and crops grown on these soils will produce the highest yields with the smallest input of energy and economic resources. As such, these areas should be prioritized for purchase of development rights in conjunction with the Farmland Preservation Program (P.A. 116 Program), and rural Townships should consider adopting an agricultural buffer zoning ordinance. Stream buffers and agricultural BMPs are necessary for sustainable agriculture and water quality protection.

Figure 3.3 Priority parcel for prime agricultural land, Lapeer County (Source: SRLC)

3.2.1.3 Creation and Preservation of Public Access to Water Resources

Many people choose to live in the region because of the recreation opportunities provided by local waterways. The Belle River is commonly used for boating, kayaking, and fishing access. Preserving recreational access to these waterways was identified as a top priority for the Belle River Watershed during the Public Meetings and Public Opinion Survey (Chapter 8.3). Providing recreational access is a means for the public to value these waterways that they ultimately depend on for more than just recreation. Activities such as swimming, fishing, boating, or simply riding a bike or walking along the water may not seem like water quality protection activities, but it is generally accepted that those who use water recreationally are more likely to value and protect it.

There is significant interest to acquire additional areas for public access to the water resources throughout the Belle River Watershed. Each community in the Belle River Watershed should create, or update, recreation plans in order to be eligible for various funding sources to help acquire additional parks and recreational space.

The St. Clair County Metropolitan Planning Commission (SCCMPC) and the St. Clair County Parks and Recreation Commission (PARC) created the Blueways of St. Clair to inventory and enhance coastal access points, bolster the protection of sensitive environments along the corridor and responsibly promote recreational opportunities along the entire Blueway. The Belle River Route is a Blueway trail that winds through Marine City, East China Township, and China Township (Figure 3.4 and 3.5). The route begins at China Township Park at King Road, passes through East China Township Park and continues 14.5 miles to the St. Clair River in Marine City. A new river access point has been added to this route at Springborn Road in East China Township.

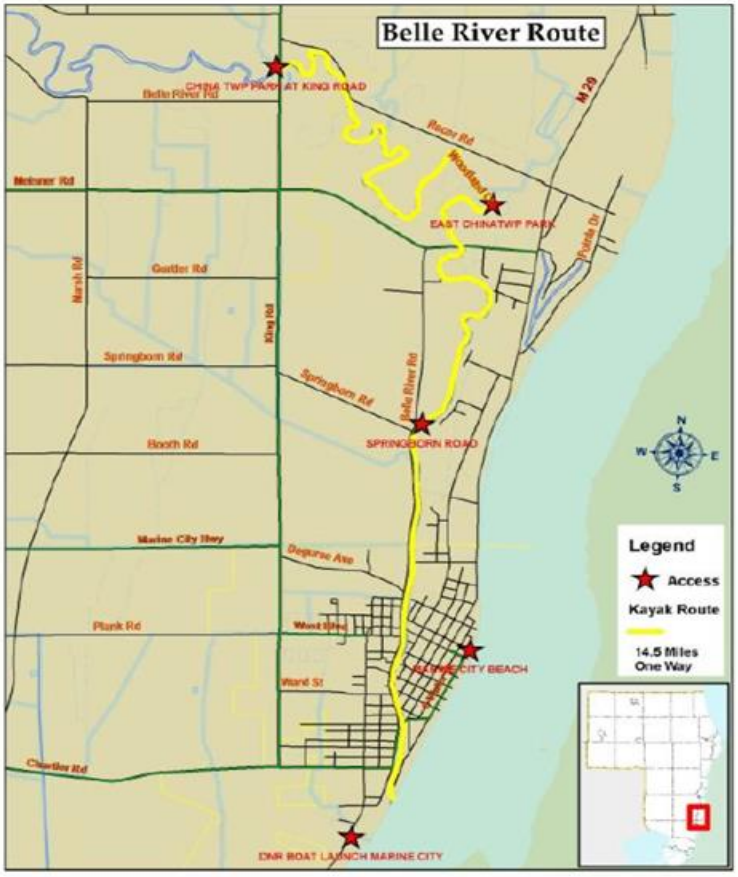


Figure 3.4 Blueways Trail Map of the Belle River Route

There are several strategies that can be implemented to acquire additional parks and recreational space throughout the Belle River Watershed. Partnerships between local governments and the Parks and Recreation Commissions to share funding options is an existing option, and there are several other funding options available for the acquisition of land for recreational uses as discussed in Chapter 6. It should be noted that as shoreline stabilization projects are implemented, their design should strive to include a public access component to increase recreational opportunities along the Belle River.

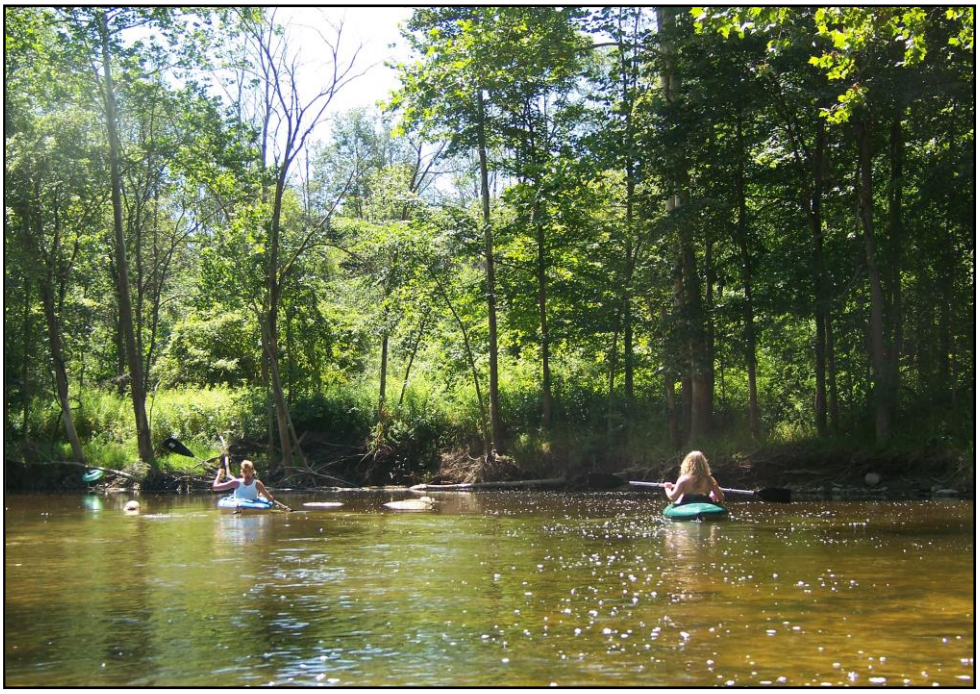


Figure 3.5 Kayakers on the Belle River Blueway Trail

3.2.1.4 Protection of Priority Conservation Lands

As explained in Section 1.4.1, the Six Rivers Land Conservancy (SRLC) assisted in identifying priority conservation lands in the Belle River Watershed. As a part of this undertaking, strategies for protecting these lands were developed. Strategies include working directly with landowners to protect their property through conservation easements; working with park systems and other public entities to create parks, preserves and recreation lands; and working with regulatory authorities and governmental agencies to develop land use controls and provide training and support in best management practices (BMPs) to landowners. Priority conservation lands were separated into three categories: the Headwaters Region, characterized by larger parcel lands and priority conservation lands falling along stream corridors; the Middle Reach has priority lands that line the main branch of the Belle River with vitally important riparian buffer areas; and the Lower Reach, where priority lands are more scattered indicating the riparian zone is more developed and fragmented with the most important lands public parks. Figure 3.6 identifies high priority parcels based on model that focuses on improving water quality in the Belle River Watershed. Another version of the model was completed that prioritizes parcels based on other natural resource values in addition to water quality; these maps are available in the Appendix K.

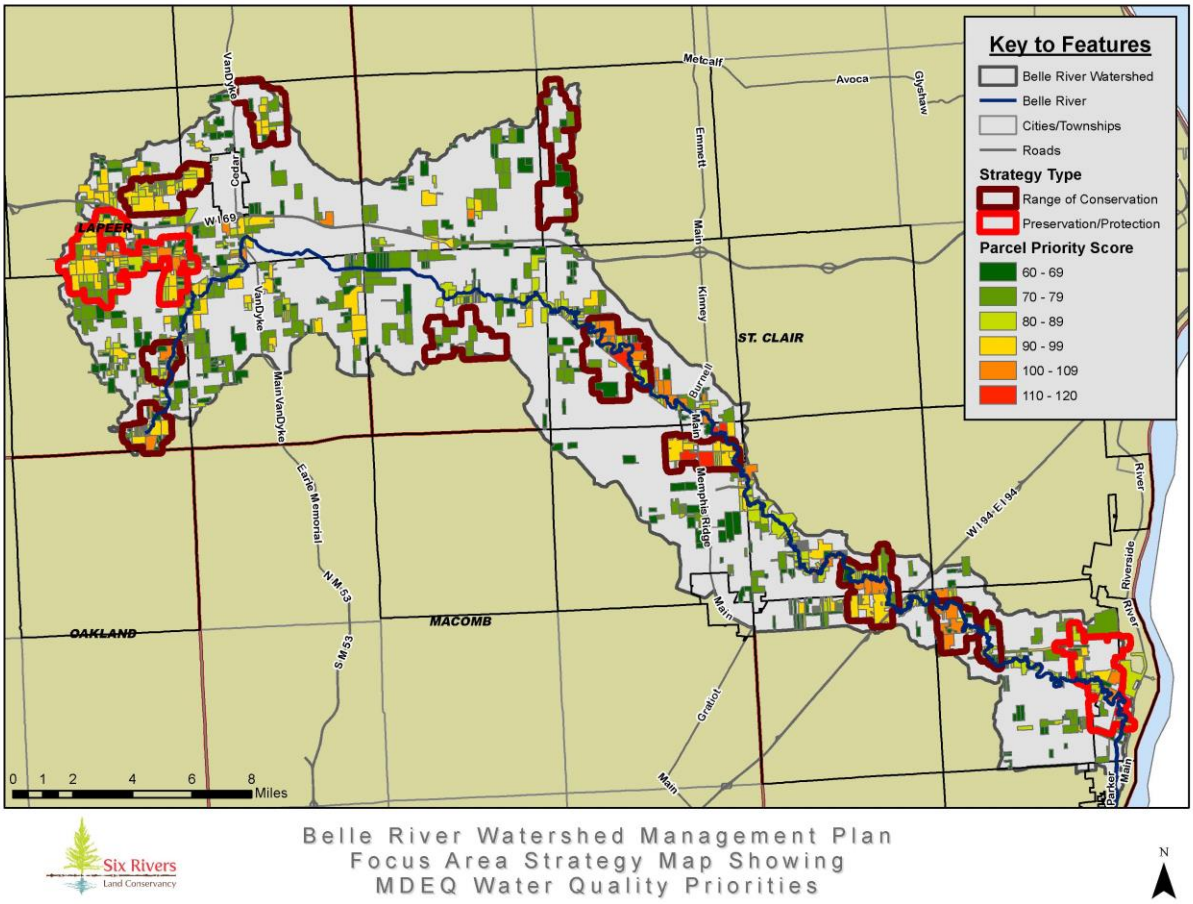


Figure 3.6 Priority parcels to improve water quality identified in the SRLC study

3.2.2 Critical Areas

General critical areas are generally described below in the categories of sediment source areas, TMDL areas, and areas with altered watershed hydrology.

3.2.2.1 Sediment Source Areas

Sediment is a major concern in the Belle River Watershed. The middle and lower reaches of the Belle River are negatively affected by the over-wide Belle River Intercounty Drain and other tributary drains in the headwaters which tend to have high turbidity levels following rain events due to re-suspension of fine sediments.

Cropland and ditches are the main sediment sources in the TMDL area of the headwaters. Construction sites, streambank erosion, hillslope failures, and road crossings are additional source areas. Critical source areas were identified in Section 2.1.10. These critical areas are places where the greatest pollutant reductions will be achieved by treating the fewest sources at the least cost. Sediment critical areas are further explained in Section 3.3.2.

Table 7.3 in Chapter 7 summarizes the priority critical sediment source areas, actions to decrease sediment loading (BMPs), estimated costs, and the anticipated reduction in sediment load. Appendix J provides site details for each of the critical areas.

3.2.2.2 TMDL Areas

As discussed in Section 2.1.1 of Chapter 2, there are several river reaches in the Belle River Watershed that have been developed for a Total Maximum Daily Load (TMDL) which outlines the allowable loading of a pollutant in a waterbody to assure that state water quality standards are met. Table 3.2 provides a summary of those areas and appropriate measures should be taken to achieve the pollutant loadings outlined in the TMDL.

Table 3.2 Summary of 303(d) listed areas in the Belle River Watershed (MDEQ, 2004)

Impairment	River	Reach Start	Reach End	Distance (mi)
Dissolved Oxygen	Belle River	Riley Center Road	Webster Road	17.1
	North Branch Belle River	Belle River confluence	Blacks Corners Road	4.2

The TMDL provides numeric targets for Waste Load Allocations (WLA) from point sources and Load Allocations (LA) from non-point sources. This plan addresses the non-point pollutant sources and seeks to decrease the LA value the total suspended solids (TSS) load by 50% from 3,461,000 pounds per year to 1,731,000 pounds per year for other land use related sources. Source areas of TSS loads are located in the Townships of Almont, Attica, Berlin, Brockway, Dryden, Emmet, Goodland, Imlay, Mussey, and Riley. The target WLA land-use related loads have also been reduced by 50%. The final target load for the TMDL, including the WLA and LA, is 2,506,000 pounds per year.

The Belle and North Branch Belle Rivers near Imlay City are designated as warmwater streams with a dissolved oxygen (DO) standard of 5 milligrams per liter as a minimum. Over 20 miles of river near Imlay City have significant and continuing DO standard nonattainment. Potential sources of DO demanding pollutants, such as sediments and nutrients, include point and non-point sources. There are four individual NPDES permitted discharges and five non-storm water general permitted discharges to the Belle and North Branch Belle River Watershed in the vicinity of Imlay City. Non-point source loadings of pollutants appear to play a significant role in the DO standard non-attainment in the Belle River Watershed. In order to decrease the sediment oxygen demand and nutrient loads, the loading of suspended sediments to the rivers must be reduced.

3.2.2.3 Areas with Altered Watershed Hydrology

The hydrologic cycle has changed significantly in the Belle River Watershed over the past two centuries (Section 1.3 of Chapter 1). During the development of the watershed for agricultural use, deforestation, wetland filling, and drainage improvements were extensive. This development increased the runoff volumes and rates and decreased base flows. In more recent decades, the runoff in more urbanized areas has increased which has resulted in flooding and channel erosion. Most tributaries throughout the Belle River Watershed have been physically modified over the past century by dredging, channel straightening, and other maintenance activities to improve conveyance of

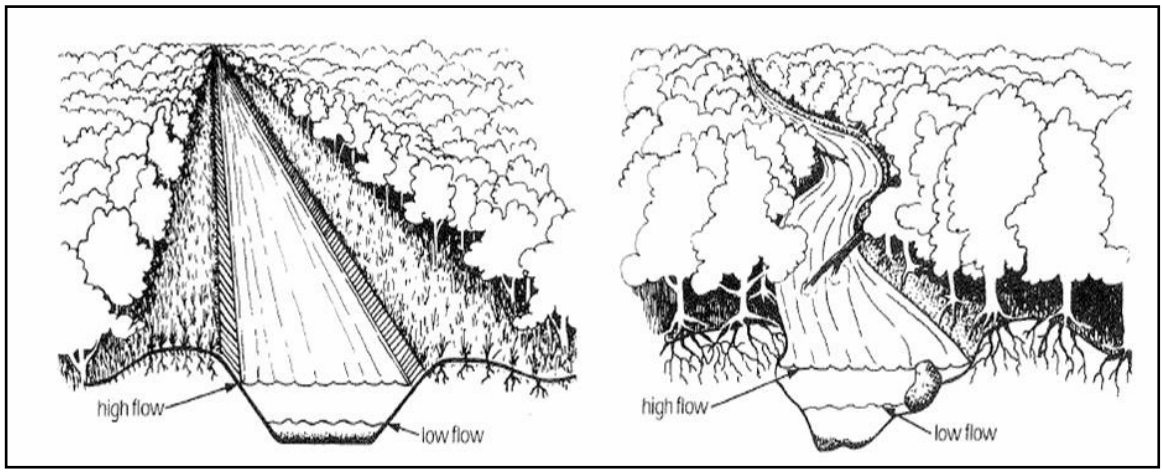
Figure 3.7 Typical channelized and modified tributaries in agricultural areas

these increased flows. Some headwater tributaries and ditches continue to be maintained in ways that are not sustainable and main tributaries have not recovered from historic impacts. Therefore, there is an opportunity to restore the hydrology in headwater areas and restore and enhance the unstable stream channels. Figure 3.7 illustrates typical modification of headwater streams.

The changes to watershed hydrology and channel hydraulics have degraded water quality and habitat. The science of stream restoration has grown significantly in recent decades throughout the U.S. and there are many opportunities for improvement in the Belle River Watershed. However, a watershed- based approach that considers restoring watershed hydrology and reducing significant sediment sources is critical to sustainable restoration efforts. Therefore, the critical areas in the Belle River Watershed with the greatest opportunity for restoring the effects of altered watershed hydrology (and hydraulics) include:

- Restoring headwater tributaries,
- Constructing two-stage ditches that require less maintenance,
- Daylighting enclosed streams,
- Re-forestation and small-scale tree planting,
- Wetland restoration and creation,
- Floodplain restoration, and
- Re-constructing road crossings with under-sized or perched culverts.

Although channelization may be necessary in some cases (such as in agricultural areas), it is an expensive and least-preferred approach. Methods that allow the drainage course to maintain a natural meandering pattern while conveying the sediment and water produced by its watershed require considerably less maintenance. Natural stream channels maintain floodplain connectivity, vegetative buffers, and in-stream habitat (Figure 3.8). The restoration of rural and urban streams provides an opportunity to achieve sustainable flood control benefits while improving water quality, habitat, aesthetics, and property values.



Source: International Association of Fish and Wildlife Agencies, U.S. Fish and Wildlife Service, and U.S. Forest Service, 1983

Figure 3.8 Schematic of channelized and meandering drainage courses

3.2.2.4 Areas Impaired from High *E. coli* Levels

E. coli has been found in levels higher than state water quality standards at sites throughout the Belle River Watershed. In 2014, subwatersheds 18, 19, 20, and 21 were listed as impaired for Total Body Contact Recreation and Partial Body Contact Recreation due to high *E. coli* levels. These subwatersheds, located in Zone 2, are critical areas where projects need to be implemented to reduce *E. coli*.

Known and suspected sources include failing septic systems, animal waste, and sanitary sewer overflow events. Further research is needed to determine the specific causes of these sources. As a TMDL is scheduled to be developed in 2029 for E. coli, additional data will need to be collected throughout the impaired area. As identified in this WMP, failing septic systems and agricultural sources will be addressed, mainly through education and outreach BMPS, to address *E. coli* levels.

3.3 Critical Sources of Prioritized Pollutants throughout the Watershed

It has been determined that bacteria, sediment, and nutrients are the priority nonpoint source pollutants impacting the Belle River Watershed. Total dissolved solids and toxic pollutants are also of concern in the watershed. These critical pollutants are further discussed in Sections 3.3.1 to 3.3.5 of this chapter.

3.3.1 Sediment

As discussed in Section 2.3 of Chapter 2, soil erosion and sedimentation are major issues throughout the Belle River Watershed. Excessive loadings of fine sediments (silts and clays) can significantly impact water quality and aesthetics. A significant increase in sediment load or a shift to a larger size of sediment will cause an increase in deposition, the formation of mid-channel bars, and extensive system-wide channel instability (as opposed to localized bank erosion) may then be triggered. The sources and causes of excess sediment to the tributaries of the Belle River Watershed are highly variable, but can generally be classified as a combination of in-stream and upland sources.

Field inventories of sites were completed by the Lapeer County Conservation District and consultant teams in 2013 in order to prioritize critical sediment source areas. Prioritizing the critical source areas is especially important due to the scale of the Belle River Watershed; over 200 square miles of land cannot feasibly be retrofitted to manage and treat stormwater runoff. Critical areas were identified throughout the Belle River Watershed in seven categories: stream crossings, gully erosion, inadequate riparian buffer, streambank erosion, livestock access, non-point agricultural sources, and tile outlets (Figure 3.9). Several tributaries in the Belle River Watershed are very unstable and produce high sediment loadings during moderate to large storm events due to ongoing channel adjustments (Figure 3.10-3.12). Nonpoint source project profiles were identified from the site inventories and are available in Appendix J. The project profiles showcase specific measures that can be taken to reduce sediment loading at sources of critical pollutants throughout the watershed. Table 7.2 in Chapter 7 summarizes each critical sediment source area, actions to decrease sediment loading (BMPs), estimated costs, and the anticipated reduction in sediment load.

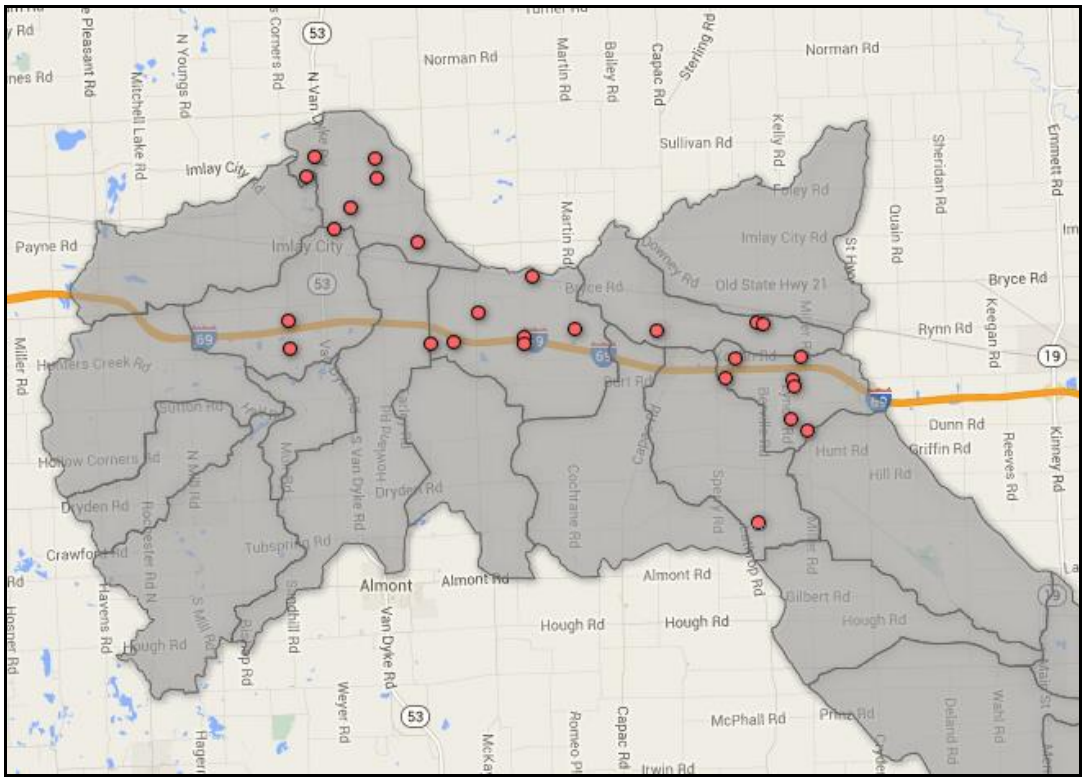


Figure 3.9 Non-point source critical areas in the Belle River Watershed headwaters

Figure 3.10 Farmed, unstable headwater tributary of the Belle River

Figure 3.11 Sedimentation in a tributary to Belle River

Figure 3.12 Evidence of streambank erosion along the Lower Belle River

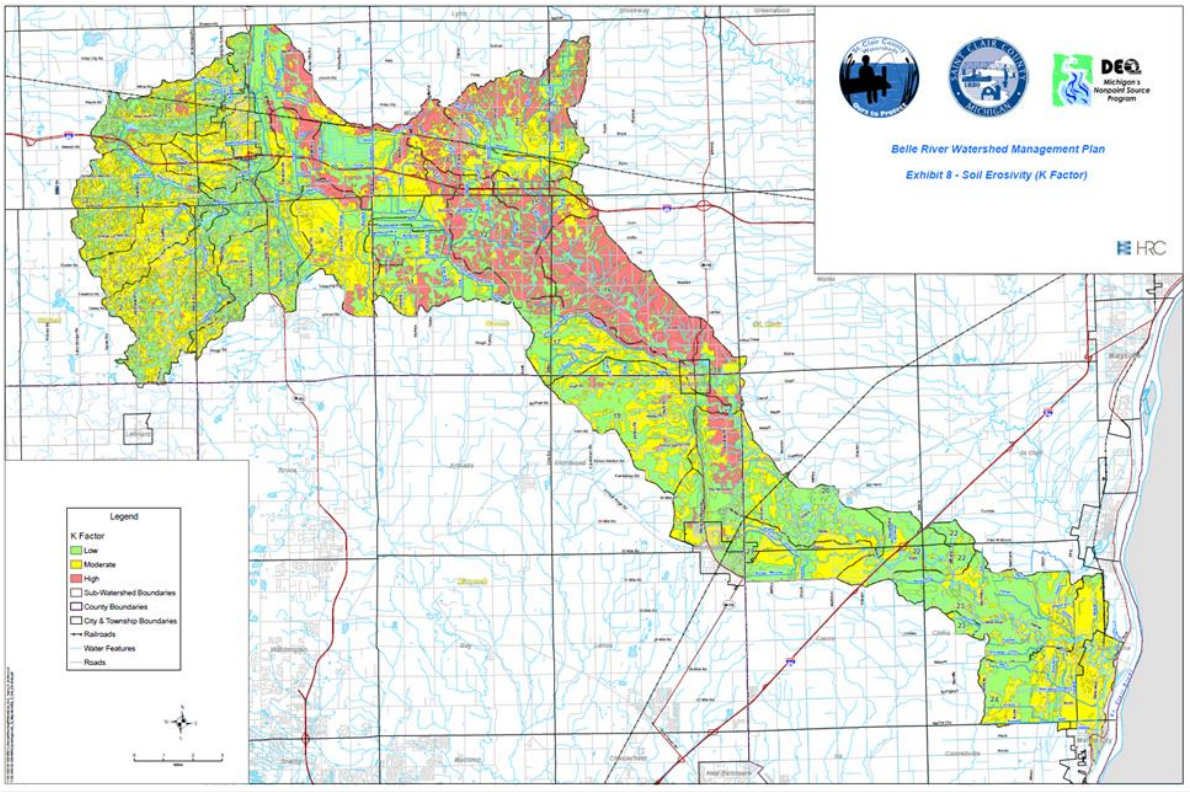


Figure 3.13 Erosion hazard areas in the Belle River Watershed based on soils

Based on the STEPL model and preliminary field observations, there are several source areas that generally provide most of the upland sediment loadings to waterways in the Belle River Watershed:

- Erosion at road and stream crossings (including unvegetated ditches, unstabilized outfalls, perched culverts),
- Agricultural runoff,
- Roadways (dirt/gravel), and
- Steep slopes and erosive soils.

Based on soil type, texture, erosivity factor, and land slope, areas of moderate to severe erosion potential are defined in Figure 3.13 for the Belle River Watershed. The areas with the most erosion potential are concentrated in the headwaters and in the middle of the watershed. Further details on erosion and sources of sediment are provided in Chapter 2.

3.3.2 Bacteria

The issue of pathogens and bacteria was discussed in detail in Section 2.1.8 of Chapter 2. The available data shows that bacteria levels are regularly exceeded at several areas within the Belle River Watershed. This indicates that there are likely sources of bacteria coming from upstream tributaries, or sources near

the shorelines. In addition, several waterways are monitored to determine possible sources of *E. coli*. From 2008 to 2012, the following weekly monitoring sites frequently exceeded 300 CFU/mL:

- Capac Road in Berlin Township
- Masters Road in Riley Township
- Kronner Road in Columbus Township
- Columbus Township Roadside Park
- Indian Trail in China Township
- Meisner Road in China Township
- St. Clair River at Marine City

Currently, SCC has 46 failing septic systems that remain uncorrected from 2007 IDEP surveys, for a variety of reasons including economic hardship and property vacancy. Seven failing onsite sewage disposal system (OSDS's) were corrected this past year. Actions continue to be taken to find and eliminate sources of contamination from bacteria and these actions will continue to be implemented throughout the watershed. Those actions include:

- Implementation of Illicit Discharge Elimination Programs (including detection and elimination of sewer cross connections and failing OSDS);
- Implementation of a Time of Sale program in Macomb County; and
- Ongoing public education efforts to encourage the reduction of bacteria into surface waters from pets, livestock, waterfowl, failing OSDS, and others.

3.3.3 Nutrients

The specific sources of nutrients throughout the Belle River Watershed cannot be determined without an extensive, long-term water quality monitoring program. Implementing measures to address suspected and known sources of nutrients should be a priority in the Belle River Watershed. Some level of consistent nutrient monitoring should be initiated in order to better understand the largest sources of nutrients in the watershed.

Based on the STEPL model, the most significant land use areas contributing phosphorous and nitrogen are agricultural land uses (Appendix G). The STEPL model identified critical subwatersheds with the highest phosphorus loads. Subwatersheds with the highest phosphorus loads include 6, 10, 7, 9, 1, 15, and 4 (Table 3.4).

Table 3.3 Ranking of upper 50% of subwatersheds by total phosphorus as calculated by the STEPL model

Watershed	Area (ac)	P Load (lb/ac/yr)
Subwatershed 6	4,224	0.81
Subwatershed 10	6,202	0.71
Subwatershed 7	4,890	0.70
Subwatershed 9	6,189	0.70
Subwatershed 1	3,264	0.69
Subwatershed 15	2,938	0.67

Subwatershed 14	3,891	0.66
Subwatershed 4	2,042	0.64

As discussed in Section 2.1.3 in Chapter 2, other sources of phosphorus, besides agricultural runoff, in the Belle River Watershed are:

- Lawn and garden activities (excess fertilizers);
- Livestock, pet, and wildlife waste;
- Sanitary sewer systems (SSOs/CSOs); and
- Failing onsite sewage disposal systems (OSDS).

Inadequate riparian buffers, while not a source of phosphorus, play a large role in allowing phosphorus-laden runoff to easily enter waterways in the Belle River Watershed. Wetland degradation and destruction has also decreased natural nutrient filtration. Considering that 79% of the wetlands have been lost in the Belle River Watershed, existing wetlands should be preserved and/or restored. The primary means of reducing nutrient loading to the Belle River Watershed will be through public education efforts and the encouragement of the use of appropriate BMPs to reduce nutrient loading, such as the installation of new riparian buffers.

3.3.4 Total Dissolved Solids

Total dissolved solids (TDS) include any inorganic or organic substances dissolved in water. In the Belle River Watershed, chloride concentrations are a concern and further explained in Section 2.1.5. Roadways are the major non-point source of TDS in the watershed. Chloride loadings were highest in the winter and spring seasons because road salt is most heavily used during these seasons, leading to more non-point runoff of chloride. The primary means of reducing chloride loading in the Belle River Watershed is to increase public and municipal awareness about salt applications and change behaviors regarding road salt usage and promoting alternative deicers.

3.3.5 Toxic Pollutants

Mercury has been found in the water column near the mouth of the Belle River at Marine City. The Detroit Edison Belle River plant emits toxic pollutants into the air and is regulated by the EPA. In 2013, the Detroit Edison Belle River Plan emitted 359 pounds of mercury into the air (DTE, 2013). The power plant reports chemical emissions under the EPA's Toxic Release Inventory (Table 3.3). Chemical emissions were down over 16 percent from 2012. These are considered a point source of pollution and are regulated accordingly. DTE's releases are below the levels at which state and federal regulators may take some action to control emissions. None of the releases reported in 2013 exceed 25 percent of an action level, and most are between 0 and 10 percent.

Table 3.4 DTE Energy 2013 chemical releases from the Belle River plant

TRI Chemical	Total (Pounds)	Air (Pounds Emitted)	Land (Pounds Managed)	Water (Pounds Discharged)
Arsenic Compounds	3,288	9	3,200	79
Barium Compounds	1,706,000	400	1,700,000	5,600
Benzo(g,h,I)perylene	0.48	0.12	0.36	0.00
Chromium Compounds	9,557	47	9,400	110
Cobalt Compounds	4,426	9	4,400	17
Copper Compounds	22,124	79	22,000	45
Dioxin[1]	0.57020	0.57020	0	0
Hydrogen Chloride	190,000	190,000	NA	NA
Hydrogen Fluoride	150,000	150,000	NA	NA
Lead Compounds	13,491.55	38.31	13,437.50	15.74
Manganese Compounds	43,460	140	43,000	320
Mercury Compounds	359.33	318.92	35.16	5.25
Nickel Compounds	14,146	87	14,000	59
PACs[2]	19.01	2.95	16.06	0.00
Selenium Compounds	2,969	310	2,600	59
Sulfuric acid	37,000	37,000	NA	NA
Vanadium Compounds	30,032	28	30,000	4
Zinc Compounds	21,560	330	21,000	230

[1] Dioxin Emissions are reported to the EPA in grams
[2] PACs = Polycyclic Aromatic Compounds

3.4 Implementation Strategy

The implementation of the recommended BMPs that target the prioritized pollutants and watershed natural resource concerns should be scheduled for implementation within the short- term, or within the first five years of WMP implementation. The BMPs for addressing the critical areas and protecting the priority areas are discussed in Chapter 6. As implementation of the Belle River Watershed WMP continues, the critical areas may change. As protection and enhancement projects are completed, additional challenges to the watershed arise, and as more information on the characteristics of the watershed is obtained, additional critical areas may be delineated. These changes will be reflected in future modifications to this WMP.